



Research article

Health and happiness of older Korean women participating in dance activities

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ABSTRACT

This study aimed to determine the health and happiness of older women participating in dance activities using the phenomenological analysis method. The study used snowball sampling to recruit eight participants among older women participating in a 3-month dance program in Korea, starting from March 2019. Data were collected through in-depth interviews and participatory observations, after which the gathered raw data were codified, systematically arranged, and analysed. The contents were then categorized by topic or content into different categories to derive meaningful interpretations and research results. To enhance the reliability and validity of the analysis, objectivity was ensured by applying appropriate criteria for assessing qualitative research. The analysis determined the participants' motivations for participation, health satisfaction, and happiness. The results conclusively and theoretically confirm the importance of dance-induced feelings of health and happiness among the older women in the study. The results should encourage relevant government agencies and other organizations to put increased effort into enacting policy measures to promote older women's health by revitalizing their participation in dance activities and providing them with long-term recreational interventions.

1. Introduction

Korea's population is moving from an aging society to a super-aging society at an accelerated pace each year. According to the United Nations, a super-aging society is one in which the proportion of the population aged 65 years and over constitutes more than 20% of the total population [1]. As of 2021, the data released by Statistics Korea indicate that the total population of Korea is 51.82 million, of which 16.5% ($n = 8,537,000$) are 65+ years of age. At this rate, Korea is projected to become a super-aging society by 2025, with the elderly population expected to account for 43.9% of the total population by 2060. In terms of the gender distribution of the Korean population aged 65+ years, women outnumbered men by 15% (57.5% vs. 42.5%) as of 2017 [2]. This female dominance in the population aged 65+ years has aroused interest in research on older women, and senior citizens' recreational programs have begun to consider older women's health specifically. Outside Korea, intensive studies on older adults in aging societies began in the 1970s and 1980s; however, within Korea, research on older adults began only in the late 1990s.

As aging societies emerge, the main focus of studies on older adults has been successful aging, which aims to counter issues arising among older adults due to deteriorating physical and psychological conditions, which may lead to a poorer quality of life [3]. In addition, most older adults' problems arise from the physical, psychological, and social changes they experience due to aging, and are

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Fig. 1. Dance activity.

closely related to health and quality of life [4]. It is likely that these various factors pose challenges to the overall health status of older adults in Korea [5].

Nepper et al. [6] highlighted physical activity as a significant factor among the conditions for successful aging. Furthermore, a long-term positive correlation has been found between future orientation and the level of exercise among older adults [7], and the likelihood of health-promoting behaviour in older patients can be predicted in terms of the values they hold [8]. Dance is attracting attention as a physical activity that can improve not only physical function [9] but also cognitive abilities and psychosocial factors, such as a sense of community, achievement, and vitality [10]. Yan et al. [11] performed a meta-analysis comparing the physical functions (cardiopulmonary function, muscle strength, balance, flexibility, blood lipid variables, and gait anxiety) of dance and other physical activities (walking, swimming, strength training, soccer, yoga, and Pilates) and reported that dance had the same effects as these activities.

Among previous studies on dance, the following effectively reflect the current situation in Korea. Ha et al. [12] reported that middle-aged and older women's participation in Korean dance contests as a leisure activity helped them overcome social alienation by creating a team and feeling a sense of belonging to a community. The authors also noted that this leisure activity became a serious undertaking through experiences of competition and solidarity. Dance is popular among middle-aged women because it allows them to express their feelings through the movements made by their bodies [13]. For older adults, dance movements evoke feelings of affinity toward others, because they are performed in response to familiar music based on folk songs and traditional music. Korean traditional dance can also have a positive effect on improving older adults' physical health because it awakens the body's delicate peripheral senses from the soles of the feet to the fingertips and crown of the head [14].

Old age brings physical and psychological changes that lead to deterioration of physical functions, a decline in emotional functions, and the occurrence of chronic diseases. This period is also associated with experiences of retreat, the death of spouses, and retirement, and such natural life changes lead to a decrease in quality of life [15]. Therefore, greater understanding is required of life in old age. Given that aging is a universal experience, there is a need for further research on older adults, not only to improve their quality of life but also to prepare a theoretical framework to create a higher-quality environment for future generations of older adults.

Previous studies on dance among older Korean women [16–19] have quantitatively analysed the effects of dance activities, focusing on analysing and quantifying physical changes to muscle tissue or the skeletal system and improving physical strength. However, in-depth studies that explore the motivations for dancing and the changes generated by the dance experience when undertaken as a leisure activity among older women are scarce. Therefore, this study explored the process and personal meaning of dance experience among older women in depth. A qualitative research method was selected that allowed the women who participated in the study to freely express their opinions regardless of the dance format or time involved and enabled us to obtain insightful answers to various questions.

Against this background, this study sought to address the following research questions. (1) What is the motivation of older women participating in dance? (2) What is the significance of health satisfaction among older women participating through the dance activities? (3) What happiness do dance activities bring to older women?

1.1. Senior dance

Dance has been verified as a useful means of enhancing the quality of life among older adults, particularly in such areas as enjoyment, social relationships, and physical functions [20]. Creative artistic activities can also reduce anxiety and enhance self-esteem, promote a sense of accomplishment, and enhance vitality of life in older adults [21]. As a creative artistic activity, dance is effective in alleviating depression or early-stage dementia [22]. Older adults who participate in dance activities have a lower risk of dementia and a more balanced and stable gait pattern [23,24]. Dance is a social, physical, and cognitive activity that induces significant and long-lasting improvement in the neuroplasticity of older adults [25]. Previous studies have demonstrated that dance is a

beneficial physical activity for older adults, which can improve their balance and reduce their risk of falls [26]. Thornberg et al. [27] identified the factors involved in creative dance, for instance, participation leads to personal growth and body–mind connection. Furthermore, Von Faber et al. [28] reported that older adults feel a sense of well-being through social contact, which is, in turn, perceived as successful aging. Older adults are also encouraged to meet others by engaging in leisure activities and provided with opportunities to create psychological bonds through participation in social activities [29]. Dance-related physical activity acts as an important accelerator for successful and healthy aging in the elderly population. Furthermore, dance is advantageous over other exercise activities owing to its fun-filled and pleasurable features, opportunities for social interaction, stimulation of a sense of community, and provision of sustained health-promoting physical activities. It is the most likely form of physical activity chosen in exercise programs for older adults [30–32].

1.2. Health in old age

Physical activity is essential for healthy aging [33]. According to a World Health Organization (WHO) report, physically active older adults have a lower risk of all-cause mortality and better physical and cognitive functions [34]. In particular, health-related factors have been found to affect the life satisfaction of older adults [35], while Stahl and Patrick [36] suggested there is a positive relationship between health-promoting future behaviour and physical activity. Regular exercise is necessary to prevent loss of function due to a lack of physical activity in old age, to maintain health, and to lead a healthy life [37]. In Korea, older adults seeking company meet people of similar ages in community welfare centres to spend time together, communicate with each other, and participate in group leisure activities, which increases social efficacy and positively affects life satisfaction [38]. According to Schulz and Heckhausen [39], successful aging is physical health. Furthermore, Mihalko and McAuley [40] found that strength training has a positive effect on perceived psychological well-being and physical function in older adults (see Fig. 1).

2. Methods

2.1. Phenomenological research

Phenomenological research is a qualitative research method in which human experience is explored to understand the lived experience of a phenomenon [41,42]. It takes the form of an in-depth inquiry into the common lived experience of the participating individuals and is thus employed to gain a thorough understanding of the common experience of a specific phenomenon [43]. As a methodology, phenomenology aims to identify and understand the essence of a phenomenon, while as a theory, it seeks to determine the descriptive essence of the experience through a pure pre-experience perception in a phenomenological attitude. Such perception should be understood in a phenomenological manner through pure intuition and reduced experience, whether involving internal existential elements or a directional correlation, as well as a phenomenological particularity, which is an important source of absolute perception in phenomenology [44]. In order to explain phenomenology, Van Manen [42] presented five key characteristics of phenomenological qualitative research: that it: (i) deals with the lived experience, (ii) elucidates a phenomenon as it emerges in our consciousness, (iii) studies the nature of experience and its structure, (iv) describes the meaning of the experience as lived, and (v) takes the form of human scientific research on a phenomenon. Accordingly, phenomenology seeks to describe phenomena in extensive detail. Drawing on the characteristics of phenomenological qualitative research, this study aimed to phenomenologically verify the health and happiness of older women participating in dance activities in Korea.

2.2. Participants

Participants were recruited from a pool of older women who regularly participated in dance activities. In a phenomenological study, it is appropriate to select six or more participants [45]. In the present study, eight participants were selected according to the following criteria: (1) older women with experience of participating in ongoing dance activities, (2) no requirement that they had a dance career, type of dance and (3) no restrictions in terms of family environment or income level. The principal investigator (PI) recruited participants who met these criteria via snowball sampling, a method commonly used by qualitative researchers. Snowball sampling is very useful for building a network of contacts to obtain recommendations for persons most suitable for the study environment. This network of contacts, which provides such recommendations, is a very efficient study participant selection tool for

Table 1
Participants' general characteristics.

No.	Code	Age	Experience
1	A	79	9 years
2	B	77	7 years
3	C	64	6 years
4	D	68	2 years
5	E	64	5 years
6	F	59	10 years
7	G	56	1 years
8	H	64	5 years

selecting appropriate participants when conducting a study in an unfamiliar environment [45]. In this manner, data collection and analysis were conducted via a series of recommendations made by participants in ongoing leisure dance programs through their personal contacts. There were 20 participants in the dance program in the community which proposed the city hall, and among them, 8 volunteers who were positive to participate in the study were selected. The eight participants enrolled in the study who were dance activities in the community as a result of this sampling method were as follows: (A) a 79-year-old with 9 years of dance experience, (B) a 77-year-old with 7 years of dance experience, (C) a 64-year-old with 6 years of dance experience, (D) a 68-year-old with 2 years of dance experience, (E) a 64-year-old with 5 years of dance experience, (F) a 59-year-old with 10 years of dance experience, (G) a 56-year-old with 1 year of dance experience, and (H) a 64-year-old with 5 years of dance experience. Information on research participants can be found in Table 1, and examples of class timetables can be found in Table 2.

2.3. Data collection

The data were collected through in-depth interviews and participatory observations over 3 months (March to May 2019). It is advisable to conduct second interviews until data sources are no longer available in order to reach saturation [45]. The interviews, which comprised the main data collection source, were conducted in locations preferred by the study participants. The interviewees were also contacted by phone or via e-mail when confirmation of details or additional data collection was required over the course of the raw data analysis. Each in-depth interview was conducted in a one-on-one manner, and the researcher alternated between asking personal and study-related questions to establish rapport. Two interviews were conducted per participant, each lasting over an hour. The duration of each session was set within the time window of 60–90 min, which is considered an appropriate length for interviews [44]. In the first interview, the participants were asked about their general circumstances and motivations for participating in dance activities. In the second interview, the participants were encouraged to give a detailed account of their health and happiness associated with dance activities. Additionally, in the participatory observations, on-site observations were made to closely monitor participants' behaviour and attitudes while participating in dance activities.

2.4. Data analysis

This study conducted a phenomenological data analysis that primarily relied upon the researcher's reflections and interpretations in the overall study context, thereby reflecting the researcher's interpretive procedure [41]. The recordings of the raw data obtained from the first set of in-depth interviews were transcribed into text, which was then systematically arranged and analysed. The transcribed raw data were analysed in accordance with the four stages of hermeneutic phenomenology proposed by Van Manen [42]. First, anecdotes with experiential significance were highlighted. An anecdote is more than a simple description of a scene; it is a re-creation of a lived experience in which the sense of vividness and realism of the experience is represented. Second, the essential meaning structure of the lived experience was disclosed. Such meanings are frequently overlooked during the experience and become apparent only through reflective activity later on. Third, the hermeneutic circle was emphasized in the analysis. In the hermeneutic circle, blurred understandings and essential understandings are subjected to iterative interpretations. Fourth, in the reduction process, meanings were concretized. Reduction is the process of returning to the essence of a lived experience and identifying this essence [46]. During these stages, the researchers attempted to derive meanings in the analysis data and iteratively confirm them.

2.5. Trustworthiness of the qualitative research

This study adopted the phenomenological method, one of many qualitative research methods. Qualitative research focuses on researchers' subjective insights and observations, and the research process and interpretation are based on a theoretical framework, unlike the objective quantitative research approach. For the purpose of ensuring the objectivity of the study, we applied the four quality criteria for qualitative inquiries proposed by Lincoln and Guba [47], namely, credibility, transferability, dependability, and conformability. First, credibility corresponds to the internal validity of the quantitative research. This criterion is applied to enhance the trustworthiness of the study results (long-term participation, continuous observation, peer verification, evidential case analysis, progressive subjectivity, triangular verification). In the present study, credibility was enhanced through peer verification and the participants' verification of the analysis results. Second, transferability corresponds to the external validity of the quantitative research and is applied to increase the likelihood of the study participants accepting the results through in-depth, detailed, and thick descriptions produced within a given time of actual study. Comprehensive literature reviews, including surveying internet resources and press materials, were used. Thick description was used to derive accurate analysis results. Then, the results were presented to the study

Table 2
Example of dance class operational.

type of dance	Korean dance
place	city hall auditorium
class time	twice a week 2 h
activity goal	Senior Dance Contest Attendance, Attend community events, performance presentation

participants to check whether their intent had been appropriately interpreted. Third, dependability corresponds to the reliability of the quantitative research and is ascertained through credibility reviews, triangular verification, verification through various investigations, and fair audits. In the case of data collection, the process of verifying interviews, observations, and document analysis is the triangulation method, and this process makes the research results more reliable [58]. We provided details of the credibility review and the PI's research procedure to independent experts in this research field, who then verified the study's analysis method and results. Fourth, conformability corresponds to the degree of objectivity of the quantitative research and is ensured by the triangular verification method and the use of a continuous research journal [48]. In this study, particular care was taken to exclude the researchers' subjective bias in the research process and in relation to the results, and the data were analysed after obtaining confirmation from the research participants.

2.6. Ethical considerations

To ensure ethical sensitivity toward the research participants, the first author received Institutional Review Board training and obtained a certificate of completion (K-2020-39452467) prior to commencing the study. To ensure the accuracy of the data collection, the PI introduced herself to all study participants and explained the research purpose, interview process, study content, and the participants' rights and recorded all statements after obtaining their consent. Each participant voluntarily signed the informed consent form after receiving detailed information about the same.

3. Results

This study was conducted to examine dance-induced health and happiness in older women. Three key results were derived from the phenomenological analysis of the in-depth interviews, which were conducted to identify the participants' motivations for participating in dance, their dance-induced health satisfaction, and their dance-induced happiness.

3.1. Participation motivation

The majority of the study participants were introduced to dance by friends and acquaintances. Their answers to questions about why they were motivated to participate in dance included, "because the dance moves are so pretty," "I was looking for a stretch program," "I was looking for a different class," "I was interested in dance when I was young," and "I came to take a look." Participants further explained:

The City Hall informed me of this dance program and encouraged me to check it out. So, I went and watched it, and the dance moves were so pretty. I liked it so much that I'm still doing it. I was 70 then. -A-

I frequently had back and knee pain, so I was looking for a program where I could do yoga or stretching. Then I started dancing through the mediation of an acquaintance. -B-

I visited another class here. Then, I switched to dancing here when they offered it. It's been about six years. I simply fell in love with dancing. -C-

I had been interested in dance since childhood, but I did not have any opportunity to do it. So much time had passed, then someone in the volunteer group I attend informed me of this program, and I joined it immediately. -F-

The dance program was offered in the community welfare centre. I went there just to check it out and tried to do it. I found it very fun and joined the group. -H-

3.2. Health satisfaction

The study participants showed a high level of health satisfaction associated with their participation in dance activities. For example, they stated, "I do not even catch colds because I exercise a lot," "I've also become active and diligent in my daily life," "My knee used to hurt a lot, but it has improved a lot," "It's a whole-body workout for me," "I think I've become healthier," "It corrects my posture," "I no longer go to the hospital," and "My body has become very flexible, and I keep gaining strength." The study participants were pleased with the benefits of dance, particularly the alleviation of discomfort in various parts of the body and thought it was a wonderful form of exercise. Such health satisfaction was extended into their daily lives, where it had a positive effect on their life satisfaction:

I do not even catch colds because I exercise a lot. I rarely go to the hospital. Staying at home for days makes me sick. I have to go out and exercise like this to keep myself healthy. It all depends on how you make up your mind. My health is my wealth. -A-

I am becoming more active and diligent in my daily life. Since I have to go dancing, I have to manage my time according to that schedule, and it's great to be able to dance together like this. They say you get depression and [bad symptoms of] menopause if you stay at home. Nothing like that has happened to me. -B-

My knee hurt, but now it's much better. I used to go to the gym and get rehab because my knee hurt, but after dancing, I stopped other sports and just dance. That means it's okay now. All in all, dance helps a lot in life. -C-

Dance is not an intensive exercise. The whole body moves gently, and it does not tire me out. You have to learn the choreography and move a lot with the whole body. I have high blood pressure, and this whole-body movement is especially good for me. -E-

I was sickly when I was a child. I still have anaemia, so I try to exercise a lot. I used to walk a lot, for example. Now, after I started dancing, I've only been dancing. I move my body a lot, so I feel healthier. I feel more energetic while doing housework. I'm much healthier now. -D-

At home, lying down is my basic position. Kind of zero motivation. In contrast, when I dance, I can correct my posture, and I have that sense of increased vitality. I keep doing things like breathing while walking, and I become healthier along the way. -F-

While dancing, my mind calmed down and my shoulder pain faded away. Dancing is definitely good exercise. I used to go to the hospital a lot, but I no longer need it now that I dance. -G-

Because I have to keep thinking about the next move while dancing, it seems to be good for preventing dementia. My body has become more flexible, I've got more muscle strength, and my quality of life has improved. -H-

3.3. Happiness

Each study participant reported finding her own meaning of happiness through dance. The women recounted, "It's fun to put on makeup and stand on stage like a celebrity," "The more I dance, the more I like it," "You become more positive about yourself," "You come out with pretty makeup on," and "My quality of life has improved." The study participants enjoyed participating in dance competitions and experiencing things they had never experienced before. Moreover, doing things that older women have generally stopped doing, such as wearing makeup and pretty costumes and dancing confidently, made them happy. Resultantly, each of them felt more like a woman in their own right, rather than someone's grandmother or mother. As the participants described:

I am delighted and happy. It is so much fun to put on makeup at close to 80 years old and to stand on stage like a celebrity. It's such a rewarding experience. I'm really happy to live like this. -A-

The more I dance, the more I like it. I feel rewarded when I participate in the competitions. Even though the process is challenging, I overcome the difficulties well and receive an award afterward. When it's over, everybody celebrates and is in a happy mood. We also self-applaud. Happiness is not a big thing; you feel it from little things. When I find joy in tiny things, my health improves, and I feel happy. -B-

Being here makes me happy in itself. While preparing for the competition, I undertake intensive training and learning, and I feel that my skills are improving, so I feel positive about myself. I am healthy, and I enjoy it. -C-

When I leave home to go dancing, I put on pretty makeup and accessories. I meet people, and we exercise together and eat together. If not here and now, when and where? -F-

It's great fun. Every time I come, I wear makeup and look prettier. I think it makes my life better. Also, we are busy here, going to competitions and such things. My family calls me an unknown celebrity. Because I dance myself, I also go and see other performances and have a vibrant cultural life. As a result, my overall quality of life has improved. This is happiness, isn't it? -H-

4. Discussion

This study analysed the health and happiness of older women participating in dance activities using a phenomenological analysis method. The phenomenological qualitative analyses led to results related to participants' motivations for participation, health satisfaction, and happiness. The research results are discussed below.

First, the analysis of the participants' motivations for participation in dance activities revealed that more participants began participating in dance activities through the mediation of public agencies or friends/acquaintances rather than on their own initiative. Lee and Kang [49] reported that recommendation is a key factor among the motivations for participating in sports activities. In line with this, introduction by close acquaintances was found to be the main motivation for the women's participation in dance activities. This suggests that advertising or recommendations (word of mouth) are key in expanding the future participation base.

Second, an analysis of the participants' health and happiness revealed that dance activities had a significant impact on their health satisfaction. They needed to get some exercise, and dance acted as a suitable health-promoting factor. Women's participation in dance programs helps them improve not only their mental health but also their physical health [50]. In addition, exercise programs for older adults increase physical self-efficacy while also enhancing social experiences and relationships, which has a direct positive effect on their quality of life [51]. This finding was also consistent with the present study's results, which revealed that participants were satisfied not only with their health but also with their daily lives as a result of participating in dance. Sirven and Debrand [52] found that the more active the social participation, the higher the perceived health status among those aged over 50 years. Similarly, Cho et al. [53] reported that older adults' participation in dance activities was associated with improvement in their health status and

quality of life. The present study also theoretically demonstrated that older women's participation in dance activities played an important role in enhancing their health satisfaction and quality of life. This finding has practical implications for local autonomous entities, which should proactively encourage their senior citizens to participate in exercise programs and seamlessly provide such programs.

Third, the analysis of the participants' health and happiness led to the finding that they were happier, thanks to the dance activities. Continuous and repetitive physical activities not only keep individuals healthy but also enable them to feel happy by improving their self-image by alleviating depression or poor physical conditions [54]. In addition, the growing self-efficacy developed through physical activities raises awareness of happiness [55]. The study's findings are consistent with previous research in that the older women who participated in dance believed that they derived happiness from activities related to dance, such as meeting people and competing, and cherished it. Sa et al. [56] also demonstrated that active older women enjoy a higher quality of life by improving their skills through leisure activities, social relationships, and self-development, which act as positive factors that contribute to happiness. Furthermore, Brown et al. [57] noted that leisure activities in one's middle age play a decisive role in enhancing happiness in life. In this context, the high health satisfaction and happiness levels expressed by the older women participating in dance activities provide further confirmatory evidence on the importance of physical activities, such as dance and other types of exercise, for older adults.

5. Conclusions

The results drawn from this study's phenomenological analyses of health and happiness among older women participating in dance activities can be summarized as follows. First, from a lifecycle perspective, old age is a period when one's values and thoughts about life as a human being can change dramatically, to the extent that it is sometimes referred to as the "third life." For successful aging in old age and to improve older adults' quality of life, it is worth considering that recreational interventions such as dance programs can have a positive effect on the alleviation or prevention of social issues related to the elderly population, especially in an aging society, by expanding opportunities for senior citizens to participate in social activities. In this regard, interventions focused on culture and art such as dance programs can provide older adults with valuable experiences that allow them to spend the rest of their lives meaningfully by participating in social activities, forming art communities, assuming a role as cultural creators, and enjoying a sense of community through their participation in leisure activities. To enable local autonomous entities to provide this kind of valuable intervention for their senior citizens, related infrastructure and recreational facilities, as well as various types of support for recreational interventions for the elderly population are required.

Second, leisure enjoyment and culture and arts education in old age provide opportunities for self-realization and the realization of social aspirations by arousing a desire for social activities and learning. These opportunities thereby alleviate or prevent certain emotional and social issues potentially faced by the elderly population, such as the possibility of a lonely death. In this respect, relevant authorities and local leaders can contribute to improving older adults' quality of life by providing dance education with a holistic orientation, with the aim of encouraging older adults to actively accept themselves and others. To this end, those responsible for providing on-site leisure education for older adults should consider the need for institutional support and subsidies, such as greater support for the instructors of leisure education for older adults and improvement in their working conditions, as well as encouraging diversification of educational content and the expansion of implementation agencies that can promote leisure education across Korea.

Finally, Korean central and local governments are aware of the need for arts and culture education as a viable means to address various social challenges arising due to the aging of Korean society. Since 2016, various culture and arts education programs such as "Young-Again Culture Road," "Seniors' Haven," and "9988 Talk-Talk Show" have been continuously offered. Employees and researchers in the culture and arts fields should continue to develop culture and arts education for older adults in a concerted effort to address the social problems associated with old age and improve the quality of life during this age from a macro-perspective in preparation for Korea's upcoming super-aging society.

The implications derived from this study's results are as follows. First, an in-depth investigation of the effect of older adults' participation in dance activities on their quality of life and ultimately, on successful aging, was performed. The results may be used as a basis for requesting practical support from the government, relevant associations, and local autonomous entities. Second, by exploring the older adults' leisure lives, this study also provides information that may be useful for other areas of arts and culture that are suitable for attracting older adults' participation. Third, the study results, which were derived by applying the phenomenological approach to in-depth interviews with older women can be used as a guide for follow-up research.

5.1. Limitations

This study has two limitations. First, it lacks the potential for generalizability due to limited sampling; therefore, performing a similar study with a greater number of participants and including men is recommended. Second, this study was conducted over a narrow period of time. As a result, the potential causality and interrelationships among the variables could not be verified. Future studies should employ a longitudinal study design and examine broader target populations to derive a deeper understanding of older adults' dance-induced health and happiness.

Author contribution statement

Jee Hoon Han: Conceived and designed the experiments; Performed the experiments; Analysed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Hye Ji Sa: Conceived and designed the experiments; Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Declaration of interest's statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Compliance with ethical standards

At the beginning of the survey, the study was explained to all respondents and their consent was obtained. Furthermore, participants were fully aware of the possibility that the research results may be published.

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