

Assignment #5: Major Paper

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Executive Summary

In Vancouver, BC, the population of older adults is projected to rise to unprecedented numbers over the next two decades. It is imperative that support structures begin to be developed now to help this population segment in their pursuit of maintaining physical wellness and aging healthily. The City of Vancouver is a leading recreation and leisure service provider and is committed to creating the best communities for its citizens. To help in this mission, an investigation led to discover ways in which leisure activities affect physical wellness and healthy aging in older adults and discover ways in which recreation programmers can help them experience these effects at public pools was undertaken. A literature review analyzing the current body of research in the field as well as a primary research plan consisting of interviews with industry experts, field observations, and content analysis, was developed and implemented. This led to the discovery of several key findings which were organized into groups based on physical effects, psychosocial effects, and programming impacts. Gaps in the current research and ways to contribute new findings to the field were also discovered and these, along with an analysis of the key findings from the primary and secondary research, were developed into a series of recommendations for the City of Vancouver to consider adopting into current and future practices. Through this research and the resulting recommendations, the pursuit of building better support networks and stronger communities for a growing older adult population can be meaningfully impacted.

Introduction

In British Columbia, statistical data from a report conducted by BC Stats titled PEOPLE 2020 (Population Extrapolation for Organizational Planning with Less Error) has projected that the number of older adults aged 65 and older will increase from 985,812 persons in 2020 to 1,607,284 persons by 2041, representing a 63% growth in older adult population across two decades (Ip & Lavoie, 2020). Additionally, the City of Vancouver's VanSplash Strategy anticipates a 15% increase in the older adult population, and that with this aging population, a change in swimming programming is anticipated, potentially resulting in an increased provision of therapeutic amenities to compliment other aquatic offerings. This significant amount of projected growth in an aging population highlights an increased need for discovering ways of supporting older adults and to assist them with healthy aging.

The purpose of this paper is to present the findings of an in-depth investigation into this very need, exploring components of leisure activities, their affect on older adults, and what recommendations can be made to better support them through recreation and leisure services as they age. These aspects were formed into a formal research question: What affects do leisure activities have on physical wellness and healthy aging in older adults, and how can recreation programmers provide opportunities for older adults to experience these effects at public swimming pools in Vancouver, BC?

To clarify the framework in which words in the research question were interpreted and researched, the following is a list of operationalized key terms:

- Affects: To produce an effect upon or make a difference to.
- Leisure Activities: Referring to freely chosen activities that contribute to an individual's feeling of enjoyment (Nilsson, 2015) including casual forms of leisure such as social and cultural activities, hobbies, and serious forms of leisure such as sport and exercise which involve substantial captivation and creativity, significant involvement and focus, and acquisition of skill over time.

- **Physical Wellness:** Refers to a person's ability to recognize the need for physical activity, healthy foods, and sleep, as well as preventing illness and injury or managing chronic health conditions (Northwestern University, n.d.).
- **Healthy Aging:** Using the description by the World Health Organization as a framework, healthy aging refers to "the process of developing and maintaining the functional ability that enables wellbeing in older age" (World Health Organization, 2020).
- **Older Adults:** Adults who are 65+ years old as it aligns with the City of Vancouver's framework for what qualifies for seniors/older adults' programs and memberships.
- **Recreation Programmers:** Using the framework provided by the BCRPA, Programmers are recreation professionals who develop, assist, and implement the planning, supervision and evaluation of recreation programs and special events (BC Recreation and Parks Association, 2020).
- **Public Pools:** Pools that are municipality owned, maintained, and operated which are accessible to members of the general public.

In the following sections, background and context that is pertinent to the research process is given, an in-depth analysis of literature and a comprehensive primary research plan that explores the components of the research question is presented, and an analysis of the findings from the research is explored. Additionally, five research-backed recommendations for the sponsoring organization are given, aimed at ways in which they can advocate for and redesign programs, services, and amenities which align with what the current research says about wellness and healthy aging.

Background and Context

The topic area was chosen due to the belief of the researcher that it has significant importance. As a recreation professional working in the aquatic industry for over 15 years, the researcher has seen firsthand how important leisure activities are to older adults. A key component of the researcher's personal mission/vision as a recreation

professional is to be able to help communities and their members improve themselves and their lives through leisure and recreation, and to promote the importance of recreation services in these communities. To be able to continue serving the older adult demographic of the population is of the utmost importance because they are currently underserved and are one of the fastest growing demographics. By researching specific effects that leisure activities have on physical wellness and healthy aging, the hope was to contribute in identifying current successful practices and develop new recommendations for how recreation professionals can provide more opportunities for older adults to improve their physical wellness and assist them in aging healthily.

The City of Vancouver's mission is to “create a great city of communities that cares about our people, our environment, and our opportunities to live, work, and prosper (City of Vancouver, n.d.). The research conducted for this paper aimed to contribute to fulfilling this mission by creating meaningful opportunities for the older adult population in our communities to help them live better lives and experience higher quality of life as they continue to age. In this way, the research will be valuable to my sponsoring organization in that it will identify positive effects that leisure activities have on physical wellness and healthy aging, highlight their importance, and identify actionable ways to promote these positive benefits in public swimming pools across Vancouver.

Additionally, furthering research that connects leisure with improved physical wellbeing and healthy aging in older adults is beneficial to the field of community recreation because it is a topic that is under researched and our society is in a time where populations of older adults are on the rise not only in BC but in all of Canada, as “about one in four Canadians will be 65 years of age or older by 2043”, according to an analysis performed by Environics Analytics for CTV News (Ferreira, 2023). Now more than ever it is important to begin analyzing affects of leisure and recreation on the lives of the older adult population in Canada and discover new ways that recreation services can serve and support this particular demographic as they continue to grow. The research presented will help make these connections and develop recommendations that can be utilized in aquatic recreation programming at public pools in Vancouver.

Literature Review

Analyzing the effects of leisure activity engagement on healthy aging and wellness has been an area of study in the literature from as early as the 1950s and began to be formalized in the 1970s, with the introduction of Lemon, Bengston, and Peterson's conceptualization of the activity theory in 1972, and recently there has been a reemerging focus in defining and understanding the variables which promote healthy aging (Brown et. al. 2008). Dupuis & Alzheimer (2008) describe how the connection between leisure activities and physical wellness has been examined most extensively, and the research has proven that maintaining a consistently active lifestyle later in life has profound consequences on physical wellness in older adults including improved physical health, reduced risk for chronic disease, different patterns and speeds of psychological change associated with aging, and can be effective in treating chronic conditions such as hypertension, diabetes, osteoarthritis, and osteoporosis. Galea (2014) also supports these claims in her article on active aging in *Alive Magazine*, and further recommends that older adults participate in at least 150 minutes per week of moderate to vigorous physical activity to prevent heart disease, and to train with light weights or other methods of light resistance to boost strength and maintain muscle mass, balance, and bone health. Kim & O'Sullivan (2013) provide further research that outlines benefits of physical exercise, as their study on older adults showed how resistance training via aqua aerobic therapy exercise in swimming pools created significant improvements in strength, agility, and balance, which they concluded would help older adults reduce their risk of falling.

Brown (2020), also describes just how important participation in leisure activities can be for physical wellness in older adults, specifically in how they can prevent, delay, or manage disease and also make it easier to perform other activities of daily living, and Brown advocates for recreational professionals to continue creating new ways to maintain a physically active lifestyle, such as her description of professionals creating virtual/home-based activity resources for older adults who may not be able to access traditional forms of recreation resources and services.

Interestingly, differentiation in the intensities of physical activities shows different effects on factors contributed to healthy aging. In their study examining correlations

between exercise intensity and well-being in older adults, Bae et al. (2017) concluded that vigorous activities contributed to lower mortality rates, great longevity, and disease management/prevention, while light to moderate physical activity had little correlation to health-related factors but were associated with psychological benefits and contributed to positive emotions such as feeling cheerful, satisfied, socially active, and happy which improved an overall sense of wellbeing in participants. Moreover, Bae et al. (2017) describe that these differentiations in benefits may have implications on recreation programming and suggest that participation in light activity during winter months can have a positive effect on improving depression in older adults caused by seasonal affective disorder (SAD), which has been shown to strongly affect older adults in winter months. Thus, recreation programmers may help older adults in their communities by focusing on promoting light leisure activity programs in the winter months to help combat depression caused by SAD.

The psychological benefits also offer an important differentiation in the ways in which participation in leisure activity can foster changes in other dimensions of wellbeing for older adults beyond physical wellness, and data from additional research agrees. In her study assessing the impact of recreational programs on the well-being of senior citizens, Camila (2023) found that older adults who participated in recreational activities experienced positive outcomes across multiple dimensions of their wellbeing including enhanced social connections, improved cognitive function, improved emotional wellness, and an overall higher quality of life. Col et al. (2022) additionally back these claims through their research, and further explain that not only do leisure activities lead to an increase in these areas, but they also link directly to healthy aging by decreasing depression, anxiety, and stress levels while simultaneously improving satisfaction in life, mental wellbeing, and overall happiness. Green (2022) further supports this connection in his article in *Alive Magazine* titled *Growing Older can be a Lonely Trip* where he cites a study done by the University of British Columbia which found that combining social interaction with physical activity, through participating in a group exercise program for example, significantly reduced loneliness in older adults, contributing to healthy aging.

Controversy and Gaps Within the Literature

Several theories on aging and descriptions of what factors are involved in healthy aging exist within the literature, and arriving at a singular consensus on the topic has not necessarily been met. Indeed, An et al. (2020) describe that there are over a hundred operational definitions for healthy aging, and healthy aging is often interchanged with terms such as successful aging, positive aging, active aging, and aging well. This plethora of definitions has led to confusion on the topic and has made it difficult for researchers to come to an agreement on which factors are most important to focus on or consider when conducting research. Additionally, theories on aging can also contend with a need for recommendations on healthy aging in the first place. In his research, published in the *Journal of Sociology and Anthropology*, Ajani (2014) describes the continuity theory of aging, which postulates that as older adults age, they typically will maintain similar activities, personality, and behavioural traits and maintain similar relationships as they did in their earlier years, suggesting that people do not really change as they age unless necessary due to individual/societal constraints or changes in personal abilities and health. The implications of this suggest that even if given opportunities to explore leisure activities which may benefit their aging process, older adults may not choose to adopt new activities into their lifestyle.

In addition, gaps in research also exist. An over emphasis on physical health as a main determinant in successful or healthy aging has been a consistent theme amongst researchers and has dominated the research landscape, leading to this being a main point of criticism over the years (An et. al, 2020). As more research is conducted in the future, continued emphasis on factors outside of physical wellness will be crucial in helping to broaden the research foundation and allow for more targeted and well-rounded approaches to systems looking to improve healthy aging to be developed in leisure and recreation organizations. Dupuis & Alzheimer (2008) identify additional gaps in the current body of research. They note that research on the connections between leisure and aging have almost entirely focused on the positive effects and that a shift towards research that identifies possible negative implications of leisure activity engagement in later life needs to be explored. Moreover, they contend that there are potentially major differences in the meaning and experiences of both aging and of

leisure across cultural and sub cultural contexts, and more research needs to be conducted which identifies and analyzes socio-cultural factors which may influence these meanings and how they attach to the current western/colonial understanding of what it means to age well or age healthily.

Camila (2023) also identifies a conceptual research gap. She explains that much of the research to date has been done on formal forms of recreation and leisure activities, traditionally offered in formal care facilities and community centres, and suggests that there is a lack of research exploring how informal self-directed leisure activities pursued by older adults in their own homes and local communities impacts their well being and experience in healthy aging. Gathering this research can offer additional insights into new ways recreational professionals can promote overall wellness, healthy aging, and happiness in older adults that extend beyond the boundaries of recreation centres or care facilities, potentially further reducing barriers to access and participation in community recreation.

Methodology

The Primary research plan consisted of three methods of field research: interviews, content analysis, and observations.

Interviews were included to collect firsthand accounts from professionals in the field regarding how they view leisure activities affecting physical wellness and healthy aging in older adults. It also allows the researcher to gather perspectives on how recreation programmers can provide opportunities for older adults to experience the effects of leisure activities at public swimming pools in Vancouver, BC. The collected data could then be examined for how it aligns with information and trends found within the literature review or lead to the discovery of new information not found through secondary research.

The process of content analysis involved uncovering data from within the organization that connects with trends discovered through secondary research, as well as discovering additional information to support and further answer the research question.

Field observations were intended to give a live-action view on ways in which participation in leisure activities might affect older adults. Observations can then be examined on how they relate to the secondary research findings on healthy aging and physical wellness outlined in the literature review as well as whether or not they provide new valuable information on the topic.

Through all three modes of primary research, information not necessarily found in the literature can also be explored, allowing the researcher to potentially reduce or minimize these gaps and contribute new information to the field. The plan for each method of primary research conducted is discussed in detail below.

Interviews

There were four interviews planned, each over Zoom where the meetings were face-to-face and recorded. The interview subjects were Brad Kuong, Aquatic Recreation Programmer II, Nick Fong, Community Center Recreation Programmer II, Sarah Harries, Lifeguard/Swim Instructor and Registered Nurse, and Tony Syskakis, Supervisor of Aquatics. Each interviewee was asked a series of questions that were guided from findings found in the literature review. A list of interview questions can be viewed in Appendix A.

Observations

Planned observations were of live leisure activities in which older adults were the main participants. There was a total of three field observations scheduled. The first activity planned for observation was a general public observation of an Aquafit class at Renfrew Pool on February 23rd, 2024. The second observation planned was a special status observation tour of Renfrew Pool, Hillcrest Aquatic Centre, and Kensington Pool in Vancouver on February 26th, 2024. The pools selected for the tour were chosen based on factors such as size, location, and similarities to other remaining public pools in Vancouver so that they would signify an accurate representation of indoor aquatics in the city. The observation was classified special status so that the researcher could access and observe from areas within each facility that were deemed staff only, such as front desk areas, guard rooms, and recreation programmer offices. The third

observation planned was a special status observation of the Seniors Luncheon Program at Renfrew Park Community Centre on March 6th, 2024. This observation was classified special status as the observer did not meet the eligibility criteria (55 years old or older) to attend the event as a member of the general public. Observation checklists with questions to guide the types of observations related to findings in the literature review and developed to help provide more findings to answer the research question were created. The checklist template developed can be viewed in Appendix B.

Content Analysis

Four documents were planned for content analysis, each of which was internal and specific for my sponsoring organization, the City of Vancouver. A content analysis checklist was created to help guide the analysis with information obtained through the literature review and other forms of primary research. The checklist template used can be viewed in appendix C. The first document planned to be analyzed was VanSplash: Vancouver's Aquatics Strategy, a document outlining the city's 25-year strategy for building the future of aquatic recreation. It was analyzed for whether information that aligns with information found in the literature review is included in the plan and if recommendations are made in the strategy pertaining to how opportunities for older adults to experience the effects of leisure activities on the physical wellbeing and healthy aging can be created.

The second document planned for content analysis was the City of Vancouver's Age-Friendly Action Plan. The document consists of over 60 action items aimed at making the city more accessible and inclusive for older adults and analyzing the document may give insights on how recreation programmers can create opportunities for older adults to experience the effects of leisure activities on their physical wellness and healthy aging.

The third document planned for content analysis was a FlexiPass Statistics Report: City-Wide FlexiPass Count, accessed using the organization's internal ActiveNet Software on Feb 24, 2024. This internal report lists pass statistics showing the number of active seniors passes within the city compared to years prior and provides evidence of whether there is a rising older adult population of facility users

over time, highlighting the potential importance of providing more opportunities for older adults to experience leisure activities tailored to them at pools in Vancouver.

The fourth and final document for content analysis was the Renfrew Park Community Centre and Killarney Community Centre Spring Recreation Guides, as representatives of both a large and a small aquatic facility and what they offer for seniors specifically. They were planned to be analyzed for information describing effects of leisure activities on physical wellness and healthy aging, and program offerings, specifically in aquatic based program sections in the guides, that are specific to seniors.

Implementation of the primary research plan went smoothly and produced several successes in the form of both research findings and broadened perspectives that were not obtainable through the literature review alone. Though access to some of the planned observations such as the seniors' luncheon and key areas that were off limits to the general public during the pool tour presented obstacles, special status was able to be granted from site specific recreation programmers which allowed this obstacle to be overcome. An additional obstacle was presented in obtaining the pass statistics data which was only accessible through the organization's internal software ActiveNet. Collaboration with the agency advisor Brad K. as well as Renfrew Community Centre's Recreation Facility Clerk Monica K. provided the assistance needed to gather the right information through the software and generate the pass statistics report.

Research Findings and Analysis

Several key findings were discovered through the primary and secondary research processes. Patterns began to form as findings were discovered and were thus categorized into three categorical themes: physical effects, psychosocial effects, and programming impacts.

Physical Effects

One of the key findings found through interviews was the correlation between decreased older adult participation in physical leisure activities and a subsequent

decrease in mobility, strength, and bone density. In her interview, Sarah Harries (2024) noted that while working as a lifeguard, she has seen the impacts first-hand that physical activity at pools has on older adult's strength and mobility. She has also noticed this correlation in her work as a registered nurse and that it leads to older adults being "at high risk for falls due to impaired balance" when they are not given the ability to participate in physical activity. She goes on to highlight the implications of this through a clinical perspective in her statement: "To most other populations, a fall doesn't seem like a major problem, however, with older adults we see prolonged hospital stays, which also puts them at increased risk of communicable and nosocomial diseases/infections, exacerbation of pre-existing chronic diseases such as COPD, or hypertension because now they have decreased and limited mobility." (Harries, 2024). In his interview, Tony Syskakis (2024) also supports this perspective and adds that one of the major benefits of water based physical leisure is the finding that "the water itself creates buoyancy, takes the strain off, especially aging hips, backs, limbs, joints".

This finding aligns with what was found in the literature review, where a study from Kim & O'Sullivan (2013) showed how resistance training via aqua aerobic therapy exercise in swimming pools created significant improvements in strength, agility, and balance, which they concluded would help older adults reduce their risk of falling. It also matches research from Dupuis & Alzheimer (2008) who conclude that maintaining a consistently active lifestyle later in life has profound consequences on physical wellness in older adults including improved physical health, reduced risk for chronic disease, different patterns and speeds of psychological change associated with aging and can be effective in treating chronic conditions such as hypertension, diabetes, osteoarthritis, and osteoporosis.

These findings provide support for how participation in leisure activities affects physical wellness in older adults, and additionally shows how a single facet or physical wellness such as maintaining mobility and muscular strength can have deeper implications or ripple systemically into other facets of health such as impacting the risk for hypertension, communicable illnesses, and many other types of disease. Brown (2020) emphasizes this point in his research as well and describes just how important

participation in leisure activities can be in promoting physical wellness in older adults, especially in preventing, delaying, and managing disease while also making it easier to perform other activities of daily living. It highlights the significance of recreation programmers continuing to create opportunities for older adults to find ways to participate in leisure activities that provide a source of physical upkeep while being low impact such as aquafit classes at pools.

Psychosocial Effects

A key finding discovered during the pool tour was the observation of effects beyond physical wellness that participation in leisure activities were having on older adults. What was observed at all three pools was that in the steam rooms, saunas, whirlpools, and leisure sections of the pool, older adults were seen in social settings talking to one another, engaging in loud conversation at times and laughing and smiling. It was apparent that these were social groups that have formed in the pool environment organically and were contributing to improved social connection and emotional wellness while people were simultaneously enjoying the amenities that were helping them relax, de-stress, and loosen up their bodies physically. Some patrons were observed to be not really in any body of water at times but were instead seen just sitting with their friends, clearly there for the social/community connection aspect of the visit.

This finding strongly aligns with research from Camila (2023) who found that older adults who participated in recreational activities experienced positive outcomes across multiple dimensions of their wellbeing including enhanced social connections, improved cognitive function, improved emotional wellness, and an overall higher quality of life and with the findings from Col et al. (2022) who explains that these same areas link directly to healthy aging by decreasing depression, anxiety, and stress levels while simultaneously improving satisfaction in life, mental wellbeing, and overall happiness. The link between these findings in the literature review conducted and the observations made during the pool tour further solidifies the credibility of these claimed effects of leisure activities on healthy aging and signifies the importance of continued support and provision of access to these leisure activities at swimming pools in Vancouver, BC.

A key finding found from the content analysis method of primary research came from the analysis of Vansplash: Vancouver's Aquatics Strategy, which is a document outlining the city's 25-year strategy for building the future of aquatic recreation. The strategy was examined for information relating to the effects of leisure activities on physical wellbeing and healthy aging and whether information contained within the document could be either cross-referenced with information found in my literature review or provide additional new data to further answer the research topic. It was also examined for potential recommendations pertaining to how opportunities can be created for older adults to experience the effects of leisure activities on physical wellness and healthy aging.

What was found was that a number of statements were made within the strategy regarding the effects of leisure activities in water on numerous factors associated with healthy aging such as that "social opportunities in water or on deck connect people and reduce feelings of isolation" (VanSplash, 2019, p.20), which is shown in the literature to be a strong component of healthy aging (Green, 2022) and that water buoyancy not only makes activity in the water an ideal path to gaining fitness but that it also facilitates overall feelings of wellness and therapeutic aspects of aquatics such as warm water pools, sauna, steam, and therapeutic sprays which develops as a driver in early adulthood and becomes increasingly important as adults age (VanSplash, 2019). This is an important acknowledgement within the strategy, as it provides additional evidence for the significance of effects beyond just the singular dimension of physical wellness which was a gap identified in the current literature body during the literature review.

Programming Impacts

Findings that impact the way recreation programmers can create the best opportunities for older adults to experience effects of leisure activities on their physical wellness and healthy aging were found throughout phases of both the primary and secondary research. While analyzing the City of Vancouver's Age-Friendly Action Plan, a number of findings were discovered that could create impacts to how recreation programming can be adjusted. For example, the plan recommends partnering with the Alzheimer Society of BC to provide training to all Park Board seniors' workers and

programmers on making existing recreation programs more dementia-friendly and caregiver-inclusive (City of Vancouver: Age-Friendly Action Plan, 2015). This type of training could create new awareness and spark new ideas to be generated from recreation programmers at public pools regarding how they view and program their spaces for older adults and potentially expand their current programs to include active programming for older adults experiencing dementia. An example given in the Age Friendly Action Plan (2015) is the Minds in Motion program, which is a low-impact aerobics class for people experiencing early-stage memory loss due to dementia and their caregivers and is offered in partnership with the Alzheimer Society of BC. This type of program could easily be adapted for an aquatic environment, which is already low-impact, and would provide support for older adults in a new and exciting way. During the content analysis of pool program guides, it was noted that no programs specialized for older adults were advertised or offered. In addition, programs that may benefit older adults, such as aquafit, were not worded in a way that articulates the benefit that participation in these activities may have on physical wellness and healthy aging for older adults. The adoption of new programming and better program descriptions would create much needed support for older adults in Vancouver public pools.

In the literature review, the research from Brown (2020) also backs up the importance of discovering new ways to program leisure activities as her research advocates for recreational professionals to continue creating new ways for older adults to maintain a physically active lifestyle, such as her description of professionals creating virtual/home-based activity resources for older adults who may not be able to access traditional forms of recreation resources and services. Although aquatics may not translate well into a virtual based activity that can be taken home, creating programming that supports individuals with dementia is an example of creating opportunities for a portion of the older adult demographic who are likely facing barriers to participation in physical leisure activities due to lack of specific support and program models suited to their needs.

Another finding which impacts the way programming is approached is rooted in determining just how much physical activity is enough for older adults to experience

effects. Galea (2014) found, for example, that older adults need to participate in at least 150 minutes per week of moderate to vigorous physical activity to prevent heart disease, and to train with light weights or other methods of light resistance to boost strength and maintain muscle mass, balance, and bone health. When put into a programming context, it is therefore important that opportunities at public pools exist where these parameters can be met by older adults who may potentially visit multiple times per week as regulars because the pool might be the only option for them to exercise comfortably due to physical restrictions limiting them such as mobility challenges and low tolerance to impact on the body.

Both Tony Syskakis (2024) and Brad Kuong (2024) mention in their interviews that there are visibly large populations of older adults who regularly use the facility at specific times in the day and are often there daily. Maintaining these spaces and potentially designating times that are for older adults to recreate can help create opportunities for them to be able to maintain 150 minutes of physical activity per week and make positive impacts on healthy aging through improved physical wellness. The VanSplash strategy also offers insight into programming recommendations rooted in facility suitability for activity specificity. The strategy mentions that “small pools are good for delivering skill development and fitness swimming, while medium/large pools are good for the same but with the addition of therapy and rehab and recreational swimming” (VanSplash, 2019, p. 20). This insight can be used by programmers to match program models to the suitability of their facility as well as by managers involved in future facility renewal when considering the development of pools which can perhaps provide more opportunities for a larger variety of programming for older adults.

Another key finding is that activity variety based on intensity of the activity as well as program scheduling based on time of the year are both necessary variables to consider as they produce different effects on specific aspects of healthy aging in older adults. For example, the research from Bae et al. (2017) in the literature review found that vigorous activities contributed to lower mortality rates, great longevity, and disease management/prevention while light to moderate physical activity had little correlation to health-related factors but were associated with psychological benefits and contributed to

positive emotions such as feeling cheerful, satisfied, socially active, and happy which improved an overall sense of wellbeing in participants. Bae et al. (2017) go on to mention that this may have implications in seasonal recreation programming, where it may be strategic to plan light activity programs during winter months as it may influence dimensions of emotional wellness and ward off symptoms of depression caused by seasonal affective disorder, which has been shown to strongly affect older adults in winter months. To further boost the effect, programmers can prioritize activity programming which allows for socialization as well as physical exercise. Research from Green (2022) supports this in his research which found that combining social interaction with physical activity, through participating in a group exercise program for example, significantly reduced loneliness in older adults, contributing to healthy aging. Additionally, the VanSplash Strategy (2019) further supports the importance of this finding, highlighting the idea that social opportunities in water or on deck connect people and reduce feelings of isolation, a component associated with healthy aging.

Through the analysis of the key findings found within the primary and secondary research, their relationship to the components of the research question is unveiled. The effects that leisure activities have on physical wellness and healthy aging were numerous. The physical effects included the correlation between older adult physical activity participation and changes in mobility, strength, bone density, balance, and disease management, the value of water's buoyancy in reducing impact on joints during exercise, how leisure activities can affect the prevention of diseases such as hypertension, diabetes, and osteoporosis, and the improvement in older adults completing daily living tasks due to improved physical wellness.

The psychosocial findings identified were strongly correlated with affects on healthy aging including improved feelings of social connection, belongingness, reduced feelings of isolation, improvements to emotional wellness, improved cognitive function, decreases in depression, anxiety, and stress levels, and increases in overall happiness. These individual findings are all major contributors to the concept of healthy aging and can make a major different in the quality of life experienced by older adults.

Findings that pertain to how recreation programmers can create opportunities for older adults to experience the effects of leisure activities at public swimming pools in Vancouver were also numerous. They included the impact that training seniors' programming staff in how to make programming and facilities dementia-friendly and caregiver-inclusive would have on creating more welcoming and inclusive pools for older adults, the lack of older adult specific programs currently found in Vancouver's public pools, the values of developing specific programs for adults with dementia, and how differences in activity intensity and program timing can change the effects experienced by older adults and lead to better programming schedules when balanced, resulting in older adults being given the chance to participate in activities numerous times throughout the week.

Recommendations

From the findings discovered through primary and secondary research, five recommendations for the sponsoring organization, the City of Vancouver, were developed and are specific to the planning, programming, and operations of their public pools.

Due to the overwhelming evidence of the benefits that participation in physical leisure activities has on physical wellness, and due too the additional benefit that structured classes can have on psychosocial elements contributing to healthy aging, it is recommended that the organization creates more aquafit based programs with differentiated designations such as range of motion, strength and balance, osteo-fitness, and deep-water classes. Having a variety of activity types and making some general public access and some specific to older adults only can allow both targeted programming to support the older adult population and promote intergenerational socialization. Ensuring that activity descriptions that better articulate the benefits of these programs to seniors is also recommended to be included.

In addition to creating aquafit based programming, it is recommended for the organization to consider partnering with the Alzheimer's Society to train programming staff in how to create supportive programming for older adults with dementia and their

caregivers. This would create an opportunity for a segment of the older adult population who have faced barriers to accessing physical leisure activities at pools to experience the multiple benefits associated with maintaining physical wellness and the unique benefits that water-based exercise provides.

It is recommended that public pools with warm water leisure tanks create designated older adults' leisure swim times so that they can benefit from the hydrotherapy benefits that warmer water has on conditions such as arthritis. This would create a supportive space without them having to compete with large populations of other swimmers who share the same amenities such as families/children, which often results in the creation of another barrier to access, as it can become unsafe for them to do their leisure activities in a crowded high energy environment.

Because of the proven benefits that socialization and low intensity leisure activities have on healthy aging in older adults, it is recommended that the organization creates events at public pools, such as holiday specific event, and lunch and swim events that can be coordinated with centre programming staff. Older adults can both sign up for participation in events through registrations as well as sign up as volunteers, allowing them to serve one another and feel a sense of purpose and connectedness to the individuals in their immediate communities.

It is also recommended that, where possible, public pools update their indoor spaces on pool decks to include areas that are designated and suitable for socialization, rest, and relaxation. These can be designated quiet areas as well as social areas with tables, chairs, and table games to play. This can be particularly important to provide as a service during winter months, where it is shown that older adults have higher rates of depression. This can extend to facility renewal and new facility planning designs as well, where the creation of these spaces as well as more hydrotherapy spaces such as cold plunge pools, waterfalls, hot tubs, and saunas can be promoted and advocated for.

Through the implementation of these recommendations, much needed programming and support can be given to the growing older adult population that visit the sponsoring organizations' public pools, and the effects of leisure activities can be better experienced by older adults to promote improvements in their physical wellness and healthy aging.

Conclusion

In summary, there is various data supporting the projected rise in the older adult population of Vancouver, BC, and it is imperative that support structures be developed to help them in their pursuit of maintaining physical wellness and aging healthily. Recreation and leisure opportunities can be considered as one of the foundational support structures communities can rely on to help them achieve this pursuit, and it is vital that organizations such as the City of Vancouver look towards new and exciting ways that leisure can impact older adults and affect healthy aging.

By conducting a literature review, these impacts from the most current research have been analyzed for key findings, themes, and potential gaps that need further research. By developing and implementing a thorough primary research plan, further research findings were captured and compared to findings from the body of literature to deepen the understanding of the research topic, gather new research data, and contribute new findings to the field.

When reviewing all key findings from the research conducted, it is clear that there are many ways in which leisure activities affect both physical wellness and healthy aging in older adults. These include the correlation between older adult physical activity participation and changes in mobility, strength, bone density, balance, and disease management, the value of water's buoyancy in reducing impact on joints during exercise. They also include the role of leisure activities in the prevention of diseases such as hypertension, diabetes, and osteoporosis, and the improvement in older adults completing daily living tasks due to improved physical health. Factors outside of physical wellness that are proven as key dimensions of healthy aging include improved feelings of social connection, feelings of belongingness, reduced feelings of isolation, improvements in emotional wellness, improved cognitive function, decreases in depression, anxiety, and stress levels, and increases in overall happiness.

When reviewing the research for ways that recreation programmers can create opportunities for older adults to experience these effects to their physical wellness and healthy aging at public pools in Vancouver BC, there were several key findings discovered. These include the demonstrated value of training seniors' programming

staff in how to make programming and facilities dementia-friendly and caregiver-inclusive, which would create more welcoming and inclusive pools for older adults. It also includes the finding of the lack of older adult specific programs currently found in Vancouver public pools, the values of developing specific programs for adults with dementia, and how differences in activity intensity and program timing can change the effects experienced by older adults, leading to better programming schedules when balanced and when older adults are given the chance to participate numerous times throughout the week.

Through the pursuit of knowledge and research, recreational professionals can continue passionately discovering ways to best support an aging Vancouver population. In-depth investigations which focus on exploring components of leisure activities, their affect on older adults, and what recommendations can be made to leading organizations to better support them through recreation and leisure services, can help recreational professionals achieve this goal and make significant and impactful progress in the ongoing pursuit of building better communities.

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Appendix A

Interview Questions Template

Date and time of Interview:

Person Interviewed:

Location interviewed:

Introduction script:

I'm doing these interviews to get some more primary research data for a topic that I'm researching for a school project at Langara College. As you already know and agreed to, this meeting will be recorded over zoom so that I can transcribe our dialogue for my research and my paper. My research question is what affects do leisure activities have on physical Wellness and healthy aging in older adults, and how can recreation programmers provide opportunities for older adults to experience these effects at public swimming pools in Vancouver, BC? For some context of this conversation, the terms older adults and seniors are synonymous. I use the term older adults because that's the term that shows up in literature the most. And it's the term that I'm using in my research as well.

Interview Questions:

1. What is your current position within the organization and how long have you been in this role?
2. What are some examples of programs, services, or amenities that are offered to older adults at public pools in Vancouver?
3. How do you think participation in leisure activities affects older adults?

4. From your experience, in what ways does cultural context impact the way leisure activities are experienced by older adults?
5. Are there ways in which participation in leisure activities can have a negative impact on older adults?
6. How many older adults versus other population groups would you estimate visit public pools in Vancouver?
7. In what ways does the City of Vancouver accommodate older adults to participate in leisure activities at public pools?
8. If you could change some accommodation features for older adults or add new ones, what would they be?
9. Within the scope of your position, if you could create more opportunities for older adults to experience the effects of leisure activities what would you create?

Transcript:

Appendix B

Observation Checklist Template

Date and Time of Observation:

Who/What was Observed:

Location Observed:

Observation Checklist Questions/Notes:

- Are there older adults participating:
 -
- Physical wellness benefits observed:
 -
- Benefits of additional components of healthy aging such as social interaction, connectedness, emotional health, entertainment, inclusion, sense of community observed:
 -
- Cultural/subcultural context and socio-cultural factors affecting/influencing the leisure activity experience observed:
 -
- Negative effects of the leisure activity observed:
 -
- Differences in intensities on leisure activity observed:
 -

Appendix C

Content Analysis Checklist Template

What documents are being used for data analysis and why:

How the documents were accessed:

Framework/checklist and field notes to analyze the document:

- Information on healthy aging/the affect of leisure activities on healthy aging
 - n/a
- Information on psychosocial/physical wellness benefits of leisure activities in older adults:
 - n/a
- Information or guidelines on opportunities for older adults to experience effects of leisure activities on physical wellbeing and healthy aging:
 -
- Other interesting information to note: