“You Have to Keep Moving, Be Active”: Perceptions and Experiences of Habitual Physical Activity in Older Women With Osteoporosis

Ing-Mari Dohrn, Agneta Ståhle, Kirsti Skavberg Roaldsen

Background. Physical activity (PA) is essential for older adults with osteoporosis, and health care professionals play important roles in promoting PA and encouraging patients to make healthy choices. However, many factors influence habitual PA, and there is only limited knowledge about the perceptions and experiences of PA among older women with osteoporosis.

Objectives. The purpose of this study was to describe perceptions and experiences of PA and the factors that influence habitual PA among older adults with osteoporosis, impaired balance, and fear of falling.

Design. This was a qualitative interview study applying interpretive content analysis with an inductive approach.

Methods. Informants were a purposeful sample of 18 women, aged 66 to 86 years, with osteoporosis, impaired balance, and fear of falling. Individual, semistructured, face-to-face interviews were recorded, transcribed, condensed, and coded to find subthemes and themes.

Results. The overall theme found was “Physical activity—a tool for staying healthy with osteoporosis.” This overall theme comprised 2 main themes interpreting the challenges and possibilities of being physically active with osteoporosis. These themes were not separate but rather linked to each other like 2 sides of the same coin, with factors that could act as both barriers to and facilitators of PA. Personal preferences and osteoporosis-related concerns influenced habitual PA, and individualization was perceived as important.

Limitations. Some results may be context specific and limit the transferability to people with other cultural or socioeconomic backgrounds.

Conclusions. The women perceived that PA was an important tool to maintain health with osteoporosis and believed that they had a responsibility to use this tool. They had adapted to disease-specific limitations and developed strategies to overcome challenges and barriers to PA. Lack of PA promotion and conflicting advice about PA from physicians created uncertainty. Encouragement and guidance from physical therapists, individually or in groups, were very important.
Perceptions of Physical Activity

Osteoporosis is a chronic disease characterized by reduced bone mineral density, resulting in fragile bones that fracture easily. It is one of the major musculoskeletal conditions in older people, and as the population of older adults is growing, the prevalence of osteoporosis is increasing. It is estimated that more than 200 million people worldwide have osteoporosis. Other chronic diseases, effective osteoporosis management requires a shared responsibility between caregiver and patient, where the health care professional is able to respond to patients’ needs for information and support. A patient-centered approach that acknowledges patients’ own experiences, priorities, and fears enhances the patients’ capacity to make decisions about their health behavior and enables patient empowerment.

Physical activity (PA) is one of the most effective tools to stay healthy in aging. Older adults who are physically active have a lower risk of developing coronary heart disease, stroke, type 2 diabetes, hypertension, depression, dementia, and some cancers. Regular exercise can improve muscle strength, bone density, flexibility, and balance and thereby decrease the risk of falls and fractures, and it is well established that PA, especially weight-bearing exercise, is essential in both prevention and treatment of osteoporosis. Physical therapists and other health care professionals play important roles in encouraging patients to make healthy choices and in promoting PA. However, PA is a dynamic and complex behavior, and many factors—individual, social, and environmental— influence habitual PA in both younger and older adults.

Beliefs in the benefits of exercise, outcome expectations, and exercise self-efficacy (belief in one’s ability to engage in exercise) are factors associated with exercise activities among older people. Other known factors of importance for PA behavior in older adults are advice from health care professionals, individual needs, fear of injury, and environmental factors such as weather conditions. Most evidence of the determinants and correlates for PA in older adults derive from quantitative studies, and there is only limited research on PA in the oldest old, that is, people aged 80 years or older. One of the few qualitative studies exploring the perceptions and experiences of PA among people over 80 years of age showed that reasons for PA were perceived mental well-being and remaining healthy and independent in daily activities, and the informants constantly adapted their PA in relation to perceptions of their own frailty.

Several studies have aimed to identify perceived motivators for and barriers to PA in people with chronic disease, and being diagnosed with a chronic health condition has been identified as both a barrier and a motivator. Knowledge about osteoporosis and stronger self-efficacy has been associated with more exercise; however, findings from research on PA behavior in older adults diagnosed with osteoporosis are inconsistent. Some studies have shown that the increased risk of fractures and fear of falling may cause self-induced PA restriction, and other studies have shown that fracture risk, pain, and fear of falling were not associated with low PA levels. These findings indicate that there is a need for more research about the perceptions and experiences of PA among older adults with osteoporosis. A deeper understanding of factors influencing habitual PA may provide important knowledge to be used clinically as well as in future intervention research.

Qualitative studies can provide insight into individual perspectives and explore experiences and perceptions that cannot be elicited through quantitative methods, and interpretive content analysis with an inductive approach is a design well suited for this aim. This non-theory-driven design, moving from the specific to the general, allows the researcher to discover patterns, interrelationships, and themes emerging from the data and synthesize them into a larger statement or theme, without the restraints of predetermined frameworks.

The aim of the present study was to describe perceptions and experiences of PA and the factors that influence habitual PA among older women with osteoporosis, impaired balance, and fear of falling.

Method

Informants

Eighteen women were recruited to the present study from a randomized controlled study evaluating a 12-week balance training program (BETA study, NCT01417598, www.ClinicalTrials.gov). Participants in the balance training study were 94 community-dwelling adults (92 women, 2 men), aged 65 years or older, with osteoporosis as objectively diagnosed via bone densitometry and with impaired balance and fear of falling. Participants were recruited through advertisements in local newspapers, through the Endocrinology Clinic at Karolinska University Hospital, and through the Osteoporosis Association in Stockholm. Sixty-four participants were allocated to balance training, and 31 were allocated to the control group. Informants with a wide range of habitual PA levels, objectively measured as steps per day, were purposely recruited to the present study from both the intervention group (n=15) and the control group (n=3). All informants were able to walk indoors without aid, 5 women were over 80 years of age, and 3 women had a habitual gait speed of <1.0 m/s, which is considered to be a risk factor for hospitalization and mortality. Further background characteristics of the informants are described in Table 1. The informants are presented as I1 to I18 together with information about their age (in years) when quoted.

Ethical Considerations

All informants provided written informed consent, and the study was approved by the Regional Board of Ethics in Stockholm (Dnr: 2006/151-31, 2009/ 819-32, 2012/1829-32).

Data Collection

Individual semistructured interviews were selected for the capacity to generate rich data, and an interview guide with open-ended questions was developed (Appendix). Three pilot interviews were conducted to train interview technique and to test and modify the interview guide. The pilot interviews were not included in the study.
All interviews were conducted face-to-face by the first author (I-M.D.), a physical therapist with 18 years’ experience from clinical work in primary health care. The long experience of meeting older patients with chronic diseases, including osteoporosis, allowed the interviewer to meet with patients and respond to questions or concerns that could arise during the interview, which ensured the protection of the informants. The interviews took place between February and October 2011 at Karolinska University Hospital or at a movement laboratory at Karolinska Institutet in Stockholm, Sweden. Informants who had participated in the balance training were interviewed 5 months after the end of training. Each woman was informed that the interview would be used for research purposes. Informed consent was obtained from each participant. The interviews were transcribed verbatim (Olympus WS-550M, Olympus America Inc, Center Valley, Pennsylvania) and transcribed verbatim.

Data Analysis
The analysis was inspired by Baxter’s description of thematic content analysis, a holistic analysis with a red thread linking the themes, and the process followed the criteria for credibility, dependability, and transferability, as described by Elo et al., to ensure the quality of the findings and trustworthiness of the interpretations. The first author (I-M.D.) performed the analysis in collaboration with the coauthors, 2 senior physical therapy researchers (A.S. and K.S.R.). The coauthors had previous experience with qualitative methodology, including content analysis, and the authors’ combined clinical and research experience was considered to be complementary and of importance to the analysis.

The rigorous and systematic analysis process was carried out in several steps. During the first step, the first author read the transcripts several times to become familiar with the material. Thereafter, all text corresponding to the aim and the research aim. This step was repeated, and codes were rearranged several times by the first author in discussion with coauthors to search for themes. The whole analysis process involved going back and forth between the different steps to capture the key aspects of the themes in the raw data, and the findings were repeatedly discussed by all authors until consensus was reached. The interviews and the content analysis were performed in Swedish. After closing of the analysis, the interview guide and the quotations were translated into English by a bilingual translator in collaboration with the first author. A native English-speaking person reviewed the quotations and made corrections, with respect to context and cultural nuances.

Role of the Funding Source
The study was supported by grants through the Regional Agreement on Medical Training and Clinical Research between the Stockholm County Council and Karolinska Institutet (ALF) and from the Swedish Research Council (521-2010-2483, 521-2013-255). The funding sources had no role in the study’s design, conduct, or reporting.

Results
The analysis resulted in one overall theme, comprising 2 main themes and 8 subthemes (Tab. 3).

Overall Theme: Physical Activity—A Tool for Staying Healthy With Osteoporosis
The overall theme found was that the women had a strong belief in PA as a possible way to maintain health in their life with osteoporosis, which also implied that they believed that they themselves had an important role in achieving this possibility. The women emphasized the importance of being seen as individuals with their own needs and choices and described how they had adapted to disease-specific limitations and developed strategies to overcome

Table 1.
Characteristics of the Informants (N=18), All Women Diagnosed With Osteoporosis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y), median (range)</td>
<td>76.5 (66–86)</td>
</tr>
<tr>
<td>Body mass index (kg/m²), median (range)</td>
<td>24.3 (18.7–32.7)</td>
</tr>
<tr>
<td>University education, n (%)</td>
<td>5 (28)</td>
</tr>
<tr>
<td>Living alone, n (%)</td>
<td>12 (67)</td>
</tr>
<tr>
<td>Physical activity (steps per day), median (range)</td>
<td>5,804 (1,927–11,024)</td>
</tr>
<tr>
<td>Other chronic diseases, n (%)</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>10 (56)</td>
</tr>
<tr>
<td>Stroke</td>
<td>2 (11)</td>
</tr>
<tr>
<td>Fractures in last 10 y, n (%)</td>
<td></td>
</tr>
<tr>
<td>Upper extremity</td>
<td>6 (33)</td>
</tr>
<tr>
<td>Lower extremity</td>
<td>3 (17)</td>
</tr>
<tr>
<td>Spine</td>
<td>1 (6)</td>
</tr>
<tr>
<td>Any fracture</td>
<td>8 (44)</td>
</tr>
<tr>
<td>Use walking aid outdoors, n (%)</td>
<td>5 (28)</td>
</tr>
<tr>
<td>Experienced a fall in previous year, n (%)</td>
<td>4 (22)</td>
</tr>
<tr>
<td>Falls Efficacy Scale International, median (range)</td>
<td>29 (21–47)</td>
</tr>
</tbody>
</table>
perceived challenges and barriers, with the aim of being able to use PA as a tool:

I really believe that, if you’ve got osteoporosis...I think, and that’s what you hear and what I’ve picked up: You have to keep moving, be active...And then some people can be more active and some less...but strengthen your back, your muscles...I believe you have to work with your body. (I5,75y)

Main Theme 1: Being Physically Active With Osteoporosis Means Having to Face Challenges

The first main theme, comprising 4 subthemes, interpreted the limitations, bar-

Table 3.
Overview of the Results: Overall Theme, Main Themes, and Subthemes

<table>
<thead>
<tr>
<th>Overall Theme</th>
<th>Main Theme</th>
<th>Subtheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity—a tool for staying healthy with osteoporosis</td>
<td>Being physically active with osteoporosis means having to face challenges</td>
<td>Perceived barriers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Accepting body limitations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Living with uncertainties and concerns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Finding strategies and solutions</td>
</tr>
<tr>
<td></td>
<td>Being physically active gives possibilities to maintain health</td>
<td>Identity as an active person</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Belief in the health effects of physical activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sense of mastery and self-efficacy</td>
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<td></td>
<td></td>
<td>On your own terms</td>
</tr>
</tbody>
</table>
riers, and concerns the informants perceived and experienced as challenges to being physically active. This theme also included having to find strategies and solutions to face the challenges:

They say I’m not allowed to mow the lawn. But I don’t know... I’ve got one of those self-propelled mowers... And I feel much better after mowing the lawn for half an hour. I walk a lot, and I have something to hold on to. (I11,80y)

Perceived barriers. The major perceived barrier to PA was weather conditions; all informants talked about how they had to be extremely careful in the wintertime. Icy and snowy sidewalks were the main reason for increased fear of falling, and the informants described how they sometimes had to stay indoors and refrain from daily walks to avoid the risk of fall-related fractures. Other barriers included travels that made regular exercise difficult, taking care of grandchildren, and lack of motivation to exercise, especially strength training. Concerns from others, mostly worried family members discouraging them from certain activities, also were mentioned:

And then it’s icy and there are hills... It’s outside the stores, it’s everywhere, you know. And that stops me from walking. (I7,70y)

Another important challenge was to approach the conflicting advice, or lack of advice, about PA and osteoporosis given by health care professionals. Most women described how their physicians emphasized activity restrictions rather than promoting PA, and many of the informants stated that their physicians had not even mentioned the importance of PA and exercise for people diagnosed with osteoporosis. This conflicting advice, or lack of advice, was perceived as confusing and in conflict with the information from physical therapists or other health care professionals and with information in newspapers or on websites targeting individuals with osteoporosis:

The doctor only said that if you’re in a lot of pain, take painkillers, but she didn’t say anything about physical activity... “Well, it’s good if you go out for a walk,” she says, just like that. I mean, I haven’t gotten any other information. (I16,68y)

My doctor told me, “It’s icy, don’t go out walking now.” OK, so what am I supposed to do? Walk indoors? (I7,70y)

The women wanted safe and effective exercise guidelines from health care professionals who had knowledge of osteoporosis, and lack of specific advice and lack of individual support were perceived as barriers.

Accepting body limitations. The informants described both age-related changes and diagnosis-specific limitations to PA, such as bodily and mental fatigue, reduced flexibility, and functional limitations caused by previous fractures. These limitations were often referred to as facts that one simply had to accept as a part of life, being an older person with osteoporosis:

You know, your body says “no.” It’s not as strong as it used to be... And that’s, of course, something you have to accept. It’s just... well... just, how life is. (I15,80y)

Living with uncertainties and concerns. Living with a fragile body evoked feelings of uncertainty or fear regarding PA. Several informants mentioned that they needed more knowledge about the appropriate type of exercise for people with osteoporosis. Some women specifically expressed uncertainty concerning whether or how well their bones could withstand different types of PA. They also described how they pictured their brittle bones:

You wonder if it’s good for you to run up the stairs from the Metro, fast, fast, fast, or is it bad? Sometimes you wonder... will the bone break? (I17,76y)

I've been thinking, maybe I should try strength training... But, God no, I think, I'm probably like a biscuit. Yes, a cracker... No, maybe it doesn't work. (I2,74y)

One informant expressed a strong fear of potential injury after receiving activity restrictions from her physician when she was first diagnosed with osteoporosis. She described her fear of moving as a phobia resulting in activity restriction:

Yes, he really scared me. I wasn’t allowed to carry more than a gallon of milk; I had to use a shopping cart... I walked around like a zombie the first 3 weeks [laughter]... I was so scared of everything... and it was stuck in my mind for a long time... Before I got diagnosed, I walked every day... almost a kilometer, morning and night, without problem, but then, you know, I got like a phobia. (I1,69y)

Many informants expressed concerns about the future development of their osteoporosis, including how they would be restricted in terms of PA due to pain or lack of flexibility or strength and how they could end up sitting in a wheelchair. They also talked about fear of losing their independence. When talking about their worries about the future, they often referred to negative role models, mostly older relatives with severe osteoporosis. For some women, these worries gave greater motivation for PA:

But then I think about her, I really don’t want to be like her, so I have to push myself a bit more... That’s how I think. (I16,68y)

Finding strategies and solutions. Informants described 3 different strategies to face the challenges of being physically active with osteoporosis. The first strategy was to be careful and take special precautions in how to perform certain activities, such as climbing stairs or lifting heavy items. This strategy was connected to fear of fractures and fall-related concerns and included avoiding outdoor activities with high demands on balance performance or activities with a high risk of falling, such as cross-country skiing, skating, or bicycling:

I don’t go skiing anymore. I used to do it a lot, but... I’m too stiff now and... fall. No, I let it be. (I2,74y)

The second strategy, mentioned only by a couple of the informants, was to conserve energy, a strategy connected to...
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I’ve started going to a gym a little to run on a treadmill...because when you pound or put pressure...on your bones, it builds new [bone mass], and then I think, even though I’m almost 70, maybe I can build new bone mass, too. (13,69y)

This main theme encompassed 4 subthemes.

Identity as an active person. Most women perceived themselves as being an active person. Physical activity had always been a natural part of their lives, and still was. They had been engaged in different sport activities as children or young adults, and some had spent a large part of their professional career in physically active workplaces. They had integrated exercise routines and walking in their daily life, and they perceived regular PA as very important. Some informants even described a craving for PA:

I’ve always done it and liked it. Liked walking, I still do. (12,74y)

Yes, it’s a kind of habit, like a craving. I get out of bed, get my jacket, and go out walking. It’s one of those routines you get. (116,68y)

Belief in the health effect of physical activity. Physical activity was perceived to have an important impact both on health in general and on bone health and fracture risk. Many women had searched for and obtained information about the benefits of PA for people with osteoporosis through the media and Internet and from patient organizations. Reasons for engaging in PA were to stay healthy with osteoporosis, to prevent further physical decline, and to combat the effects of aging:

It’s important [PA]. Because when you sit down, start solving crosswords, day in and day out, it’s no good. . . . [laughter] But crosswords are good too, for the brain . . . . But, well, you know what I mean, sitting too much, too much sedentary . . . that’s not good for your body, the joints, and it’s not just the osteoporosis, but in general. (11,69y)

The informants’ own experiences of positive effects of PA contributed to a general positive attitude toward PA and exercise. Both physical and mental effects were described, and walking in particular was connected to positive emotions and mental well-being. Some women also had experiences with specific exercises or everyday activities that helped them to control or prevent musculoskeletal pain:

Walking, it clears your mind, I think. It feels good, you get out and . . . and then it feels so good to get back in again. (12,74y)

Some of the informants talked about how the knowledge of the possible impact of PA on future development of their disease made them feel guilty when they were not as active as they felt that they could be:

I think about how I know I can influence this [physical decline] myself, and then at the same time realize how stupid I am . . . . Now, I’m talking to myself. When I know this, and have these images in my mind . . . and, at the same time, can at least delay it . . . Then you must be an idiot not doing what you’re supposed to do . . . [laughter] . . . Well, isn’t that the case? . . . At my age, I should know better, anyway. (110,68y)

The belief in the impact of PA on health also evoked feelings of unfairness in some women. They felt disappointed about being diagnosed with osteoporosis despite their active lifestyle:

I think it’s strange I have to face this, because I’ve been active all my life . . . but it probably has something to do with hormones. (116,68y)

Sense of mastery and self-efficacy. Added PA routines gave the women a sense of control over their bone health, and positive PA experiences contributed to a sense of mastery. Being able to take long walks or perform difficult activities generated increased PA self-efficacy. The women who had participated in the balance-training program declared how the specific training helped to strengthen their PA confidence:

Because if you have different diagnoses, it can make you scared of doing certain...
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It's your own body, you're the only one who knows how much you can manage. (I7,70y)

In contrast to the perception that group activities and training partners are facilitators for PA, several women mentioned that they preferred to walk alone so they could choose the pace and route they preferred:

I have a friend, she has a walker, too, because she's got aching feet. But she's not fit at all, not at all, and can't walk very far...we have to sit down. And that's why I rather walk alone if I want to go for a long walk, I can choose the pace myself. (I12,86y)

**Discussion**

The overall theme “Physical activity—a tool for staying healthy with osteoporosis” comprised 2 main themes interpreting both the challenges and possibilities of being physically active with osteoporosis. These themes were not separated but rather linked to each other like 2 sides of the same coin, with several factors acting as both a barrier and a facilitator. Necessary adaptations to age and osteoporosis-related concerns, as well as personal preferences, influenced habitual PA, and individualized support from caregivers was perceived as important.

Chronic disease can affect a person’s self-identity by forcing changes in habits that have been part of daily life for years. To face this challenge, the individual must try to find solutions and strategies, change habits, and adapt accordingly. If this process is done well, one’s life will feel natural and appropriate to the situation. Most women in the current study had adapted successfully to a life with a fragile body; they could continue to be active and thereby maintain healthy behavior. They did not identify themselves as being ill, instead, many of them had a strong identity as being a healthy person. A study on men with osteoporosis showed a similar result; even though the men reported pain on a daily basis or suffered2 and that knowledge about osteoporosis may influence PA behavior to include exercises that improve bone health and decreases the risk of falling. Several informants described how they had added regular PA or specific exercises as part of their self-care after being diagnosed with osteoporosis. This finding is consistent with previous research, showing that self-education facilitates patient empowerment for individuals with chronic diseases and that knowledge about osteoporosis may influence PA behavior to include exercises that improve bone health and decreases the risk of falling.

Social support and peer encouragement have been associated with exercise self-efficacy and maintaining PA habits in older adults, and many women in this study appraised exercising in a group or walking with friends. The social aspects of PA, such as meeting and socializing with other people, are important to older women and may be of special significance for women with osteoporosis, as research has suggested that resources and personal abilities—such as having a positive spirit, a positive view of life, and strong social networks—can modulate the uncertainty and anxiety about future fracture risks. In contrast, and similar to other research findings, several women stated that they preferred to walk alone, which highlights the importance of individualized PA.

The PA restrictions prompted by fear of falling or fear of fractures mentioned in the present study were mainly modifications responding to weather conditions during the winter or adaptations to specific risk activities, such as climbing, lifting, or riding a bicycle. Similar PA behavior changes have been reported in previous studies and could be considered appropriate adaptive adjustments when living with a fragile body and adequate osteoporosis management. Some restrictions were perceived as loss of quality of life; several women stated that they missed being able to ride a bicycle but did not dare to do so any-

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on 15 September 2017
Perceptions of Physical Activity

more. However, the restrictions did not necessarily imply decreased PA. Many informants described how they had found solutions that enabled them to continue to be active.

Even though all informants expressed a genuine belief in PA as a tool to maintain health and to control symptoms or future development of their osteoporosis, some women felt confused and uncertain because their physicians did not promote PA or gave conflicting advice about it. Older adults regard health care professionals as the most trusted source of health information, and physicians have a unique opportunity to promote PA to their patients; however, research suggests that these opportunities are not fully practiced. Lack of PA counseling may give patients the impression that their health care provider does not approve of exercise and, consequently, may lead to uncertainty about the benefits of PA and possible PA restriction.

Similar to the results in studies investigating patients’ ways of handling osteoporosis, we found that several women had chosen not to follow their physicians’ advice regarding PA restrictions; deliberate risk taking was a strategy associated with quality of life in the sense of being able to continue to engage in the same activities as prior to being diagnosed with osteoporosis. Positive experiences in managing activities and taking chances without being injured can result in increased PA self-efficacy and resumed PA. Delbaere et al investigated physiological and perceived fall risk in older adults and found that individuals with a high physiological risk but low perceived fall risk engaged in behaviors that were protective for falling, mediated through a positive outlook on life, and maintained PA.

Some women expressed worries about how much stress their bones could endure and felt uncertain about suitable and safe activities. These concerns are important to recognize, and a dialogue exploring the patient’s beliefs, interpretations, and feelings of the potential risks and benefits of PA could prevent misunderstandings and unnecessary anxiety. Physical therapists can provide accurate advice regarding PA for individuals with chronic diseases, and, consistent with other studies, many women felt that the encouragement and understanding they received from their physical therapists were very important. However, they also requested more individualized instructions and support from their physical therapists to be able to maintain PA on their own. A close and trustful relationship with health care professionals and continued follow-up are important factors for patients with osteoporosis. Exercising at a tolerated intensity level improves adherence and continued activity in older adults, and finding an activity that is perceived as fun and enjoyable facilitates motivation and sustained PA.

Limitations

The sample was limited to a selected population, that is, Swedish women living in urban areas who had chosen to participate in a balance training study; therefore, they may be more positive toward PA and better informed than women with osteoporosis in general. Attitudes, cultural differences, and structural differences in health care may limit some results to be context specific and thereby limit the transferability to people with other cultural or socioeconomic backgrounds. In addition, all informants were women, and the results may not be transferable to men; however, similar results have been described in studies on men’s experiences of living with osteoporosis.

The fact that the informants knew that the interviewer was a physical therapist, who some women previously had met as a test leader in the balance training study, could potentially have resulted in social desirability bias. On the other hand, familiarity with the interviewer could make the informants feel more comfortable with the interview situation and encourage them to talk more freely. All authors were experienced physical therapists with different clinical backgrounds yet solidly familiar with the concepts and context of the study, which was a strength in the analysis process. Nevertheless, prior understanding could overshadow new meanings and hinder noticing everything in the data. There is also a risk that data were overlooked or misinterpreted due to the large amount of data. However, the transparency of the analysis process, including quotations from the interviews, allows the reader to judge the trustworthiness of the results.

Implications and Future Studies

The results provide an understanding of the challenges of being physically active for older women with osteoporosis and highlight the need to consider the individual’s concerns and knowledge regarding PA and bone health. Our findings indicate that older women with osteoporosis who have a positive attitude toward PA and knowledge of the possible health effects of exercise manage to be physically active on their own, which can contribute to physical and mental well-being. However, lack of PA promotion or inadequate PA counseling from physicians or other caregivers can trigger uncertainty and unnecessary self-restriction of PA. These findings emphasize the significance of clear and consistent messages from health care professionals regarding the feasibility and safety of PA for people with osteoporosis and the need for individualized counseling. Physical therapist expertise can help to provide correct information, introduce safe exercises, and make necessary individual adaptations, thereby strengthening PA self-efficacy and facilitating patient empowerment for individuals with osteoporosis.

Our findings may be useful when planning osteoporosis management programs and for health promotion interventions. Efforts must be made to reach those individuals who do not succeed in remaining active on their own, and interventions focusing on increasing PA self-efficacy and reducing fear of falling for older adults should be further developed and evaluated. Supportive tools, such as exercise referrals or simple instructions on television or online, may be useful supplements to face-to-face PA counseling and should be investigated. Furthermore, future studies should explore the information given to patients with osteoporosis, with a particular focus on PA advice and how this advice is perceived and interpreted by the patients.
to verify our findings, more research is needed in other cultural and socio-economic settings.

In conclusion, the women in the present study perceived that PA is an important tool to maintain health in everyday life with osteoporosis, and they believed that they had a role and a responsibility to use this tool. Most women had adapted to disease-specific limitations and developed strategies to overcome challenges and barriers to PA; however, the lack of PA promotion and conflicting advice about PA from their physicians created uncertainty. Many women perceived that the encouragement and guidance they received from their physical therapists, individually or in groups, were very important; however, they also requested more individualized instructions and support.

All authors provided concept/idea/research design, writing, and data analysis. Ms Dohn provided data collection. Professor Stähle provided project management, fund procurement, and facilities/equipment. Dr Roaldsen provided consultation (including review of manuscript before submission). The authors thank all of the informants who made this study possible. They also acknowledge physical therapist students Sofie Werjfelt and Johan Lidén for their help with transcription of 6 interviews and Dr Osmond Crosby for help with translation of the quotations.

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References


### Appendix.

**Interview Guide (Translated From Swedish)**

<table>
<thead>
<tr>
<th>Question</th>
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<tbody>
<tr>
<td>Can you tell me how it is to live with osteoporosis?</td>
</tr>
<tr>
<td>In what ways are you physically active these days?</td>
</tr>
<tr>
<td>What does physical activity mean to you?</td>
</tr>
<tr>
<td>What is it like for you to be physically active with osteoporosis?</td>
</tr>
<tr>
<td>Is there any difference how physically active you are now compared with before the diagnosis?</td>
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<tr>
<td>Can you tell me what you know about physical activity and osteoporosis?</td>
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<tr>
<td>What kind of information on physical activity and osteoporosis have you received? How? Where? From whom?</td>
</tr>
<tr>
<td>What kind of advice would you like to give to other people living with osteoporosis?</td>
</tr>
<tr>
<td>What kind of advice would you like to give to us, health care professionals, when we meet people with osteoporosis?</td>
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<tr>
<td>What are your thoughts about the future regarding physical activity?</td>
</tr>
<tr>
<td>Do you think we have discussed things that you feel are important to you about physical activity?</td>
</tr>
<tr>
<td>Is there anything else you would like to add?</td>
</tr>
<tr>
<td>Follow-up questions: Can you give an example? Could you tell me more about that? Did I understand you correctly?</td>
</tr>
</tbody>
</table>