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PERSONAL AND SITUATIONAL FACTORS AFFECTING EXERCISE INVOLVEMENT

A Thesis Presented
to the
Department of Kinesiology
Lakehead University

In Partial Fulfillment
of the Requirements for the
Degree of Master of Science
in
Applied Sport Science and Coaching
with a
Specialization in Gerontology

by
Trisha Gavin

Abstract

The purpose of this study was to investigate factors related to either continuing involvement or dropping out of a community based mall walking program for older adults. A questionnaire or telephone interview was administered to 109 adherers and 48 dropouts. The dropouts were grouped as active dropouts (n=29) and inactive dropouts (n=19) based on their current activity patterns. Chi Squares and ANOVAs indicated that the active dropouts were very similar to the adherers on a variety of measures. The adherers were nonsmokers and more highly educated. They rated their perceived health, ability to function, and fitness level higher than the inactive dropouts. The adherers recognized cardiovascular benefits as an advantage to participating in physical activity while the dropout groups expected an increase in energy and psychological gains from participation. Health and fitness gains were stated as the main reasons to join the programs by all groups. Weight loss was reported as an additional reason to join by the dropout groups. Social aspects of the program helped to maintain the adherers' participation. Barriers to participation for the active dropouts included no ride or an injury while illness was a barrier faced by the inactive dropouts. Being too busy was the most common reason to drop out of the programs and illness was also reported by the inactive dropouts as a main reason to drop out. Recommendations for the mall walking programs, both program and facility related, have been included. Overall, this information provides insight into why some older individuals adhere to an exercise program while others do not.

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I would also like to thank my friends both at home and here in Thunder Bay who offered their support and friendship over the past two years. Finally, a special thanks to a close friend who supported my work each day and gave me the strength and encouragement to follow through.

Dedication

For my parents, Diane and Gord, who have guided, influenced, and instilled the attitudes necessary to pursue this task. Their constant love, support, and encouragement provide me with the strength I need to face the challenges that I encounter each day.

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Introduction

The incorporation of regular physical activity into one's lifestyle is a behaviour change that is recommended by health professionals (Garcia & King, 1991). This advice is a result of the expanding evidence being reported on the positive association between physical activity and health (Pate et al., 1995). The interest in health and wellness and the benefits of exercise are not only for the young, but also for the older, aging population.

Older individuals who engage in regular exercise are consistently reported to demonstrate substantial physiological and psychological gains (Pate et al., 1995). Exercise is defined as "physical activity that is planned, structured, repetitive, and purposive in the sense that improvement or maintenance of one or more components of physical fitness is an objective" (Caspersen, Powell & Christenson, 1985, p.128). Exercise remains the most effective avenue for older individuals to improve physical strength and maintain functional independence and cardiovascular health (Heckler, 1985). It can have a positive effect on cognitive functioning, self esteem, self efficacy (Brown, 1992), and relieve feelings of depression and anxiety (Ruuskanen & Ruoppila, 1995). Exercise can also have a beneficial impact on some common chronic diseases such as arthritis, hypertension, heart disease, and diabetes that can be experienced by the older population and improve one's overall quality of life (Fletcher et al., 1992).

Despite the many benefits that can be achieved by following an active lifestyle, the amount of intensive and regular exercise that one participates in, has been reported to decrease with advancing age. Ruuskanen and Ruoppila (1995) reported that approximately twenty percent of individuals aged sixty-five to seventy-four, and seventy four percent of women aged eighty to eighty-four were no more physically active than necessary to perform their daily

routines and did not carry out any form of physical exercise for the purpose of enhancing or maintaining their health and fitness. Likewise, Heckler (1985) stated that fifty-seven percent of individuals in the sixty-five and older age cohort do not exercise on a regular basis. Furthermore, fifty percent of middle aged or elderly individuals who enroll in physical activity programs cease to continue with the program after six months (Shephard, Berridge, Montelpare, Daniel, & Flowers, 1987).

The problem of sustaining adherence to an exercise program once it has begun is one of the most commonly studied and least understood aspects of exercise and physical activity (Duncan & McAuley, 1993). Welsh, Labbe, and Delaney (1991) defined adherence as the length of time an individual continues with the program regimen. Dropouts are defined as those individuals who discontinue participation in an exercise program (Robison & Rogers, 1994). Research into the area of exercise adherence is fundamental to promoting the health potential of physical activity. However, the lack of research on adherence to exercise at various life stages, and neglecting to follow up on those who dropout of activity programs, leads to incomplete conclusions in the adherence and dropout literature.

King et al. (1992) stated that little is known about the specific personal, social, and environmental barriers to exercise that are prevalent at each life stage. The circumstances at different life stages have an impact on both the interest to exercise and the ability to be physically active. Many factors associated with poor adherence to exercise programs have been identified using young and middle aged subjects in clinical and laboratory settings (Dishman, 1988). This research has neglected older age groups who may be involved in activity programs in a community based location.

The factors that influence adherence to exercise programs include personal, environmental, and program related items. Personal characteristics that may influence adherence to an activity program have been defined as past or present knowledge, attitudes, behaviours, personality attributes, and/ or demographic features (Dishman, Sallis, & Orenstein, 1985). According to Dishman (1988) older individuals, smokers, the overweight, and blue collar workers were either not likely to engage in exercise or were at an increased risk for dropping out of a supervised activity program. Individuals who have reported a lack of physical activity in leisure time, and who have experienced a medical problem, injury, or illness were less likely to participate in physical activity (Hovell, Hofstetter, Sallis, Rauh, & Barrington, 1992). In addition, Dishman (1982) reported that those who perceived their health as poor and believed that exercise had little value for health and fitness were unlikely to enter or adhere to an exercise regimen.

Characteristics of the environment can influence ones' participation in a physical activity program. Dishman et al. (1985) stated that the most common reason for dropping out of activity programs was the perceived lack of time by the participant. The level of social support from family and friends has been reported to be highly correlated with exercise adherence (Sallis, Hovell, & Hofstetter, 1992). In addition, convenience of the exercise setting and its proximity to home or the work place, as well as accessible transportation to the program location were positively related to exercise adherence (Andrew et al., 1981).

Characteristics of the exercise program can also influence adherence. The cost of the program, personal perceptions of the program as well as personality characteristics of the program leaders have been listed as barriers to activity programs (Hovell et al., 1992; Sallis & Hovell, 1990). Programs that offered a self monitoring component, provided incentives, and

social reinforcements from interpersonal relationships between exercisers or program staff have resulted in increased adherence (Dishman, 1982).

Walking programs have appeared to promote higher adherence rates than programs involving other forms of aerobic activity (Pollock, 1988). Simonsick et al. (1993) reported walking as the most common form of recreational activity performed by older adults. Walking is considered to be a moderate-intensity exercise and can provide health benefits if performed for thirty minutes or more on most days of the week (Pollock & Froelicher, 1990). However, the benefits that a walking program can provide will not occur if the program is not maintained (Hovell et al., 1989).

It is necessary to identify and understand the reasons why individuals continue to participate in or drop out of exercise programs. There is a lack of research about individuals who quit exercise programs. It may be possible that some individuals who quit a formal program will continue to exercise in another exercise program, at home, or in another informal setting (Dishman, 1982). Thus, decreased attendance at an activity program does not necessarily indicate a decreased level of exercise, but perhaps just simply the change of location (Dishman, 1988).

Generally, past literature has addressed reasons for adherence with healthy young and middle aged men in laboratory or clinical settings (Dishman, 1988). Research has failed to examine exercise adherence in community based elderly fitness programs and has neglected to follow up on dropouts from these exercise programs. The health potential of physical activity cannot be fulfilled by the aging population until the specific behavioural determinants of participation for this age group are identified and managed. To improve adherence to exercise

programs, it is necessary to understand the factors that limit or prevent participation and develop ways to overcome such limitations.

Purpose

The purpose of this study was to investigate factors related to either continuing involvement or dropping out of a community based mall walking program. In particular, an exploration of the personal, environmental, and program related factors of the adherer and dropout was completed.

Review of Literature

The Characteristics of Aging

Recent statistics have indicated that older individuals, especially those over sixty-five, make up the fastest growing segment of the North American population. In Canada, twelve percent of the population is sixty-five years of age or older and it is estimated that by the year 2026 the percentage will have grown to about twenty-five percent, with almost half of these people being seventy-five or older (Statistics Canada, 1990). The aging process has frequently been characterized as a time of loss and decline. Although most individuals sixty-five years of age and over consider themselves to be in good health, approximately eighty percent suffer from at least one chronic health condition (Heckler, 1985).

The negative changes that accompany aging are frequently reported in gerontological literature. The age related decline and deterioration in physiological, psychological, and cognitive capacities have been the focus of many studies (Blumenthal, Schocken, Needels, & Hindle, 1982; Hassmen, Ceci, & Backman, 1992; Ruuskanen & Ruoppila, 1995). The slow, subtle, and progressive changes that occur during mid-life and through the elderly years are thought to be attributed to advancing age (Payne & Hahn, 1992). Recent research however, is beginning to recognize that many of the physical and behavioural age-related changes are similar to characteristics that result from inactivity. Changes in body composition such as a decrease in lean body mass and increase in the percent of body fat has been reported with increasing age (Bortz, 1982). However, Rippe, Ward, and Porcari (1988) suggested that an active exercise program can reverse the body composition changes of older adults. Bortz (1982) identified behavioural changes, particularly depression as a characteristic of aging. However, a program

of physical activity can relieve depression and improve the overall mood of the participant (Thayer, 1988). Thus, many of the effects of aging may be due to inactivity rather than intrinsic biological processes (Bortz, 1982).

Holloszy (1983) reported that exercise training may have the potential to slow the deterioration in structure and function of the cardiovascular system, skeletal muscles, and skeletal system which is associated with the aging process. Exercise may play a protective role against the development of coronary artery disease, high blood pressure, and adult onset diabetes (Cononie et al., 1991; Hagberg et al., 1989; Simonsick et al., 1993). Studies have also indicated an improvement in mood and feelings of well being, cognitive functioning, and self esteem, and a lower occurrence of depressive symptoms in older people who participate in physical activity (Palmer, 1995; Shephard, 1983).

Moderate Exercise

Recent research has shown that considerable health benefits may be gained by participating in daily low intensity physical activity. King (1994) reported that there has been a shift away from a uniform exercise prescription based on intensity, frequency, and duration to one that encourages increased levels of general energy expenditure throughout a person's day. It is becoming increasingly evident that light to moderate activities such as walking, may provide some of the same health benefits as do more vigorous types of physical activity (Duncan, Gordon, & Scott, 1991; Rippe, Ward, & Porcari, 1988; Siegel, Brackbill, & Heath, 1995). Light to moderate activities such as walking, are easier to perform each day and can be undertaken by a large segment of the population (Frandin, Grimby, Mellstrom, & Svanborg, 1991).

Benefits of walking. Walking has been reported as the most popular form of physical activity (Siegel et al., 1995). Walking can easily be incorporated into a busy schedule and does not require any special skills, equipment, or facility. Walking is also less likely to cause injury than other forms of aerobic exercise (Hovell et al., 1989; Kriska et al., 1986). About half of all people who exercise during their leisure time walk for exercise and the majority of those who walk for exercise do so on a regular basis (Siegel et al., 1995). Older individuals reported walking for exercise more frequently than younger people, and men and women over fifty years of age walk significantly more than the younger age groups (Hovell et al., 1989). Frandin et al. (1991) found walking habits to be correlated with a positive attitude toward physical activity and with participation in fitness programs.

Maintaining a consistent walking program can lead to many physical, mental, and social benefits. The physical activity associated with walking has received growing attention as a means of preventing disease, reducing the risk of premature death, and for maintaining physical well being (Moore, 1989). Stamford (1994) stated that walking can help to slow the aging process by keeping muscles, bones, and joints strong and healthy. Walking twenty minutes a day for eight weeks can lower a moderately elevated blood pressure without medication or change in diet (Palmer, 1995). The lowering of an elevated blood pressure, as well as a reduction in body fat that can be experienced from the participation in a walking program, can have an overall improvement in the cardiovascular functioning of the physically active adult (Hagberg et al., 1989).

Older individuals who engaged in physical activity have also reported substantial psychological benefits. Participation in physical activity has been an excellent way to manage stress and reduce anxiety and depression (Brown, 1992). Walking has been reported to

positively affect self-esteem (Palmer, 1995), enhance cognitive functioning, and improve the overall mood of the participant (McAuley & Rudolph, 1995). Physical activity can result in an increased energy level, greater mental alertness, and provide an opportunity for social interaction (Thayer, 1988). Thus, there is strong evidence to indicate that regular physical activity, such as walking which is performed at a moderate intensity, can provide substantial health gains for the aging population.

Adherence to Exercise Programs

Despite the potential health benefits that can be derived from exercise, a large number of people have a difficult time maintaining a regular exercise program regardless of their initial interest and involvement (Dishman & Ickes, 1981). Studies have indicated that only about one-half or fewer of individuals who begin an exercise program, whether on their own or in a structured program, will continue to participate after three months (Dishman, 1982; Martin & Dubbert, 1982). This decline in adherence to exercise is similar in studies of individuals with known health problems such as individuals in a cardiac rehabilitation program (Oldridge, 1988), as well as in studies of healthy adult subjects (Martin & Dubbert, 1982). Therefore, from a public health perspective, the problem is no longer one of simply promoting physical fitness, but rather of devising strategies that will help individuals adhere to an exercise program once they have started.

Personal characteristics. Sallis and Hovell (1990) reported that there is no variable that solely determines adherence to either a prescribed or self-initiated exercise program. Human behaviour and personal characteristics can affect exercise adherence. Lee et al. (1996) observed nonsmokers and ex-smokers to have a greater attendance at exercise programs than current

smokers. The level of education and occupational status are positively associated with leisure time physical activity. Dishman (1988) reported that individuals with higher levels of education, such as a university degree or college certificate were more physically active than those with an elementary or high school education. Furthermore, individuals from managerial or professional occupations reported more activity in their leisure time than those in blue collar jobs.

An individual's level of physical activity may also be related to marital status. Wallace, Raglin, and Jastremski (1995) reported that married couples who joined an adult fitness program together were more successful in adhering to a fitness program than those who joined without their spouse. The increased levels of social support shared between the participants was associated with increased levels of physical activity (Hovell et al., 1992). Research has also found that the level of social support obtained by a program participant, particularly by family members, was highly correlated with exercise adherence (Gale et al., 1984; Hovell et al., 1989).

Overweight individuals have been less likely to maintain a fitness program. Dishman and Gettman (1980) suggested that exercise adherers were leaner and lighter than those who were prone to drop out. This was supported by Lee et al. (1995) who stated that obesity was negatively associated with attendance in an exercise program. Dropouts are believed to be heavier and have a higher percentage of body fat than those who continue with an exercise program (Gale, Eckhoff, Mogel & Rognick, 1984).

Adherence to a physical activity program may also be influenced by long-term illness, disability, or injury. Persons who have reported medical problems or conditions have been less active than their healthier counterparts (Dishman et al., 1985). The report of a long term illness was the primary factor for determining compliance in a walking program of older women (Kriska et al., 1986). Injury has also been reported as a common reason for stopping regular

exercise (Pate et al. 1995). These factors are important since limited health will have a direct influence on the amount of physical activity for the elderly who are in ill health or disabled (Ramlow, Kriska, & LaPorte, 1987).

Perceived health benefits and attitude toward physical activity. Personal health beliefs and the attraction to physical activity can influence the intention to be active. Individuals who perceived their health as being poor and who had low exercise participation rates were unlikely to adhere to an exercise program (Sallis, Haskell, & Fortmann, 1986). In a study conducted by Ruuskanen and Ruoppila (1995) persons aged sixty five and older who rated their health as good, carried out physical exercise more intensively than those who rated their health as average or poor. Furthermore, people who believed that exercise had little value for health and fitness or that health outcomes from exercise were outside one's personal control, exercised less frequently and dropped out of programs earlier than peers holding opposite views (Dishman & Gettman, 1980).

Andrew et al. (1981) observed that those with a strong belief in the value of exercise for their health were more likely to maintain participation in physical activity programs. Furthermore, individuals who had positive feelings toward exercise would exercise longer and more frequently than peers holding opposite views (Hovell et al., 1989). Contrary to this belief, Dishman et al. (1985) stated that neither one's attitude nor awareness of the benefits of exercise predicted participation in an exercise program. This was supported by Ferrini, Edelstein, and Barrett-Connor (1994) who recorded that seventy-nine percent of their elderly respondents agreed with statements about the importance of personal health practices and behavioural factors for their overall health. However, only thirty-seven percent reported exercise to be a part of their

lifestyle. Furthermore, Dishman and Gettman (1980) reported that neither the attraction to physical activity, nor the perceived value of physical activity were related to adherence in a twenty week jogging program. Thus, many people may believe that exercise is good for them, but few people actually participate in an exercise program (Dishman, 1988).

Program factors. Characteristics of the physical activity program and exercise setting may influence exercise participation levels. Dishman et al. (1985) stated that approximately fifty percent of exercisers in supervised programs or community settings drop out within one year of onset. Dishman noted that the program's characteristics, which included location, staff, and the intensity of the activity were reasons cited to drop out of an exercise program.

It is important to determine the perceptions of cost and time as barriers toward physical activity. King et al. (1992) reported that the cost of the exercise program presented a barrier to adherence for adults. Young and middle age adults reported a lack of time as the most common reason for dropping out of an exercise program (Robison & Rogers, 1994). Dishman et al. (1985) noted that the reports of a lack of time as a barrier may reflect a lack of interest in activity since regular exercisers are as likely as sedentary individuals to report time as an activity barrier.

Access to exercise facilities can influence a person's decision to exercise. Sallis et al. (1990) stated that exercise facilities encourage physical activity by serving as a visual stimulus that cues exercise behaviour. This was supported by Dishman (1982) who indicated that participants who lived closer to exercise facilities were less likely to dropout of an activity program. The importance of program convenience and accessibility of the exercise location as determinants for physical exercise need to be recognized since Andrew et al., (1980) observed

that participants of exercise programs frequently reported the perceived inconvenience of facilities and travel problems as reasons for dropping out.

Personal contact with program personnel can also affect one's adherence to exercise. In a study by Andrew et al. (1981) dropouts frequently indicated an inadequate level of personalized attention by the program staff. This lack of individualized attention by the program personnel resulted in a dropout rate that doubled that of participants who received a high level of attention. Wankel (1985) added that program organization, flexibility, and the general administration are attributes the program staff can control that influence participation in an activity program. Additional characteristics of the exercise setting and factors related to neighborhood safety and other potential environmental barriers may also have an important influence on adherence but have been minimally studied.

Generally, it has been reported that the amount of participation in physical activity programs decreases with advancing age (King et al., 1992). However, Lee et al. (1995) found that older individuals were more likely to attend low intensity exercise sessions. The poor attendance rate in high intensity exercise groups may have been a reflection of the participants' low self confidence in their ability to perform the exercise. Routine or lifestyle activities such as walking, have higher compliance rates than high intensity exercises (Dishman et al., 1985). Walking is an appropriate form of physical activity for older adults. Hovell et al. (1989) observed that older individuals reported more walking for exercise than younger persons.

Mall Walking Programs

Walking programs offered in community malls are increasing in popularity throughout North America (Moore, 1989). They are designed for people who are interested in an

individualized or group walking program. These programs are often organized by a local health unit and the mall management so that walkers have a place to meet and enjoy their daily walk.

Mall walking programs offer an original exercise experience since the program does not have a direct leader and operates outside of a health care facility (Fletcher & Macauley, 1983). Malls have become a popular environment for walking since they provide a flat, controlled climate, and secure environment to exercise (Ketchum, 1990). Malls offer safety from automobile traffic, bad weather, and falls on the ice (Fletcher & Macauley, 1983; Moore, 1989). Benches found throughout the malls can be used for periodic rests or a place to sit and talk when the walk is over (Fletcher & Macauley, 1983).

Mall walking programs take place around the halls and corridors of community malls. Participants walk around the mall and record their mileage in a daily log book. Special awards are often donated by mall merchants for walkers who meet their mileage goals. Mall walking programs usually run prior to the opening of stores so walkers do not interfere with the shoppers. The long hours that malls are open accommodate a variety of scheduling needs and mall walkers can continue their exercise routine all year long (Moore, 1989). Some walkers prefer to walk alone in order to keep their own pace while others may walk in pairs or groups where they receive a greater amount of emotional support and encouragement (Fletcher & Macauley, 1983).

The emergence of mall walking programs is exciting since this form of community based physical activity programming is an effective method of reaching and influencing the inactive older population to become active (King, 1994). Walking programs are reported to promote higher adherence rates than programs involving other forms of aerobic activity, possibly because of the decreased incidence of injuries with walking (Pollock, 1988).

Samples of mall walking programs. Numerous mall walking programs are offered across North America. It is interesting to investigate the unique features that each program has to offer since program characteristics can influence adherence to the program.

Mall walking programs operate at different times and attract a wide array of people. Programs offered at Lakeshore Mall in Sebring, Florida, "Hearts in Motion" at Lane Avenue Shopping Center in Ohio, and "Walk in the Heart" in Hamilton, Ontario are run prior to the opening of the stores. These malls open their doors around 6:30 a.m. so walkers can workout before the stores open at 10:00 a.m. Most programs operate from Monday through Friday, while "Wild about Walking" at St. Laurent Mall in Ottawa, Ontario operates only three times a week. The Mall of America in Bloomington, Minneapolis has one of the largest mall walking programs in North America. "Mall Stars" has approximately three hundred and fifty people walking daily, the majority of whom are in the forty-five to fifty-five year-old age group. The members of this program are encouraged to walk at anytime throughout the day (A. Bellenger, personal communication, November, 2, 1996; S. Crocker, personal communication, August 13, 1996; G. Dowling, personal communication, August 6, 1996 & S. Struve, personal communication, November 28, 1996).

Many of the mall walking programs such as "Mall Stars", "Hearts in Motion", and "Wild about Walking" provide free health information sessions for the participants. Once a month, speakers from various organizations speak on a health related topic of interest to older adults. At this time a social breakfast is provided and walkers receive prizes for reaching their mileage goals. The incentive prizes are donated by merchants in the mall who support and encourage the continuance of the program (S. Latimer, personal communication, November, 1, 1996).

"Mall Stars" at the Mall of America is unique since it is the only program that charges a fourteen dollar annual fee to join the walking club. By joining the club, walkers are able to chart their progress with an electronic tracking device, attend monthly breakfast meetings, and enjoy the incentives offered in the program. Whereas most mall walking programs chart their progress in daily log books, members at the Mall of America keep track of their time spent walking by inserting a coded card into a check in station that looks similar to a bank machine. This machine records the hours spent walking around the mall (S. Struve, personal communication, November 28, 1996).

Many of the mall walking programs have a small group of volunteers that help organize and supervise many aspects of the program such as special events or promotions to encourage members to walk more often. "Mall Stars" also offers a newsletter to the walkers and many of the merchants in the mall offer discounts to the members. Many of the walkers return to the mall to shop after they have finished walking. Thus, the walkers are not only benefiting from using the mall but the mall is profiting because the people shop where they walk (S. Struve, personal communication, November 28, 1996).

"Walk in the Heart" at the Hamilton Eaton Center offers a special promotion. Since this program is located in the heart of downtown Hamilton, the Hamilton Parking Authority offers discounted parking rates to the participants. The organizers of this program hope that by providing the opportunity for regular exercise that many in the community will gradually develop the skills to adopt and maintain walking as a habit (S. Crocker, personal communication, August 13, 1996 & G. Dowling, personal communication, August 6, 1996).

The Thunder Bay District Health Unit promotes two mall walking programs for the Thunder Bay community. The main objectives of "Shake, Chatter'n Stroll" offered at Intercity

Mall and "Window Walk" offered at Victoriaville mall are taken from the Health Protection and Promotion Act, 1983 (Ministry of Health, 1989). These objectives are: (a) to increase the percentage of adults (20 to 64 years of age) and elderly (65 years of age of more) participating in regular physical activity to seventy five percent by the year 2000; (b) to support and encourage community-initiated efforts to promote regular physical activity for people of all ages as appropriate; and (c) to provide information to the public about health benefits of physical activity by providing a walking program. The walking programs have also included two additional objectives of: (d) providing a safe, climate-controlled environment for participants to exercise and; (e) to provide a variety of physical, social, and mental benefits to participants in the program.

The "Shake, Chatter'n Stroll" program at Intercity Mall operates from 7:00 a.m. to 11:00 a.m., Monday to Friday while the "Window Walk" program located in Victoriaville Mall is available from 7:00 a.m. to 9:00 p.m., Monday to Friday. The distance has been measured in each mall to allow walkers to calculate their mileage. Participants are encouraged to walk frequently and record their mileage in a logbook. Each mall has organized a group of volunteers who help run the program. The volunteers are responsible for the enrollment of new members, promotion of special events, and to keep the programs in operation.

Occasionally, the program at Intercity Mall offers a social breakfast for the participants. This is not only a social gathering for the walkers but also a time where the walking club recognizes the mileage of the long distance walkers and provides small incentives and rewards for their efforts. A few participants in this group make beaded "lap counters" as a fund raising method. These counters are used to help walkers count and keep track of the number of laps they walk in a session. A newsletter was once produced for the Intercity group but is no longer

in publication. Intercity mall has also designated a parking area for the participants and the mall makes a priority of removing the snow in this area early on the snowy, winter mornings.

Over eight hundred and fifty people have enrolled in the mall walking programs since their outset. In the past year, one hundred and thirty-six people have maintained their membership while sixty-four participants have discontinued their participation in either of the mall walking programs (M. Twigg, personal communication, September 19, 1996). If progress is to be made in increasing the number of older people who adhere to an exercise program, then information is needed on how participants' personal, and environmental situations and specific program related factors help to maintain participation or cause the participants to drop out of the program. This knowledge will lead to the identification of areas for improvement in each of the programs and may enhance the membership and adherence rates in the future.

Methodology

Sample

A list of names and phone numbers of the members of the two mall walking programs operating in Thunder Bay, Ontario was obtained from the enrollment logs maintained by the Thunder Bay District Health Unit. A sample (n=157) of individuals who have participated in the mall walking programs offered at Intercity Mall and Victoriaville Mall in Thunder Bay, Ontario over the past year participated in this study. The sample was categorized into three groups, adherers (n=109), active dropouts (n=29), and inactive dropouts (n=19).

Instrumentation

A standardized tool for measuring adherence and barriers to participation has not been identified in the literature. Therefore, a self-administered questionnaire composed of three parts was developed based on the knowledge obtained from previous studies. The questionnaire was made up of a combination of open-ended and close-ended items to represent personal, environmental, and program related variables that have been identified in past literature to relate to adherence in exercise programs. Both the adherers and dropouts received identical questionnaires except for slight wording changes in the dropout questionnaire regarding tense and specific questions regarding reasons for dropping out of the mall walking program. The questionnaire given to current walkers is available in Appendix A and the questionnaire for the dropouts is located in Appendix B.

The first component of the questionnaire consisted of general demographic information. This information was used to describe the participants in the study and also to gather information about the participants' background that have been identified to affect adherence in an exercise

program. The items included were gender, age, marital status, occupational status, and educational background (see Appendix A, Section A).

The second section of the questionnaire was the lifestyle component. The questions in this section included general lifestyle questions such as current activity levels, reasons for being active or inactive, perceived barriers to exercise, smoking behaviour, personal perception of health, perceived benefits to being active or inactive, and attitude toward physical activity. The questions in this section were taken from a previous study (Farrell & Horne, 1996) and from the Standardized Test of Fitness Lifestyle Questionnaire (Fitness and Amateur Sport, 1986) (See Appendix A, Section B).

The third section of the questionnaire focused on program related items. This part of the questionnaire was a modified version of the "Walk in the Heart Survey" used in the evaluation of the "Walk in the Heart" mall.walking program located in Hamilton, Ontario (Crocker & Dowling, 1996). The questionnaire included a series of questions that examined the participants' exercise experience. Questions regarding reasons for joining, continuing, or discontinuing participation in the walking program, rate of involvement, level of satisfaction, likes and dislikes about the program, barriers to participation, and suggestions for improvement were included in this section (see Appendix A, Section C).

Procedures

Data collection occurred at the two mall walking programs that were in operation in Thunder Bay, Ontario or by telephone. The recruitment of current walkers was initially conducted through the mall walking programs. Notices were posted at each mall one week prior

to data collection. This informed perspective participants about the purpose of the study and the times of data collection.

In the following week, questionnaires were distributed by the researcher and a research assistant to the participants in the two centres, Intercity Mall and Victoriaville Mall. The self-administered questionnaire was distributed for one week, during the time of program operation so all walkers, who may walk on different days and at different times would be reached.

On the days of data collection, walkers were approached as their walking log books were picked up. The purpose of the study was explained and verbal consent received. The questionnaire was completed on location and immediately returned to the researcher or research assistant. Approximately fifteen minutes was needed to complete the questionnaire.

The current walkers who were not contacted during this week and the individuals who no longer participated in the mall walking programs were contacted by telephone to ask if they would participate in the study. An explanation of the study was described and verbal consent received. Participants were given the option to partake in a telephone interview at that time, arrange another time for a telephone interview, or to complete a written questionnaire that would be mailed to them. Telephone interviews were conducted using the set questionnaire for all respondents at the time of initial contact or at the mutually arranged time and none of the respondents asked for a mailed questionnaire.

Data Analysis

The data collected from the two testing sites, Intercity Mall and Victoriaville Mall were combined. This was done because of the similarity of responses from the two locations and also

because of the small sample size available from Victoriaville Mall (n=18). Thus, combined data for the two sites was reported, except for specific comments about the individual facilities.

Of the 157 participants who completed the questionnaire or telephone interview, 109 were classified as adherers and 48 as dropouts. Initially the data collected from the walkers was categorized as regular walkers (walk three or more times per week for 15 minutes or more each time) and irregular walkers (walk less than three times per week or less than 15 minutes each time). However, these two groups were combined due to the small sample of irregular walkers (n=7) and since no significant differences were found between the two groups. The label of adherers was given to this group.

The dropout sample however, was divided into two groups. The active dropouts (n=29) are those who no longer participate in either of the mall walking programs but participate in other forms of physical exercise in their daily activities, while the inactive dropouts (n=19) no longer participate in either of the mall walking programs and did not report participation in any type of physical activity.

The three groups were compared using Chi Square tests for the frequency measures and one way analysis of variance for the means. When significant differences were found, further analyses were conducted using either pairwise Chi Squares or Tukey's Honest Significant Difference test with the alpha level set at .05. Because of the large number of questions asked and the relatively small size of one of the dropout subgroups, no overall correction of Type 1 error was applied. This was done in order to identify the maximum number of possible differences because of the potential practical value of such findings. However, some of these differences may well be Type 1 errors and this limitation will be acknowledged in the discussion.

Homogeneity of variance tests were run for all ANOVAs to determine whether the estimated variances are significantly different from each other. The condition of significance was found on only one case and in that case an F test did not approach significance. Further analysis of the groups using an unequal variance t-test indicated that these groups failed to approach significance.

Results

Demographics

The age range of the participants included a small sample under 50 years of age (n=17) to a sample over 75 years of age (n=14) with the majority of the respondents (n=140) being over 50 years of age. A breakdown of the ages of the sample can be found in Table 1.

Table 1
Description of Sample by Age

	Adherer	Active Dropout	Inactive Dropout	Total
	%	%	%	%
50 and under	11	10	5	11
51-55	17	17	16	17
56-60	11	21	37	16
61-75	50	48	37	47
75 and over	11	4	5	9

Demographic information of the three groups is available in Table 2. The marital status among the three groups was similar. The majority of the respondents were married or widowed (87%), while being single (4.5%), separated (4%), or divorced (4.5%) were less frequently reported by all of the groups.

Educationally, the adherers reported a significantly greater completion of post high school education than the nonactive dropouts ($p<.05$) but not the active dropouts. Approximately 75% of the adherers, 72% of the active dropouts, and 68% of the inactive dropouts were retired. Although the adherers and active dropouts reported a greater trend toward employment in professional and managerial occupations while the inactive dropouts reported employment in blue collar jobs, significant differences in occupational status

between the three groups was not found. Furthermore, a total of 19% of the adherers, 21% of the active dropouts, and 22% of the inactive dropouts were homemakers.

Table 2
Demographic Characteristics

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Married	88	86	84	0.25
Post high school education	52	48	21	$5.99^{*}{}_{b}$
Professional/ managerial job	43	41	16	5.11
Blue collar job	38	38	63	4.49
Smoker	8	10	37	$12.53^{**}{}_{bc}$
Obese (BMI > 27)	44	59	37	2.61

$_{a}$ Adherers vs. Active Dropouts;
$_{b}$ Adherers vs. Inactive Dropouts;
$_{c}$ Active vs. Inactive Dropouts;
* $p<.05$. ** $p<.01$.

Respondents were also asked about their experience with tobacco. Approximately 90% of the adherers and active dropouts were non smokers, either never smoked or had quit smoking ($p<.01$) while almost 40% of the inactive dropouts reported being a smoker (see Table 2).

Participants were asked their current height and weight so body mass index (BMI) could be calculated. Little difference was found in BMI of the three groups. BMI ranged from 19 to 41 with a mean score of 27.37 for the adherers, a range of 22 to 40 with a mean score of 29.0 for the active dropouts, and a range of 22 to 37 and a mean score of 27.38 for the inactive dropouts. Although the three groups did not differ statistically on the number of obese individuals in the groups, the average BMI of the three groups was high. Slightly less

than half of the adherers and inactive dropouts and greater than half of the active dropouts met the criteria for being classified as obese.

Perceived Health, Function, and Fitness

A five point scale ranging from very poor to excellent was used to assess the participants' perception of health. Overall most individuals reported their health as average or good (79%) with few reporting their health as excellent (16%). No one, in any of the three groups, reported very poor health. The adherer group rated their health better than the inactive dropout group ($p<.05$) but no difference between the adherer group and active dropout group was evident (see Table 3).

Table 3
Description of Perceived Health, Function, and Fitness

	Adherer		Active Dropout		Inactive Dropout		ANOVA
Perceived	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	F
Health	3.79	0.74	3.51	0.87	3.21	0.85	$5.31^{*}{}_{b}$
Function	4.07	0.81	3.69	0.94	3.57	0.69	$4.51^{*}{}_{b}$
Fitness	2.21	0.63	1.82	0.66	1.64	0.75	$8.0^{*}{}_{bc}$

Note. Tests of homogeneity of variance were not significant for the three measures.
$_{a}$ Adherers vs. Active Dropouts;
$_{b}$ Adherers vs. Inactive Dropouts;
$_{c}$ Active vs. Inactive Dropouts;
*$p<.05$.

The same five point scale was used to assess the participants' ability to function in their daily activities around the home. Similar to the perception of health, the adherer group reported a significantly higher level of functional ability compared to the inactive dropout group ($p<.05$) (see Table 3).

Respondents were asked to compare their level of fitness to others of the same age and sex using a three point scale. Approximately 89% of the adherers, 68% of the active dropouts, and 51% of the inactive dropouts thought that they were more fit than their peers. The adherers and active dropouts had a significantly higher estimation of their physical fitness than the inactive dropouts ($p<.05$) (see Table 3).

The overall perception of health, function, and level of physical fitness may be influenced by the physical health of the respondent. Approximately 49% of the sample (45% adherers, 62% active dropouts, 53% inactive dropouts) stated that they were limited in the type or intensity of activity or felt pain when moving due to a long term illness or injury. Table 4 provides a description of the type and frequency of the limitations for each of the groups.

Table 4
Description of Physical Limitations

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Arthritis	14	10	0	3.06
Diabetes	2	7	0	6.09*$_c$
Cardiovascular	17	21	31	2.06
Musculo-skeletal	17	31	21	3.07
Respiratory	2	7	16	7.89*$_b$

$_a$ Adherers vs. Active Dropouts;
$_b$ Adherers vs. Inactive Dropouts;
$_c$ Active vs. Inactive Dropouts;
*$p<.05$.

Cardiovascular limitations (cardiac problems, limitations due to a stroke) and musculoskeletal limitations (back, knee, or foot injury, or hip replacement) were the most common types of limitations reported by the three groups. Diabetes was reported as a health

concern by a greater number of active dropouts than inactive dropouts ($p<.05$), while respiratory concerns or breathing problems were reported by more inactive dropouts than those who adhere to the mall walking program ($p<.05$).

Physical Activity

Participants were asked about their involvement in regular moderate physical activity, both organized such as group walking or activity classes and non-organized activity through daily chores, work, or hobbies. To be considered regular, the moderate physical activity had to be conducted three times per week for a minimum of 15 to 20 minutes each time.

Ninety-four percent of the adherers reported involvement in organized regular moderate physical activity while 72% indicated involvement in other activities of a non-organized nature. Twenty-four percent of the active dropouts indicated participation in organized regular moderate physical activity while 97% of the active dropouts indicated involvement in other types of non-organized regular moderate physical activity in their daily work, chores, or hobbies. Walking was the most common type of organized activity reported by the adherers while house or yard work was a popular non organized activity among the active dropouts. A complete list of the activities that the adherers and active dropout group engaged in are listed in Table 5.

Table 5
Type of Physical Activities Participated In

	Adherers	Active Dropouts	Total
	%	%	%
Bowling	3	3	3
Dancing	3	0	2
Cycling	4	0	3
Fitness Class/ Video	6	10	6
Golf	4	10	5
House/yard work	51	52	46
Job - volunteer or other	2	28	6
Strength training	2	0	1
Swimming	5	3	4
Tai Chi	4	0	3
Therapy Class	6	14	6
Walking	100	14	72
X country skiing	0	7	1

Participants were asked if they felt there were advantages and disadvantages to participating in physical activity. Over 95% of the respondents from each of the groups felt that there were advantages to participating in physical activity. Table 6 lists the types of advantages reported by the three groups. The reporting of cardiovascular benefits was significantly higher ($p<.05$) in the adherer group compared to the inactive dropout group. The reporting of increased energy was higher in both dropout groups ($p<.05$) and psychological benefits from physical activity was higher in the inactive dropout group than in the adherers ($p<.05$).

Table 6
Description of Advantages to Participation in Physical Activity

Types of Advantages	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Cardiovascular Benefits [1]	18	7	0	6.01*$_b$
Controls Blood Sugar	2	0	0	0.89
Controls Cholesterol	5	0	0	2.27
Feel Better	23	31	21	0.94
Increase Flexibility	7	14	11	1.24
Increase Muscle Strength	9	7	0	1.95
Increase energy	13	31	37	9.03*$_{a\,b}$
Keeps you Healthy	26	14	37	3.40
Psychological Benefits [1]	2	7	16	7.89*$_b$
Respiratory Benefits	2	0	0	0.89
Social Opportunity	7	10	0	0.38
Weight Control	16	14	5	1.44
Wellbeing	9	10	0	1.99

$_a$ Adherers vs. Active Dropouts;
$_b$ Adherers vs. Inactive Dropouts;
$_c$ Active vs. Inactive Dropouts;
[1] Differences may be unreliable due to cell frequencies being less than five.
*$p<.05$.

Approximately 4% of the adherers and active dropouts reported disadvantages toward participation in physical activity. The disadvantages were "overdoing it", the experience of "pain or discomfort during the activity", and "time constraints". The inactive dropouts did not believe that there were disadvantages to participation in physical exercise.

The participants' attitude toward participating and not participating in physical activity was assessed by calculating the responses from 14 questions using a 7- point Likert scale. Table 7 describes the mean attitude scores of the three groups. The mean values

reported by the three groups indicated a relatively neutral attitude toward the respondents participating or not participating in regular moderate activity of their choice during their leisure time. This finding was inconsistent with the strong support and acknowledgment of the expected advantages toward participating in regular physical activity by all of the groups. Statistical analysis revealed a difference between the attitudes toward participating between the adherer and inactive dropout group. The adherer group had a more positive attitude toward participation in physical activity than the inactive dropouts ($p<.05$).

Table 7
Description of Attitude Toward Participating and Not Participating in Physical Activity and Level of Social Support

	Adherer		Active Dropout		Inactive Dropout		ANOVA
	$\bar{x}$	SD	$\bar{x}$	SD	$\bar{x}$	SD	F
Participating	3.76	0.42	3.62	0.22	3.52	0.16	$4.18^{*}{}_{b}$
Not Participating	4.37	0.48	4.30	0.28	4.36	0.19	0.38
Social Support	6.05	1.41	6.20	0.72	6.0	0.67	0.21

Note. Test of homogeneity of variance revealed significance only for social support.
$_{a}$ Adherers vs. Active Dropouts;
$_{b}$ Adherers vs. Inactive Dropouts;
$_{c}$ Active vs. Inactive Dropouts;
*$p<.05$.

A 7-point Likert scale was used to assess the participants' level of social support. The groups were not significantly different in their level of social support (see Table 7), and all groups averaged 6 or above, indicating very high levels of social support in each group.

Program Related Factors

Table 8 describes the reasons why the adherers, active dropouts, and inactive dropouts joined either of the mall walking programs. Although one main motive for joining the mall walking programs was for fitness related reasons, the active and inactive dropout

groups were significantly more likely to report the loss of weight as the purpose for joining the program ($p<.05$).

Interestingly, 27 respondents reported mall characteristics as a reason for joining. Of these respondents, 19 were from Intercity Mall and 8 were from Victoriaville Mall. A "convenient location" was described by respondents from both malls, while respondents from Intercity Mall also mentioned the "large size of the mall" as a drawing factor.

Table 8
Reasons for Joining Mall Walking Program

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Fitness	39	35	37	0.16
Fun/Enjoyment	6	7	16	2.03
Lose Weight	20	40	40	$6.43^{*}{}_{a\,b}$
Mall Characteristics	16	21	21	0.64
Social Reasons	8	3	0	2.35
Weather	22	24	16	0.49

$_a$ Adherers vs. Active Dropouts;
$_b$ Adherers vs. Inactive Dropouts;
$_c$ Active vs. Inactive Dropouts;
*$p<.05$.

The adherers to the mall walking program were asked for the reasons why they continued to participate. The most common reasons reported were health and fitness reasons (29%), "social aspects" (29%), "makes me feel good" (16%), and "weather conditions" (10%). Less frequently reported reasons were "to get up and going in the morning" (8%), mall characteristics (4%), and for the "enjoyment" of walking (3%).

Various factors and situations may inhibit regular participation in an exercise program. The respondents were asked to describe the obstacles that interfered with their

participation in the mall walking program. Factors that made it difficult to attend the mall walking program for each of the three groups are described in Table 9. The inactive dropout group reported more injuries than the adherer group ($p<.05$), and more illness compared to the active dropouts ($p<.05$). The experience with transportation difficulties or "no ride" was significantly greater in the active dropout group compared to the adherers ($p<.05$).

Table 9
Factors that Create Difficulties for Attendance at the Mall Walking Programs

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Early Morning	2	0	0	0.89
Family Demands	7	17	5	3.12
Illness [l]	5	0	16	6.11*$_c$
Injury [l]	0	7	0	8.94*$_a$
Lazy	6	0	16	5.33
No Ride	7	24	16	6.77*$_a$
Other Activities	9	7	0	1.96
Other Appointments	4	3	0	0.71
Time	1	0	0	0.44
Weather	13	21	16	1.15
Work-volunteer or paid	13	21	26	2.79

$_a$ Adherers vs. Active Dropouts;
$_b$ Adherers vs. Inactive Dropouts;
$_c$ Active vs. Inactive Dropouts;
[l] Differences may be unreliable due to cell frequencies being less than five.
*$p<.05$.

Similarities exist between the factors that made it difficult to attend the mall walking programs and reasons for dropping out of the mall walking program. The reasons reported by the dropouts for failing to continue with either of the mall walking programs are available in Table 10. One distinguishing factor between the two dropout groups was

illness. The inactive dropout group was more likely to report illness as a reason for dropping out than the active dropouts ($p<.05$).

Table 10
Reasons for Dropping Out of Mall Walking Program

	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	χ^2
Attending Therapy	14	0	2.85
Busy	21	26	0.21
Difficult to get to	14	0	2.85
Illness	3	21	3.81*
Injury	7	0	1.37
Moved	0	5	1.55
Partner Quit	10	5	0.38
Poor Weather	7	5	0.05
Spring - walk outside	10	21	1.05
Work - volunteer or paid	14	10	0.11
Did not like walking in mall	0	5	1.55

*$p<.05$.

All groups reported an increase in the amount of regular walking (three or more sessions each week, 15 minutes or more per session) once they joined the mall walking program. Upon withdrawal from the mall walking program, the amount of regular walking reported by the two dropout groups decreased. Table 11 describes the participation rate of walking for exercise on a regular basis (three or more sessions each week, 15 minutes or more per session) of the three groups prior to enrollment into the mall walking program, during enrollment, and after withdrawal from the mall walking program.

Table 11
Description of Rates of Participation in Regular Walking

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Prior to Enrollment	45	31	63	4.81
During Enrollment	92	83	79	3.78
Withdrawal from Program	----------	17	5	1.50

The length of enrollment in the mall walking program was significantly different among the groups ($F_{(2, 150)} = 11.75$, $p<.05$). The average time of enrollment for the adherers was 25 months, 12 months for the active dropouts, and 9 months for the inactive dropouts. The adherers and the active dropouts were significantly different from the inactive dropouts in their length of participation in the program. When the dropouts were asked if they would consider rejoining, a total of 46 out of the 48 dropouts would consider rejoining the mall walking programs.

Respondents were also asked various program and environment related questions concerning the mall walking programs. A summary of the responses are available in Table 12. Overall the respondents felt safe walking in the malls. The only concern reported was of construction as a possible safety hazard. It was suggested that identifying the areas under construction with bright tape or paint would increase the visibility of hazardous areas and serve as a warning sign for the walkers.

Type of transportation and length of travel time to the mall were similar among the three groups (see Table 12). Over 95% of the sample traveled to the malls by car, 1% by bus, and 4% walked to the mall. Travel time consisted of under 15 minutes for over 85% of

each of the three groups and over 20 minutes for less than 4% of the adherers and active dropouts, and slightly over 5% of the inactive dropouts.

Table 12
Description of Various Program Characteristics

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Health Presentations	37	21	37	2.71
More Shopping	62	45	47	3.76
Safe Environment	99	97	100	1.44
Transportation -car	97	93	95	1.16
Travel Time(<15min.)	92	86	90	1.02

All respondents were asked if they would like specific health information sessions presented by the local health unit (see Table 12). Less than half of the respondents from each of the groups provided a positive response. Concerns regarding the time of the presentation were expressed since many walkers believed that health presentations would interfere with their exercise routine and they already had access to health information from other sources.

Although the adherer group reported a slightly greater frequency of shopping in the malls where they walk, compared to the individuals in the dropout groups, the difference in frequency of shopping was not significant (see Table 12). Of those reporting no additional shopping, 79% walked before the stores open, while 21% either shopped at the mall anyway or shopped closer to where they resided.

Ninety eight percent of the participants were either very satisfied (66%) or satisfied (32%) with the current mall walking programs and all respondents would recommend this

program to others. Adherers to the mall walking programs and dropouts were asked an open-ended question pertaining to what they liked about the program and how they thought it could be improved. Table 13 lists the factors that each of the groups liked best. The inactive dropouts reported the availability of the program ("flexible schedule", "available in any type of weather") more often than the adherer group ($p<.05$), while the adherer group liked the mall atmosphere such as the "size", "location", and "safety" as an important factor more frequently than the inactive dropout group ($p<.05$). The active dropouts reported the opportunity for social interaction as the part of the program that they liked best ($p<.05$).

Table 13
Frequency of Reported Likes About the Program

	Adherer	Active Dropout	Inactive Dropout	Chi Square (df=2)
	%	%	%	χ^2
Availability	24	41	53	8.27^{*}_{b}
Individual Program	2	3	0	0.74
Increase Energy	43	43	14	3.13
Keeps you Active/Healthy	8	3	5	0.91
Mall Atmosphere	28	10	5	7.40^{*}_{b}
Social Opportunity	45	69	26	9.05^{*}_{ac}
Window Shopping	5	0	5	1.66

[a] Adherers vs. Active Dropouts;
[b] Adherers vs. Inactive Dropouts;
[c] Active vs. Inactive Dropouts;
*p<.05.

Improvements - Intercity Mall versus Victoriaville Mall

Respondents from each of the mall walking programs were asked for suggestions to improve their specific program. It is encouraging that less than 30% of the participants from

each of the malls indicated that improvements needed to be made. The suggestions for improvements for both of the programs and the malls are as follows.

The respondents from Victoriaville Mall would like the program to include "achievement awards" for completing specified mileage and fitness testing so progress could be measured and monitored. More "social opportunities" for the walkers and a "ride board" so car pooling could take place were also recommended. The mall could help to improve the program by providing a place to hang and leave personal belongings while walking, having the stores offer discounts to the walkers, and eliminating the smoking area from the facility.

The respondents from Intercity Mall also made many recommendations, both for the program and the mall. The respondents from Intercity suggested that a bench be available in the check-in area so walkers would have a place to sit while changing their shoes. The water cooler should be kept full with cups available for use. The walkers suggested that mileage indicators be placed on the posts around the mall so distance could be calculated if less then the entire loop is performed. More advertising to recruit new members and a greater number of social opportunities for the walkers were suggested. At the social functions, names and phone numbers could be exchanged to eliminate transportation difficulties. A ride board could also be installed so walkers could car pool with those who live in the same area. Furthermore, the walkers would like the program to offer a walking time in the evening and suggested that everyone in the walking program walk in the same direction around the mall to avoid unnecessary collisions.

The managers at Intercity Mall could help to improve the program by playing upbeat music at a louder volume throughout the mall. Although some stores offer recurrent

discounts to the walkers, it was suggested that the stores offer regular discounts to the members of the program. Many walkers expressed a concern about the temperature in the mall. The 'new' section of Intercity mall was reported to be much warmer than the rest of the mall. An even temperature maintained throughout the mall and an overall cooler temperature in the building was recommended. The smoking area was also a concern for the walkers at Intercity mall. Eliminating the smoking area or moving it to the other side of the food court was suggested so the walkers do not have to inhale the second hand smoke that is exhaled in their walking area.

Discussion

Concerns Regarding the Analysis

Before discussing the results, it is important to recognize the limitations of this study. The data collected from the dropouts was retrospective, collected up to one year after quitting one of the mall walking programs. Therefore, it is possible that inaccurate recall may provide a potential source of error. Using only those participants who have discontinued their participation within the past year was an attempt to try to eliminate this issue by having to recall a recent experience.

The completion of the written questionnaires raise the issue regarding the accuracy of self reported data. To try to eliminate this problem, the respondents were informed that all information would be kept confidential and that their honest responses would be valuable in trying to improve the programs. Subjective observations suggested that the participants were interested in completing the questionnaire and appeared to provide genuine responses to the questions.

Error may also occur from the self-selection of the respondents to complete a questionnaire. Perhaps those who were satisfied with the program and content with the benefits they were receiving were more likely to participate in this study compared to those who did not participate and dropped out of the program. Valuable information may be lost in the participants who did not complete a questionnaire. Therefore, it is recognized that the results of this analysis do not provide a complete description of the population but only describes the participating sample.

The possibility of committing statistical error always exists. The small sample in the dropout groups represents a potential source of error. It is well known that differences found in the examination of large samples are more likely to be statistically significant than differences observed in a study of smaller samples. Therefore, not finding a significant difference on a variety of variables, that have been reported as significant in past research (i.e., occupational status, BMI) may be due to the small sample size in the two dropout groups, especially the inactive dropout group (n=19).

Two types of error may result from the decisions made within this analysis, Type 1 and Type 2 error. The use of non parametric Chi Square tests in some of the statistical analyses may have reduced the chances of rejecting a false null hypothesis and thus increased the chance of committing Type 2 error. The probability of committing a Type 1 error was set at .05, indicating that a 5% chance of making a Type 1 error was possible for each analysis. No overall correction for Type 1 error was applied so that even relatively small differences among the three groups could be described. This was done because of the exploratory nature of this research. It can serve as a foundation for achieving a better understanding of the present status of the current mall walking programs and the reasons for joining, continuing, and discontinuing participation in this older population.

An overall pattern of findings emerged showing that the active dropouts were very similar to the adherers on most measures. The inactive dropouts however, differed from these two groups on a number of measures. Thus, findings from this study do not simply address adherence to the mall walking program but also provide insight into adherence to exercise versus being inactive. The gathering of this information not only helps to improve the two mall walking programs currently in existence, but also provides relevant

information regarding personal characteristics and perceived barriers to exercise that affect this older age group.

Personal Characteristics

The level of education and occupational status have been reported in past literature to influence exercise adherence. In the current analyses, the adherers reported a greater completion of post high school education than the inactive dropouts. This is consistent with previous reports which stated that individuals who participated in post high school education were more likely to be physically active (Dishman, 1988).

Occupational status could not be used to separate the three groups in this study. Although the inactive dropout group indicated a trend toward a greater participation in blue collar occupations and less in professional or managerial occupations than both the adherers and active dropouts, a significant difference was not found. This is inconsistent with previous findings of Oldridge (1988) who reported that participation in blue-collar jobs negatively affected adherence while those in managerial or professional occupations reported a greater involvement in physical exercise (Dishman, 1988). Although reports from past research focused on current workers, previous occupational status could not be used to separate the active from the inactive participants through the retirement years.

Smoking behaviour was identified as a variable associated with adherence to the mall walking programs. A greater number of inactive dropouts reported being a smoker than the adherers and the active dropouts. Past literature has demonstrated an inconsistent relationship between adherence to physical activity programs and smoking status. Many studies have reported that dropouts from exercise programs are more commonly smokers

(Dishman et al, 1985; Kriska et al., 1986) while additional research indicates no associations or a very weak relationship between smoking status and physical activity (Blair, Jacob & Powell, 1985).

Over half of the smokers in the inactive dropout group reported respiratory problems as a limitation to participating in physical activity. The respiratory problems may be due to their smoking habits. Thus, it may not have been the actual smoking behaviour that eliminated participation in activity but the negative effect that smoking rendered on the body that made it difficult and uncomfortable to be active. Thus, the inconsistencies reported in past literature may be dependent upon the age of the sample. Further research could be conducted in this area to determine if it is the actual smoking behaviour or the negative side effects that smoking creates that reduces and eliminates participation.

The finding in this study that BMI was not related to adherence to physical activity is inconsistent with previous findings. The BMI classified many of the participants as obese and a difference between the number of obese respondents within the three groups was not found. Siegel et al. (1995) stated that obese persons were less likely to participate in physical activity than were persons of average body mass. However, BMI could not be used to discriminate between the adherers and the dropouts from the mall walking programs in this study. Previous literature has seldom used BMI to describe adherence in the older population, it is more frequently used in young and middle aged adult groups. McArdle, Katch, and Katch (1991) reported that body weight increases until 55 to 60 years and then gradually declines while height decreases by six centimeters from age 17 to 60. Since height and weight are the two factors that determine BMI, perhaps the high values among

the three groups do not actually indicate obesity but an overall change in body composition as one ages.

Self-Perceptions of Health and Fitness, Exercise Attitudes and Social Support

Respondents who were involved in regular physical exercise estimated their health and fitness levels to be higher than those who do not participate in physical activity. Perceptions of being in poor health have been associated with decreased participation in activity programs (Sallis et al., 1986). The present study supports this view since the adherers reported a higher perception of personal health than the inactive dropouts. The higher perception of personal health may be due to their involvement in an activity program and the belief that they are obtaining the health benefits that regular exercise provides.

Those participating in physical activity, both the adherers and active dropouts had a higher estimation of their physical fitness than the inactive dropouts. These results are similar to reports by Frandin et al. (1991) who recognized that walkers had a higher estimation of their personal physical fitness than non-walkers. This result was expected since it is well known that participation in regular physical exercise will improve the level of overall fitness.

The positive perceptions of health and fitness may also be linked to a positive attitude toward physical activity. Although the attitude scores among the three groups were relatively high, the adherers to the mall walking programs reported a more positive attitude toward participation in physical activity than the inactive dropouts. This is contrary to past research that stated that attitude toward physical activity is not a strong predictor of adherence in an exercise program (Dishman, 1982). The positive attitude toward

participation may be one of the unreported benefits that the adherers were receiving from the program. However, it is unclear whether the positive attitude encouraged participation or whether participation fostered the positive attitude.

Social support from family and friends has been reported as one of the most important means of encouraging greater participation in physical activity (Wankel, 1985). It was expected that those who dropped out of the mall walking program would have a lower level of social support than those who adhered to the program but instead all groups reported a strong level of social support. Since almost 85% of this sample were married, the perception of the level of social support was greater than what may be experienced in a sample with fewer married couples.

Spousal support has frequently been associated with better adherence to an exercise program (Dishman,1988). A greater number of respondents from the adherer group reported walking with their spouse during the mall walking program. The presence of their spouse at the program may have provided additional support for continued attendance. This is supported by Wallace et al. (1995) who reported that married couples who joined an adult fitness program together were more successful in attendance and adherence than married people who joined without their spouse. Further investigation into the mutual participation of spouses in exercise programs and their adherence to the programs is warranted.

Program Related Factors

The high adherence rate to the mall walking program, reported by the three groups, supported the notion that walking has a higher compliance rate compared to other high intensity physical activities (Dishman et al., 1985). The average report for attendance by the

adherers was 25 months, 12 months for the active dropouts, and 9 months for the inactive dropouts. These values are greater than the reports from past literature that state that fifty percent of middle aged and elderly individuals who enroll in physical activity programs cease to continue with the program after six months (Shephard et al., 1987). The low intensity, low impact nature of the walking activity is an appropriate activity for the older participants to engage in.

The increased reports of regular walking upon joining either of the mall walking programs was a favorable finding. Participants reported more walking on a regular basis during their enrollment in the program compared to the walking rates prior to enrollment or after discontinuing participation in the mall walking program. These results supported the report by Siegel et al. (1995) who stated that about half of all people who exercise during their leisure time walk for exercise and the majority who do so, walk on a regular basis. Upon joining the mall walking program, over 80% of all the respondents in the three groups were walking three or more times per week for at least fifteen minutes each time. This was an increase from the participation reports prior to enrollment and after discontinuing participation. The challenge is to encourage members to maintain participation so regular activity will be continued.

Reasons for being active. The reasons for joining the mall walking program and the advantages that were expected to be achieved through regular participation in activity are both informative and help to discriminate between the groups. All groups in the current analysis reported fitness as one of the top reasons for joining the mall walking program while losing weight was the main reason reported by the active and inactive dropout groups.

Past research has indicated that most participants join activity programs because of the expected health benefits that they are eager to receive (Dishman, 1988; Heinzelmann & Bagley, 1970; Wankel, 1985).

The advantages that the respondents expected to achieve through participation in an activity program influenced the level of adherence. The inactive dropouts reported psychological benefits and both dropout groups reported increased feelings of energy as advantages to participation in physical activity. The adherers expected cardiovascular benefits as the main advantage gained through participation.

The reasons for joining the mall walking program and the expected advantages to participating in activity may be underlying indicators of adherence. Dishman and Gettman (1980) stated that adhering to or dropping out of an exercise program may reside in the individual at the outset of the program. "An outcome expectancy is defined as a person's estimate that a given behaviour will lead to certain outcomes" (Bandura, 1977, p. 193). The dropouts of the mall walking programs may have discontinued their participation because their specific expectations for initial involvement in the program were not met.

The high incentive to lose weight by the dropouts may be an unrealistic goal. Since almost half of the adherer group was classified as obese, according to their BMI, it indicated that weight loss was not a primary advantage gained from this walking program. If the participants' expectations were too specific or too high in the physical and psychological gains they hoped to achieve, then they may become discouraged and drop out of the activity program. Since the adherers had more general expectations, they may be content with the overall improvements that they were receiving and thus maintained their participation.

Adherence to an exercise program may be improved if the participants' expectations are realistic and achievable at the start of the program.

The reasons for continuing participation in the mall walking program were slightly different from the reasons for joining. Although health and fitness reasons remained a high priority, the adherers reported more social reasons and feeling good as important contributors in the maintenance of their participation. The shift in the motivation to participate from large health and fitness related benefits to comradeship and feeling good may provide a better understanding of why some individuals remain active. The goals and expectations had changed and the motivations for continued participation were fulfilled by other characteristics of the activity program.

Withdrawal from physical activity. The barriers that participants face in their daily lives can affect exercise plans and may lead to dropping out of an activity program. Many reasons have been reported to explain why individuals fail to continue in an exercise program. A lack of transportation, injury, and illness were the main barriers reported toward continued participation by this sample.

Travel difficulties were supported as a limiting factor even though the majority of the respondents from the three groups lived within fifteen minutes of the mall. Not having transportation to the mall was the most commonly reported difficulty since many of the respondents did not drive and would rely on others for transportation. This was a unique barrier for the older population compared to younger age groups. Many studies of younger age groups have indicated that participants who live close to exercise facilities are less

likely to drop out (Dishman, 1982; Sallis et al., 1990), however, if transportation is not available for the older population then drop out is still very likely to occur.

The active dropout group reported injuries as a barrier to participation in the mall walking programs. This was unexpected since this group was maintaining their physical activity participation in other activities. Walking has frequently been reported as a lifestyle activity that has a high adherence rate and is less likely to cause injuries than other forms of physical exercise (Dishman et al., 1985; Kriska et al., 1986). However, if walking was the cause of the current injury, then modifications in footwear, or in the intensity of exercise should be performed to avoid future injuries. If the injury was due to another factor, then walking could be encouraged as a rehabilitation measure rather than eliminated from one's lifestyle.

Illness not only created a barrier for some of the respondents to attend the program but it was also one of the main reasons why the inactive participants discontinued their participation altogether. Illness not only terminated their involvement in the walking program but prevented participation in any other type of physical activity. The reporting of illness as a barrier to participation in this sample was expected due to the age of the participants and the reports of a decline in overall health with increased age. Illness has been reported as a barrier to participation in exercise for older individuals in past research. Kriska et al. (1986) reported illness as the primary factor for determining participation in a walking program for older women.

Previous research on adult samples have also reported a lack of time or being too busy as the most common reason for dropping out of activity programs (Dishman et al., 1985). The findings in the current study were consistent with this report. Being "too busy"

was the most common response by both the active and inactive dropout groups for discontinuing their participation in the mall walking program. Perhaps the response of being busy is more a reflection of a lack of interest or commitment to the mall walking program rather than a busy schedule. Since the mall walking program at Intercity Mall is offered early in the morning and the Victoriaville Mall walking program is available all day, it was unfortunate that the dropouts could not have arranged a timetable that could accommodate their daily routine.

Recommendations for the programs. The evaluation of activity and health related programs is necessary in order to document their effects and to develop and maintain future programs for the older population. It is important to find out what participants consider to be important and develop ways to meet their interests and concerns. The Ministry of Health for the Province of Ontario (1992) identified many features that make up a successful community project. These features included community involvement, long term programming, high visibility, and the offering of the program in several locations. The mall walking programs were meeting several of these features but improvements can always be made.

Additions and improvements to the existing mall walking programs offer the potential to increase the number of members and encourage current members to attend more often. The following recommendations for the programs offered at both Intercity Mall and Victoriaville Mall were developed from the results of the current analysis and from the suggestions made by the respondents.

Program Improvements:

a) Increase the number of special events and offer promotions that encourage members to walk. For example, walkers could participate in a "Walk to Winnipeg" or "Cross Canada Tour" where walkers add up the number of kilometers they walk to reach specific destinations.

b) Increase the number of new members, especially at Victoriaville Mall by launching a membership drive or an open house day. Current members could be encouraged to bring guests and introduce them to the mall walking program.

c) Public awareness of both of the mall walking programs should be increased with media support and the distribution of promotional materials. This could attract new members to the program.

d) Increase the number of social opportunities for the walkers where all members are invited to meet the other walkers. This could be a time to exchange phone numbers, set up car pools and perhaps reduce transportation difficulties. A health information session could also be provided at this time to interested participants.

e) Installation of a ride board at both centers so members can arrange transportation with participants who live in the same area.

f) Educate the walkers on proper footwear and the intensity and duration that they should participate at. This can eliminate the risk of injury due to walking

g) Keep the water cooler filled and provide cups for participant use.

Facility Improvements:

a) Improvements in the check-in areas by providing lockers or facilities to store personal belongings at Victoriaville Mall. Provide a bench at the Intercity Mall check-in area so participants have a place to sit while changing their shoes.

b) Relocate or remove the smoking areas from both facilities to eliminate the second hand smoke that exists in the walkers' paths.

c) Increase the awareness and support for the mall walking programs among mall merchants. The health unit could take the time to describe the program to mall merchants and encourage the merchants to offer discounts to the walkers. This would be mutually beneficial for both the stores and the walkers since the merchants will increase sales and a rapport will be developed between the two parties.

d) Decrease the temperature at Intercity Mall, especially in the new section.

e) Provide louder, up beat music at both malls for the participants to listen to while they walk.

f) Install mileage indicators around the mall so participants can measure distances shorter than the full distance.

Recommendations for Future Research

Many ideas for future research have developed from the completion of this study. The creation of precise measurements or standardized tools to assess the factors associated with adherence and dropping out of exercise programs should be a priority. In addition to community malls, an exploration of other public areas that may be conducive to the adoption and maintenance of various forms of physical activity is required. An evaluation of the effectiveness of different environments and locations would be worthwhile to determine the adherence levels for different intensities of exercise and modes of activity, other than walking.

Most research has focused on young or middle aged adult men (Dishman, 1988). Future research should focus on other populations, especially elderly individuals who are over the age of 65. The identification of specific areas of concern in the elderly (i.e., medication use, health status, physical limitations) that may reduce or eliminate participation in physical exercise is warranted. Unique approaches that help to overcome the limitations faced by the elderly population and the creation of programs that keep the elderly active, need to be designed and implemented.

Dropouts who continue to exercise on their own must be studied further to investigate their unique personal profiles and the types of activities that motivate and encourage their involvement. Further evaluations of the characteristics of the inactive older

population and whether physically inactive people are more likely to adopt and maintain other types of physical activity are needed. This knowledge will enable health professionals to target effective activity programs and change the status from inactive to active individuals.

Longitudinal research could also be performed to extend this line of research. Following a sample of participants at the start of a program, during their involvement in a program, and long after they discontinue their participation in a program would be beneficial. This research could provide valuable information on the adherence patterns and lifestyles of those who maintain participation and those who drop out of programs. Researchers would be aware if dropouts from one exercise program discontinued their involvement in order to participate in another form of activity. Longitudinal research could also determine which factors are most effective for supporting long term behavioural change and this information could be used to increase the overall adherence patterns of the population.

Conclusions

The results of this study are encouraging for several reasons. Involvement in the mall walking programs increased the amount of regular exercise that the respondents participated in. Upon withdrawal from the mall walking program, many of the dropouts were remaining physically active in other activities. The program participants were quite satisfied with the current program structure and many dropouts were considering returning to the program.

Both the adherers and dropouts reported health and fitness gains as the main reason for joining either of the mall walking programs. In addition, the dropouts also indicated the desire to lose weight and the advantages of increased energy and psychological benefits as reasons to be physically active. Illness, injury, and not having transportation to the mall were the barriers faced by the dropout groups toward participation and being too busy was the most common response for dropping out of the exercise program. The implications of these findings suggest that realistic goals at the start of the program, overcoming the barriers, and time management may help to maintain participation in the mall walking programs. Overall, this information provides insight into why some older individuals adhere to an exercise program while others do not.

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Appendix A:

Adherer Questionnaire

LAKEHEAD UNIVERSITY

955 Oliver Road, Thunder Bay, Ontario, Canada P7B 5E1

School of Kinesiology
Telephone (807) 343-8544
Fax (807) 343-8944

Reasons for Maintaining Participation in the Mall Walking Program

Dear Participant:

Thank you for agreeing to participate in the following survey. The intent of this research project is to investigate factors relating to either continuing involvement or dropping out of a community based mall walking program.

To accomplish this goal, I ask that you complete the following questionnaire. In the questions that follow, simply check ✓ in the box provided to indicate the item you think is most appropriate. For some questions, you will be asked to write in the space provided. There are no right or wrong answers, I am interested in your personal thoughts and feelings. The completion of the questionnaire will take approximately 15 minutes of your time. Once completed, please return the questionnaire to the researcher.

To ensure confidentiality and anonymity, no individual will be identified in any report of the results, only group data will be reported. The results from this evaluation will be shared with the Thunder Bay District Health Unit and will also be made available to you at your request upon the completion of the project

I look forward to your participation in this project. If you have any questions concerning this project, I can be reached at 346-0576.

Thank you for your cooperation.

Sincerely,

Trisha Gavin, H.B.Ph.Ed., B.Ed.
Research Investigator

BACKGROUND INFORMATION

Section A

1) In what age range are you?

☐ 50 and under ☐ 51-55 ☐ 56-60 ☐ 61-75 ☐ 76 and over

2) Are you?

☐ female ☐ male

3) What is your current martial status?

☐ single ☐ divorced ☐ separated

☐ married ☐ widowed ☐ other _____

4) What is your primary occupation?

If Retired, check here ☐

Please check below beside the appropriate occupation category for either your current occupation or your occupation prior to your retirement.

☐ professional ☐ managerial

☐ technical ☐ clerical

☐ homemaker ☐ laborer

☐ other _____

5) Check the category which best describes the highest level of formal education that you have attained.

☐ no schooling ☐ some trade, technical or business school

☐ elementary school ☐ trade, technical or business school diploma

☐ some high school ☐ some university

☐ high school diploma ☐ Bachelor's degree or equivalent

☐ some community college ☐ Master's, doctoral degree or equivalent

☐ community college diploma ☐ other _____

LIFESTYLE

Section B

1) In general, how would you describe your state of health?

- ☐ Excellent
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Very Poor

2) How would you describe you ability to function in your daily activities (e.g. doing chores around the home)?

- ☐ Excellent
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Very Poor

3) Are you limited in the type or intensity of activity that you engage in due to an injury or long term health problem(s)?

- ☐ Yes
- ☐ No

If yes, please explain briefly as follows.

	Name/Description of problem	How does this limit your activity?
Example:	arthritis in knees - limits the distance I can walk	

_____

_____

_____

_____

4) Approximately how tall are you? (in feet and inches) _____

How much do you weigh?(in pounds) _____

5) Which of the following best describes your experience with tobacco.

☐ I haven't smoked

☐ I **currently** smoke.

What do you smoke? _____

How much per day? _____

☐ I **stopped** smoking

How long ago? _____,

What did you smoke? _____

How much did you smoke per day? _____.

6) Comparing yourself to others of your own age and sex, would you say you are.....

☐ More fit ☐ Less fit ☐ As fit

Physical Activity

Please use the definition below in answering the questions

Moderate physical activity includes walking, activity classes and anything else primarily movement oriented. To be considered **regular** the moderate physical activity must be done **3 times per week for at least 15-20 minutes**.

For example, **regular moderate physical activity** may be swimming for 20 minutes twice a week or walking 20-30 minutes on Monday and raking the lawn for at least 15 minutes Thursday.

7) Are you **currently** involved in any organized regular moderate physical activity or exercise class

☐ Yes
☐ No

If yes, please name the activity and indicate how long and how often you participate.

_____

_____

_____

8) Are you **regularly** involved (i.e. 2-3 times/week) in any other types of moderate physical activities either through daily chores/work or hobbies (e.g. walking to the store 3 blocks away, mowing the lawn or raking leaves)?

☐ Yes
☐ No

If yes, please name the activities, indicate how often you participate and whether you consider these activities leisure or work/ chores related.

_____

_____

_____

9) Is there anything preventing or limiting your participation in **regular moderate physical activities?**

☐ Yes
☐ No

If yes, please list below.

_____

_____

_____

10) In general, do you think that there are advantages or benefits to you participating in regular moderate physical activity?

☐ Yes
☐ No

If yes, what are the advantages or benefits for you participating in regular moderate physical activity?

_____

_____

_____

11) In general, do you think that there are disadvantages to you participating in regular moderate physical activity?

☐ Yes
☐ No

If yes, what are the disadvantages for you participating in regular moderate physical activity?

_____

_____

_____

12) Generally speaking, most people who are important to me think I should participate in regular physical activity.

1	2	3	4	5	6	7
strongly disagree						strongly agree

13) My participation in regular moderate physical activities of my choice in my leisure time will be……

1	2	3	4	5	6	7	
boring							fun
pleasant							unpleasant
wise							foolish
harmful							beneficial
enjoyable							unenjoyable
good							bad
useless							useful

14) For me, not participating in regular moderate physical activity of my choice in my leisure time would be…..

1	2	3	4	5	6	7	
boring							fun
pleasant							unpleasant
wise							foolish
harmful							beneficial
enjoyable							unenjoyable
good							bad
useless							useful

MALL WALKING PROGRAM

Section C

1) Which mall walking program are you participating in?

- ☐ "Shake Chatter'n Stroll - Intercity Mall
- ☐ "Window Walk" - Victoriaville Mall

2) How did you find out about the mall walking program?

- ☐ Mall information
- ☐ Local newspaper
- ☐ Your Doctor
- ☐ Other _____
- ☐ Thunder Bay District Health Unit
- ☐ Television
- ☐ A Friend

3) When did you join the mall walking program? _____

4) Why did you start walking at this mall?

_____

_____

_____

5) What factors encourage you to keep participating in this program?

_____

_____

_____

6) While participating in the mall walking program, do you walk....

- ☐ by yourself
- ☐ with a friend
- ☐ with your spouse
- ☐ with a relative
- ☐ with a group
- ☐ other _____

Please check one of the lines for the following questions

7 a) How often did you walk before joining the mall walking program?

- ☐ never
- ☐ occasionally
- ☐ once a week
- ☐ twice a week
- ☐ three or more times weekly

b) Approximately how long did you walk each time?

- ☐ fewer than 15 minutes
- ☐ 15-30 minutes
- ☐ 31-45 minutes
- ☐ 46-60 minutes
- ☐ more than 60 minutes

8 a) Since joining the mall walking program, how often are you walking each week?

- ☐ occasionally
- ☐ once a week
- ☐ twice a week
- ☐ three or more times weekly

b) Approximately how long are you walking each time?

- ☐ fewer than 15 minutes
- ☐ 15-30 minutes
- ☐ 31-45 minutes
- ☐ 46-60 minutes
- ☐ more than 60 minutes

9) What best describes the Thunder Bay area that you reside in?

- ☐ North ward (Port Arthur)
- ☐ South ward (Fort William)
- ☐ Intercity
- ☐ Rural

10) How do you travel to the mall so you may participate in the mall walking program?

☐ car ☐ bus ☐ taxi ☐ other _____

How long does it take you to get to the mall? _____

11 A) Would you like health information sessions to be presented?

- ☐ Yes
- ☐ No

If yes, what are your suggestions for topics of health information sessions?

_____

_____

_____

12) Are you satisfied with the mall walking program?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neither satisfied or dissatisfied
- ☐ Dissatisfied
- ☐ Very dissatisfied

13) What kinds of things create difficulties for you to attend the walking program?

_____

_____

_____

_____

14) Things I like the *best* about the mall walking program are:

_____

_____

_____

_____

15) How do you think that the mall walking program could be *improved*?

_____

_____

_____

_____

16) Would you recommend this program to others?

☐ YES ☐ NO

If no, why not?

_____

_____

_____

_____

17) Do you feel safe walking in the mall?

☐ YES ☐ NO

If no, what changes should be made to improve your safety?

_____

_____

_____

18) Do you do more shopping at this mall because of the walking program?

☐ YES ☐ NO

If no, where do you go and shop and why?

_____

_____

_____

Do you have any other comments about the program that you would like to add?

_____

_____

_____

Thank You For Completing This Survey!

Appendix B:

Dropout Questionnaire

Hello, may I please speak to _____. Hello, my name is Trish Gavin and I am a graduate student at Lakehead University. I am currently conducting an investigation with the Thunder Bay District Health Unit related to the involvement and participation in the mall walking programs in Thunder Bay. Your comments about the walking program are important. All information will be confidential and the results will be available to you if you do so request. Would you mind answering some questions for me?

If yes, continue with questions.

If no, can I arrange another time for you to answer the questions or would you be willing to complete a questionnaire if I mailed it to you (ask for their address)?

Thank you.

BACKGROUND INFORMATION

Section A

1) In what age range are you?

☐ 50 and under ☐ 50-55 ☐ 56-60 ☐ 61-75 ☐ 76 and over

2) Are you?

☐ female ☐ male

3) What is your current martial status?

☐ single ☐ divorced ☐ separated

☐ married ☐ widowed ☐ other _____

4) What is your primary occupation?

If Retired, check here ☐

Please check below beside the appropriate occupation category for either your current occupation or your occupation prior to your retirement.

☐ professional ☐ managerial

☐ technical ☐ clerical

☐ homemaker ☐ laborer

☐ other _____

5) Check the category which best describes the highest level of formal education that you have attained.

☐ no schooling ☐ some trade, technical or business school

☐ elementary school ☐ trade, technical or business school diploma

☐ some high school ☐ some university

☐ high school diploma ☐ Bachelor's degree or equivalent

☐ some community college ☐ Master's, doctoral degree or equivalent

☐ community college diploma ☐ other _____

LIFESTYLE

Section B

1) In general, how would you describe your state of health?

- ☐ Excellent
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Very Poor

2) How would you describe you ability to function in your daily activities (e.g. doing chores around the home)?

- ☐ Excellent
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Very Poor

3) Are you limited in the type or intensity of activity that you engage in due to an injury or long term health problem(s)?

- ☐ Yes
- ☐ No

If yes, please explain briefly as follows.

	Name/Description of problem	How does this limit your activity?
Example:	arthritis in knees - limits the distance I can walk	

_____

_____

_____

_____

4) Approximately how tall are you? (in feet and inches) _____

How much do you weigh?(in pounds) _____

5) Which of the following best describes your experience with tobacco.

☐ I haven't smoked

☐ I **currently** smoke.

What do you smoke? _____

How much per day? _____

☐ I **stopped** smoking

How long ago? _____,

What did you smoke? _____

How much did you smoke per day? _____.

6) Comparing yourself to others of your own age and sex, would you say you are.....

☐ More fit ☐ Less fit ☐ As fit

Physical Activity

Please use the following definition in answering the next few questions

Moderate physical activity includes walking, activity classes and anything else primarily movement oriented. To be considered **regular** the moderate physical activity must be done **3 times per week for at least 15-20 minutes.**

For example, **regular moderate physical activity** may be swimming for 20 minutes twice a week or walking 20-30 minutes on Monday and raking the lawn for at least 15 minutes Thursday.

7) Are you **currently** involved in any organized regular moderate physical activity or exercise class

- ☐ Yes
- ☐ No

(If **yes**), what activities do you participate in, how long and how often.

_____

_____

_____

8) Are you **regularly** involved (i.e. 2-3 times/week) in any other types of moderate physical activities either through daily chores/work or hobbies (e.g. walking to the store 3 blocks away, mowing the lawn or raking leaves)?

- ☐ Yes
- ☐ No

(If **yes**), what types of activities, how often and do you consider these activities leisure or work/ chores related.

_____

_____

_____

9) Is there anything preventing or limiting your participation in **regular moderate physical activities?**

☐ Yes
☐ No

(If **yes**), what types of things.

_____

_____

_____

10) In general, do you think that there are advantages or benefits to you participating in regular moderate physical activity?

☐ Yes
☐ No

(If **yes**), what are the advantages or benefits for you participating in regular moderate physical activity?

_____

_____

_____

11) In general, do you think that there are disadvantages to you participating in regular moderate physical activity?

☐ Yes
☐ No

(If **yes**), what are the disadvantages for you participating in regular moderate physical activity?

_____

_____

_____

12) On a scale from 1 to 7 with 1 as strongly disagree and 7 with strongly agree, how would you rate this statement "Generally speaking, most people who are important to me think I should participate in regular physical activity".

1——2——3——4——5——6——7

strongly disagree — strongly agree

13) Still using a 7 point scale, the statement we will use in this question is "My participation in regular moderate physical activities of my choice in my leisure time will be"……

1——2——3——4——5——6——7

boring — fun

1——2——3——4——5——6——7

pleasant — unpleasant

1——2——3——4——5——6——7

wise — foolish

1——2——3——4——5——6——7

harmful — beneficial

1——2——3——4——5——6——7

enjoyable — unenjoyable

1——2——3——4——5——6——7

good — bad

1——2——3——4——5——6——7

useless — useful

14) For me, **not** participating in regular moderate physical activity of my choice in my leisure time would be…..

1——2——3——4——5——6——7

boring — fun

1——2——3——4——5——6——7

pleasant — unpleasant

1——2——3——4——5——6——7

wise — foolish

1——2——3——4——5——6——7

harmful — beneficial

1——2——3——4——5——6——7

enjoyable — unenjoyable

1——2——3——4——5——6——7

good — bad

1——2——3——4——5——6——7

useless — useful

MALL WALKING PROGRAM

Section C

1) Which mall walking program did you participate in?

- ☐ "Shake Chatter'n Stroll - Intercity Mall
- ☐ "Window Walk" - Victoriaville Mall

2) How did you find out about the mall walking program?

☐	Mall information	☐	Thunder Bay District Health Unit
☐	Local newspaper	☐	Television
☐	Your Doctor	☐	A Friend
☐	Other _____		

3) When did you join the mall walking program? _____
When did you stop participating in this program? _____

4) Why did you start walking at this mall?

_____

_____

_____

5) Why did you stop participating in the mall walking program?

_____

_____

_____

6) While participating in the mall walking program, did you walk....

☐ by yourself	☐ with a friend	☐ with your spouse
☐ with a relative	☐ with a group	☐ other _____

Please check one of the lines for the following questions

7 a) How often did you walk before joining the mall walking program?

- ☐ never
- ☐ occasionally
- ☐ one weekly
- ☐ two times weekly
- ☐ three or more times weekly

b) Approximately how long did you walk each time?

- ☐ fewer than 15 minutes
- ☐ 15-30 minutes
- ☐ 31-45 minutes
- ☐ 46-60 minutes
- ☐ more than 60 minutes

8 a) While enrolled in the mall walking program, how often did you walk each week?

- ☐ occasionally
- ☐ once weekly
- ☐ two times weekly
- ☐ three or more times weekly

b) Approximately how long did you walking each time?

- ☐ fewer than 15 minutes
- ☐ 15-30 minutes
- ☐ 31-45 minutes
- ☐ 46-60 minutes
- ☐ more than 60 minutes

9) Are you currently walking as part of an exercise program?

☐ YES ☐ NO

(If **yes**), where do you walk _____

How often do you walk each week?

- ☐ occasionally
- ☐ once weekly
- ☐ two times weekly
- ☐ three or more times weekly

Approximately how long do you walk each time?

- ☐ fewer than 15 minutes
- ☐ 15-30 minutes
- ☐ 31-45 minutes
- ☐ 46-60 minutes
- ☐ more than 60 minutes

(If **no**), why not?

10) Did you stop participating in the mall walking program to participate in another or a different exercise program?

☐ YES ☐ NO

If **yes**, what are you doing and where?

11) What best describes the Thunder Bay area that you reside in?

- ☐ North ward (Port Arthur)
- ☐ South ward (Fort William)
- ☐ Intercity
- ☐ Rural

12) How did you travel to the mall so you could participate in the mall walking program?

☐ car ☐ bus ☐ taxi ☐ other _____

How long did it take you to get to the mall? _____

13) Would you like health information sessions to be presented?

- ☐ Yes
- ☐ No

(If yes), what are your suggestions for topics of health information sessions?

_____

_____

_____

14) Were you satisfied with the mall walking program?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neither satisfied or dissatisfied
- ☐ Dissatisfied
- ☐ Very dissatisfied

15) What kinds of things created it difficult for you to attend the walking program?

_____

_____

_____

_____

16) What things did you like the *best* about the mall walking program:

_____

_____

_____

_____

17) How do you think that the mall walking program could be *improved*?

_____

_____

_____

_____

18) Would you consider rejoining the program if your suggested changes were made?

☐ YES ☐ NO

19) Would you recommend this program to others?

☐ YES ☐ NO

(If no), why not?

_____

_____

_____

_____

20) Did you feel safe walking in the mall?

☐ YES ☐ NO

(If no), what changes should be made to improve your safety?

_____

_____

_____

21) Did you do more shopping at this mall because of the walking program?

☐ YES ☐ NO

(If no), where do you go and shop and why?

_____

_____

_____

22) Do you have any other comments about the program that you would like to add?

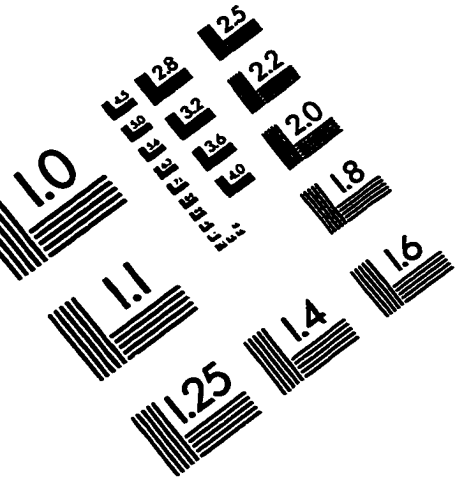
_____

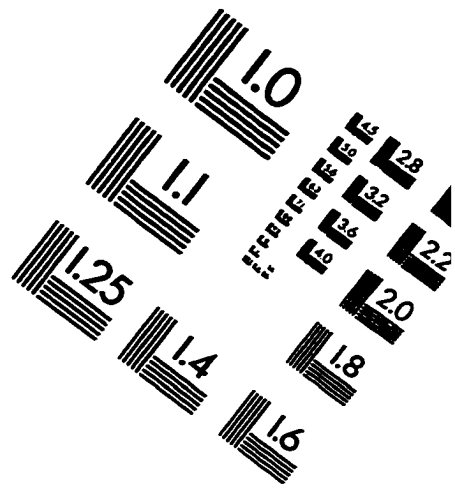
_____

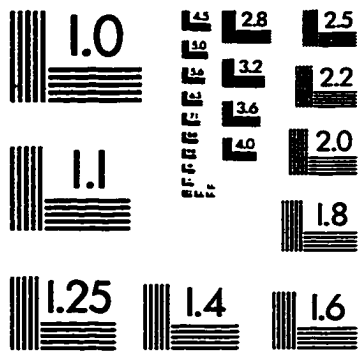
_____

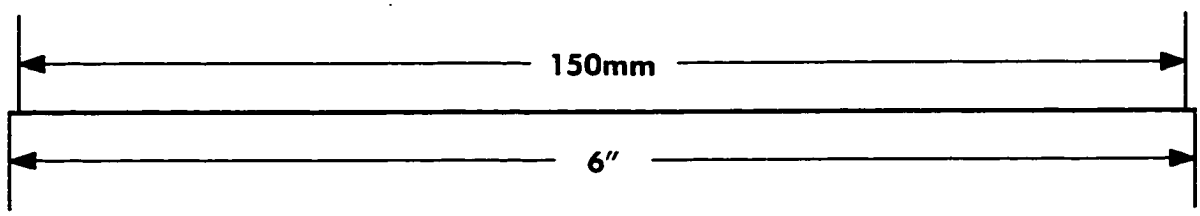
Thank You For Completing This Survey!

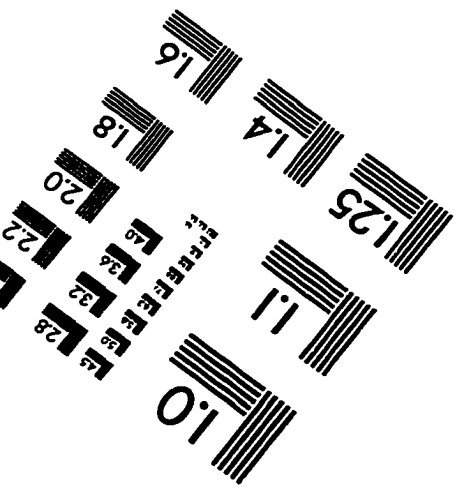
IMAGE EVALUATION TEST TARGET (QA-3)

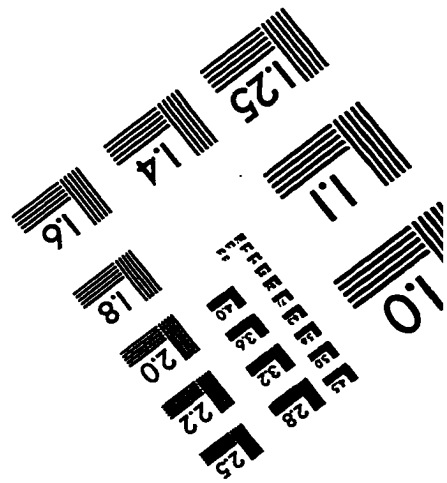












APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989