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Impact of an 11-week Nordic Pole Walking Program on the Overall Feelings of Health, Wellbeing and Motivation in Older Adults

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Impact of an 11-week Nordic Pole Walking program on the overall feelings of health, well-being and motivation in older adults

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About the Sheridan Centre for Elder Research

The Centre for Elder Research conducts innovative Lab to Life™ research that enhances the quality of life of older adults while serving as an education and research hub for Sheridan and the broader community.

The Centre for Elder Research was launched in 2003 at the Oakville, Ontario campus of Sheridan College. The Centre has an established track record in applied research and a reputation as a leader that challenges traditional thinking, creating possibilities that transcend historical boundaries.

The applied research conducted at the Centre has contributed to the implementation and evaluation of programming at all levels of society, from the general public, to industry partners, all the way to regional and municipal policy-makers.

Embracing an interdisciplinary approach and, working with faculty and staff from all departments of the college, the Centre is able to directly support the scholarship of teaching and learning at Sheridan, enhancing the student experience and giving all students the opportunity to broaden their horizons through applied research.

Our applied focus, Sheridan's institutional strengths and our strong network of community and industry stakeholders positions the Centre to ensure that knowledge is effectively translated into goods, services, programs and policies that directly benefit older adults and their families.

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Nordic Pole Walking

Nordic Pole Walking (NPW), the act of walking with poles, is an activity that promotes health and wellness for individuals of all ages and fitness levels. For older adults, this activity can be part of a healthy lifestyle while assisting with balance and encouraging correct gait for those who require additional support. The Sheridan Centre for Elder Research, in partnership with Nordixx Canada, offered an 11-week Nordic Pole Walking program (20 hours) to evaluate its impact on the overall feelings of health, well-being and motivation in older adults. A total of sixteen people participated (14 female, 2 male), and each participant completed a comprehensive battery of surveys and standardized evaluations of health, physical activity levels and motivation. Results showed that participants enjoyed the ‘walk and talk’ component and reported improved fitness levels and eagerness to continue Nordic Pole Walking after the project ended.

1. Introduction

1.1 Background

Nordic Walking became an exercise program in Finland in the year of 1997 (Dechman, Appleby, Carr, & Haire, 2012). Prior to this, elite cross-country skiers walked with poles as a way to train during the summer months (Shove & Pantzar, 2005). Nordic walkers use two poles while maintaining coordination of the upper and lower body, resulting in a full-body workout that engages the arms, legs and torso. Nordic Pole Walking increases energy consumption and heart rate by 20% (Kukkonen-Harjula, Hiilloskorpi, Mänttari, Pasanen, Parkkari, Suni, . . . Laukkanen, 2007) and has also been shown to increase oxygen consumption (VO_2). In a study conducted in 1995 it was found that 30 minutes of Nordic Walking at a speed of 6.7 km-hour increased oxygen consumption by 11% (Tschentscher, Niederseer, & Niebauer, 2013). In Nordic Walking, the poles offer balance and promote a correct gait and straight torso posture (Figueiredo, Finch, Mai, Ahmed, Huang, & Mayo, 2013).

Past work at the Centre for Elder Research has suggested that walking is viewed as an integral part of the physical activity strategy for many older adults. Walking not only provides necessary exercise, but can also support elements of functional mobility and independence, as many Activities of Daily Living (ADLs) require effective and confident locomotion. Nordic Pole Walking may be suitable for older adults in a variety of ways since it both provides an enjoyable exercise activity, while the poles can provide added stability, compensating for a number of physical challenges that older adults may face, including those related to a variety of chronic health conditions. It is also an activity that can be easily introduced and maintained as part of a daily routine, as the only equipment needed is a set of poles and a surface to walk on. It can be done indoors and outdoors, which removes the weather as a barrier. The poles are easy to transport and adjustable to any height.

1.2 Current Project

The specific purpose of this study was to evaluate the impact of an 11-week, twice-weekly Nordic Pole Walking program on the overall feelings of health, well-being and motivation in older adults. A total of 20 hours of walking conducted both outdoors and/or in an indoor walking facility were completed by participants, and they also received on week's worth of education and orientation prior to beginning the walking component.

Additionally, Nordixx Canada was interested in learning more about the effectiveness of the program and how they might improve it. Nordixx Canada is a company that promotes Nordic Pole Walking and they provided the poles for the participants to use during the course of this study.

2. Methodology

2.1 Sample and Procedure

Participants over the age of 55 who had never pole walked before were recruited through the Sheridan Centre for Elder Research email database. Initially, 23 participants signed up for the program. Three of those participants dropped out because of scheduling conflicts and two of them did not attend the pre-measures interview. From the remaining 18 participants, one dropped out before completing the post measures (work scheduling conflict), and one participant completed the walking program but did not attend the post-measures interview.

Once participants agreed to be part of this research project, they were invited to a pre-interview meeting. In this one-hour session, the project was explained, participants provided informed consent to be part of the project, and the surveys and assessments were completed. These same measures were completed at the end of the project. (This study has been approved by the Sheridan Research Ethics Board.)

The research participants for this investigation ranged from 57 to 84 years of age (average age=72). A total of 16 participants completed the program (female=14, male=2). In terms of health, on a scale from 1 to 7 (1=poor, 4=okay, 7=excellent), the self-reported average was 5. Participants rated their hearing (hearing aids used by 2 people), vision, and mobility between 'okay' and 'excellent'. Five people reported mobility challenges (themes: tiredness, pain and medical condition), and ten people reported falling or having a challenge with balance.

Participants were also asked to describe any chronic conditions they might have. The most common ones were arthritis (n=11), high blood pressure (n=8) and osteoporosis (n=7). There were no participants with neurological disease. Other conditions reported were diabetes, seizure, fibromyalgia and thyroid problems.

The first week of the project included two orientation sessions, and the 10 subsequent weeks consisted of two, one and a half hour long walking sessions each week. These sessions were all facilitated by a certified pole walking instructor. During the course of the program, each participant was asked to maintain a journal in which they recorded the physical effort they put into the walking program (level of exertion) and their thoughts and feelings related to the program. (Participants were provided with guided questions to help prompt their journal writing.) The journals were collected at the end of the program and reviewed by the researchers. Three months after the program ended, participants were contacted through email by one of the researchers to see if participation in the program has had any long-term impacts on their health or well-being.

2.2 Measures Used

2.2.1 Questionnaire

The measures used in this project were the following:

- Participant History Questionnaire
Included personal and health information and expectations of the program
- Nordic Pole Walking – Pre/Post Questionnaire
Included fitness information and questions about social interactions
- Inventory of Lifestyle Needs
Included a list of lifestyle features to be rated for importance level
- Activity Inventory Tool #5 – The Canadian Physical Activity, Fitness and Lifestyle Approach
Included a list of physical activities to be rated for level of engagement
- Identifying Barriers to Exercise Tool #18 – The Canadian Physical Activity, Fitness and Lifestyle Approach
Included a set of statements to identify barriers and their importance

Sixteen complete sets of pre and post measures were analyzed. Complete copies of the research measures can be found in Appendices A-D.

2.2.2 Journal

The journal booklet contained the following information:

- Guided questions for writing a journal entry:
How is this program impacting your life?
How do you feel before, during and after each session?
What keeps you motivated to attend the sessions each week?
Do you feel this program is improving your health? Why or why not, and in what ways?
Has this program had an impact on your social life?
Have you begun doing other activities as a result of this program?
Did you have any concerns about participating in this program? How do you feel about them now?
Is this program having an effect on your mood?
Have you noticed a change in your sleep patterns as a result of this program?
- Borg Exertion scale – a ten point scale (0=nothing at all, 5=strong, 10=maximum), participants were asked to report their exertion level during each session of Nordic Pole Walking
- ‘Faces scale’ (a series of drawn faces depicting a range of emotions from very sad to very happy). Participants were asked to circle the face expression most appropriate to how they were feeling before and after each session of Nordic Pole Walking

Sixteen journal booklets were submitted. The journal materials and scales can be found in Appendix E.

2.2.3 Three-month follow up survey

The 3-month follow up survey included questions about physical activity, current fitness, changes within the past three months, barriers to exercising, and Nordic Pole Walking activity. Survey Monkey was used for this follow up. All participants were emailed with the link. Eleven people responded to the survey.

3. Results

3.1 Health and well-being

The results showed a self-reported increase in current fitness level after the completion of the program. The pre-measures showed participants ranging between 'poor' and 'very good' (most common response was 'good' with 10 responses), whereas in the post measures all participants ranged between 'average' and 'very good' (most common was 'very good' with 11 responses).

In the Inventory of Lifestyle Needs questionnaire, improving health was ranked as the top need (with 15 responses) in both the pre and post measures. In the post measures, 'Being physically active' was also the top-rated need (tied with 15 responses). 'Having fun and enjoying myself' (n=14) and fitness and well-being (n=14) were ranked second in importance in both the pre and post measures.

In the activity inventory questionnaire, participants reported an increase in the following activities: household chores (+5), stair climbing (+4), and walking (+4). Some participants also reported engaging in aerobics (+2) and hiking (+2).

In the journal entries participants reported mainly feeling happy during class (n=13), having energy to do more after the class finished (n=13) and building physical strength (n=9) and improvements in their striding (n=7). Seven participants reported improved sleep; specifically, participants reported that they experienced deeper sleep, sleeping through the night, sleeping more and better, and falling asleep easier. The results from the Faces Scale show that fourteen participants had an average positive feeling after completing class; only two participants reported having negative feelings after the class.

Four participants reported life management, transportation, no mood improvement, and feeling discouraged as concerns during the program.

3.2 Exercise program

Most participants expected increased fitness (16 responses) and enhanced well-being (14 responses) to be their primary program outcomes. Some participants were surprised about the complex technique of Nordic Walking (n=4), as it seemed simpler before starting the program. However, as the program progressed so did their skill level. All the participants expressed that they would recommend this activity to others. Twelve participants reported looking forward to the class.

The major barrier for participants was cost and lack of time. Two participants also identified that an instructor who did not know about osteoporosis or was not an expert would be barriers to their future participation in Nordic Pole Walking.

Thirteen participants gave positive feedback about the instructor, which included that she was encouraging, provided good feedback, was patient, joyful and caring, was a role model in NPW, and was an effective leader. Most participants reported feeling comfortable with the technique as the time went by (n=10). Nine participants commented about the cool down exercise, saying that it was good and they were able to do it. Four participants recorded the number of steps during this exercise activity (i.e. pedometer).

Three minor accidents occurred during the program. One participant almost fell in a hole and as a result of this incident their ankle became sore and they could not sleep well. The other two participants were, fortunately, not injured. Five participants reported sore muscles or pain in some part of their body (hip, left foot and arms) after classes, and seven participants expressed the class was tiring.

3.3 Environment

Research participants supported the idea of Nordic Pole Walking in an indoor facility (n=14), with two participants commenting on the more even terrain indoors. The music within this indoor facility was an added bonus for 9 participants. There were 9 participants that enjoyed being outside and the fresh air, and six participants reported that cold weather was good for walking as they could push harder and walked further to keep warm.

3.4 Social

Socially, 15 participants reported that they enjoyed the company and talking to others. There were 6 participants that made new friends while the program was taking place. Five participants reported that being part of a group was motivating; one of those participants mentioned that it was encouraging because they lived alone and cared for a loved one.

Seven participants reported an increase in both the frequency and quality of their social interactions as a result of the program.

3.5 Attendance

A total of 14 participants missed at least one class during this program. Most people missed classes because of work (n=3) or travel (n=5) arrangements. Seven out of the fourteen participants recorded their walking exercise (alone or in a group) while being away, and some participants joined other organized pole walking groups for 'make up' sessions.

3.6 Three-month follow up

Eleven participants replied to the 3-month follow up survey. All of them continued doing Nordic Walking during the intervening 3 months. Nine of them were doing it twice a week or

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more and were accompanied by someone else. Two of the eleven participants were doing this activity alone.

Other exercises implemented within the past 3 months have been Zumba, cardio, and more walking. Changes that participants have noticed included enhanced flexibility, balance, muscle tone, posture and endurance, more energy, and better sleep.

Participants expressed that motivation to continue doing Nordic Walking came from the following factors: social benefits, indoor location, well-being, feeling better, and good instructor. In terms of barriers, cost is still a factor that impacts their level of engagement.

Overall though, there was an increase in the frequency of engaging in physical activity three months following the end of the formal program.

Table 1. Question: Over a typical seven-day period (one week), how many times do you engage in physical activity that is sufficiently prolonged and intense to cause sweating and a rapid heartbeat?

	Pre responses	Pre %	Post responses	Post %	3 month follow up responses	3 month follow up %
At least 3 times	4	25%	11	69%	8	73%
Normally once or twice	6	38%	4	25%	3	27%
Rarely or never	6	38%	1	6%	0	

In regards to exertion levels, participants reported an increase in intense effort.

Table 2. Question: When you engage in physical activity, do you have the impression that you make an intense effort, a moderate effort or a light effort?

	Pre responses	Pre %	Post responses	Post %	3 month follow up responses	3 month follow up %
Intense effort	2	13%	10	63%	7	64%
Moderate effort	12	80%	7	44%	4	36%
Light effort	1	7%	1	6%	0	

4. Discussion/Recommendations:

The Centre for Elder Research, in partnership with Nordixx Canada, offered an 11-week Nordic Pole Walking program for older adults. The results from the 14 women and 2 men who completed the program align with previous work showing that Nordic Pole Walking is an effective and enjoyable activity for individuals of all ages.

Participants in this study reported increased health, social, emotional and motivational outcomes. Tellingly, all those who responded to the 3-month follow-up survey had continued walking, which speaks to the motivational element of this activity. Taken together, these results suggest that Nordic Pole Walking is a very suitable exercise option for older adults of varying abilities that can have a wide range of benefits.

Based on the results of this study, the Centre presents the following recommendations for individuals and/or groups looking to take on Nordic Pole Walking as an activity:

Health and well-being

- Objectives of participants may differ (ex. improving health, being physically active, having fun and fitness/well-being); these should be taken into account when designing the program
- Personal challenges (non-physical) may pose barriers for some participants – tailoring the program according to participants' state of mind is important
- Explicit motivational strategies should support the multi-dimensional needs and interests of participants

Exercise program

- Flexibility – meeting days can be tailored to fit people's schedule
- Instructor – needs to be encouraging, knowledgeable and able to adapt to the unique physical challenges of the participants
- Pace management – each individual to manage their speed
- Social component - 'walking and talking' can provide a motivational component for committing to the exercise program
- Level of difficulty – to be tailored to each participant so as to be both appropriately challenging and progressive
- Walking groups – Nordic Pole Walking can be done through community groups to service a larger group of the population and enhance the social engagement component of the program

Environment

- Planning different locations depending on the weather – heat (less exertion), cold (more exertion) and extreme cold (needing an indoor facility)
- Surfaces – consider the needs and abilities of the group when deciding where to walk, warm up and cool down (i.e. grass vs. gravel vs. concrete)
- Holiday exercise: it was interesting that some participants continued pole walking while on holiday. Providing participants with the knowledge they need to effectively

pole-walk on their own in unfamiliar places would support adherence to a regular walking program

Cost and cost-sharing

- The poles are an important component of this activity and they vary greatly in terms of quality and price. The prices are relatively low, but to people that are living below the poverty line these prices may be prohibitively expensive. Organizing community groups where people can share poles, or creating a rental system, may be a feasible option for this activity to be accessible for all interested individuals.

Future research in this area should explore more closely the differences between men and women (as this study was not gender-balanced with 14 women and 2 men participating). Additionally, as this study was conducted in Oakville there was an abundance of parks and open areas for the group to go to walk. Other more urban areas may not have as much green space conveniently available, so an investigation into ways to both secure indoor walking spaces and 'carve out' places to walk would support the broader implementation of Nordic Pole Walking.

5. Conclusions

Nordic Pole Walking is an effective, enjoyable and relatively cost-effective activity that older adults can integrate into their physical activity routines. Pole walking can be done alone or in groups and requires only a set of poles and a surface to walk on. The range of positive benefits observed in this study include health, mood, socialization and well-being, indicating that pole walking can have a multi-faceted impact on the walker, supporting healthy active aging.

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7. Appendix A

Nordic Pole Walking – Pre/Post Questionnaire

Participant Code: _____

Circle: Pre Post

Height (m):

Weight (kg):

Waist circumference (cm):

Over a typical seven-day period (one week), how many times do you engage in physical activity that is sufficiently prolonged and intense to cause sweating and a rapid heart beat?

- At least 3 times
- Normally once or twice
- Rarely or never

When you engage in physical activity, do you have the impression that you:

- Make an intense effort
- Make a moderate effort
- Make a light effort

In a general fashion, would you say that your current physical fitness is:

- Very good
- Good
- Average
- Poor
- Very Poor

Would you prefer an 8-week training program to have goals related to: (please check all that apply, but put a star* next to your top choice)

- Weight loss
- Preventing diabetes (or other chronic conditions)
- Improving general fitness
- Improving your walking distance to 5km, 10km or more
- I'd rather it didn't have specific goals, I just want to enjoy the outdoors
- I'd rather it didn't have specific goals, I just want to enjoy the company

How satisfied are you with the **frequency** of your daily social interactions?

Very Satisfied Satisfied Not very satisfied Very dissatisfied

How satisfied are you with the **quality** of your daily social interactions?

Very Satisfied Satisfied Not very satisfied Very dissatisfied

To be completed during the 'pre' test only:

What do you expect from Nordic Pole Walking? (please check all that apply)

- More general fitness
- Weight loss
- Improved well-being
- New social contacts
- None of the above
- Other: _____

To be completed during the 'post' test only:

Afer participating in a Nordic Pole Walking program, would you recommend pole walking to family, friends, neighbours or colleagues?

- Yes
- No

Why or why not?

Do you have any additional comments you'd like to share?

Thank you for participating in our study!

Appendix B

Nordic Pole Walking – Inventory of Lifestyle Needs

Please read the list of statements below. When you think about how important each item is for you, check off the appropriate box.

	Not important	Somewhat important	Very important
Liking the people I'm with			
Being in a group			
Being independent			
Getting to know other people well			
Meeting many new people			
Being a leader			
Feeling confident			
Learning something			
Being in pleasant, attractive surroundings			
Being along			
Having a structured activity			
Being able to do things at the last minute			
Following rules			
Being praised			
Having fun and enjoying myself			
Releasing frustration			
Taking a risk			
Enjoying the outdoors			
Releasing energy			
Improving my health			
Having common interests with other people			
Being able to contribute something to a group			
Having other people like me			
Being physically active			
Using my imagination			
Creating something			
Finding the activity challenging			
Feeling safe and secure			
Being myself			
To relax while exercising			
Motivate other people to join me			
Try something new and different			
Having an exercise I can do on my own			
Having goals I can achieve			
Using my talents			
Feeling progress shortly			
Have an easy-to-do sport			
Have an inexpensive sport			
Improving myself and my skills			
Accomplishing something			

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Spending time with family			
To lose body weight			
To improve my general fitness			
To improve my well being			
Relaxing			

Appendix C

Tool #5 **ACTIVITY INVENTORY**

Have done	Currently doing	Would like to do		Have done	Currently doing	Would like to do	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	aerobics/exercise-to-music	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	martial arts
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	archery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	orienteering
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	badminton	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	racquetball
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	baseball/softball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ringette
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	basketball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	roller skating
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	bicycling (utility or pleasure)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	rowing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	bowling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	running/jogging
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	broomball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	sailing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	calisthenics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	skateboarding
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	camping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	skiing (X-country)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	canoeing/kayaking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	skiing (downhill)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	climbing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	snowshoeing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	coaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soccer
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	curling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	squash
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	dancing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	stair climbing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	fencing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	swimming
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	floor hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	t'ai chi
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	table tennis
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	gardening, yard work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	tennis
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	volleyball
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	handball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	walking
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	hiking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	weight training
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	wind surfing
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	horseback riding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	yoga
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	household chores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ice skating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	inline skating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Appendix D

Tool #18 IDENTIFYING BARRIERS TO EXERCISE

From the choices below, rate each potential barrier from 1 to 10 to indicate the importance of that barrier to your:
a) adopting (beginning) an exercise programme, and
b) maintaining an exercise programme for improving your fitness.

Perceived Barriers	Rate the importance of each barrier to exercise from 1 to 10									
	No barrier whatsoever					Major barrier				
Previous negative experiences with exercise programmes	1	2	3	4	5	6	7	8	9	10
Lack of time	1	2	3	4	5	6	7	8	9	10
Cost of exercise program	1	2	3	4	5	6	7	8	9	10
Lack of energy	1	2	3	4	5	6	7	8	9	10
Lack of knowledge	1	2	3	4	5	6	7	8	9	10
Lack of motivation	1	2	3	4	5	6	7	8	9	10
Lack of skills	1	2	3	4	5	6	7	8	9	10
Feeling uncomfortable or intimidated in exercise surroundings	1	2	3	4	5	6	7	8	9	10
Fear of injury or re-injury	1	2	3	4	5	6	7	8	9	10
Fear of making an existing condition worse	1	2	3	4	5	6	7	8	9	10
How I see my body	1	2	3	4	5	6	7	8	9	10
Failure to reach goals in past attempts at beginning an exercise programme	1	2	3	4	5	6	7	8	9	10
Know that I cannot achieve the goals I want so why bother	1	2	3	4	5	6	7	8	9	10
Lack of access to opportunities such as nearby facilities	1	2	3	4	5	6	7	8	9	10
Keep talking myself out of it	1	2	3	4	5	6	7	8	9	10
Lack of safe places	1	2	3	4	5	6	7	8	9	10
Lack of child care	1	2	3	4	5	6	7	8	9	10
Lack of a partner	1	2	3	4	5	6	7	8	9	10
Lack of available and suitable exercise programmes at my level	1	2	3	4	5	6	7	8	9	10
Lack of support from others	1	2	3	4	5	6	7	8	9	10
Lack of transportation	1	2	3	4	5	6	7	8	9	10
Have other areas in my life that I feel must take priority in my day	1	2	3	4	5	6	7	8	9	10
Do not feel that I have the ability to exercise at a sufficient level for it to be worthwhile	1	2	3	4	5	6	7	8	9	10
Find that other people pressure me and that bothers me	1	2	3	4	5	6	7	8	9	10
Other:	1	2	3	4	5	6	7	8	9	10
Other:	1	2	3	4	5	6	7	8	9	10
Other:	1	2	3	4	5	6	7	8	9	10

Appendix E

Nordic Pole Walking – Daily Journal

Date: _____

Before the session began, please circle the face that most closely matches the way you were feeling:



During the class, on a scale from 1-10, how would you rate your level of exertion during the session?

_____ (See the scale in the front of your binder for details about each level)

After the session finished, please circle the face that most closely matches the way you were feeling:



Daily Journal Entry

Using the guided questions at the front of your binder, please tell us about today’s session: (feel free to use the back side of the sheet if you have more to write)

Guided Questions for Journal Entries:

(These are sample questions to get you started – feel free to elaborate on whatever it is that you feel you'd like to discuss)

How is this program impacting your life?

How do you feel before, during and after each session?

What keeps you motivated to attend the sessions each week?

Do you feel this program is improving your health? Why or why not, and in what ways?

Has this program had an impact on your social life?

Have you begun doing other activities as a result of this program?

Did you have any concerns about participating in this program? How do you feel about them now?

Is this program having an effect on your mood?

Have you noticed a change in your sleep patterns as a result of this program?

Exertion Scale:



0 Nothing at all

0.5 Extremely weak

1 Very weak

2 Weak



3 Moderate

4 Somewhat strong

5 Strong



6 Stronger

7 Very strong

8

9 Very very strong



10 Maximum