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Research article

Anxiety about ageing and related factors in Japan

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Abstract

Japan is the most super-aged country in the world: 30% of its population will be 65 years old or older by 2025. The government program “Promoting the Dynamic Engagement of All Citizens” encourages the elderly to remain active. In doing so, it is asking them to play a continued role in society, thus increasing interactions among generations. Negative attitudes towards the elderly may be caused by anxiety about ageing. However, this issue is understudied in Japan. This study used the Anxiety about Aging Scale (AAS) of Lasher et al. to assess Japanese anxiety about ageing. This scale includes the factors Fear of Old People, Psychological Concerns, Physical Appearance, and Fear of Losses. This study investigated three related factors: frequency of contact, life satisfaction, and worry about ageing. In total, 107 outpatients (68 men and 39 women) at an ENT clinic and 117 undergraduate and graduate students (72 men and 45 women) participated in this study. A negative correlation was found between Fear of Old People and Fear of Losses, which may be due to cultural and societal influence. Those with more contact with the elderly had lower scores on Fear of Old People and higher scores on Fear of Losses. Further, Psychological Concerns was negatively associated with life satisfaction, and contentment was associated with reduced concern about ageing. Physical Appearance, which measures self-acceptance of one’s image as elderly, was positively associated with worrying about ageing. AAS results in Japan are not a single construct but are multidimensional. Further investigations, including qualitative studies, are needed.

Key words: anxiety about aging, contact frequency, life satisfaction, worry about aging, Japan

Introduction

In Japan, the world’s most super-aged country, 30% of the population will be 65 years old or older by 2025 [1]. The government program ‘Promoting the Dynamic Engagement of All Citizens’ calls on the elderly not to retire but to remain active [2], thus requesting them to play a continued active role in society and increasing interactions among generations.

According to a meta-analysis by North and Fiske [3], East Asians take a more negative attitude towards the elderly than Westerners, South Asians, or Southeast Asians. A study of ageism compared attitudes towards the elderly in the UK and Taiwan [4]. The Taiwanese showed an ambivalent attitude towards the elderly: their admiration, envy, contempt, and active harm scores were greater than those of the UK residents. Vauclair et al. suggested

that a possible reason for this ambiguity is the result of mixed feelings: cultural deference towards the elderly combined with negative views of older generations due to their refusal to transfer power or due to the burden of pension expenses [4]. Japan is in a similar state. Studies have suggested that negative attitudes towards the elderly that lead to ageism are caused by anxiety about ageing [5-7]. However, there have been few studies investigating anxiety about ageing in Japan.

Lasher et al. called anxiety about ageing ‘a possible mediating factor in determining attitudes and behavior toward the elderly, or as a factor in adjustment to aging as an adult developmental issue’ [8]. They developed the Anxiety about Aging Scale (AAS), a multidimensional instrument to assess anxiety about ageing [8]. They

suggested that a whole-person model that incorporated the physical, psychological, social, and spiritual dimensions into consideration was needed to assess anxiety about ageing, and its dimensions were conceived of as founded on three fears: fear of ageing as a process, fear of being old from one's own standpoint and fear of old people. The results of factor analysis of 84 questions (four dimensions \times three threats \times seven questions), they designed the AAS, which consisted of four dimensions: Fear of Old People, Psychological Concerns, Physical Appearance, and Fear of Losses. Lasher and Faulkender thus hoped to obtain a clearer picture of the construct of anxiety about ageing [8].

Sargent-Cox et al. investigated anxiety about ageing among Australians using AAS, in accordance with Lasher et al. intentions [9]. They confirmed the structural validity of the AAS for different age groups, while also suggesting that certain meanings of certain items could be taken in different ways in groups that differ culturally and/or socially. In a study of anxiety about ageing with US and Korean subjects [10], Korean respondents showed higher mean overall scores for anxiety about ageing than Americans did, and Korean elderly individuals had had greater anxiety than their younger compatriots. This pattern was not observed in the US sample. In a study comparing German and US anxiety about ageing [11], the German respondents displayed higher levels of anxiety on every dimension than the Americans did, and both the German and American women expressed more concern about ageing in terms of physical appearance than the men did. In a study in Greece [12], whose culture has a mix of collectivism and individualism, nursing and social work students showed a higher overall score for anxiety about ageing than community residents and medical professionals; in addition, the education and experience of individuals with dementia effected the expression of their anxiety about ageing. In Taiwan, which, like Korea in the previously cited study [10], is culturally and geographically close to Japan, women had greater concern for changes in physical appearance from ageing than men did, and younger adults felt more threatened by the elderly than older ones [13], which was similar to results for Koreans. As noted, suggestions on anxiety about ageing on the basis of social cultural background are now under discussion, leading to a need for different samples in studies with different approaches.

Lasher et al. designed the AAS, investigated the association between anxiety about ageing and contact [8]. In their study, contact frequency was negatively correlated with total AAS, Fear of Old People, Physical Appearance and Fear of Losses. Some studies have reported that it was not frequency but quality of contact that is associated with ageism [14-16]; however, only Lasher and Faulkender's study examined the associations between the dimensions of AAS and contact.

Klemmack et al. explored the associations between anxiety about ageing and subjective well-being [17], examining participants ranging in age from 55 to 89. That

study clarified that fear of ageing was the best inverse predictor for subjective well-being. Life satisfaction and experiences of ageism among the elderly have been studied [18-20]; however, there have been no studies on the association between the dimensions of the AAS and life satisfaction at different life stages.

Lynch maintained that anxiety about ageing should be distinguished from other forms of anxiety, such as death anxiety and general anxiety [21]. He suggested that anxiety about ageing could be modeled as a single latent construct composed of worries about declining health and physical functioning, financial well-being, cognitive ability, changes in physical appearance and social loss. According to Watkins et al. [22], anxiety about ageing is evoked by worry about anticipated threats associated with the process of ageing; that is, worry contributed to causing and maintaining anxiety, however, no studies supporting this proposition could be found.

Using the AAS, this study investigated anxiety about ageing in the East Asian country of Japan, where the proportion of the elderly to the population at large continues to increase, and it explores related factors: sex, age, frequency of contact with the elderly, life satisfaction, and worry over ageing.

Methods

Participants

Participants were recruited from two sources: 107 subjects (68 men and 39 women) were outpatients at an ENT clinic in a suburban area, and they were asked to respond to the study questionnaire as they waited for their appointments. This group was enrolled consecutively. Then, 117 subjects (72 men and 45 women) were recruited from among undergraduate and graduate students at three universities. Their instructors distributed questionnaires to them at the end of their classes and collected the responses before the following classes. The return of the questionnaire was viewed as implied consent. Table 1 lists the demographics of the respondents.

Measures

AAS

The AAS is divided into four dimensions: Fear of Old People, Psychological Concerns, Physical Appearance, and Fear of Losses. Each dimension includes five items, each measured using a 5-point Likert-type scale, ranging from 1 (strongly agree) to 5 (strongly disagree). Higher scores indicate greater fear of ageing. The AAS was translated into Japanese by a professional translation agency. The researchers compared this product to the English version until a consensus final version was achieved.

Related factors and demographic characteristics

Contact frequency with the elderly was measured with the following question, "Do you have any contacts with the elderly (whether they are relatives or not relatives) in daily life?" Life satisfaction was measured with the following question, "Are you satisfied with your life as a

Table 1. Respondents' demographic characteristics

	Outpatients (n = 107)		Students (n = 117)	
	n	%	n	%
Sex				
Male	68	63.6	72	61.5
Female	39	36.4	45	38.5
Age (years)				
19 and younger	1	1.0	4	3.4
20–29	11	10.3	57	48.7
30–39	24	22.4	29	24.8
40–49	19	17.8	13	11.1
50–59	34	31.8	8	6.8
60–69	16	15.0	5	4.3
70 and older	2	1.9	1	0.9

whole?" Concern over ageing was measured with the following question, "Do you have any worries about ageing?" Participants indicated their sex and their age within decades from 20 to 69 or younger than 20 or older than 69.

Data Analysis

All analyses were performed using the statistical software package SPSS, version 22.0J for Windows. Correlation analyses were used to examine the associations among the items of the AAS to explore the construct of anxiety about ageing in Japan. Multiple regression analyses were performed that took each dimension of the AAS as a dependent variable and contact frequency, life satisfaction, concern over ageing and demographic items as independent variables.

The study protocol was approved by the Kyoto University Graduate School and Faculty of Medicine Ethics Committee.

Results

Correlative relationships among the items of the AAS

Table 2 gives the correlation matrix for the items of the AAS. Items for the Fear of Old People and the Fear of Losses were negatively correlated. Items 5 and 20 were included in Fear of Losses because Item 5 "I fear it will be very hard for me to find contentment in old age" and Item 20 "When I look in the mirror, it bothers me to see how my looks have changed with age" were positively correlated with items in Fear of Losses. Physical Appearance was. This is positively correlated with items in Fear of Losses. The reliabilities of the four dimensions were computed using Cronbach's alpha: the result for this indicator for the Fear of Old People was 0.827; for the original Psychological Concern it was 0.436; for the Psychological Concern with no Item 5 it was 0.682; for the original Physical Appearance was 0.484; for the Physical Appearance with no Item 20 it was 0.625; for the

original Fear of Losses was 0.644; and the alpha for the Fear of Losses including in Items 5 and 20 it was 0.724. Correlative relationships among the AAS dimensions

Correlative relationships among the AAS dimensions

The correlation matrix for the four dimensions of the AAS and their means and standard deviations are shown in Table 3. Fear of Old People, Psychological Concern and Physical Appearance were all positively correlated with each other. Fear of Losses however, was negatively correlated with other three dimensions.

Associations among the dimensions of the AAS and related factors

To explore the associations among the dimensions of the AAS and related factors, multiple regression analyses were performed, using each dimension of the AAS as a dependent variable, with contact frequency, life satisfaction, worry about ageing, sex, age and method of recruitment as independent variables. The results are shown in Table 4. For Fear of Old People, older respondents who had less contact with the elderly had greater fear of them. For Psychological Concerns, those with lower levels of life satisfaction showed greater concern. For Physical Appearance, those who have more worry over ageing had more response. For Fear of Losses, those who were younger and contacted with the elderly more, held greater Fear of Losses. Sex and method of recruitment way were not significantly associated with any dimension.

Discussion

Using the ASS, this study investigated anxiety about ageing and related factors in Japan, the most super-aged country in the world. All items of the AAS are positively correlated, according to an Australian study before mentioned [9], which supports the validity of the original AAS created by Lasher et al. [8]. However, the Taiwanese study [13] found that Item 5 'I fear it will be very hard for

Table 2. Correlation matrix for AAS items.

Item No.	Fear of Old People					Psychological Concerns				Physical Appearance									
	1	3	10	13	19	7	11	16	18	4	9	12	15	2	6	8	14	17	5
1	1	.657**	.490**	.354**	.470**	.472**	.389**	.094	.256**	.468**	.209**	.230**	.240**	-.603**	-.544**	-.412**	-.124	-.076	-.250**
3		1	.555**	.443**	.513**	.356**	.259**	.065	.211**	.451**	.118	.206**	.266**	-.555**	-.558**	-.420**	-.271**	-.179**	-.325**
10			1	.404**	.531**	.406**	.320**	.217**	.269**	.286**	.121	.151*	.265**	-.307**	-.407**	-.423**	-.233**	-.156*	-.131
13				1	.516**	.265**	.296**	.167*	.096	.228**	.069	.073	.141*	-.337**	-.356**	-.260**	-.180**	-.206**	-.159*
19					1	.260**	.320**	.111	.184**	.298**	.055	.183**	.228**	-.336**	-.432**	-.336**	-.200**	-.164*	-.124
7						1	.442**	.331**	.366**	.384**	.198**	.152*	.393**	-.268**	-.366**	-.316**	-.115	-.149*	-.223**
11							1	.207**	.515**	.462**	.443**	.120	.416**	-.155*	-.397**	-.286**	-.017	-.065	-.183**
16								1	.285**	.112	.137*	.206**	.083	-.070	-.044	-.125	-.260**	-.193**	-.140*
18									1	.393**	.355**	.194**	.370**	-.077	-.278**	-.295**	-.193**	-.092	-.147*
4										1	.295**	.256**	.390**	-.399**	-.445**	-.372**	-.126	.007	-.206**
9											1	.224**	.341**	.014	-.073	-.004	-.063	-.022	-.061
12												1	.282**	-.021	-.011	-.173**	-.225**	-.077	-.035
15													1	-.062	-.152*	-.280**	-.129	-.125	-.045
2														1	.531**	.388**	.293**	.193**	.422**
6															1	.421**	.086	.104	.298**
8																1	.196**	.114	.143*
14																	1	.452**	.239**
17																		1	.349**
5																			1
20																			

Table 3. Correlation matrix for four dimensions of the AAS and means and standard deviations.

	Fear of Old People	Psychological Concerns	Physical Appearance	Fear of Losses	Means	SD
Fear of Old People	1	.454***	.422***	-.641***	16.2	3.09
Psychological Concerns		1	.547***	-.388***	12.1	2.16
Physical Appearance			1	-.296***	12.7	2.49
Fear of Losses				1	19.5	3.74

*** P < 0.001

Table 4. Associations among the dimension of the AAS and related factors obtained using multiple regression analyses.

	Fear of Old People		Psychological Concerns		Physical Appearance		Fear of Losses	
	β	P-value	β	P-value	β	P-value	β	P-value
Sex ^a	.031	.653	.123	.653	.085	.233	-.023	.745
Age	.215	.011	-.022	.011	-.031	.716	-.235	.007
Method of recruitment ^b	.019	.807	-.114	.807	.089	.260	.022	.780
Contact	-.223	.001	-.011	.001	-.021	.761	.161	.020
Life satisfaction	-.097	.150	-.224	.150	-.081	.238	.007	.914
Worry	-.047	.514	.035	.514	.204	.006	.100	.173
(Constant)		< 0.001		< 0.001		< 0.001		< 0.001

a: Female = 0, Male = 1

b: Student = 0, Outpatient = 1

me to find contentment in old age' had weak factor loading, so it was eliminated from Psychological Concern and inserted in Fear of Losses. Gao suggested that Item 5 was conceptually related to Fear of Losses and indicated individual fear regarding loss of contentment. Our results partly supported her results: Cronbach's alpha increased when Items 5 and 20 were included in Fear of Losses. Contentment is defined by the Cambridge Dictionary as 'happiness and satisfaction, often because you have everything you need'. Oishi et al. argued that the conception of happiness varies cross-culturally [23]. For instance, most Americans perceive happiness as enjoyment or pleasure resulting from personal achievement and positive experiences, while Japanese interpret it as transient and fading in nature. In a Japanese sample, therefore, Item 5 might be best categorized among Fear of Losses items not Psychological Concerns, which indicate unfulfilled status. Item 20, 'When I look in the mirror, it bothers me to see how my looks have changed with age', was interpreted by Watkins et al. [22] as relating to acceptance of the self as ageing. Item 20, like Item 5, could be conceptually related in Japan to Fear of Losses indicate individual fear of the loss of youth.

In the AAS study in Taiwan [13], Fear of Old People and Fear of Losses were negatively correlated, both in the original model and in the IRT model. According to the study comparing Korean and American anxiety about ageing [10], Fear of Old People and Fear of Losses were, although not significantly, positively correlated in the American sample and negatively in the Korean sample. Our results indicate something similar to the results found in Taiwan and Korea. In addition, Fear of Losses was negatively correlated with Fear of Old People, Psychological Concerns and Physical Appearance. Concretely, those who enjoy being around old people will have plenty to occupy their time with when they are old. Further, those that have never dreaded looking old do fear that their friends will be gone when they are old. Oishi et al. found that East Asians consider happiness to be transient and

showed an ambivalent attitude about whether it is good [23]. Asian cultures consider that misfortune might be a blessing in disguise. The more content life is at the moment, the greater fear of loss is. However, for the Japanese, loss might not always be something to avoid. Further investigation, including qualitative studies, is needed.

Lasher et al. found that both Fear of Old People and Fear of Losses were negatively correlated with contact frequency [8], but in our study, Fear of Old People negatively correlated with contact frequency, and Fear of Losses did so positively. Bousfield et al. [14] and Drury et al. [15] observed no association between the total result for AAS and contact frequency; however, they did not look for relationships among the dimensions and contact frequency. In our study as well, total AAS scores did not relate to contact frequency (data not shown). Sargent-Cox et al. suggested that the first-order four-dimension AAS model reflecting the original Lasher et al. structure fit the data better than the second-order model [9]. As anxiety about ageing is a multi-dimensional concept, a separate exploration of each dimension and related factors might be useful.

Christian et al. [24], citing an article on racism by Islam and Hewstone [25], indicated that larger quantities of contact with the elderly were associated with reduced prejudice, although this was not a panacea, rather playing the role of an anchor reducing discrimination. Our results support this conclusion: we found that more contact with the elderly was associated with reduced fear of old people, which leads to ageism.

Allan et al. found that those who had daily contact with the elderly at work felt less anxious about ageing than those who did not, while those who had daily contact at home felt more anxious about ageing than those who did not [26]. They noted that qualitative differences in interactions could occur in different situations. Drury et al. interpreted Allan and Johnson's results as showing that contact at work was likely to be with competent older

adults, while contact at home was likely to be with dependent older relatives [15]. In Japan, most companies have a mandatory retirement age of around sixty years old, so there are few opportunities to interact with competent older individuals in the office. The stereotype content model of Cuddy et al. indicates that the elderly tend to be categorized as kind but incompetent, and that those characteristics evoke compassion and sympathy [27]. Christian et al. [24] cited Abrams et al. [28] to suggest that contact has the potential to reinforce negative stereotypes. In this study, the enhancement of compassion and sympathy by contact might elevate the level of Fear of Losses.

Certain studies on anxiety about ageing have investigated associations of this anxiety with the age of the subject. In the Korean [10] and Taiwanese [13] studies, younger adults showed more fear of old people than older adults did, while older adults showed a greater Fear of Losses, which was not paralleled by the results of our study. Older Americans, for their part, exhibited more fear of older than younger people [10]. Lasher et al. found that older adults showed more fear of old people than younger adults did, and younger adults showed a greater Fear of Losses; although this result was not significant, it was similar to the result found in our study [8]. Ota et al. [29], working on intra- and intergenerational communication, showed that younger adults felt obligated to be polite to the elderly and were not accommodating to them and kept their distance from them. Ota et al. [29] cited a study article by Paoletti [30] in which active older adults often refused to self-identify as older, suggesting that they might wish to keep their distance from same-aged people not in their own family. Further investigation, including qualitative studies, is needed.

Klemmack et al. found that fear of ageing was the best inverse predictor of subjective well-being, even after adjusting for income, education, perceived health and race [19]. Fisher [31], in a qualitative study on the elderly, indicated that study participants perceived life satisfaction as the foundation for successful ageing, speaking of life satisfaction in a way that focused on present conditions, related to the past experiences. Klemmack et al. [17] and Fisher [30] investigated the association between the fear of ageing or a successful experience of ageing and life satisfaction among the elderly. In our results, psychological concerns were only related to life satisfaction but not age. This suggests that contentment with one's current life leads to reduced concerns about ageing throughout one's life.

Watkins et al. modified the AAS and created the AASE for the study of an older population because their view of future is quite different from that of young adults, as that study population already considered themselves as old [22]. In their results, items in the original for Physical Appearance of the original were divided into the Acceptance of the Self as Very Old (Items 9, 12 and 15) and Acceptance of the Self as Ageing (Items 4 and 20). This modification was done to enable the understanding of the attitudes of the very old. However, examining the accep-

tance of one's visceral image as an old man or woman yielded insights on the Physical Appearance items in the original AAS. In our results, Item 20 was excluded from Physical Appearance, and Cronbach's alpha increased. This shed light on the concept of Physical Appearance as acceptance of the self as old. When respondents were asked 'Do you have any worries about ageing?' they might answer according to whether they accepted their own visceral image as old.

This study had several limitations. First, the generalization of the results is limited due to convenience sampling. However, as no differences of attitude between outpatients and students recruited in different ways were observed, the results reflected realities in Japanese anxiety about ageing, to some degree. Next, this was a cross-sectional study, so causal relationships could not be determined. The more frequent the contact of respondents was with the elderly, the less they felt fear of old people and the more they felt fear of loss. If these results indicate a causal relationship, respondents who feel less fear of old people and more fear of loss might wish to increase their contact with the elderly.

Conclusion

This study provided evidence on anxiety about ageing using the AAS and related factors. This was the first study of its kind in Japan, which is a super-aged East Asian country.

The results found a negative correlation between Fear of Old People and Fear of Losses, which may be due to cultural and societal influences. Those with more frequent contact with the elderly had lower scores for Fear of Old People and higher scores on Fear of Losses. The frequency of contact with the elderly could act to decrease fear and increase sympathy. Life satisfaction was negatively associated with Psychological Concerns, and contentment with life was found together with a reduction of concerns about ageing. Physical Appearance was found to be positively associated with concern over ageing. Physical Appearance here means acceptance of one's own visceral image as an old man or woman. This might evoke intuitive concern over ageing. Our findings suggest that AAS in Japan should not be treated as a single construct but as a multidimensional scale. Further investigation, including qualitative studies, is needed.

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Conflicts of Interest

There are no conflicts of interest to declare.

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