

## ***Physical Activity and Dimensions of Subjective Well-Being in Older Adults***

***Aphrodite Stathi, Kenneth R. Fox, and James McKenna***

Using a qualitative approach, the dimensions of subjective well-being of active older adults were outlined and ways identified through which they might be influenced by participation in physical activities. One-to-one and group interviews were used to collect the data. Using cross-case analysis, 17 main themes were identified. The following main dimensions emerged: developmental, material, physical, mental, and social well-being. The findings indicated that physical activity influences all dimensions of the subjective well-being of older adults, with the exception of material well-being. Physical activity appears to contribute to the mental health of older adults through maintenance of a busy and active life, mental alertness, positive attitude toward life and avoidance of stress, negative function, and isolation. The complexity of subjective well-being and the multiple roles of physical activity stress the need to extend qualitative research to sedentary older adults and the institutionalized elderly to explore the relationship between well-being and physical activity in later life. ■

**Key Words:** ■

The Heidelberg Guidelines for Promoting Physical Activity Among Older Persons (World Health Organization, 1997) acknowledge the positive influence of physical activity on the health and well-being of older adults. Physical activity can increase aerobic capacity and strength, as well as improve flexibility and balance, decrease risk of falling, prevent disease, and reduce risk of all-cause mortality (American College of Sports Medicine, 1998; Shephard, 1997; Smith & Tommerup, 1995; Spirduso, 1995). Although it is well established that fitness and physical activity are closely linked to the physiological and biomedical aspects of older adults' health, the extent to which their mental health is influenced by physical activity is less clear.

Growing evidence from the experimental approach supports the positive effect of physical activity on aspects of mental well-being in other populations (Fox, 1999). Meta-analytical and narrative reviews of studies have concluded that physical activity can be effective in reducing depression (Craft & Landers, 1998; Mutrie, 2000), improving mood (Biddle, 2000), and enhancing self-perceptions

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The authors are with the Dept. of Exercise and Health Sciences at the University of Bristol, Bristol, UK BS8 1TN.

(Fox, 2000). This research, however, has primarily been located in the quantitative paradigm and has revealed little to further our understanding of the ways in which physical activity makes a difference to older adults. This is hardly surprising, because it is unable to take advantage of the subjective knowledge about the lived experience that is revealed by personal accounts.

To date, few studies have investigated physical activity's impact on the mental well-being of older adults, irrespective of how it has been conceptualized (Biddle & Faulkner, *in press*). There is some evidence that exercise participation increases older adults' self-efficacy, which in turn might improve perceptions of well-being (McAuley & Rudolph, 1995; Spirduso, 1995). In addition, some studies have indicated that physical activity is effective in improving mood state (Arent, Landers, & Etnier, 2000; Gitlin et al., 1992; Nieman, Warren, Dotson, Butterworth, & Henson, 1993), cognitive performance (Chodzko-Zajko & Moore, 1994; Etnier et al., 1997), and life satisfaction (Berger & Hecht, 1990) and decreasing depressive symptoms (McMurdo & Burnett, 1992) in older adults. Finally, there is some evidence that social interaction and decreased isolation are significant benefits of a physically active lifestyle for older adults (McPherson, 1994). Several researchers (Brown, 1992; Fillingim & Blumenthal, 1993; McAuley & Rudolph; O'Connor, Aenchenbacher, & Dishman, 1993) have commented, however, on the limited quality of the literature on older adults, which depends on cross-sectional designs and quantitative perspectives based on inadequate instrumentation. In addition, Biddle and Faulkner (*in press*) specifically state that "qualitative research is strongly recommended for illuminating the role of exercise in the lives of the elderly," which comes in accordance with the call for more research that explores the depth of the lived experience of older adults (Ruth & Coleman, 1996; Sherrard, 1998). Furthermore, Diener, Eunkook, Lucas, and Smith (1999) have suggested that the literature carries a bias toward negative mental states such as depression and anxiety, and therefore more research is needed on the positive dimensions of well-being and quality of life.

Subjective well-being has been seen as a critical indicator of successful aging (Rowe & Kahn, 1987). Veenhoven describes subjective well-being as the degree to which an individual judges the overall quality of her or his life as a whole in a favorable way (Diener, 1994). Andrews and Robinson (1991) define subjective well-being as "a psychological summing up of the quality of an individual's life in a society" (p. 61), and Diener et al. (1999) stress that "subjective well-being is a broad category of phenomena that includes people's emotional responses (pleasant-unpleasant affects), domain satisfactions, and global judgements of life satisfaction" (p. 277). Subjective well-being is therefore seen to be a phenomenological, global expression by the individual of the quality of her or his state of existence.

Subjective well-being has typically been assessed via paper-and-pencil instruments such as life-satisfaction scales (Neugarten, Havighurst, & Tobin, 1961; Wood et al., 1969; Andrews & Robinson, 1991). Some measures include single-item scales (Andrews & Withey, 1975; Cantril, 1967), whereas others, through multi-item scales (Andrews & Robinson, 1991; Bradburn, 1969; Kozma & Stones, 1980; Lawton, 1976), have provided some insight into the dimensional structure of subjective well-being. Nonetheless, some researchers (Bytheway, 1996; Rudinger & Thomae, 1990; Sherrard, 1994) have suggested that inadequate attention has been paid to the viewpoints of older adults themselves, so the richness

of the subjective experience of older adults has not been fully documented and analyzed. This is particularly seen to be the case in the area of subjective well-being, where “subjective accounting itself is the ‘what’ requiring analysis” (Sherrard, 1998, p. 253). It would therefore seem appropriate to listen to what older adults think about their lives and well-being as a way to better understand the multiple realities of the physical activity experience.

Further exploration of the key dimensions of life involvement that contribute to the global subjective well-being of older adults, particularly those who are already experiencing regular physical activity, is required. The delineation of key dimensions might provide an alternative insight into the potential routes through which physical activity might affect the global statements of subjective well-being of older adults and, thus, their mental health. This in turn could help in the design of more rewarding and effective physical activity programs for older adults, which will stimulate sustained involvement and help them enjoy any subsequent mental and physical benefits.

The purpose of this study, therefore, was to explore the components of subjective well-being of active older adults, with a view to identifying possible pathways through which physical activity participation might enhance their mental health.

## Method

Given the scarcity of qualitative data in aging research and the need to address older adults’ own framework of meanings regarding the contributing elements of subjective well-being and the influence of physical activity on them, an interpretive approach was adopted.

### PARTICIPANTS

Participants were recruited from settings where they were engaged in organized forms of physical activity. Programmed forms of physical activity were chosen in this initial research because most physical activity interventions are designed around organized activities. They offer a range of discrete experiences with potential physical benefits, as well as enhancing social interaction, and this provides a suitable starting place for study. This choice does not preclude the potential importance of less programmed activity such as walking or gardening. Active people were chosen because they have experiential information about the contribution of physical activity to subjective well-being. Initial contact was made with managers of settings that offer activity programs to older adults, information regarding the demographic characteristics of the older adults using these facilities was gathered, and access to the settings was agreed on.

The sample included 28 community-dwelling, retired older adults, with ages ranging from 62 to 81 years (average age = 71). The respondents included 15 women and 13 men who participate in an organized form of regular physical activity at least once per week. Twenty of the respondents were married, 2 were divorced, 5 were widowed, and 1 had never been married. All the participants had completed high school, and 8 had university degrees. Thirteen respondents were recruited from general-practitioner (GP) exercise-referral schemes, 10 from 50+ exercise groups

(aerobic, keep-fit classes, badminton), and 5 from social-dance groups. Respondents were recruited at the settings after a brief presentation of the scope and aims of this study.

## INTERVIEWS

Two types of interviews were used as the method of data collection. First, one-on-one interviews were conducted, and second, group interviews were held because they encourage the participation of people who are normally wary of an interviewer or who do not feel sufficiently comfortable to talk about themselves (Kitzinger, 1995). This might particularly be the case in studies concerning older adults, especially when the interviewer is someone who is not considered a peer or of a similar age.

The interview guide was designed to collect information to identify the main dimensions of subjective well-being for this group of active older adults and the dimensions that might be particularly influenced by their activity participation. The interview process was first explored with 2 individuals, and subsequent refinements of the interview questions were made. The semistructured interviews consisted of open-ended questions, which allowed the interviewer to probe and divert in order to pursue an idea in great detail, as well as expand and paraphrase the interviewees' responses.

## PROCEDURES

All volunteers participated by choice in either an individual interview or a group interview. This choice was offered in order to maximize the contribution of information by placing participants in situations in which they felt comfortable. Before each interview, participants were asked to complete Cantril's Self-Anchoring Ladder (Cantril, 1967) and the five-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). These instruments were used to stimulate discussion on the topic in the interview. Participants were asked to explore the issues they had considered as they completed these initial prompting activities. Fourteen individual interviews and six group interviews were conducted in the physical activity settings or in respondents' homes. Each interview lasted from 20 to 60 min. With respondents' expressed permission, after assurance of confidentiality, the interviews were tape recorded and later transcribed verbatim.

## DATA ANALYSIS

**Cross-Case Analysis.** Data analysis consisted of the identification of categories, recurrent themes, ideas, language, and belief systems generated and in some cases shared across research participants and settings (Marshall & Rossman, 1989n). Miles and Huberman (1994) note that cross-case analysis helps one learn about a concept that makes sense beyond a specific case. Because a description of common parameters of older adults' subjective well-being has the capacity to generalize across individuals, the cross-case technique was chosen for data analysis. The aim, however, was not to seek "a smoothed-down set of generalisations that may not apply to a specific case in the set" (Miles & Huberman, p. n) but rather to

deepen the understanding of the concept of subjective well-being. Cross-case analysis permits the reconciliation of an individual's case uniqueness with the need for general understanding of generic process occurring across cases (Silverstein, 1988). Although simply adding cases does not help in that perspective, using multiple cases, adequately sampled and carefully analyzed, could enhance generalizability and ensure saturation of content.

**Coding Process.** Both one-on-one and group interviews followed the same analysis procedures. The transcript of the first two interviews helped refine the interview guide by rephrasing elements that respondents found difficult to understand and adding further questions. The transcripts then provided the raw data that were segmented, coded, and reorganized in categories based on common content. A provisional start list of codes was created from the conceptual framework and the research questions, tested on a sample of the transcriptions, and further developed and expanded through the emerging codes.

The transcripts contained 983 themes that were logged and grouped into categories establishing a hierarchy of responses, moving from specific to general levels. This produced 158 lower order themes (specific) that coalesced into 19 higher order themes (general), which were finally grouped into five dimensions (highest order themes). The inductive process was complete at the dimension level when no additional meaningful groupings coalesced. A database software program (Microsoft Access) was used to reduce and identify the hierarchy of themes.

#### **CREDIBILITY OF DATA ANALYSIS**

Qualitative analysis is based on the value of trying to accurately represent the phenomena studied (Giacomini & Cook, 2000). Commenting on the ongoing reconceptualization of qualitative trustworthiness criteria (Guba & Lincoln, 1994; Lincoln, 1995), Sparkes (1998) argued that there can be no recipes or rigid formulas in this form of inquiry, "as different validation procedures or sets of criteria may be better suited to certain situations, forms of representation, and desires for legitimization" (p. 380).

In order to ensure credibility in this study, the following procedures were chosen:

- Description of the chosen methods and procedures, presentation of findings linked with raw-data themes, consideration of rival perceptions, and an analytic list of all emerged themes that can be tested in further research.
- Triangulation of the transcripts and the theme classifications. Two researchers independently coded parts of the transcripts in order to reduce the danger of misinterpretation of the data. Furthermore, three other researchers checked the emerged themes and agreed on their appropriateness.
- Member checking through a pilot study helped exclude irrelevant questions and enhance the interview guide's clarity and relevance. Furthermore, a sample of 10 interviewees was asked to confirm the accuracy of the interview transcriptions and theme classifications. Participants confirmed the accuracy of their transcripts and the interpretation of their comments, and any observations on the hierarchy of themes as they applied to themselves were taken into consideration.

The credibility of the account is determined by the accuracy with which it reflects the lived experience of this specific group of participants. In this study, the participants were regularly active, reported high-perceived levels of well-being, and were in the young-old and old age groups.

## Findings

Among the interviewees, a number of common features were important for the reporting of subjective well-being. Table 1 demonstrates the dimensions of subjective well-being that emerged from the raw data points and the reduction of subthemes as described in the coding process. The final dimensions were developmental, material, physical, mental, and social well-being. In reality, these dimensions are not likely to exist as completely independent constructs, because subjective experiences can contribute in different ways to more than one of them. Nonetheless, the delineation of initial dimensions provides a useful framework for investigating the contributory components of older adults' subjective well-being and the potential influence of physical activity on them. Participants reported that some issues were not directly influenced by participation in physical activity; these issues are presented in parentheses in Table 1.

\Insert Table 1 About here\

### DEVELOPMENTAL WELL-BEING AND PHYSICAL ACTIVITY

This dimension embodies personal development, independence, and healthy adjustment to older age. It refers to the need to develop one's self, the importance of being independent in order to continue to pursue personal goals and aspirations, and, furthermore, the need to maintain a busy and active life. According to respondents, well-being is "to achieve mainly what you want," "to be able to do what you want to do," and "to achieve a little bit more all the time." Through physical activity they "take something out," and they feel better because they have made "a little bit more."

According to 1 respondent, "when you have been successful and you finally find that you are old and you do not have anything to be successful at, it is very difficult." Physical activity offers a sense of "achievement" and makes respondents feel "pleased" with themselves because they are still able to do things they have enjoyed in the past and are able to improve further. Physical activity gives respondents "a purpose in life" and "something to look forward to." Participants mentioned the significance of maintaining their independence because it is important "not to have to bother anybody," because they "hate to rely on someone else," and "it drives [them] crazy not to be able to do things."

Retirement "is not the end" and is seen as an opportunity for spending more time in furthering who one is. Nonetheless, it brings "a big change," and some respondents find difficulty in coping with it. An interviewee stressed that "when you are used to doing something that you cannot do anymore, you miss it. So you try to find ways to replace it, and up to a point exercise put things together." Being active and busy is very important, and activity protects older adults "from having time on their hands" that they otherwise find difficulty in filling. Through exercise, respondents try to avoid the "defeating attitude" and "sitting on a chair all day long

**Table 1 The Dimensions of Subjective Well-Being**

Lower order themes	Higher order themes
Developmental Well-Being	
Achievement, adjustment, challenge, coping, creativity, fulfillment, expectations, goals, purpose, aging, improvement, interest in life, replacement for work, retirement	Personal development
Ability to do things, dependence, independence, freedom, control over one's life, restriction	Independence
Habit, being active, keep being busy, something to hold on to, vegetate	Maintenance
Material Well-Being	
Financial security, money concern	Financial independence
Home, garden	Personal possessions
Physical Well-Being	
Adrenaline, aging, agile, being fit, being nimble, comfort, coordination, exhaustion, flexibility, loose, mobility, pain, supple, stiffness, strength, sweat	Fitness
Being healthy, genes, disease, tiredness, breathing, deterioration, diet, function, heart, insomnia, low back pain, sleep, stamina, weight control	Health
Mental Well-Being	
Alertness, concentration, state of mind, peace of mind, discipline, distraction, focus, information, memory, mind, obligation, skills, think different, think fast	Cognitive function
Having faith, church	Faith
Hold back, loneliness, nervous, pressure, sluggish, stagnation, stress, tension, worry	Negative affect
Ability to enjoy life, better mood, calming effect, concentration on the inner being, contentment, energy, enjoyment, feel good, forcible, happiness, hope, young attitude, satisfaction with life, positive attitude, luck, pleasure, relaxation, stability	Positive affect
Belief in self, body image, physical self, self-confidence, self-control, self-esteem, self-satisfaction	Self

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Social Well-Being	
Contribution, church, help people, modern trends, voluntary work	Community involvement
Activities in and outside home, change of scenery, happiness with surrounding, natural environment, noise, man-made surrounding, weather	Environment
Children, family life, marriage, spouse, parental role, partner, looking after parents	Family
Acquaintances, different approach to people, friends, isolation, meet people, meet people with the same interests, neighbors, personal relationships, to be needed	Social life

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and not getting up.” Being active and busy seems to be critical, because “if you stop, you vegetate.”

Finally, having things to do helps older adults “keep going.” According to 1 respondent, “I could quite easily at one time have said ‘I do not want to bother’ when I retired. But it does make a difference when you wake up and you have to do things that you enjoy.”

#### **MATERIAL WELL-BEING AND PHYSICAL ACTIVITY**

This dimension embodies the need for financial independence and security and material possessions. Although respondents “dislike worrying about money,” and some mentioned that they would like more money, income does not seem to play an important role in their well-being. Respondents reported, “As long as I pay the bills I am happy,” stressing that money is important up to the point that it covers basic needs. A “decent, reasonable, warm” house and a garden seem to be enough for the respondents, and statements such as “I have home, car, and television, but I do not specifically need them. I prefer enjoying doing other things” show that possessions are important but do not ensure well-being. No respondents mentioned aspects of material well-being as outcomes of activity. On this basis, material well-being appears to be unaffected by physical activity participation.

#### **PHYSICAL WELL-BEING AND PHYSICAL ACTIVITY**

Responses indicated that being physically healthy and free from illness are important contributors to the subjective well-being of older adults. One participant stated, “No matter how much money you have, if you do not have your health you do not have anything.” “Not to have illness” is obviously a desired commodity, and respondents pointed out that diseases cause several restrictions and influence all other aspects of well-being. It should be noted that many of the participants had been referred by their GPs for exercise at a local leisure center in order to improve their health.



There is also a functional element in physical well-being. Respondents notice that their body “is running down” and that every year their physical abilities “are getting less.” What they believe, however, is that they “would have deteriorated much more” if they “did not have the exercise.” For respondents with specific health problems such as arthritis, “physical activity is to slow down the effects” of their disease, because if they can “slow things down and maintain the quality of life” they “would be happy.” Fitness is a significant element of physical well-being, and respondents believe that “you need to feel fit, because if you do not feel fit everything you do, you do not enjoy it.” “If you have aches and pains and you are not well, you cannot do the things you want to do.” “Well-being is to be physically in a good condition,” and physical activity helps respondents keep “loose,” “comfortable,” and “trim.”

Participating in physical activity programs leads to “better breath control,” and respondents report that through exercise their “sleeping is better.” Respondents recognize the necessity of exercise; if they do not exercise they get “very stiff” and become “more and more immobile.” Exercise therefore helps them keep “mobility” and “function,” because after participating in an exercise program they “perform better” and they “bend and stretch with no problem.” Moreover, they “fairly enjoy the housework,” and for them it is important that during exercise they “use the muscles that help [them] get up from a chair, carry the shopping,” and do inside (“hoover,” “cleaning up”) and outside (“gardening,” “walking the dog”) activities.

Some interviewees suggested that exercise had negative elements such as making them feel “more tired,” but most of the respondents believed that they need exercise to “keep on going”; they “must not give it up,” and as 1 interviewee stressed, with participation in physical activities “the blood is flowing, the heart doing its job, and the system feels lively.”

#### MENTAL WELL-BEING AND PHYSICAL ACTIVITY

The statements “feeling well,” “being satisfied with how life is going,” and “being mentally alert” indicate the main characteristics of mental well-being. Respondents mentioned that it is important to be “content,” keep “a young attitude,” and “enjoy life.” Furthermore, well-being is a “peaceful approach to everything,” and respondents prefer to live peacefully and have a “nice, calm, collective, and stable life.”

Physical activity plays multiple roles in respondents’ mental well-being. It keeps them “mentally alert,” “takes away the problems,” and helps them “focus better” on what they are doing. It makes them feel “content,” and therefore it is very important that they can participate in “enjoying” activities that make them feel “happy.”

Through physical activity, “life looks better,” and respondents mentioned that exercise is “as much a mental thing as a physical thing,” and it helps them do things with a much more “positive” and “young” attitude. In advancing age “it is very easy to give up in life,” and physical activity helps respondents feel “lively” and “forcible.” Participants stressed that physical activity is something to “hold on to” and offers them “support,” and, more important, it gives them “the quality of concentration on the inner being.” Furthermore, respondents reported that through exercise they have “more control,” which increases their self-confidence. In addition, body image appears to be important: “Feeling fit does affect your mood

because you do not want to get up in the morning when you know you are fat and overweight, do you?" Moreover, "it is very important that you always look nice."

"Not to hold back" and "stagnation" are negative effects of aging that respondents fear. They also dislike being under "stress" and "worrying about things," especially health, which becomes an important issue for them. Physical activity is a good distraction for them, because after participating in physical activities they find themselves "more able to solve problems." Exercise is "something that can help to take the stress out of anything" and helps respondents with "controlling" their way and "controlling" their minds. Finally, according to 1 respondent, physical activity is beneficial "because it is good for your health," which "influences your mind," and that in turn "influences your general health," implying the mutual interaction of the mental and physical dimensions of subjective well-being.

### **SOCIAL WELL-BEING AND PHYSICAL ACTIVITY**

Most respondents consider family life very important and said that "well-being for me is when my family is well. That gives me good feelings." Furthermore, "well-being is friends, it's the social life." Respondents stressed the importance of having nice friends "who support you" and the need for friends "your own age." Most of all, respondents need friends and social life because they "need to be needed," they "need to be wanted," and they are afraid of "living alone." All the interviewees reported that one of the most important outcomes of participating in physical activity is the opportunity to "meet people" and "broaden" their social lives.

Physical activity helps respondents maintain social networks and do the things they "want to do," because "without being fit you cannot do any of these things, you cannot go out, just sit." Through participation in physical activity, respondents have the opportunity to meet a lot of "different people," and this is important "when usually you do not get out of the house." Exercise gives them the chance to not only meet other people but also "meet people with the same interests." "Having a lot in common" helps people build new friendships more easily. Exercise also helps respondents "have a different approach to people" and be more open and less reserved in making new friends. Meeting people is beneficial for respondents because "people help each other without realizing it. Just a smile makes me feel better. So probably makes other people feel better as well."

Finally, respondents stressed that "a pleasant surrounding in which to live" is important to them because "well-being is being able, when friends come, to walk outside in the nice atmosphere." Participating in physical activities offers participants the opportunity to be "outside home" in the natural environment, "mixing with other people in the fresh air" and having a "change of scenery."

Physical activity is in itself a diverse phenomenon, taking many different forms. In this study participants were intentionally drawn from organized physical activity such as social dance, competitive sport such as badminton, and aerobic exercise that took place in groups. Clearly the characteristics of the activity and the setting in which it takes place can be important influences on the potential for receiving mental-health benefits. Although the unit of analysis in this study was the participant rather than the form of activity, contributions revealed some insight into the differential effects of involvement in different types of physical activity.

Participants in the social-dance groups, for example, mentioned that they simply enjoy learning new dances. They also find a challenge in the need to “have to remember what the steps are and make them with the beat.” Participating in sports such as badminton has its own set of benefits. Respondents mentioned that they like to improve their skills in the game, and they enjoy the “competitiveness, beating someone, and the ‘dressing-room talk’ that follows a game.” Physical activity modes appear to offer their own particular formulas for enhancing subjective well-being.

It is also conceivable that characteristics of the setting in which the activity takes place are important considerations. For example, the qualities of the exercise leader, the weather, the lighting and sound qualities, and the “sociability” of the setting are important. The characteristics of physical activity and the mechanisms by which they help stimulate or inhibit the enhancement of subjective well-being are therefore important considerations for further research.

## Discussion

The purpose of this study was to explore the dimensions of older adults’ subjective well-being and to identify ways in which dimensions might be influenced by participating in physical activities. Five main dimensions emerged from the interviewees’ responses, with high correspondence to those emerging in the general literature (Cummins, 1996): developmental, material, physical, mental, and social well-being.

The emergence of developmental well-being as a dimension that describes how older adults seek growth, independence, and adjustment to old age contrasts with the stereotype that older people passively accept their declining ability to perform and contribute (Andrews, 1991). The notion that a way to successful aging is to “go on pursuing ends that give our existence a meaning” (Simone de Beauvoir, in Andrews, 1991) is supported. Personal development suggests “moving onward and forward,” and this was clearly apparent in the comments of these active older adults.

Respondents mentioned that participating in physical activities offers them feelings of achievement and success. This might help counteract the decline in sense of personal control and competence in the elderly and the subsequent loss of independence that is often reported as a feature of old age (Baltes & Baltes, 1990). Greater exposure to physical activity appears to improve perceptions of personal capabilities, and this in turn leads to positive changes in well-being (McAuley & Rudolph, 1995). Furthermore, commitment to a set of physical activity goals can provide a sense of personal agency and of structure and meaning to daily life for older adults (Diener et al., 1999). This is considered particularly important for successful aging that includes self-acceptance, autonomy, and purpose in life (Baltes & Lang, 1997). Physical activity might provide a substitute and therefore help replace lost roles with new ones (Atchley, 1993■).

Financial resources and personal possessions contribute to the subjective well-being of older adults to the point that they cover basic needs such as shelter and security. Once individuals feel that they have sufficient resources to manage, personal achievement and goals become more salient (Krause, 1996). This seems

to be the case for participants in this study. Respondents reported that more wealth beyond comfortable housing and subsistence did not contribute to well-being. Although financial and housing status were not assessed in detail in this study, most participants came from professional backgrounds before retirement, and this clearly requires consideration when generalizing from their responses. Participants did not link this dimension with participating in physical activity, other than it being necessary to enjoy reasonable financial standing before physical activity becomes a priority or perhaps even a feasible option. Nonetheless, participants were reluctant to make further comments on financial issues, maybe because of the sensitivity of this topic. Therefore, we suggest that future research on this dimension be explored with caution.

The findings of the present study stress the importance of good health to the subjective well-being of older adults. This confirms previous research showing that the health domain is consistently ranked highest in its contribution to life satisfaction (Cummins, 1996). Functional limitations caused by physical disability or illness can have important and sometimes devastating effects on well-being and have been shown to be predictive of depressive symptoms, reduced life satisfaction, and even suicidal ideation (Bookwala & Schultz, 1996; Bowling, Farquhar, Grundy, & Formby, 1993; Newsom & Schulz, 1996; Zeiss, Lewinsohn, Rohde, & Seelay, 1996). The active older adults in this study certainly feel that physical activity is critical in helping them avoid or delay physical deterioration and serious illness. This amounts to a belief that activity slows the aging process. It is important to remember that several participants were sensitized to the potential of exercise to improve health. They had been referred for exercise for ill-health reasons such as cardiovascular disease, stroke, or arthritis by their GPs and were probably told that exercise was an important part of their treatment.

A doctor's advice can be motivating to at least start to exercise, but a number of respondents stressed that experiencing the benefits of physical activities was required for them to really believe and accept the fact that exercise was important for their well-being. One participant reported that physical activity made him feel more tired: "They tell me there are gains but I do not know. I will wait to see if there is any difference in the end of the 10 weeks, and if not I will stop it." This implies that experiencing health gains might be critical for some individuals and that programs need to be attractive to ensure that there is persistence in order for health gains to be experienced. In general, however, the voluntary participation in exercise of GP-referred individuals and their positive comments provide supporting evidence for the effectiveness of exercise for this group.

Physical activity is also seen as leading to direct improvement of functional ability and mobility; respondents reported that it keeps them "mobile" and "supple" and helps them move easily. This, in turn, through maintaining autonomous functioning, helps participants independently perform everyday activities.

Findings suggest a significant contribution of physical activity to the mental well-being of older adults, which encapsulates maintaining mental alertness and positive affect and avoiding stress and negative function. Impaired cognitive performance is one of the signs of advancing age having direct negative effects on older adults' life (Chodzko-Zajko & Moore, 1994). Participants reported that physical activity helped their cognitive performance through better concentration

and focus. Furthermore, as with younger populations, activity is seen to enhance affect (Biddle, 2000). The “feeling good” effect of physical activity is evident in older adults’ statements of better mood and pleasant emotions. Increased levels of happiness and enjoyment and a more positive attitude in general are seen to be important outcomes from participating in physical activities. Also important is the role of physical activity in alleviating negative symptoms and feelings; respondents mentioned that physical activity helps them reduce stress and tension, deal with problems more effectively, and feel comfortable and relaxed. Furthermore, respondents did not mention depression as a negative affect, although it is one of the major problems faced by older adults (O’Connor et al., 1993). The degree to which this is a result of participation in physical activity, however, is not possible to determine.

An important finding is that participants reported that the “feeling good” outcome of participating in physical activity and the positive change in mental-health conditions are independent of improvement in physical fitness. Consistent with that are the findings from experimental research that has repeatedly failed to identify links between changes in fitness and improvements in measures of mental well-being. The qualitative data here clearly indicate that physical activity might invoke many mechanisms such as sense of accomplishment and control and sociability as a means of improving well-being in the absence of functional changes.

These findings support previous research showing that social and family relationships come second in importance to health in contributing to life satisfaction (Cummins, 1996). Social relationships have also been found to be strongly related with health in later life (Krause, 1996). Adults who have friends are known to meet various developmental challenges such as widowhood with better outcomes than individuals who do not have friends (Connidis & Davies, 1990).

The participants in this study reported the necessity of having friends, meeting people, and socializing. They mentioned that participating in physical activities gives them the opportunity to avoid isolation and provides a reason for getting out and expanding their social network. Physical activity also contributes indirectly to helping older adults avoid social isolation by helping them maintain functional capacity and their ability to complete daily tasks of living. Furthermore, avoiding physical deterioration can enable older adults feel as though they are able to contribute to the social fabric of the communities in which they live.

Although this qualitative study has confirmed the existence of several important dimensions of subjective well-being, it has also revealed the complexity of the human experience and the interdependence and interrelatedness of these dimensions. “Healthy body and healthy mind” and their interdependence are encapsulated in the words of the participants. Many of them feel that through physical activity their physical functioning improved, and this in turn lead to feelings of success and attainment of an overall better quality of life. Their physical independence and functioning contribute to better health, and, reciprocally, improved affect, cognitive function, and self-perceptions appear to promote interest and attraction to physical activity. Similarly, developmental well-being is inexorably tied to mental well-being. To this extent, dimensions should be viewed as having permeable and shifting boundaries, with scope for overlap, and the potential of them being hierarchically arranged with some dimensions existing as superordinate to others should be considered.

## Conclusions

The qualitative techniques used in this research with active older adults have allowed considerable insight into the potency of different elements of life experience in contributing to their subjective well-being. Sources of subjective well-being for this group were reduced through content analysis to five underpinning dimensions. These broad dimensions appear to exist in some form throughout the adult life span but have characteristics that are unique to later life that can feature retirement, bereavement, and loss of function and independence. A qualitative approach has enabled a part of that uniqueness to be documented, so dimensions can be described in older adults' own terms and from their own experiences. The richness of the data also allowed an examination of the interrelatedness of the dimensions of subjective well-being, illustrating the value and the opportunities offered by a qualitative approach. The outcomes of this study have provided a useful insight into how physical activity can contribute to the subjective well-being of older adults. All dimensions of well-being seem to be influenced, with the exception of material well-being. These adults seemed to be able to express their need for challenge, health, fitness, functional health, mental health, and friends and family, and they have clear views about how physical activity assisted in fulfilling some of their current needs.

Further qualitative research might be undertaken with older adults who are not physically active to determine whether the same dimensions are potent and how and the extent to which their well-being needs are met in the absence of physical activity. Furthermore, exploring the subjective well-being characteristics of sedentary older adults in comparison with active adults might inform us further of the specific elements through which activity can contribute. Further research is also needed in a variety of settings and subject groups. Institutionalized older adults, in particular, make up a large, important group that is likely to have different needs and priorities.

Finally, the information from this study suggests some early pointers for the design of successful exercise programs for older adults. Certainly, the older active adults in this study felt that physical activity had contributed in many ways to their well-being. Although the focus of the study was not directly on their motives for physical activity, it is reasonable to assume that the benefits to well-being that they experienced helped motivate them to participate. This suggests that activity programs should be designed to maximize opportunities for participants to experience personal achievement and an improved sense of personal control; improved functional capacity, strength, mobility, mood, alertness, and vigor; less stress; and a sense of belonging and social confidence.

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