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Original article

Interest in and standard of selection of clothing related to quality of life in older Japanese adults: Sex, age, and physical function differences

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Abstract

The purpose of this study was to examine the cross-sectional association between quality of life (QOL) in older adults and their interest in and standard of selection of clothing. The QOL of older adults in this study was assessed by the sense of life worth living (in Japanese, *Ikigai*). We hypothesized that having an interest in clothing and dressing behaviors may help maintain and enhance the QOL of older adults. In January 2010, a questionnaire survey including demographic factors (age, sex, and activities of daily living), interest in clothing, standard of selection of clothing, and sense of life worth living was distributed to 850 older Japanese people (aged 70–95 years) who were registered with a survey company. Responses from 499 people (256 men and 243 women; response rate, 58.7%) were analyzed. For standard of selection of clothing, all scores for women were higher than they were for men; no significant age-group differences were observed, however. Furthermore, scores for interest in one's own and others' dressing behavior and interest in fashion were significantly greater in those who were younger or independent. The hierarchical multiple regression analyses also showed that the clothing-related variables significantly explained variance of the sense of life worth living (*Ikigai*) in older people (from 10% to 23%). We suggest that selecting personal taste in dress and/or an interest in clothing contribute to maintaining and enhancing QOL in older adults.

Key words: interest in clothing, standard of selection of clothing, the sense of life worth living (*Ikigai*)

Introduction

The Japanese population has the highest percentage of people aged 65 years or older (25.1% in 2013) and the highest life expectancies in the world (79.59 years for men and 86.35 years for women in 2013). Consequently, as in many developed countries, maintaining quality of life (QOL) and extending healthy life expectancy into later years are issues of major importance in Japan. The American Psychological Association (VandenBos, 2009) has defined QOL as "the extent to which a person obtains satisfaction from life," and previous studies have reported

an association between maintaining and enhancing QOL in older adults and various personal and social factors (Larson, 1978; Motl & McAuley, 2010; Pinquart & Sörensen, 2000).

Some researchers have suggested that clothing plays a large role in maintaining and enhancing QOL (Chowdhary, 1991; Kaiser, 1985; Kottke, Trapp, Spittal, Panser, & Novotny, 1996; Richards, 1996). A feature of all modern human societies is the wearing of clothing. The purposes of clothing are to keep the wearer comfortable; to enhance safety during hazardous activities, such as hiking and cooking; and to provide a hygienic barrier by keeping toxins away from the body and limiting the transmission of germs. Furthermore, clothing performs important social and cultural functions, such as a form of adornment and an expression of personal taste or style. Thus, clothing is closely related to our daily lives and may greatly influence our psychological status.

Several practical studies (Chowdhary, 1991; Ueno, Hakoi, & Kobayashi, 2002) have reported the psychological benefits of clothing in older populations. For example, in a Japanese study that investigated the relationship between clothing and emotional activation of the elderly, researchers found that watching a fashion show stimulated an emotional response and was a pleasant activity (Ueno et al., 2002). Likewise, Chowdhary (1991) reported that clothes can be used as a tool to enhance the self-esteem of institutionalized elderly women. However, most of these studies were conducted with a small number of participants, and the number of quantitative studies in this area is insufficient in the older Japanese population.

The purpose of this study was to examine the cross-sectional association between QOL in older adults and their interest in and standard of selection of clothing. In this study, QOL of older adults was assessed by the sense of life worth living (in Japanese, *Ikigai*). The term *Ikigai* is understood as a uniquely Japanese concept that has a positive effect on one's life (Koizumi, Ito, Kaneko, & Motohashi, 2008) and is the most commonly used indicator of subjective well-being in Japanese culture (Sone, Nakaya, Ohmori, Shimazu, Higashiguchi, Kakizaki, Kikuchi, Kuriyama, & Tsuji, 2008). We have also examined these associations in relation to sex, age, and physical function, as assessed by activities of daily living (ADLs), because previous studies reported that sex, age, and physical function had a large influence on QOL (Larson, 1978; Yasunaga & Tokunaga, 2001) and/or on clothing-related behavior and interest (Kaiser, 1985). We hypothesized that having an interest in clothing and dressing behaviors may help maintain and enhance QOL in older adults.

Methods

Study design and participants

In January 2010, we distributed a questionnaire survey that included demographic factors (age, sex, and ADLs), interest in clothing, standard of selection of clothing, and sense of life worth living (*Ikigai*) to 850 older Japanese people through a survey company (NTT RESONANT Goo Research Co., Ltd., Tokyo, Japan). The survey company listed approximately 35,000 registered participants, 4.5% of whom (1,575 people) were over 70 years of age, for mail survey across both sexes and various age groups from all over Japan. Registered participants in the company were recruited through an internet site. The survey company's criteria for registration are that registrants must (1) be over 13 years of age, (2) not be on the current list of registrants, and (3) not own, work for, or have relatives working for companies involved in internet investigation services, the media, publishing, advertising, or consulting. In this study, we applied the following criteria: (1) aged over 70 years, (2) absence of severe dementia, (3) not hospitalized, and (4) not a nursing home occupant. We asked the research company to

distribute 850 questionnaires. The forms were collected several weeks later. The questionnaire survey was completed by 499 people aged 70–95 years (256 men and 243 women; response rate, 58.7%). Although the participants were registrants of the survey company, we conducted the survey in line with the purpose of the study, and the privacy policies were fully explained to participants by an accompanying document.

ADLs

Physical function of participants was assessed by five basic ADLs (feeding, toileting, bathing, walking on a level surface, and dressing/undressing), rated at 1 (able to perform without assistance) or 0 (unable to perform or needing assistance). Functional independence was defined as being able to perform all of these ADLs without assistance (a total score of 5), whereas functional dependence was defined as the need for help in performing any of these ADLs (a total score of 0 to 4).

Standard of selection of clothing and interest in dressing

The standard of selection of clothing was assessed using the elder's dressing standard index (Tanaka, Akiyama, Izumi, Ueno, Nishikawa, & Yoshikawa, 1998). The elder's dressing standard index incorporates 19 questions regarding the selection of street clothes and measures four dimensions: personal taste in dress (e.g., sense of myself can be expressed; suits my taste), fashion (e.g., design, material, color and/or pattern is prevalent; appears to be younger), function (e.g., can be easily put on and taken off; can be easily washed and cleaned), and social dressing norms (e.g., clothes similar to those around him/her; traditions and customs are satisfied). Responses are given according to a five-point scale, ranging from (1) not important to (5) very important. Ratings for each dimension were added together; a higher score in a particular dimension indicated the greater importance of that dimension in the selection of street clothes. We arbitrarily provided and asked the participants about three items of interest in dressing behavior—personal dressing behavior, others' dressing behavior, and fashion—in reference to Kaiser's definition of interest in clothing as the extent to which an individual is favorably predisposed toward clothes (Kaiser, 1985). Responses were given according to a four-point scale, ranging from strongly disagree (1) to strongly agree (4).

The sense of life worth living (Ikigai)

The sense of life worth living (*Ikigai*) was assessed using the scale of the sense of life worth living (*Ikigai*) (Kondo & Kamada, 2004). This instrument includes 16 questions about approaching challenges with spirit, purpose, and motivation and a self-awareness of making a contribution to others. Responses were given according to a three-point scale: yes (2), undecided (1), or no (0). These ratings were added up to give a total score, with a higher score indicating a higher perception of the sense of life worth living (*Ikigai*).

Statistical analyses

Analyses of covariance (ANCOVA) assessed the independent associations of the standard of selection of clothing and the interest in dressing with sex (men vs. women after controlling for age and ADLs), age group (70–74 years vs. over 75 years, after controlling for sex and ADLs), and ADLs (functional dependence vs. independence, after controlling for sex and age). Following analyses, data were examined separately among six sub-groups (men, women, those aged 70–74 years, those aged over 75 years, those with functional dependence,

and those with functional independence). Partial correlation analysis controlling for demographic factors examined relationships between the sense of life worth living (*Ikigai*) scores and the standard of selection of clothing and/or interest in dressing. A two-block hierarchical multiple regression analysis was conducted to determine potential predictors of the sense of life worth living (*Ikigai*) score. Independent variables of model 1 included demographic variables such as age, sex, and ADLs. Model 2 was added to the standard of selection of clothing and the interest in dressing to demographic factors. All statistical contrasts were made at the .05 level of significance (Statistical Package for Social Science 16.0, SPSS Inc., Chicago, IL, USA). Data are presented as means and standard deviation (*SD*).

Results

The associations of the standard of selection of clothing and the interest in dressing with sex, age group, and ADLs are shown in Table 1. ANCOVA controlling for age and ADLs showed that scores on four individual dimensions of the elder's dressing standard index and scores for three items of interest in dressing were significantly higher for women than they were for men. Two item scores for interest in dressing behavior (interest in one's own dressing behavior and interest in others' dressing behavior) were significantly higher among those aged 70–74 years than among those aged over 75 years after controlling for sex and ADLs. However, there were no significant age differences for scores in any dimension of dressing standard index or interest in fashion. Likewise, after controlling for sex and age, two individual dimension scores of the dressing standard index (personal taste in dress and fashion) and all scores for interest in dressing were significantly higher in physically and functionally independent people than they were in those who were dependent, but there were no significant differences between independent and dependent people for scores of function and social dressing norms.

The relationships between the sense of life worth living (*Ikigai*) scores and the standard of selection of clothing and the interest in dressing in all sub-groups are shown in Table 2. Partial correlation analysis after controlling for demographic factors showed that the sense of life worth living (*Ikigai*) score was significantly and positively associated in all sub-groups with the scores on all individual dimensions of the dressing standard index (except function)—personal taste in dress (r=.191 to .380), fashion (r=.229 to .278), and social dressing norms (r=.142 to .245)—and all scores for interest in dressing—interest in one's own dressing behavior (r=.237 to .416), interest in others' dressing behavior (r=.243 to .432), and interest in fashion (r=.287 to .360).

The potential predictors of the sense of life worth living (*Ikigai*) score are shown in Table 3. Hierarchical multiple regression showed that the sense of life worth living (*Ikigai*) score was significantly associated with those who were younger and those independent in ADLs for both men (β=−.128 and .332, respectively) and women (−.141 and .333, respectively), those independent in ADLs for both age groups (β=.287 for those 70–74 years and .241 for those 75 years and older), and those who were younger in the independent group (β=−.125) in model 1. In the case of adding the dressing standard index and the interest in dressing factors to demographic factors as independent variables (model 2), significant predictors for the sense of life worth living (*Ikigai*) score were the personal taste in dress score in men (β=.238), those aged over 75 years (β=.307), the independent (β=.149), and the dependent groups (β=.338) ; interest in one's own dressing behavior in women (β=.180) ; interest in others' dressing behavior in men (β=.216) and the over-75 group (β=.182) ; and interest in fashion in both sexes (β=.162 for men and .171 for women), those aged 70–74 years (β=.250), and the independent (β=.205).

Table 1 The standard of selection of clothing and interest in dressing among participants

Variable	Men		Women		Sig.[1)]	Age 70–74 years		Age over 75 years		Sig.[2)]	Functional independence		Functional dependence		Sig.[3)]
Number of participants	256		243			240		259			388		111		
The elder's dressing standard index															
Personal taste in dress	22.8	(4.4)	24.3	(4.3)	**	24.0	(4.4)	23.2	(4.4)	*n.s.*	23.9	(4.4)	22.4	(4.2)	*
Fashion	10.0	(3.2)	11.0	(2.8)	**	10.9	(3.0)	10.1	(3.1)	*n.s.*	10.8	(3.0)	9.3	(2.8)	**
Function	13.5	(2.7)	14.9	(2.6)	**	14.2	(2.8)	14.2	(2.6)	*n.s.*	14.1	(2.6)	14.2	(3.0)	*n.s.*
Social dressing norms	11.4	(2.5)	12.1	(2.3)	**	11.9	(2.4)	11.6	(2.4)	*n.s.*	11.8	(2.3)	11.4	(2.6)	*n.s.*
Interest in dressing															
Interest in one's own dressing behavior	2.6	(0.7)	2.9	(0.7)	**	2.9	(0.6)	2.7	(0.7)	*	2.9	(0.6)	2.4	(0.8)	**
Interest in others' dressing behavior	2.3	(0.7)	2.7	(0.7)	**	2.7	(0.6)	2.4	(0.7)	*	2.6	(0.7)	2.3	(0.7)	**
Interest in fashion	2.2	(0.7)	2.6	(0.7)	**	2.5	(0.7)	2.3	(0.7)	*n.s.*	2.5	(0.7)	2.1	(0.7)	**

Values are mean (standard deviation).

sig.: significant.

[1)] men vs. women after controlling for age and ADLs; [2)] 70–74 years vs. over 75 years after controlling for sex and ADLs; [3)] functional dependence vs. independence after controlling for sex and age.

* $p<.05$; ** $p<.01$

n.s.: not significant.

Table 2 The relationships between clothing variables and the sense of life worth living (*Ikigai*)

	Men		Women		Age 70–74 years		Age over 75 years		Functional independence		Functional dependence	
Number of participants	256		243		240		259		388		111	
The elder's dressing standard index												
Personal taste in dress	.266[1)]	**	.267[1)]	**	.191[2)]	**	.333[2)]	**	.228[3)]	**	.380[3)]	**
Fashion	.230[1)]	**	.253[1)]	**	.229[2)]	**	.258[2)]	**	.233[3)]	**	.278[3)]	**
Function	.046[1)]	*n.s.*	.073[1)]	*n.s.*	.097[2)]	*n.s.*	.044[2)]	*n.s.*	.071[3)]	*n.s.*	.035[3)]	*n.s.*
Social dressing norms	.184[1)]	**	.160[1)]	**	.153[2)]	*	.195[2)]	**	.142[3)]	**	.245[3)]	*
Interest in dressing												
Interest in one's own dressing behavior	.244[1)]	**	.346[1)]	**	.293[2)]	**	.294[2)]	**	.237[3)]	**	.416[3)]	**
Interest in others' dressing behavior	.313[1)]	**	.284[1)]	**	.259[2)]	**	.327[2)]	**	.243[3)]	**	.432[3)]	**
Interest in fashion	.287[1)]	**	.326[1)]	**	.340[2)]	**	.289[2)]	**	.287[3)]	**	.360[3)]	**

Values are partial correlation coefficients: [1)] controlling for age and ADLs, [2)] controlling for sex and ADLs, [3)] controlling for sex and age.

* $p<.05$; ** $p<.01$

n.s.: not significant.

Table 3 Potential predictors of the sense of life worth living (*Ikigai*)

	Men		Women		Age 70–74 years		Age over 75 years		Functional independence		Functional dependence	
	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β
Number of participants	256		243		240		259		388		111	
Sex	—	—	—	—	.021 *n.s.*	−.094 *n.s.*	−.044 *n.s.*	−.082 *n.s.*	.021 *n.s.*	−.060 *n.s.*	−.002 *n.s.*	−.163 *n.s.*
Age	−.128 *	−.081 *n.s.*	−.141 *	−.085 *n.s.*	—	—	—	—	−.125 *	−.093 *n.s.*	−.162 *n.s.*	−.095 *n.s.*
Activities of daily living	.332 **	.259 **	.333 **	.281 *	.287 **	.241 **	.376 **	.293 **	—	—	—	—
The elder's dressing standard index												
Personal taste in dress		.238 **		.111 *n.s.*		.045 *n.s.*		.307 **		.149 **		.338 *
Fashion		−.091 *n.s.*		−.034 *n.s.*		−.028 *n.s.*		−.108 *n.s.*		−.003 *n.s.*		−.218 *n.s.*
Function		−.044 *n.s.*		.005 *n.s.*		.063 *n.s.*		−.060 *n.s.*		.001 *n.s.*		−.051 *n.s.*
Social dressing norm		−.043 *n.s.*		−.015 *n.s.*		.016 *n.s.*		−.063 *n.s.*		−.034 *n.s.*		−.070 *n.s.*
Interest in dressing												
Interest in one's own dressing behavior		−.063 *n.s.*		.180 *		.130 *n.s.*		.009 *n.s.*		.016 *n.s.*		.155 *n.s.*
Interest in others' dressing behavior		.216 **		.006 *n.s.*		.010 *n.s.*		.182 *		.063 *n.s.*		.257 *n.s.*
Interest in fashion		.162 *		.171 *		.250 **		.109 *n.s.*		.205 **		.084 *n.s.*

	R^2	ΔR	*F* change	R^2	ΔR	*F* change	R^2	ΔR	*F* change	R^2	ΔR	*F* change	R^2	ΔR	*F* change	R^2	ΔR	*F* change
Model 1	.147	.147	21.8 **	.165	.165	23.7 **	.085	.085	11 **	.142	.142	21.1 **	.016	.016	3.2 *	.026	.026	1.46
Model 2	.265	.118	5.62 **	.288	.123	5.77 **	.210	.124	5.21 **	.279	.137	6.76 **	.119	.103	6.31 **	.263	.230	4.64 **

* $p<.05$; ** $p<.01$

n.s.: not significant.

Discussion

We examined the cross-sectional relationships between the standard of selection of clothing, interest in dressing, and QOL assessed as the sense of life worth living (*Ikigai*) according to sex, age group, and ADL levels in community-dwelling older people aged 70–95 years.

Previous studies reported that women are more interested in clothing than men are (Chowdhary, 1991; Kaiser, 1985). Kaiser (1985) noted that women seem to be more appearance-conscious than are their male counterparts, and clothing may interest them more than it does men. Our results supported this view; scores for interest in one's own and others' dressing behavior and interest in fashion among older women are consistently higher than they are for older men. Likewise, younger or independent people are more likely to be interested in their clothing than are older or disabled individuals (Chowdhary, 1989). In line with this expectation, our data showed that all sub-scale scores of interest in dressing except age-group difference in interest in fashion were significantly greater in those who were younger or independent.

For standard of selection of clothing, all sub-scale scores for women were higher than they were for men, but there were no significant age-group differences for all dimensions of standard of selection of clothing. Previous works suggested that, contrary to the misconception that the elderly need comfortable rather than fashionable clothing (Chowdhary, 1991), the majority of the elderly people in the sample preferred to wear stylish clothing (Chowdhary, 1989). Regarding the selection of clothing among men and women, there is a similar tendency irrespective of age.

Several previous authors have reported that clothing can enhance psychological aspects of well-being, such as self-esteem (Chowdhary, 1991; Kaiser, 1985; Kottke et al., 1996; Richards, 1996). Present results from partial correlation analysis support some of the previous work. We found significant and positive relationships between the sense of life worth living and all clothing-related variables except function of the standard of selection of clothing, irrespective of sex, age, or health status. The hierarchical multiple regression analysis also showed that the clothing-related variables significantly explained variance in the sense of life worth living (*Ikigai*) in all sub-groups (12–23%). Specifically, the sense of life worth living (*Ikigai*) was significantly and positively associated with personal taste in dress in men, those aged over 75 years, those with functional independence, those with functional dependence, interest in others' dressing behavior in women, interest in one's own dressing behavior in women, those aged over 75 years, interest in fashion in both sexes, those aged 70–74 years, and those with functional dependence. Some researchers have reported that having an interest in fashion and dressing up leads to activation of emotions and behaviors among people (e.g., Hakoi, Ueno, & Kanbayashi, 2002). Thus, we thought that a can-do attitude toward clothes might be associated with a higher sense of life worth living (*Ikigai*) through the activation of the individual's emotions and behaviors.

Selecting personal taste in dress was also relatively closely related to a sense of life worth living (*Ikigai*) in those aged over 75 years (β=.307) and in those who were dependent (β=.338). Chowdhary (1991) noted that clothes are an extension of the individual's self and hence are important to one's identity. They cover the body and enhance one's appearance, both physically and emotionally. In addition, there is evidence that clothing has an effect on psychological well-being, contributing to self-worth and self-respect, and improves the appearance of older people. In later years, appearance becomes more of a liability than an asset, and because this is by definition more applicable to the elderly and the dependent, it follows that dressing up like oneself may have a greater

contribution to the sense of life worth living (*Ikigai*) for older and dependent people than for those who are younger and healthy.

In summary, the data from this cross-sectional study confirmed our hypothesis that QOL of older adults is associated with the standard of selection of clothing and/or an interest in dressing behaviors. However, some limitations should be considered when interpreting our results. First, there is the presence of sampling bias, because we conducted the survey using those registered with a survey company. Second, the direction of cause-and-effect in the relationship between clothing and QOL is not clear from a cross-sectional study such as this. Third, personal economic status, which may be related to clothing behavior, was not considered in this study. Fourth, the correlation among clothing-related variables was relatively high (data not shown). In spite of these limitations, we suggest that selecting personal taste in dress and/or having an interest in clothing contribute to maintaining and enhancing QOL in older adults. Further research using a longitudinal randomized controlled study and considering personal economic status is recommended to give a more definitive interpretation of the present findings.

Conflict of interest statement

The authors declare that they have no conflict of interest.

Author Note

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