Creation of a Fitness Program Manual for Residents with Dementia Living in a Long-Term Care Facility

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The procedures in the facilitator’s guide, found in the appendices, are meant to be used by agency staff, as part of the broader services they provide, or under the supervision of agency staff.
ABSTRACT

The ‘Fun and Fitness’ manual was developed by the researcher to be used by staff and students implementing exercise and fitness programs at a long-term care facility. The manual included eight parts: an outline of the importance of an exercise manual, descriptions of the different types of fitness, exercise example descriptions, a Fun and Fitness session outline with example, specialized fitness group descriptions, common impairments and possible modifications, music suggestions for the Fun and Fitness session, and additional resources. The manual was constructed using various resources, such as research journals, textbooks, online resources, resources from the long-term care facility, and material from other local long-term care facilities. The manual provided a means to implement a beneficial exercise program with consistency for seniors with and without dementia. Staff and students in the recreation department of the long-term care facility evaluated the manual and revisions were made based on that feedback. The feedback form contained questions regarding the overall usefulness and ease of understanding of the manual content, the organization and visual appeal of the manual, and whether the manual would be beneficial to the facility and residents. Results of this feedback form revealed that the majority of respondents believed the manual would be useful as a resource within the long-term care facility. Due to time constraints, the program outlined in the manual could not be implemented, and its effectiveness could not be evaluated. Further research is essential in order to evaluate the effectiveness of the Fun and Fitness program by implementing and then reviewing and revising the content based on collected data and feedback.
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TABLE OF CONTENTS

ABSTRACT ........................................................................................................... ii
ACKNOWLEDGEMENTS .................................................................................... iii
TABLE OF CONTENTS ....................................................................................... iv
LIST OF TABLES ................................................................................................... v
CHAPTER I: Introduction .................................................................................. 1
  Problem Area ...................................................................................................... 1
  Thesis Statement ................................................................................................ 1
  Thesis Overview ................................................................................................ 1
CHAPTER II: Literature Review ....................................................................... 2
  Overview of Dementia ....................................................................................... 2
  Exercise and the Elderly .................................................................................... 2
  Physical Benefits ............................................................................................... 3
  Psychological Benefits ..................................................................................... 4
  Social Benefits ................................................................................................. 6
  Importance of Consistency .............................................................................. 7
CHAPTER III: Methodology ............................................................................. 8
  Manual Development ...................................................................................... 8
  Feedback Regarding Manual ......................................................................... 9
CHAPTER IV: Results ........................................................................................ 10
  Creation of the “Fun and Fitness” Manual .................................................... 10
  Feedback Form Results ................................................................................ 10
CHAPTER V: Discussion .................................................................................... 14
  Summary .......................................................................................................... 14
  Implications for the Behavioural Psychology Field .................................. 14
  Strengths .......................................................................................................... 15
  Limitations ........................................................................................................ 15
  Multilevel Systems Perspective of Strengths and Limitations ................ 15
  Recommendations for Future Research .................................................... 15
REFERENCES ..................................................................................................... 16
APPENDICES ...................................................................................................... 20
  Appendix A: “Fun and Fitness” Manual Feedback Form ................................ 20
  Appendix B: Number of Respondents Choosing Each Category on the Feedback Form ................................................................. 24
  Appendix C: “Fun and Fitness” Manual ............................................................ 27
LIST OF TABLES

Table 1. An Overview of the “Fun and Fitness” Manual.................................................. 8
Table 2. Total Percentage of Responses on the Agency Staff and Student Feedback
Form................................................................................................................................. 10
Table 3. Percentage of Raters’ Responses on the Agency Staff and Student Feedback
Form for Individual Items............................................................................................... 11
Table 4. Comments Provided in Suggestion Areas of the Agency Staff and Student
Feedback Form.................................................................................................................. 13
CHAPTER I: Introduction

Problem Area

Dementia involves the deterioration of an individual’s physical and cognitive ability (Mechling, 2008; Davison, Blankstein, Flett, & Neale, 2010). According to Davison et al. (2010), there are three types of dementia: Alzheimer’s disease, frontal-temporal, and frontal-subcortical. Alzheimer’s disease is the most common type of dementia, which will affect 1 in 13 Canadians over age 65. Frontal-temporal and frontal subcortical dementias refer to, and are defined by, the brain regions that are mostly affected. Individuals with dementia experience difficulties with hand-eye coordination, recognition, learning abilities, language, memory, reasoning, and judgment (Bera, 2008).

Individuals with dementia are more frequently being institutionalized due to the proportion of the population aging (Burge, Kuhne, Berchtold, Maupertit, & Gunten, 2012). The amount of research that supports the importance of remaining active as individual’s age is extensive. Therefore, it is imperative for all long-term care facilities to provide engaging and meaningful fitness activities for residents with dementia.

Fitness activities provide residents with dementia with stimulation, comfort, and relaxation, as well as maintaining their current abilities and reducing symptomatic behaviours (Burge et al., 2012). Fitness activities and programs must be adjustable to provide success for residents with varying symptoms of dementia. Residents with dementia often require encouragement to participate in physical activities due to insecurities and anticipated embarrassment (Burge et al., 2012). Therefore, a supportive environment is crucial during a fitness program in order to stimulate involvement and social interaction among residents with dementia (Mechling, 2008). A properly structured and implemented fitness program can inhibit social, functional, affective, physical, and cognitive degeneration (Mechling, 2008).

Thesis Statement

The development of a fitness program manual will ensure consistency in implementation of a fitness program in efforts to slow the decline of physical and cognitive abilities of residents with dementia in a long term-care facility.

Thesis Overview

The following study consists of a number of chapters. The first chapter is a review of the literature relevant to effects of fitness programs on individuals with dementia. The literature review addresses the impacts a fitness program has on an individual’s physical, cognitive, and social functioning. Following the literature review is a description of the method, which includes an overview and rationale of the Fun and Fitness manual for elderly with dementia and its review by staff members and students via a manual feedback questionnaire. The method section of this study also describes the structure of the manual, how it was developed, and the process undertaken to evaluate its helpfulness within the agency. The information obtained from the completed “Agency Staff and Student Feedback Forms” is presented in the results section. The results section also includes a description of the “Fun and Fitness” manual. The discussion section includes a summary of the study, implications for the behavioural psychology field, strengths and limitations of the study, multilevel systems perspective of strengths and limitations, and recommendations for future research.
CHAPTER II: Literature Review

Overview of Dementia

Dementia is viewed as a current public health problem due to its link with disability and mortality in the elderly, along with being the most common persistent health condition (Rocha, Marques, Pinto, Sousa, & Figueiredo, 2013). Weiten (2004) defines dementia as a condition with various cognitive difficulties. Dementia encompasses a variety of symptoms caused by disorders that impact the brain, which frequently results in a reduction in the ability to perform everyday tasks (Alzheimer Society of Canada, 2014). It results from an assortment of different diseases, such as Parkinson’s disease, Huntington’s disease, and Alzheimer’s disease (Weiten, 2004). Another cause of dementia is due to stroke (vascular dementia), which accompanies Alzheimer’s disease in being the most prevalent cause (Alzheimer Society of Canada, 2014). According to a fact sheet by the Alzheimer’s Society of Canada (2012), in 2011 roughly 15% of Canadian residents over the age of 65 were living with dementia or other cognitive impairments, and by 2031 this percentage is likely to double. This increase puts a vast strain on existing long-term care facilities and their ability to meet the individual needs of every resident with and without dementia.

Individuals with dementia may be institutionalized for various reasons. Long-term care facilities encounter individuals who may be impaired behaviourally, psychologically, and/or physically (Burge et al., 2012). These impairments can be manifested in behavioural complications such as wandering, care or food refusal, apathy, or agitation, which can lead to disengagement from planned activities (Heyn, 2003). These individuals also vary in their level of independence in activities of daily living, such as feeding, bathing, and dressing. Individuals with dementia often experience emotions such as anger, depression, and anxiety (Johnson, Deatrick, & Oriel, 2012). Many people view the possibility of dementia as one of the most feared secondary effects of aging (Larson et al., 2006). Regrettably, there is currently no cure for dementia; however, the consequences of the disease may be influenced by being physically active, avoiding smoking and excessive alcohol consumption, maintaining healthy eating habits, minimizing stress, and working the brain on a daily basis (Blankevoort et al., 2010).

Exercise and the Elderly

Exercise benefits for seniors with dementia are extensively supported by current research. Although though the research is lacking in some areas, such as the precise biological mechanisms that are affected, it is definite that exercise improves average life expectancy, physical fitness, psychological functioning, muscular endurance, and reduced risk of falling for individuals with dementia (Johnson et al., 2012). Exercise can increase independence by sustaining and improving muscle strength, balance, and coordination in individuals with dementia (Chang, Chen, Shen, & Chiou, 2011). It is apparent in the research that established exercise programs are essential to improve the quality of life and health of individuals with dementia (Heyn, 2003). Unfortunately, institutionalization may influence the lack of participation in exercise programs. A study by Heyn, Abreu, and Ottenbacher (2004) showed that extended duration of physical exertion, at a moderate intensity level, results in positive health outcomes in seniors with dementia. Moderate refers to working at an intensity level just slightly above being comfortable and below feeling tired (Heyn et al., 2004).

Rocha et al. (2013) stated as the cognitive status of an individual with dementia declines, they become more limited in activities, resulting in a decrease in participation. This suggests that providing adequate support to individuals with dementia to actively participate in activities may be effective at delaying their cognitive decline (Rocha et al., 2013). The study concludes that
there are severe activity limitations and participation restrictions amongst individuals with dementia who live in a long-term care facility. However, many of these residents still have the capability to understand what people say and be companionable with individuals who are around them. Therefore, the findings of this study underline that even if a resident has severe activities limitation and participation restrictions, they continue to have the ability to engage in some specific activities (Rocha et al., 2013). Rocha et al. recommend that viewing an individual with dementia as someone who is capable is essential to planning health resources and developing well-versed rehabilitation programs personalized to each individual’s functionality. Along with individualized planning, regularity of exercise is also important.

Larson et al. (2006) conducted a study supporting greater reduction in risk of dementia in those who exercised regularly, compared to those who exercised less. The purpose of this study was to determine whether regular exercise was associated with a reduced risk for occurrence of dementia and to investigate whether the association of physical exercise with incident dementia was restrained due to other risk factors, such as diabetes, cognitive function, and depression. Initially the study consisted of 1740 participants over the age of 65 who were cognitively intact. Concluding the 6.2-year longitudinal study, 158 of the participants developed dementia, 276 deceased, and 121 withdrew from the study. The results of this study indicated that the incidence rate of dementia for individuals who exercised at least three times per week was 13/1000 person-years in comparison to those who exercised less than three times per week at 19.7/1000 person-years (Larsen et al., 2006). Larsen et al. concluded that there was a 32% decrease in risk for dementia in participants who exercised more often. Therefore, not only does physical activity help reduce the risk of developing dementia but also helps to slow the progression of symptoms associated with dementia.

**Physical Benefits**

Exercise is an important component of lifestyle for all individuals, whether having dementia or not. Physical activity improves cardiovascular health, decreases obesity, slows osteoporosis, improves strength and flexibility, and reduces risk of fractures and falls (Allison & Keller, 1997; Mechling, 2008). It increases cerebral blood flow and oxygen delivery, induces fibroblast growth factor in the hippocampus, preserves neuronal plasticity, and aids in maintaining brain volume (Taaffe et al., 2008). For individuals with dementia, exercise is imperative to reduce frequency of behaviour disorders in individuals with dementia (Mechling, 2008). Taaffe et al. (2008) conducted a study to investigate the relationship between late life physical activity and physical function with incident dementia in 2263 Japanese American men, aged 71-93 years old, who at the initiation of the study were not diagnosed with dementia as determined by the Cognitive Abilities Screening Instrument (CASI). Incident dementia is recently diagnosed cases of dementia. The study consisted of acquiring usual daily physical activity data from each participant using a developed questionnaire with a follow up questionnaire and CASI. Follow-up was a mean of 6.1 years and resulted in determining 173 incident cases of dementia. Taaffe et al. concluded that the participants who developed incident dementia had less education, were older, and had poorer physical function. These findings suggested that men with poor physical function may be able to benefit from enhancement of physical activity, potentially conferring a protective effect or delaying the onset of dementia (Taaffe et al., 2008).

Cristopoliski, Barela, Leita, Fowler, and Radacki (2009) state that, as we age, there is a gradual decrease in locomotion due to an assortment of changes in muscle mass, strength, and muscle-tendon unit shortening. Therefore, Cristopoliski et al. conducted a study to determine if a stretching program would adjust the gait in an elderly population. The results showed that the
A stretching program was efficient at increasing both hip and ankle range of motion for those participants in the experimental group compared to those in the control group (Cristopoliski et al., 2009).

The study by Rocha et al. (2013) indicated that individuals with dementia are less mobile than those without dementia due to shortened strides and reduced speeds while walking. Kemoun et al. (2010) conducted a study consisting of a 15-week exercise program that included balance and strength exercises and walking which produced a positive influence on the stride length and speed of walking in elderly individuals with dementia. In addition, Blankevoort et al. (2010), stated that it is known that the physical functions of people (e.g. mobility, lower-extremity strength, balance, and walking endurance) can be trained if the individual is cognitively intact, which can lead to an increase in that individual’s quality of life. They proceeded to investigate the effects of physical activity on physical function in individuals with mild, moderate, and severe dementia. The results of this study indicated that individuals with all stages of dementia could benefit from physical activity interventions but also from normal exercise. Blankevoort et al. found that the highest improvements of physical function occurred when an exercise program was at least 12 weeks with three sessions a week, and each session was 45-60 minutes in length.

**Psychological Benefits**

Physical symptoms of dementia are easily recognizable; however, other symptoms such as aggression, hallucinations, agitation, and decline in reasoning can be challenging in maintaining adherence to exercise programs (Johnson et al., 2012). A study by Chang et al. (2011) stated that people are able to maintain a sense of energy during exercising if they have higher self-efficacy. The study aimed to maintain the activities of daily living (ADL) in elders with dementia by examining the effectiveness of an exercise program (Chang et al., 2012). Results of the study indicated that the participants’ overall performance of ADL were significantly higher post-treatment than at baseline. Chang et al. suggested that an individual’s self-efficacy is simultaneously increased as their ADL performance improves. Therefore, caregivers should devise exercise programs that enhance exercise self-efficacy.

Fitness programs must meet the individual needs of each resident to be effective. A study by Burge et al. (2012) reviewed 303 randomized controlled trials to determine the different types of physical activity designed for individuals with various levels of dementia and how these activities impact ADL performance. The results of the study supported patients’ claims that physical programs should also benefit their psychological and social needs. This claim is in contrast to caregivers’ focus on maintenance of functions and independence (Burge et al., 2012). Heyn et al. (2004) agreed that in order to increase the levels of physical activity in seniors, programs must be adaptable to fit the various needs of each individual.

Burge et al. (2012) provided evidence that music during physical programs improved the performance of individuals with dementia. Johnson et al. (2012) suggested that music could be used to lessen the behavioural inattention in elderly with dementia. Music can enhance communication with the brain and uncover lost memories, which can increase adherence, stimulate positive emotions, and improve motor control (Johnson et al., 2012). An individual with dementia may also become more alert and attentive while listening to music, due to the sounds’ influence on confusion, hallucinations, and lethargy (Johnson et al., 2012). The study by Johnson et al. showed that music must be age appropriate and have a defined beat, with a medium to fast tempo in order to improve participation in exercise programs. Music may also increase participation by reducing disruptive behaviours (shouting out, making negative comments, verbal refusal to participate), which will then increase the participant’s physical functions.
Satoh et al., 2014 explored the idea that combining physical exercise with music has an increased positive effect on the cognitive function in elderly individuals more than exercise alone. The study consisted of three protocols: Group 1 combined physical exercise with music; Group 2 involved solely exercise and no music; and Group 3 was a control group. The results of the study showed Group 1 having considerable improvement in visuospatial function in comparison to the other two groups (Satoh et al., 2014). Satoh et al. discussed three separate hypotheses regarding the mechanisms by which music assists cognitive improvement in relation to the results of the study. The first hypothesis suggested that music contributes to the ability to participate in physical exercise by using appropriate music to influence physical movement. Second, Satoh et al. proposed that combining music with physical activity may simultaneously act as both physical and cognitive training. Lastly, it was submitted that a key role in the improvement of the musical addition may be connected to the parietal lobes, due to their involvement in somatosensory and visuospatial function (Satoh et al., 2014). In conclusion, the study by Satoh et al. supports the suggestion that combining music with physical exercise can enhance the cognitive function of elderly individuals.

Music is not the only addition to exercise programs that are beneficial to individuals with dementia. Heyn (2003) supported the importance of a multisensory fitness approach by combining imagery and storytelling to increase program engagement. Imagery is the process of developing a mental image of objects, feelings, or persons and can induce the use of various senses (Heyn, 2003). Imagery allows the individual to create an experience based on images and past memories. Heyn states participants are able to increase their sense of well-being when asked to imagine peaceful settings. Storytelling and listening to stories can allow the participants to increase their attention and, therefore, participation in the exercise program. Storytelling involves the narration of events, incidents, and themes to promote engagement and participation in the program (Heyn, 2003).

The relationship between cognitive and physical performance suggests that regular physical activity could provide cognitive benefits for individuals with dementia (Burge et al., 2012). Studies also indicate that individuals who participate more within the facility or community and live a more active lifestyle are able to sustain more neurological function before they experience worsened cognitive symptoms of dementia (Bruijn et al., 2013). Lista and Sorrentino (2010) investigated the biological mechanism behind physical activity preventing cognitive decline by providing an overview of current research. They concluded that the research suggested exercise improves memory, learning, and cognitive functioning (Lista & Sorrentino, 2010). The biological mechanisms involved in reducing cognitive decline through physical activity include angiogenesis, neurogenesis, and synaptogenesis. Unfortunately, these biological mechanisms require further research to be fully understood (Lista & Sorrentino, 2010). A study by Balsamo et al. (2013) examined the effectiveness of previous structured cardiorespiratory and strength exercise programs on the cognitive functions in seniors with Alzheimer’s disease. Based on that research, Balsamo et al. determined that structured physical exercise is a promising measure that can be taken in preventing cognitive decline, especially for those with mild to moderate dementia.

The research conducted by Lista and Sorrentino (2010), and Balsamo et al. (2013) can be supported by a more current study conducted by Hu et al. (2014) investigating a group of aging participants during a six-month exercise program. This longitudinal study consisted of 204 participants (male and female), age 65 years or older, who had mild cognitive impairments. Of these participants, half were randomly designated to the experimental group and the other half to the control group. The participants’ cognitive functions were assessed using the Chinese Mini Mental Status Examination (MMSE). Their daily activity was assessed using the revised
Activity of Daily Living Scale (ADL), and their measurements of somatic movement were also assessed pre and post treatment (Hu et al., 2014). The exercise program for the experimental group involved 30 minutes of jogging and 60 minutes of shadowboxing once a week. Upon treatment completion, the participants in the experimental group showed improvement in delayed recall and immediate memory, as indicated by the MMSE, their daily life abilities, as indicated by the ADL, and their somatic movement (Hu et al., 2014). Hu et al. stated that this study supported the importance of exercise in the elderly with dementia as it allows those individuals to preserve their quality of life and independence. These improvements not only benefit the individual with dementia but also provide relief for family members and caregivers responsible for their welfare (Hu et al., 2014). This liberation is possible encouragement for family, caregivers, and other residents to engage more socially with the individual with dementia.

Social Benefits

Physical activity itself may result in an enriched environment, both where the activity takes place and the social situations that are encountered (Taaffe et al, 2008). Baum, Jarjoura, Polen, Faur, and Rutechi (2003) implemented a study that resulted in an exercise group having significant increases in overall function compared with residents participating in a recreational therapy group. The study was a controlled, randomized, semi-crossover trial where participants in the recreational therapy group (control group) joined the strength and flexibility training group at the 6-month mark for the remaining 6 months. The exercise group was held for one hour three times a week and consisted of warm up, upper and lower body strengthening, and a cool down period. The therapy group met for the same amount of time as the exercise group for the first 6 months of the study and consisted of a variety of recreational activities such as drawing, playing cards, and painting. The therapy group joined the exercise group after 6 months and began to participate in the exercise intervention. Comparing each group from baseline to 6 months into treatment, the control group showed little improvements compared to the exercise group. However, once the control group joined the exercise group, those participants showed an even greater improvement at 6 months compared to the original exercise group (Baum et al., 2003). This study suggested that there was an advantage to providing fitness as a group program instead of individually (Baum et al., 2003). Baum et al. stated that the advantage of this study was that it provided a recreational activity for the residents as well as therapeutic benefits.

Ruthirakuhan et al. (2012) discuss social engagement as an important skill set for postponing the onset of dementia as indicated in the cognitive reserve hypothesis (avoidance of dementia symptoms despite brain deterioration). By influencing the social environment, individuals with dementia may be able to retain a better sense of self-worth and a more positive attitude towards their life (Ruthirakuhan et al., 2012). Pitkala, Routasalo, Kautiainen, Sintonen, and Tilvis, (2011) assessed the effects of improving social encouragement on cognitive outcomes in elderly with mild dementia. The study consisted of three groups: group exercise, art experiences, and therapeutic writing. Participants of the study were placed into a group based on their interest. Each group was then divided into a placebo or intervention group. Participants in the three social intervention groups resulted in significant improvement on the Alzheimer’s Disease Assessment Scale (ADAS-Cog), as well as an increase in their overall quality of life (Pitkala et al., 2011). However, the study indicated that the therapeutic writing subgroup showed a higher improvement on the ADAS-Cog compared to their control group than the music or exercise group did when compared to their designated control groups.
Importance of Consistency

Many clinical studies regarding the impact of physical activity on psychological disorders identified that consistent physical activities have a positive impact on cognition, improve wellness, and positively impact mood and personal motivation (Abramavičiūtė & Zaičenkovienė, 2013). However, Abramavičiūtė and Zaičenkovienė (2013) concluded that inconsistent physical activity had very little positive impact on cognitive abilities and did not improve personal motivation. Patients with dementia may view variation in activities as upsetting or disruptive in daily life routine, causing stress and leading them to not attend programs such as exercise programs (Bossers et al., 2014). This is important because individuals with dementia already lack motivation to exercise, and therefore fitness programs must be implemented consistently in order to show positive results. A study by Logan and Sackley (2009) concluded that a program intended to increase the activities of daily living was unsuccessful because it was targeted to a personal goal and did not help preserve physical abilities of individuals living in residential care. However, it was also stated that compliance and reinforcement from health-care workers might have been low which would cause this result.

Mechling (2008) agrees that a fitness program will only show improvements if cognitive, sensory, and physical systems are addressed simultaneously. This leads to the current thesis study. Based on the reviewed literature, creating a manual with the procedures of a fitness program that contains specific exercise components that address cognitive, sensory, and physical systems and which targets psychological and social aspects of functioning will ensure that it meets the needs of each resident participating, as well as being provided consistently by those running the program.
CHAPTER III: Methodology

Manual Development

The “Fun and Fitness” manual was developed as a guide for students and staff members of the recreation department at the long-term care facility. This facility offered support to elderly residents with various levels of abilities and diagnoses and focused on encouraging residents to develop and accomplish personal goals that will increase their quality of life. The student developed the current manual with support from the staff at the long-term care facility. The student researched suitable research articles to obtain information regarding the required procedures and activity descriptions. Two long-term care facilities operating locally, for seniors, were contacted to obtain examples of fitness programs.

The manual addressed the benefits the fitness program will have for the residents as well as guidance for potential risks. The target demographic of this program were initially elderly residents with dementia in the long-term care facility; however, the program can be applicable to all seniors (50+ years old) with or without dementia. The manual contained information on the major categories of exercises (aerobic, muscular, flexibility, balance, and relaxation) used in the long-term care facility. For each category, the manual included the social and psychological elements associated with that form of exercise. Because the levels of individual abilities among the residents of the long-term care facility were diverse, specialized fitness groups (walking group, cerebrovascular accident group, balance group, endurance group, and stretch and relaxation group) were also incorporated into the “Fun and Fitness” manual. These specialized fitness groups involved smaller group sizes to allow for more one-to-one assistance for residents with similar abilities.

The manual was constructed using lay language and visual diagrams to improve understanding. The manual was designed with multiple headings to provide recreation staff and students with quick access to the information. These headings allowed for ease of implementation for the individual leading the fitness session. The manual originally consisted of six parts and was circulated for agency staff and student feedback. This feedback was used to modify the manual to contain two new chapters, common impairments and modifications and suggested music playlist, for a total of eight sections. An overview of the initial “Fun and Fitness” manual is provided in Table 1.

Table 1
An Overview of the “Fun and Fitness” Manual

<table>
<thead>
<tr>
<th>Sections of the Manual</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1: Introduction</td>
<td>• Introduction of the manual</td>
</tr>
<tr>
<td>Part 2: Fitness Category Descriptions</td>
<td>• Purpose of “Fun &amp; Fitness” program</td>
</tr>
<tr>
<td>Part 2: Fitness Category Descriptions</td>
<td>• Aerobic exercises</td>
</tr>
<tr>
<td>Part 2: Fitness Category Descriptions</td>
<td>• Endurance exercises</td>
</tr>
<tr>
<td>Part 2: Fitness Category Descriptions</td>
<td>• Balance exercises</td>
</tr>
<tr>
<td>Part 2: Fitness Category Descriptions</td>
<td>• Flexibility exercises</td>
</tr>
<tr>
<td>Part 2: Fitness Category Descriptions</td>
<td>• Relaxation exercises</td>
</tr>
</tbody>
</table>
Part 3: Exercise Descriptions
- Warm up exercises
- Aerobic exercises
- Recreational exercises
- Cool down exercises

Part 4: Fun and Fitness Outline and Example
- Skeleton outline of a “Fun and Fitness” session
- Example outline using the exercises provided in Part 3

Part 5: Specialized Fitness Groups
- Walking group
- Cerebrovascular Accident (CVA) group
- Balance group
- Endurance group
- Stretch and Relaxation group

Part 6: Additional Resources
- Local resources
- Online resources

Note: Feedback received from raters resulted in two additional sections to the manual

Feedback Regarding the Manual

Seventeen individuals (eight agency staff and ten students) were invited to evaluate the initial manual based on its content, readability, and anticipated ease of implementation. They did this by completing a feedback questionnaire that consisted of 31 questions pertaining to the usefulness, visual appeal, and content efficacy of the manual, using a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). In addition, two suggestion areas were provided at the end of the feedback form to allow participants to indicate, in more detail, potential areas of the manual that needed improvement as well as indicate any other comments relevant to the manual. The cover page of the feedback questionnaire explained the purpose, risk, and benefits of the study and stated that participation was voluntary and anonymous. Each participant was informed that completion of the “Agency Staff and Student Feedback Form” indicated their consent to participate in the study. See Appendix A for a copy of the feedback form.

Hardcopies of the questionnaire were provided to each member of the recreation department, which included five full time staff, four part time staff, and eight students. Two copies of the “Fun and Fitness” manual were placed in a designated location in the recreation department office on Level one of the long-term care facility. The recreation staff and students were verbally asked by the placement student to review the manual and provide anonymous feedback using the “Agency Staff and Student Feedback Form”. There was a drop box set up in the recreation office where completed questionnaires were placed anonymously and later collected by the student.

Data from the “Agency Staff and Student Feedback Form” were collated and presented in tables in the results section of this paper to visually display the percentage of agreement or disagreement with each statement.
CHAPTER IV: Results

Creation of the “Fun and Fitness” Manual

The completed “Fun and Fitness” manual is located in its entirety in Appendix C. The manual was constructed using various resources, such as journal articles, textbooks, online resources, resources from the long-term care facility, and material from other local long-term care facilities. The “Fun and Fitness” manual was initially developed as a fitness program guide for staff and students of the recreation department at the long-term care facility to implement with elderly residents with dementia. However, upon further research and manual development, the Fun and Fitness manual can be implemented to benefit any senior (50+ years of age) resident, with or without dementia. There were six parts to the “Fun and Fitness” manual, including Introduction, Fitness Category Descriptions, Fun and Fitness Outline and Example, Exercise Descriptions, and Additional Resources.

Feedback Form Results

75% of agency staff (four full-time and two part-time) and 60% of students provided feedback regarding the “Fun and Fitness” manual. A raw data table, which displays the number of respondents choosing each category on the feedback form, can be found in Appendix B. The percentage of the respondents’ answers to all of the questions on the overall questionnaire is shown below in Table 2. Note that no respondents endorsed “disagree or strongly disagree” on any questions.

Table 2
Total Percentage of Responses on the Agency Staff and Student Feedback Form

<table>
<thead>
<tr>
<th>Scale</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>0%</td>
<td>0%</td>
<td>12.3%</td>
<td>57.8%</td>
<td>29.9%</td>
</tr>
</tbody>
</table>

A breakdown of the percentage of respondent’s answers to individual questions can be seen below in Table 3. Table 3 does not include the “disagree” or “strongly disagree” choices because no respondent selected either of those options. The feedback form indicated that the majority of the respondents were most satisfied with “Part 2: Fitness Category Descriptions” of the manual and the least satisfied with “Part 6: Additional Resources”. There were only 7 respondents (58.3%) that indicated that they would use the online resources provided, and only 8 respondents (66.7%) who indicated they would use the local resources. “Part 5: Specialized Groups” on the feedback form indicated that most respondents were comfortable with understanding the walking and endurance groups (91.7%) but less confident with their understanding of the balance group (75.0%). Respondents also all agreed or strongly agreed that the manual content was beneficial and visually appealing to the user. Overall, the manual received positive reviews from all respondents.
Table 3
Percentage of Raters’ Responses on the Agency Staff and Student Feedback Form for Individual Items

<table>
<thead>
<tr>
<th>Question</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall content was useful.</td>
<td>0.0%</td>
<td>83.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>The information needed was easy to find.</td>
<td>25.0%</td>
<td>66.7%</td>
<td>8.3%</td>
</tr>
<tr>
<td>The manual was well organized.</td>
<td>33.3%</td>
<td>41.7%</td>
<td>25.0%</td>
</tr>
<tr>
<td>The manual was visually appealing.</td>
<td>0.0%</td>
<td>66.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td>“Part 1: Introduction” was easy to understand.</td>
<td>16.7%</td>
<td>83.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>After reading “Part 1: Introduction” I understand the purpose of the manual.</td>
<td>25.0%</td>
<td>25.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” was easy to understand.</td>
<td>0.0%</td>
<td>58.3%</td>
<td>41.7%</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding aerobic exercises.</td>
<td>0.0%</td>
<td>41.7%</td>
<td>58.3%</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding endurance exercises.</td>
<td>0.0%</td>
<td>58.3%</td>
<td>41.7%</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding balance exercises.</td>
<td>0.0%</td>
<td>33.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding flexibility exercises.</td>
<td>0.0%</td>
<td>25.0%</td>
<td>75.0%</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding relaxation exercises.</td>
<td>0.0%</td>
<td>83.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>“Part 3: Fun and Fitness Outline and Example” was easy to understand.</td>
<td>0.0%</td>
<td>83.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>“Part 3: Fun and Fitness Outline and Example” provided an outline and example I would use.</td>
<td>25.0%</td>
<td>58.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Statement</td>
<td>Agree (%)</td>
<td>Neutral (%)</td>
<td>Disagree (%)</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td>“Part 4: Exercise Descriptions” was easy to understand.</td>
<td>8.3%</td>
<td>50.0%</td>
<td>41.7%</td>
</tr>
<tr>
<td>“Part 4: Exercise Descriptions” provided a good variety of <em>warm up exercises</em>.</td>
<td>0.0%</td>
<td>66.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td>“Part 4: Exercise Descriptions” provided a good variety of <em>aerobic exercises</em>.</td>
<td>8.3%</td>
<td>58.4%</td>
<td>33.3%</td>
</tr>
<tr>
<td>“Part 4: Exercise Descriptions” provided a good variety of <em>recreational exercises</em>.</td>
<td>8.3%</td>
<td>41.7%</td>
<td>50.0%</td>
</tr>
<tr>
<td>“Part 4: Exercise Descriptions” provided a good variety of <em>cool down exercises</em>.</td>
<td>0.0%</td>
<td>66.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td>“Part 5: Specialized Fitness Groups” was easy to understand.</td>
<td>16.7%</td>
<td>66.6%</td>
<td>16.7%</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a <em>walking group</em>.</td>
<td>8.3%</td>
<td>50.0%</td>
<td>41.7%</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a <em>CVA group</em>.</td>
<td>16.7%</td>
<td>75.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a <em>balance group</em>.</td>
<td>25.0%</td>
<td>75.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running an <em>endurance group</em>.</td>
<td>8.3%</td>
<td>75.0%</td>
<td>16.7%</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a <em>stretch and relaxation group</em>.</td>
<td>0.0%</td>
<td>100.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>“Part 6: Addition Resources” provided beneficial resources.</td>
<td>25.0%</td>
<td>58.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>I would use the <em>local resources</em> provided in “Part 6”.</td>
<td>33.3%</td>
<td>66.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>I would use the <em>online resources</em> provided in “Part 6”.</td>
<td>41.7%</td>
<td>33.3%</td>
<td>25.0%</td>
</tr>
<tr>
<td>This manual would improve fitness sessions for residents.</td>
<td>16.7%</td>
<td>66.6%</td>
<td>16.7%</td>
</tr>
<tr>
<td>I would use this manual.</td>
<td>25.0%</td>
<td>50.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>This manual would benefit staff and students in the recreation department.</td>
<td>16.7%</td>
<td>16.7%</td>
<td>66.6%</td>
</tr>
</tbody>
</table>
Further feedback was provided from respondents on areas of the manual that require improvement, as well as additional comments concerning the manual. This feedback indicated that the guide would benefit new staff members and students implementing the fitness program, as well as provide a means of reviewing existing staff members’ adherence to program policies. Suggestions for improving the guide included more detailed information regarding modifications for certain residents with different diagnoses and abilities, visuals accompanying the exercise descriptions, as well as a soundtrack that can be used in conjunction with the session outline. Specific comments can be found below in Table 4. The raw data of the feedback form can be found in Appendix B.

Table 4
Comments Provided in Suggestion Areas of the Agency Staff and Student Feedback Form

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggested areas of the manual that need improvement</td>
<td>• A bit more detail in Part 2 about the different benefits.</td>
</tr>
<tr>
<td></td>
<td>• Pictures to go with the exercise descriptions would make it easier for those who are visual learners to understand how to do the exercise properly.</td>
</tr>
<tr>
<td></td>
<td>• Exercise descriptions could use more variety.</td>
</tr>
<tr>
<td></td>
<td>• Providing an example outline for all of the speciality groups would make it easier for students and volunteers to run them.</td>
</tr>
<tr>
<td>Additional Comments</td>
<td>• Loved the pictures.</td>
</tr>
<tr>
<td></td>
<td>• I think this will be a great beginners manual for students doing placement or volunteers.</td>
</tr>
<tr>
<td></td>
<td>• Very nice! Will definitely be looking at those online resources.</td>
</tr>
<tr>
<td></td>
<td>• I like that you incorporated the use of music and would love to get a soundtrack to go along with your outline to avoid the guess work of what songs to use.</td>
</tr>
</tbody>
</table>
CHAPTER V: Discussion

Summary

The Fun and Fitness manual was created as a resource for a long-term care facility located in Kingston, Ontario for staff and students within the recreational department to implement a proper and effective fitness program. The manual was originally developed to be used with residents with dementia within the long-term care facility but was broadened to include all seniors in the long-term care facility. The manual initially consisted of sections that discussed the purpose of the manual, fitness category descriptions, a session outline with example, exercise descriptions, specialized groups, and additional resources. The manual was read and evaluated by six recreation department staff members and six students within the agency.

The results of the feedback form suggested that the manual would be useful as a resource within the long-term care facility. The general view of the manual was positive with respondents selecting “agree” or “strongly agree” 87.7% of the time, selecting “neither agree nor disagree” 12.3% of the time, and selecting “disagree” or “strongly disagree” 0% of the time. Multiple respondents indicated that the manual could benefit current recreational department staff, not only new staff members and students. Among the positive comments, there were also various recommendations for improvements of the manual. Some critiques made by the respondents included suggestions that the manual should contain more visuals to demonstrate different exercises, discuss different modifications to the exercises provided based on resident abilities, and provide session outlines for the specialized groups. Based on this feedback, the manual was altered to include a section focused on common impairments and modifications to implement the program more successfully for the residents as well as recommended playlists to use in combination with the Fun and Fitness session.

Implications for the Behavioural Psychology Field

The current study contributes to the behavioural psychology field by providing education on the importance of fitness within a long-term care facility and acknowledging that consistency with implementation is essential for residents with and without dementia to benefit from a fitness program. The Fun and Fitness manual is a resource that can be used to ensure consistency when staff members and students are required to implement a fitness session with residents. Because the manual was developed using lay language and adheres to the requirements of a fitness program for seniors with and without dementia, it can also be generalized to other long-term facilities as well as in-home use. The creation of the manual adds to current literature concerning fitness and the elderly because it provides a resource that has been developed following specified guidelines required for usage in an Ontario long-term care facility.

Consistency was very important and therefore this manual provided a basis for increased consistency while incorporating those important elements (i.e. cognition and sensory goals) with the psychological and social aspects. The development of the manual adheres to the requirements needed, based on previous studies, for residents with dementia to actively participate in and benefit from an exercise program. Rocha et al. (2014) found that residents with dementia have the ability to engage in some specific activities regardless of their physical limitations. The Fun and Fitness manual adheres to this by implementing a variety of exercise groups able to target the specific needs of each resident. Research by Bossers et al. (2013), Abramavičiūtė and Zaičenkivienė (2013), and Logan and Sackley (2009) stated that in order for a fitness program to be successful in benefiting the resident, implementation must be consistent. By developing a manual to implement a fitness program, the consistency of the program is more likely to improve.
**Strengths**

The Fun and Fitness manual was developed as a guide for staff and students in the recreation department of a long-term care facility. Developing a manual to implement a fitness program will allow the staff and students to provide a more efficient program with consistency across implementers. The manual can also be used as a starting point for the development of additional fitness program manuals that are focused on specific groups and abilities. Another strength of the manual is that it was developed using lay language to allow for individuals without the behavioural psychology background to have a better understanding of the contents. The manual incorporated important components identified in the literature as well as addressed cognitive, sensory, and physical systems and targeted psychological and social aspects of functioning.

**Limitations**

The manual was developed by researching current literature, gathering multiple resources from local long-term care facilities, and organizing resources previously used by the faculty. Researching more relevant articles regarding fitness and its benefits/risks as well as supplementary fitness programs within the community directed towards an elderly population or individuals with dementia, would have increased the content of the manual and, therefore, would have additionally benefited the residents and staff. Including additional fitness groups, such as a men’s group or weightlifting group, would also increase the diversity of the manual to better meet the individual needs of each resident. Another limitation was that the staff and students did not implement the manual so its effectiveness could not be determined. Implementing the program and adjusting it based on resident feedback as well as the resident’s improvement in their physical, psychological, and social functioning could overcome this limitation. The feedback form regarding the contents and quality of the manual was also done during a limited time frame, and, because of this, respondents may not have read the entirety of the manual.

**Multilevel Systems Perspective of Strengths and Limitations**

There are many challenges to cope with when developing a fitness manual that will benefit a specific population with a diverse set of needs. At the client level, many residents do not wish to participate in physical activity due to fear of embarrassment, lack of physical ability, lack of understanding, and other various reasons. These reasons need to be addressed in order for them to want to participate in and benefit from a fitness program. At the program level, a challenge was to develop an organized set up of the information and structured activities within the manual. Another program level challenge may be the communication and relationship between the staff implementing the program and the resident. If there is not some level of mutual interest and understanding of each resident’s needs, then the program will not be successful. At the organizational level, a challenge arises at the consistent implementation of the fitness manual. The staff of the long-term care facility have multiple weekly tasks and requirements that need to be met, which means that the fitness program may not be utilized as often as necessary for improvement. Finally, the societal level challenges include the influence that friends and family may have on whether or not the resident participates in the fitness program. Some individuals do not see the merit in participating in a fitness group at an older age.

**Recommendations for Future Research**

In order to determine the effectiveness of the Fun and Fitness manual, the program needs to be implemented, then reviewed and revised as needed. The effectiveness of the manual could
be evaluated by obtaining data on the progress participants make with their physical, psychological, and social functioning over a specified time period. Feedback would also be required from staff, students, and residents on the usefulness and overall quality of the fitness program. Residents should also provide feedback about their participation and satisfaction with the program. Developing smaller manuals with greater detail from the Fun and Fitness manual may also be beneficial for implementing specialized groups more efficiently. Further research also needs to be conducted to incorporate more variety in the exercises that can be used in the program.
REFERENCES


APPENDICES

Appendix A: “Fun and Fitness” Manual Feedback Form

Agency Staff and Student Feedback Form for Review of “Fun and Fitness” Manual

The “Fun and Fitness” manual was developed as a guide for students and new staff members of the recreation department at the long-term care facility to allow a better understanding of how fitness sessions should be conducted.

Please complete the attached questionnaire to assess the readability, content, visual appeal, and anticipated ease of usage, after reading the “Fun and Fitness” Manual. Once the questionnaire is completed, please put the form in the drop box located in the Recreation Office on Level 1. The forms must be completed by 4:00pm on December 10th.

This is an anonymous feedback form and your name will not appear on any publications, reports, or presentations resulting in this project. Please do not put any identifying information on the submitted feedback form.

**Consent to use your feedback is assumed by completion of the “Fun and Fitness” manual feedback form.**

If you have any questions, comments, or concerns you may reach me at:
Email: tberrigan07@student.sl.on.ca
Phone: 613 449 4687
In Person: Recreation Office

Thank you for taking time to complete this feedback form, which will assist me in completing my project and thesis.

Sincerely,

Toni Berrigan
Circle the one that best describes you

<table>
<thead>
<tr>
<th></th>
<th>Full Time Staff</th>
<th>Part Time Staff</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please circle your answer using the following ratings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The overall content was useful.</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Neither Agree Nor Disagree</td>
</tr>
<tr>
<td>The information needed was easy to find.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The manual was well organized.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The manual was visually appealing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 1: Introduction” was easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After reading “Part 1: Introduction” I understand the purpose of the manual.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” was easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding aerobic exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding endurance exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding balance exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Information regarding flexibility exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding relaxation exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 3: Exercise Descriptions” was easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 3: Exercise Descriptions” provided a good variety of warm up exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 3: Exercise Descriptions” provided a good variety of aerobic exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 3: Exercise Descriptions” provided a good variety of recreational exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 3: Exercise Descriptions” provided a good variety of cool down exercises.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 4: Fun and Fitness Outline and Example” was easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 4: Fun and Fitness Outline and Example” provided an outline and example I would use.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 5: Specialized Fitness Groups” was easy to understand.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a walking group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a CVA group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a balance group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running an</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>endurance group.</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>----------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>After reading “Part 5” I feel confident running a stretch and relaxation group.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>“Part 6: Addition Resources” provided beneficial resources.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I would use the local resources provided in “Part 6”.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I would use the online resources provided in “Part 6”.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>This manual would improve fitness sessions for residents.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I would use this manual.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>This manual would benefit staff and students in the recreation department.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Suggested areas of the manual that need improvement:

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

Comments:

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

Thank you for your contribution ☺
### Appendix B: Number of Respondents Choosing Each Category on the Feedback Form

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The overall content was useful.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>The information needed was easy to find.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>The manual was well organized.</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>The manual was visually appealing.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>“Part 1: Introduction” was easy to understand.</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>After reading “Part 1: Introduction” I understand the purpose of the manual.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” was easy to understand.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding <em>aerobic exercises</em>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding <em>endurance exercises</em>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding <em>balance exercises</em>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>“Part 2: Fitness Category Descriptions” provided efficient information regarding <em>flexibility</em>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Section Description</td>
<td>Rating</td>
<td>Confidence</td>
<td>Comfort</td>
<td>Value</td>
<td>Relevance</td>
</tr>
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FUN AND FITNESS

A STAFF AND STUDENT MANUAL TO EFFECTIVELY EXECUTE FITNESS PROGRAMS AT A LONG-TERM CARE FACILITY

Image used with permission from clipartsalbum.com

Created by: Toni Berrigan

St. Lawrence College

Providence Manor

Providence Care
2014

Special thanks to the staff at Providence Manor for their efforts and contributions to this manual
Table of Contents

Part 1: Introduction 4
Part 2: Fitness Category Descriptions 5
Part 3: Exercise Descriptions 9
Part 4: Fun and Fitness Outline and Example 17
Part 5: Specialized Fitness Groups 20
Part 6: Common Impairments and Modifications 27
Part 7: Music Suggestions 29
Part 8: Addition Resources 30
References 31
Part 1: Introduction

The “Fun and Fitness” manual has been developed to assist staff and students in implementing fitness programs effectively. The manual addresses the benefits the fitness program will have for the residents as well as guidance for potential risks. The program can be applicable to all seniors (50+ years old), with or without dementia. The manual contains information on the major categories of exercises (aerobic, muscular, flexibility, balance, and relaxation) used in the long-term care facility. For each category, the manual includes the social and psychological elements associated with that form of exercise. Because the levels of individual abilities among the residents of the long-term care facility are diverse, specialized fitness groups are also incorporated into the “Fun and Fitness” manual. These specialized fitness groups involve smaller group sizes to allow for more one-to-one assistance for residents with similar abilities. A list of additional resources is also provided in the manual for staff and students who wish to seek further research.

Purpose

Fitness activities provide residents with stimulation, comfort, and relaxation, as well as help maintain their current abilities and reduce negative behaviours. Fitness programs must be adjustable to provide success for residents with varying levels of abilities. Many clinical studies regarding the impact of physical activity on psychological disorders identify that consistent physical activities have a positive impact on cognition, improve wellness, and positively impact mood and personal motivation. A properly structured fitness program can inhibit social, functional, emotional, physical, and mental degeneration. Therefore, fitness programs must be implemented consistently and meet each individual’s needs in order to show positive results.
Aerobic and Endurance Exercises

Aerobic fitness is defined as any high paced physical activity that elevates the heart rate. The heart and lungs work together to meet the increased oxygen demand the body requires during this type of exercising. Endurance is the ability to continue a physical activity despite fatigue and stress.

Physical Benefits

- Increases endurance and energy level
- Prevents heart disease
- Improves circulation of oxygen through the blood
- Helps maintain healthy weight and blood pressure

Psychological Benefits

- Reduces anxiety and depression
- Produces higher levels of serotonin (the “happy” hormone), and endorphins, which have a calming effect
Balance Exercises

Balance, or stability, is an important component of fitness and everyday movement. The ability to balance, or remain upright, is very important in all of the routine tasks of daily life. A resident’s stability or ability to balance can change with age, injury, and illness.

Physical Benefits

- Decreases risk of falls and broken bones
- Increases ability to control and maintain body movement

Psychological Benefits

- Improves spatial awareness
- Increases self-confidence
Flexibility Exercises

Flexibility is the ability to move muscles and joints through a full range of motion. A good stretching program will involve all the major muscle groups, including the muscles of the arms, back, hips, thighs and calves.

Physical Benefits

- Helps alleviate stiffness and prevent injuries
- Improves balance, coordination, and range of motion
- Increases ease of completing every day tasks
- Improves posture
- Relieves arthritis pain

Psychological Benefits

- Reduces stress and anxiety
- Provides a means of relaxation
- Improves mood
Relaxation Exercises

Relaxation exercises are often incorporated into the “Warm Up” or “Cool Down” segments of a fitness program. Relaxation exercises allow the body to return to its resting state. If either the warming-up or cooling-down portions are ignored, the body and muscles can suffer damage.

Physical Benefits

• Allows the body to clear itself of toxins and waste products
• Increases flexibility and movement around the joints
• Reduces muscle tension and chronic pain

Psychological Benefits

• Decreases stress and fatigue
• Alleviates frustration and anger
• Improves confidence in decision making
Part 3: Exercise Descriptions

Warm Up Exercises

**Upper Body**

Wrist Circles
- Rotate wrists one at a time or simultaneously in each direction.

Finger Rain
- Move hands up and down while flickering fingers

Finger Flex
- Stretch hands as wide as possible then make a tight fist

Forward Arm Stretch
- Bring arm forward one at a time or together and point hands backward then downward

Arm Raises
- Bring arms to the side then up above the head and repeat

Elbows Behind Back
- Try to touch elbows behind the back

**Lower Body**

Toe Curls
- Flex toes upward and downward

Ankle Circles
- Rotate ankles one at a time or simultaneously in both directions
Toe Lifts
• Keeping heels on the floor, point toes upward

Heel Lifts
• Keeping toes on the floor, point heels upward

Knee Lifts
• One at a time, bring knee up while keeping the lower leg perpendicular to the floor.
• Hold knee up if needed

Heel Out
• Point feet inward while flat on the floor, touching toes together and heels out

Toes Out
• Point feet outward while flat on the floor, heels together and toes out

Leg Swings
• One at a time or together, swing leg out straight and back to the resting position

Toe Touch
• Bend forward and touch your toes if possible
Aerobic Exercises

Upper Body

Shoulder Shrug
• Lift one shoulder at a time or both together toward the ear

Swimming
• Do front breast stroke, back stroke, doggy paddle

Punching
• With both fists bunch to each side, up toward the ceiling, and downwards

Turning Knob
• Pretend to be turning the knobs on a sink on and off

Reaches
• Reach upward like you’re climbing a ladder

Skiing
• Swing arms on your side like you would skiing

Arm Circles
• Bring arms up to the side, one at a time or simultaneously, start with small circles then go bigger
• Alternate forward and backwards

Lower Body

Accelerated Marching
• March slowly then increase the speed
Toe Tapping
- Tap toes to the beat of the music alternate between each foot or tap them at the same time

Heel Tapping
- Tap heels to the beat of the music alternate between each foot or tap them at the same time

Bum Shift
- Alternate shifting body weight onto each side of your bum

Foot Shuffle
- Keep feet together and shuffle from side to side to the beat of the music

Leg Bounces
- Keeping feet and knees together bounce on the ball of your toes left and right
Recreational Exercises

Ball Toss
  • Arrange residents in a semi circle and toss the ball back and forth

Table Bowling
  • Set up pins on table or floor and assist residents if needed with tossing the ball at the pins

Bocce-Ball
  • Use coloured nerf balls
  • Toss the red ball and have residents try to toss their ball as close as possible to the red ball

Bean Bag Toss
  • Have residents toss the bean bags into the target provided

Darts
  • Using magnetic dart board and darts
  • Arrange residents so they can observe each player’s turn
  • Assist residents if needed
Parachute
  • Arrange residents in a circle and have them hold onto the parachute
  • Lift the parachute up and down together

Basketball
  • Attach the net at a level that allows all residents to toss the basketball into it

Volleyball
  • Use a beach ball or balloon and allow residents to volley the ball to one another using their hands

Balloon Badminton
  • Arrange residents in a circle at arms length between them
  • Give each resident a racket (they can use their hands if preferred) and have them hit the balloon back and forth

Scoop Ball
  • Have each resident toss and catch the ball using the scoops

Net Ball
  • Have each resident toss and catch the ball using the nets

Baseball
  • Spread residents out at a safe distance
  • Toss the foam ball and allow the resident to hit it using the foam bat
Cool Down Exercises

Upper Body

Neck Rolls
- Bring head down to chest and roll head gently side to side

Head Tilts
- Tilt head side to side

Chin Down
- Press chin down onto chest

Hand Stretch
- Spread hand out and move each finger while keeping hand tense

Back Arch
- Bring shoulders forward and hunch

Chest Stretch
- Pull shoulders back and pop out chest

Arm Stretch
- Hold hands together and push out forward

Self Hug
- Bring hands to opposite shoulder and squeeze

Hand Massage
- Rub hand from finger tips downward
- Assist residents if needed

Shoulder Massage
- Using index and middle finger massage shoulder blade
- Assist residents if needed
Face Massage
• Massage middle of forehead, temples, and back of neck
• Assist residents if needed

Deep Breathing
• Bring arms up above head breathing in
• Bring hands together and down in front while breathing out

Lower Body

Knee Hold
• Bring knees up one at a time and hold

Foot Stretch
• Point toes upward and then downward

Thigh Stretch
• Bring leg to the side with foot pointing outward to stretch inner thigh
Part 4: Fun and Fitness Session Outline and Example

The following outline is a guide that will allow your “Fun and Fitness” session to cover the broad range of exercises that benefit seniors with and without dementia. Each session should be 60 minutes in length if possible. Match each fitness section with the corresponding tab colour for examples of different fitness activities to incorporate into your session.

Part 1: Warm Up (5 minutes)
Alternate between lower and upper body every 2-3 exercises

Part 2: Aerobics (10 minutes)
Alternate between lower and upper body every 2-3 exercises

Part 3: Recreational Games (30 minutes)
Choose 2 recreational games and allow 15 minutes for each game

Part 4: Cool Down (5 minutes)
Alternate between lower and upper body every 2-3 exercises
Fun and Fitness Session Example

WARM UP
Upper Body
1. Wrist Circles
2. Finger Flex
3. Elbows Behind Back
Lower Body
1. Toe Lifts
2. Leg Swings
3. Ankle Circles

AEROBICS
Upper Body
1. Shoulder Shrug
2. Reaches
3. Arm Circles
Lower Body
1. Foot Shuffle
2. Accelerated Marching

RECREATIONAL GAMES
1. Ball Toss
2. Balloon Badminton

COOL DOWN
Upper Body
1. Hand Stretch
2. Back Arch
Lower Body
1. Foot Stretch
2. Knee Hold
Upper Body
1. Self Hug
2. Shoulder Massage
3. Deep Breathing
## Skeleton Fun and Fitness Session

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<thead>
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<th>WARM UP</th>
<th>AEROBICS</th>
<th>RECREATIONAL</th>
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* Using the exercise descriptions from Part 3 (pages 9-16), fill in each box in the above skeleton outline with an exercise

* This skeleton provides a reference sheet during program execution
Part 5: Specialized Fitness Groups

Walking Group

Number of Residents: 3

Time Frame: Dependent on the abilities of the residents (maximum of 30 minutes).

Abilities Required: Residents who can walk independently or with an assistive device.

Objectives:
- Allows for residents to build relationships with staff and other residents.
- Provides opportunity for socialization.
- Promotes a healthy lifestyle and encourages independence.

Activity Outline:
- Predetermine the walking path with the residents.
- Encourage conversation with and among the residents.
- Take breaks if a resident requires them.
- Remind residents the importance of breathing during exercise.
CVA Group

Number of Residents: 3

Time Frame: 30 Minutes

Abilities Required: Residents with the physical capacity to follow directions and mimic actions with or without assistance. Residents must be able to have some level of success for it to be beneficial.

Objectives:
• Encourage socialization between residents with similar abilities
• Promote a healthy lifestyle and increase range of motion
• Create a positive environment for residents with limited abilities due to stroke
• Improve mood by actively engaging residents at their level of ability

Activity Outline:
• Arrange residents in a semi-circle so you can easily move around to assist each individual
• Implement the “Fun and Fitness” program with alterations to accommodate stroke survivors (See Part 6: Common Impairments and Modifications)
• Remind residents the importance of breathing during exercise

Music: Use a playlist suggested in Part 7 or create your own following the arrangement of those provided.

Hints:
• Motivate residents to move residual limbs using capable extremities. (E.g. Lift arm using opposite hand, lift leg by placing opposite leg behind and lifting)
• Assist residents in moving limbs CAREFULLY
Balance Group

Number of Residents: 3-5

Time Frame: 20 Minutes

Abilities Required: Ability to stand with or without an assistive device for periods at a time. Residents must be able to have some level of success for it to be beneficial.

Objectives:
• Reduce the risk of resident falls
• Provide an environment that allows residents to explore the range of their abilities
• Promote communication and encouragement between residents
• Improve relationship between caregivers and residents

Activity Outline:
• Position residents beside an open area with a wall banister
• Have each resident hold onto the banister for support
• Complete the four balance exercises provided below
• Each exercises should only be performed a maximum of 5 times on each limb with alternating limbs
• Remind residents the importance of breathing during exercise

Balance Exercises
*Hold each for 5-10 seconds
Single Leg
• Hold onto banister for support with one or both hands
• Slowly lift one leg off the ground while bending knee and hold
• Return to starting position and perform with opposite leg

9 O’clock/3 O’clock Stance
• Hold onto banister for support with one hand
• Place other arm out straight to the side, parallel with the floor (left for 3 O’clock and right for 9 O’clock)
• With arm out shift weight to opposite leg, lifting foot slightly off the floor
• Return to starting position and perform with opposite arm and leg

Toes up
• Hold onto banister with one or both hands for additional support
• Slowly raise onto your tippy-toes and hold
• Slowly return to a normal standing position with feet flat on the ground
• Repeat 3-6 times

Flamingo Stance
• Hold onto banister for support with one or both hands
• Bend leg at the knee and bring it up keeping your foot touching the opposite leg
• Try to have foot touching the knee on the opposite leg
• Repeat with each leg

Music: Slow, calming music should be played to avoid distractions

Hints:
• Space residents at an arm’s length away from one another at the banister to prevent possible altercations while lifting legs and arms.
• Encourage residents to hold their position as long as possible.
• Challenge residents while doing the 9 O’clock/3 O’clock Stance to touch their nose while balancing on their leg to add entertainment to the group.
• Do before the walking group to get the residents warmed up.
Endurance Group

Number of Residents: 3-7

Time Frame: 45 Minutes

Abilities Required: Residents with the physical capacity to follow directions and mimic actions with or without assistance. Residence must be able to have some level of success for it to be beneficial.

Objectives:
- Improve the ability of muscles to sustain activity
- Promote larger motor physical activity and range of motion, communication, and enjoyment
- Provide an environment that allows residents to explore the range of their abilities

Activity Outline:
- Determine where the group will be held prior to inviting residents
- Complete any arm and leg lift exercises provided in Part 4 of this manual
- Have residents hold each exercise for increasing intervals (5, 10, 15 seconds)
• Alternate between upper and lower body focus every 2-3 exercises
• Have residents participate in one or two *recreational exercises* depending on time frame
• Finish group off with a 3-5 upper and lower body *cool down exercises* providing in Part 4
• Remind residents the importance of breathing during exercise

**Music:**
• Slow, calm music for the arm and leg lift exercises to promote concentration.
• More upbeat music for the recreational exercises
• Soothing, wordless music for the cool down
• See Part 7 for suggested playlists

**Hints:**
• Use stretch bands to add extra tension for residents who have a higher ability level.
**Stretch and Relaxation Group**

**Number of Residents:** 5-10

**Time Frame:** 30 minutes

**Abilities Required:** Residents with the physical ability to follow one-step directions or mimic desired actions. Residents must be able to achieve some level of success for it to be beneficial.

**Objectives:**
- Provide a failure-free, pleasurable, and stress-free environment
- Encourage interaction with others and increase social contact
- Enhance attention span and concentration
- Increase and maintain range of motion in joints

**Activity Outline:**
- Arrange residents in a semi-circle where you can be seen easily by everyone
- Choose exercises from the “Warm Up” and "Cool Down” sections in Part 4 of this manual
- Verbally state the desired action while providing a demonstration
- Provide verbal encouragement and motivation to the residents
- Remind residents about the importance of breathing

**Music:** Slow, calm music to promote relaxation and prevent distraction

**Hints:**
- Keep the conversation soft and light
- Use imagery to promote relaxation and concentration
# Part 6: Common Impairments and Modifications

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<th>Common Impairments</th>
<th>Modifications</th>
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| **Physical Limitations**  
- Loss of upper/lower-extremity function  
- Limited range of motion  
- Loss of hand dexterity  
- Hemiplegic (total or partial paralysis of one side of the body) |  
- Provide proper seating and positioning  
- Provide holders (e.g., book holder, card shuffler, adapted tools)  
- Move targets closer (for recreational games) and make needed compensations  
- Offer hand-over-hand guidance/direct physical guidance  
- Simplify tasks  
- Slow down the action or activity |
| **Cognitive Limitations**  
- Impaired ability to follow directions  
- Impaired ability to comprehend/language  
- Impaired verbal skills  
- Impaired ability to learn  
- Impaired processing of information  
- Limited attention span  
- Forgetfulness  
- Repetitive behaviours  
- Impaired memory recall  
- Increased anxiousness/agitation  
- Decreased awareness of |  
- Segment and simplify tasks  
- Alter length of program based on attention span  
- Redirect resident to task/activity  
- Provide one-step direction  
- Demonstrate desired action  
- Provide verbal and visual clues  
- Provide hand-over-hand guidance  
- Increase stimulation  
- Use prompts and props  
- Speak slowly and distinctly  
- Provide praise and reassurance  
- Offer simple choices, but limit choices |
<table>
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<tr>
<th>Environment</th>
<th>Visual Limitations</th>
<th>Hearing Limitations</th>
</tr>
</thead>
</table>
| *Decreased comfort levels* | **Visual Limitations**  
  - Impaired/poor eyesight  
  - Blindness  
  - Visual field neglect  
  - Light sensitivity | **Visual Limitations**  
  - Increased lighting without causing glare  
  - Provide magnifying glass  
  - Describe size, shape, colour, placement, etc.  
  - Provide verbal cues  
  - Offer direct physical guidance or hand-over-hand guidance  
  - Place objects in the residents filed of vision  
  - Provide smaller group activities  
  - Place residents near the activity  
  - Have resident wear dark glasses |
| *Remind and repeat gently*  
*Allow adequate time for processing information and formulating response* | *Hearing Limitations*  
  - Impaired/poor hearing  
  - Deafness | *Hearing Limitations*  
  - Decrease background noise  
  - Provide written instructions  
  - Use gestures/sign language  
  - Utilize props and pictures  
  - Place resident closer to the sound source of the activity  
  - Face resident and stand at eye level  
  - Speak slowly and distinctly  
  - Ask only one question at a time  
  - Use a microphone |

*Adapted from The Big Book of Resident Activities*
Part 7: Music Suggestions

Below are some suggested songs to play while running the “Fun and Fitness” exercise program. It is important to play songs that residents enjoy to increase participation. Asking residents for song suggestions is a great way to get them motivated and involved. It is also fun to incorporate holiday music into the program when appropriate.

**Warm up (115-120 bpm)**
*Choose 1-2 songs*

- Trying to Get to You - Elvis Presley
- Funky Broadway - Wilson Picket
- The Way You Do The Things You Do - The Temptations
- Chain of Fools - Aretha Franklin
- Mohair Rich - Mohair Sam
- I Saw the Light - Hank Williams Sr.
- Dancing in the Street - Martha and the Vandellas
- Rescue Me - Fontella Bass
- Sugar Sugar - The Archies

**Aerobic and Recreational (120-140 bpm)**
*Choose 8-10 songs*

- Bits and Pieces - The Dave Clark Five
- Hippy Hippy Shakes - The Swinging Blues
- Twist and Shout - The Beatles
- Shop Around - The Miracles
- I’m a Believer - The Monkees
- You Really Got Me - The Kinks
- Jailhouse Rock - Elvis Presley
- The Twist - Chubby Checker
- The Bird Dance - The Emeralds
- Yakety Yak - The Coasters
- Hound Dog - Elvis Presley
- I Want You Back - Jackson Five
- Shout! - The Isley Brothers

**Cool Down (<120 bpm)**
*Choose 1-2 songs*

- Just a Walk With Thee - Patsy Cline and Willie Nelson
- He Washed My Eyes With Tears - Jimmy Swaggart
- Banana Boat - Harry Belafonte
- Only You - The Platters
- Kokomo - Beach Boys
- Put Your Head on My Shoulder - Paul Anka
- The Best is Yet to Come - Frank Sinatra

*Additional songs can be found at [https://www.cs.ubc.ca/~davet/music/index.html](https://www.cs.ubc.ca/~davet/music/index.html) and [http://canada.powermusic.com/music/activity-class/seniors.html](http://canada.powermusic.com/music/activity-class/seniors.html)
Part 8: Additional Resources

<table>
<thead>
<tr>
<th>Artillery Park Aquatic Centre</th>
<th><a href="http://www.seniorskingston.ca">www.seniorskingston.ca</a></th>
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<tr>
<td>382 Bagot St.</td>
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</tr>
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<td>613-546-4291 ext 1700</td>
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<tr>
<th>INVISTA Fitness &amp; Wellness Centre</th>
<th><a href="http://www.kingstongetsactive.ca">www.kingstongetsactive.ca</a></th>
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<td>1350 Gardiners Rd.</td>
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<td>6 Francis Street</td>
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<th>Seniors Fit For Life Program</th>
<th><a href="http://www.livestrong.com/">http://www.livestrong.com/</a></th>
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<td>284 Earl Street</td>
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<td>613-533-2500</td>
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<th><a href="http://www.eldergym.com">http://www.eldergym.com</a></th>
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References


