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RESEARCH

TURKISH VERSION OF KOGAN'S OLD PEOPLE SCALE: A VALIDITY AND RELIABILITY STUDY

ABSTRACT

Introduction: The aim of this cross-sectional study was to examine the reliability and validity of the Turkish version of Kogan's Old People Scale (KOP) - one of the most commonly used instruments developed with the aim of evaluating attitudes towards older people.

Materials and Method: Following the translation process, 399 students of Nursing and Physiotherapy & Rehabilitation Departments completed the socio-demographic questionnaire and the Turkish version of the scale. Content and construct validity, internal consistency reliability of this scale were analyzed by appropriate statistical methods.

Results: The Turkish version of the scale had good content validity (CVI=0.85). All but one of the 34 items had significant item-total correlations ($p<0.05$). The Cronbach's alpha coefficient for the total scale was 0.64. Some evidence of construct validity was found in three-factor solution, which explained 23.7% of the variances. Test and re-test reliability of the items indicated the reliability of the Turkish version of KOP scale ($p<0.01$).

Conclusion: It is concluded that Turkish version of KOP presents adequate validity, internal consistency reliability, and may be used to assess the attitudes toward older people, especially of the students attending to health sciences departments.

Key Words: Aged; Attitude of Health Personnel; Designs, Epidemiologic Research.

ARAŞTIRMA

KOGAN'IN YAŞLI BİREYLERE YÖNELİK TUTUM ÖLÇEĞİNİN TÜRKÇE VERSİYONU: BİR GEÇERLİK VE GÜVENİLİRLİK ÇALIŞMASI

ÖZ

Giriş: Bu çalışmanın amacı, yaşlı bireylere yönelik tutumun değerlendirilmesinde kullanılan en yaygın ölçeklerden birisi olan Kogan'ın Yaşlı Birey Ölçeği (KOP)'nin Türkçe versiyonunun geçerlik ve güvenilirliğini incelemektir.

Gereç ve Yöntem: Çeviri sürecini takiben, 399 Hemşirelik ve Fizyoterapi ve Rehabilitasyon bölümü öğrencisi sosyodemografik anket ile ölçeğin Türkçe versiyonunu doldurmuşlardır. Ölçeğin içerik ve yapı geçerliği, iç tutarlılık güvenilirliği, uygun istatistiksel yöntemlerle analiz edilmiştir.

Bulgular: Ölçeğin Türkçe versiyonunun iyi bir içerik geçerliğine sahip olduğu görülmüştür (CVI=0.85). 34 maddenin biri dışında tüm maddelerin madde-toplam korelasyonu anlamlı bulunmuştur ($p<0.05$). Toplam ölçek için Cronbach alfa katsayısı 0.64 olarak belirlenmiştir. Yapı geçerliği için üç faktörlü çözümlemede varyansın %23.7'si açıklanmıştır. Maddelerin test ve tekrar-test güvenirliği KOP ölçeğinin geçerliğine işaret etmiştir ($p<0.001$).

Sonuç: Kogan'ın Yaşlı Birey Ölçeği'nin (KOP) Türkçe versiyonu uygun geçerlik, iç tutarlılık güvenilirliği ve geçerliğine sahip olduğu ve bu ölçeğin özellikle sağlık bilimleri bölümlerinde okuyan öğrencilerin yaşlı bireylere ilişkin tutumlarının değerlendirilmesinde kullanılabileceği düşünülmektedir.

Anahtar Sözcükler: Yaşlı; Sağlık Personelinin Tutumu; Epidemiyolojik Araştırma Dizaynı.

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INTRODUCTION

Aging of the population is one of the most complicated problems of contemporary societies (1). The proportion of elderly is increasing all over the world, as well as in Turkey, where the proportion of people ≥65 years old is estimated to reach 10.9% by the year 2030 (2). By 2034, the world's elderly people are being expected to constitute 26% of the European population (3).

With changing demographic characteristics of the older population, social, economic, cultural, and political problems related to older people arise. Various physical changes, health problems, loss of roles such as retirement and widowhood, cause elderliness to become a challenging life period (4). With the rapid increase of the elderly population, loneliness, disability, chronic diseases, need of care and support problems associated with long-life brings up the necessity of reviewing health care and services for geriatric patients (5). As known, delivering services related to the elderly is influenced by the attitude of health professionals (such as nurses, physiotherapists, medical doctors etc). Kogan's Old People Scale (KOP) is one of the most commonly used instruments developed with the aim of evaluating attitudes towards older people. This scale has been translated into many languages and is being used as a valid and reliable instrument (6-11).

Currently, a reliable and valid tool is needed to measure the attitudes of health professionals and health sciences students towards elderly people in Turkey. Accordingly, this study translated the KOP scale into Turkish, and assessed its validity and reliability.

MATERIALS AND METHOD

The design of this study was cross-sectional. The authors obtained the necessary permission from Prof. Nathan Kogan, who holds the copyright for the Kogan's Old People Scale (KOP), in order to translate the scale into Turkish.

This study was conducted at the Muğla School of Health Sciences, after obtaining permission from the relevant authorities of the University. Participants were undergraduate students in the Department of Nursing (n=478) and the Department of Physiotherapy & Rehabilitation (n=98), both providing a four-year education. A form, including questions about socio-demographic characteristics and Kogan's Old People Scale were distributed to all of the participants during courses. Those who agreed to participate in the study completed the questionnaire in Turkish. The completion and return of the questionnaires were treated as informed consent to participate in the study.

Instrument

KOP, which measures the affective attitude component towards older people, is a self-administered scale consisting of 17 paired statements, each having one positive and one negative version (6,7,9-12). Thus, the scale contains one set of 17 items expressing negative, and a second set of 17 items expressing positive sentiments about older people. These positive and negative pairs yield two subscales labeled OP+ and OP-, respectively. These two subscales can be calculated separately. A higher score on OP+ (added total score of all positive items) indicates a favorable disposition toward older people. For OP-, such a favorable disposition is indicated by disagreement with the items. The scoring of KOP is done on a Likert type scale with six consecutive alternative response categories, where high numbers indicate the degree of agreement with the item (6,7,9-12).

Turkish Translation

KOP was translated into Turkish by the authors (IÇK, MSB), independently. These translations were than synthesized by these translators, and two bilingual health professionals. Back translation was done by a person (BY) whose native languages are both Turkish and English, and who was totally blind to the original version. The original scale and back translation were compared and reviewed by an expert committee composed of the authors, an experienced professional translator, and health professionals, who were all bilingual. The committee reviewed the translations and reached consensus on any discrepancy. Cognitive debriefing was done to assess the level of comprehensibility and cognitive equivalence of the translation, on 15 respondents, including students, and administrative and academic staff. These respondents were asked to independently rate the relevancy, clarity and simplicity of the items by using a content validity index (CVI) four-point rating scale: (1) not relevant, (2): somewhat relevant, (3) quite relevant and (4) very relevant. The CVI was the proportion of total items rated by the experts as either 3 or 4 and a CVI rating of 0.8 was considered to be valid (11,13). Review of cognitive debriefing results was performed by the expert committee.

Procedures

After the translation process was completed, questionnaires including a cover letter that addressed the purpose and im-

portance of the study, demographic questions (age, gender, class and cohabitation with the elderly) and the Turkish version of the KOP scale were distributed to participants present at the beginning of some courses. The completed questionnaires were collected by the lecturer of each course, and delivered to the researchers. The scale took approximately 12 minutes to complete. In order to assess the reliability of the Turkish version of the scale, another KOP form was distributed to the participants one week after the first completion, and they were asked to complete the form if they were willing to take part.

Data Analysis

Quantitative and qualitative variables were presented as mean ± standard deviation (X±SD) and %, respectively. The scale was coded according to the directions given by Shaw and Wright (12). The data were analyzed at the 0.05 alpha levels with Statistical Package for Social Sciences (SPSS) 11.5 version. The Kolmogorov Smirnov test was used to investigate whether the scores are normally distributed or not. Content validity, construct validity, and internal consistency reliability were assessed. Content validity was assessed as mentioned in the *Turkish translation* section. The Kaiser-Meyer-Olkin (KMO) test was used to determine the sufficiency of the sample and multivariate normality (14,15). In order to evaluate construct validity, suitability of the sample for factor analysis was performed by Bartlett's Test of Sphericity. Factor analysis was performed by using a principal component analysis with varimax rotation. The number of factors was determined by using the factor scree plot (>1.0). Cronbach's alpha was used for internal consistency reliability of the whole, negative (OP-) and positive (OP+) subscales. Cronbach's alpha was considered as high if above 0.80, moderate if between 0.60 and 0.80, and low if below 0.60 (16). Test-retest reliability of the scale was tested by Spearman correlation analysis. Spearman correlation coefficients were classified as high (above 0.60), moderate (between 0.60 and 0.30) or low (below 0.30) in reliability of the scale (17).

Results

Three hundred and ninety-nine participants out of 576 (response rate =69.27%) completed the questionnaire. Nursing students were in the majority (n=320). Mean age of the sample was 21.16±1.81 years (21.18±1.82 and 21.11±1.81 for the nursing and physiotherapy students, respectively). Rate of cohabitation with the elderly was found to be 18.5%. Other demographic data for the participants are summarized in Table 1.

Validity

Content Validity: Mean CVI for the Turkish version of KOP scale was 0.85, indicating adequate content validity.

Construct Validity: Construct validity was assessed by factor analysis employing Principal Component Analysis. The Bartlett test of sphericity ($x2$=1868.17, d.f.=561, p<0.0001) was statistically significant, indicating that the data were not an identity matrix and the KMO value was 0.673 indicating the appropriateness of data for statistical assumptions of multivariate normality and sampling adequacy for factor analysis (14,15). Initial factor analysis using principal components analysis with varimax rotation revealed 13 factors with eigenvalues >1.0. However, the scree test indicated that a three-factor solution was the most appropriate one, and provided the most meaningful interpretation based on the theoretical dimensions of learned resourcefulness (Figure 1). The principal

Table 1— Demographic Characteristics of the Participants

	Nursing (n=320) n(%)	Physiotherapy and Rehabilitation (n=79) n(%)	Total (n=399) n(%)
Gender			
Female	190 (59.4)	29 (36.7)	219 (54.9)
Male	130 (40.6)	50 (63.3)	180 (45.1)
Class			
First year	88 (27.5)	35 (44.3)	123 (30.8)
Second year	84 (26.3)	22 (27.8)	106 (26.6)
Third year	79 (24.7)	22 (27.8)	101 (25.3)
Fourth year	69 (21.6)	0 (0.00)	69 (17.3)

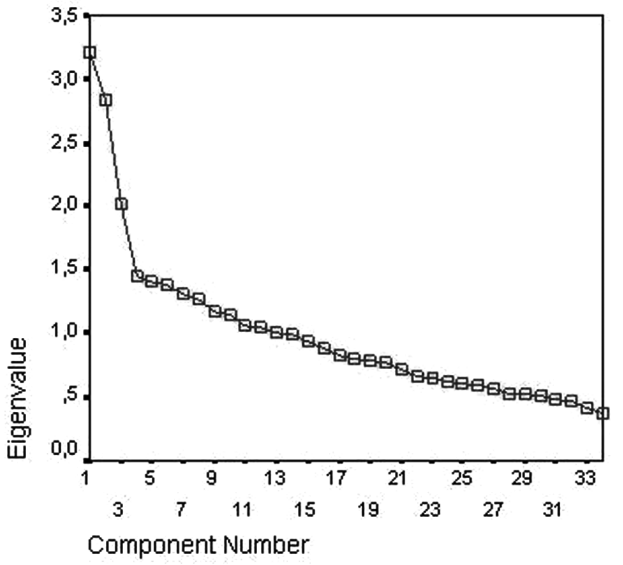

Figure 1— Scree plot of factor analysis of Turkish version of the KOP scale.

components analysis was repeated by forcing a three-factor solution which accounted for 23.7% of the total variance. First factor (prejudice) composed eight negative items, explaining 9.45% of the variance. Factor 2 (appreciation) consisted of four positive items, explaining 8.34% of the variance. Factor 3 (recognition of similarity and difference) consists of two positive items, explaining 5.91% of the variance. Factor loadings above 0.40 of items for the scale are presented in Table 4.

Reliability

Internal Consistency: Cronbach's alpha values were 0.68 for OP-, 0.63 for OP+ and 0.64 for the total scale, indicating adequate internal consistency reliability. The two subscales (OP- and OP+) were significantly correlated (r_s=0.51, p=0.037). The reliability analysis of the items included in subscales is presented in Table 2. Spearman's Rank correlation coefficients for the items (except 7N) yielded statistical significance (p<0.05) (Table 2). Increase in the value of Cronbach's alpha was within a range of less than 0.1 when the non-correlated item was excluded; therefore, the decision was made not to exclude this item from the analysis.

In addition, Cronbach's alpha values for Factor 1, 2 and 3 were 0.64, 0.55 and 0.24, respectively.

For assessment of test-retest reliability, 399 questionnaires were distributed to the students one week after the initial completion. Spearman's correlation coefficient was calculated to measure test-retest reliability (Table 3). Reliability coefficients for Factor 1,2 and 3 were 0.31, 0.24 and 0.20, respectively.

In this study, independent variables (gender, class and cohabitation with the older people) did not affect participants' attitudes toward elderly people. None of OP-, OP+ and total KOP scale mean scores presented any difference among investigated groups (p>0.05) (Table 5).

Discussion

KOP was translated into Turkish in order to have a reliable scale for measuring Turkish population's attitudes towards older people. Psychometric properties of the Turkish version of the KOP scale were tested on undergraduate students of Muğla University, Muğla School of Health Sciences (Nursing and Physiotherapy & Rehabilitation Departments).

The Turkish version of KOP indicates good content validity (CVI=0.85). Construct validity of the Turkish version was supported in the factor analysis, in which KOP shows three factors (prejudice, appreciation, and recognition of similarity and difference) similar to the Japanese and Swedish versions (8,10). These factors explained 23.7% of the variance, which seems not to be high, but nevertheless close to the Swedish and Japanese versions of the KOP (30% and 30.7%, respectively) (8,10).

Cronbach's alpha coefficient indicates that the total scale and the subscales offer a moderate level of reliability (15). This finding is similar to those found in other studies (8,9). Cronbach's alpha for the subgroups (0.68 for OP-, 0.63 for OP+) and the higher number of items in Factor 1 (prejudice) suggest that the OP- scale may be stronger than OP+. This finding is consistent with Swedish, Greek and Chinese versions of the KOP scale (8,9,11).

In this study, Factor 1 (prejudice) consisted of only OP- items, explaining 9.45 % of variances, and expressing negative feelings and opinions towards older people. Factor 2 (appreciation) consisted of only OP+ items, explaining 8.34% of variances, and expressing positive feelings and opinions towards older people. Factor 3 (recognition of similarity and difference) consisted of only OP+ items, explaining 5.91% of variances. Although Cronbach alpha coefficients -especially for Factor 2 and 3, seem to be poor, this situation may arise from large sample size, and the items covered in *appreciation* and *prejudice* has similarities with the ones in Greek, Japanese, Chinese and Swedish versions of the scale (8-11). *Recogni-*

Table 2— Means, Standard Deviations, Item-Total Spearman Rank Correlations (RS) and Item-Deleted Cronbach Alpha Coefficients for KOP Items (n=399)

Item	Item Content	M	sd	Rs	Alpha if Item Deleted
1N	It would probably be better if most old people lived in residential units with other elderly people	3.65	1.46	.19*	0.63
1P	It would probably be better if most old people lived integrated with younger people	3.78	1.28	.16**	0.63
2N	It's hard to figure out what makes the old people tick	3.32	1.44	.36**	0.61
2P	Most old people are really not different from anybody else: they are as easy to understand as younger people	3.55	1.36	.26**	0.62
3N	Most old people get set in their ways and are unable to change	2.91	1.34	.27**	0.63
3P	Most old people are capable of new adjustments when the situation demands it	3.69	1.24	.32**	0.61
4N	Most old people would prefer to quit work as soon as pensions or their children can support them	3.41	1.36	.27**	0.62
4P	Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody	4.11	1.31	.24**	0.62
5N	Most old people tend to let their homes become shabby and unattractive	3.72	1.41	.30**	0.62
5P	Most old people can generally be counted to maintain a clean, attractive home	4.16	1.16	.24**	0.62
6N	It is foolish to claim that knowledge and experience comes with old age	4.13	1.65	.34**	0.62
6P	People grow wiser as they get older	4.21	1.35	.32**	0.61
7N	Old people have too much power in business and politics	3.34	1.30	.17**	0.63
7P	Old people should have more power in business and politics	3.92	1.37	-.09	0.65
8N	Most old people make one feel ill at case	4.30	1.25	.40**	0.61
8P	Most old people are very relaxing to be with	4.06	1.29	.33**	0.61
9N	Most old people bore others by their insistence on talking about the 'good old days'	3.77	1.41	.34**	0.61
9P	One of the most interesting and entertaining qualities of most old people is to talk about their past experience	4.53	1.18	.20**	0.63
10N	Most old people spend too much time prying into the affairs of others and giving unsought advice	3.22	1.43	.39**	0.61
10P	Most old people tend to keep to themselves and give advice only when asked	2.99	1.36	.13**	0.63
11N	If old people expect to be liked, their first step is to try to get rid of their irritating behaviors	3.28	1.43	.25**	0.62
11P	In fact, old people have the same faults as anybody else	4.07	1.24	.18**	0.63
12N	A nice residential neighborhood is the one that too many old people did not live in it	4.46	1.38	.32**	0.61
12P	A nice residential neighborhood is the one with too many old people living in	3.51	1.34	.23**	0.62
13N	Generally most old people are pretty much alike	3.13	1.25	.22**	0.62
13P	Most old people are very different from one another	3.32	1.33	.20**	0.62
14N	Most old people should be more concerned with their personal appearance, they're too untidy	3.51	1.38	.29**	0.61
14P	Most old people seem to be quite clean and neat	3.81	1.27	.33**	0.61
15N	Most old people are irritable, grouchy and unpleasant	4.02	1.36	.35**	0.61
15P	Most old people are cheerful, agreeable and good humored	4.02	1.17	.23**	0.62
16N	Most old people are constantly complaining about the behavior of the younger generation	2.83	1.28	.30**	0.62
16P	One seldom bears old people complaining about the behavior of the younger generation	3.40	1.31	.22**	0.62
17N	Most old people make excessive demands for love and reassurance	2.76	1.20	.11*	0.63
17P	Most old people need no more love and reassurance than anyone else	2.58	1.28	.11*	0.64

**p<0.01
*p<0.05

Table 3— Test-Retest Reliability, Spearman's Correlation Coefficient for the KOP Scale (last 7 days) (n=399)

Item	Item Content	R
1N	It would probably be better if most old people lived in residential units with other elderly people	.32*
1P	It would probably be better if most old people lived integrated with younger people	.32*
2N	It's hard to figure out what makes the old people tick	.28*
2P	Most old people are really not different from anybody else: they are as easy to understand as younger people	.21*
3N	Most old people get set in their ways and are unable to change	.35*
3P	Most old people are capable of new adjustments when the situation demands it	.33*
4N	Most old people would prefer to quit work as soon as pensions or their children can support them	.40*
4P	Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody	.23*
5N	Most old people tend to let their homes become shabby and unattractive	.31*
5P	Most old people can generally be counted to maintain a clean, attractive home	.21*
6N	It is foolish to claim that knowledge and experience comes with old age	.35*
6P	People grow wiser as they get older	.32*
7N	Old people have too much power in business and politics	.23*
7P	Old people should have more power in business and politics	.29*
8N	Most old people make one feel ill at case	.25*
8P	Most old people are very relaxing to be with	.27*
9N	Most old people bore others by their insistence on talking about the 'good old days'	.33*
9P	One of the most interesting and entertaining qualities of most old people is to talk about their past experience	.22*
10N	Most old people spend too much time prying into the affairs of others and giving unsought advice	.39*
10P	Most old people tend to keep to themselves and give advice only when asked	.26*
11N	If old people expect to be liked, their first step is to try to get rid of their irritating behaviors	.29*
11P	In fact, old people have the same faults as anybody else	.20*
12N	A nice residential neighborhood is the one that too many old people did not live in it	.26*
12P	A nice residential neighborhood is the one with too many old people living in	.24*
13N	Generally most old people are pretty much alike	.24*
13P	Most old people are very different from one another	.23*
14N	Most old people should be more concerned with their personal appearance, they're too untidy	.30*
14P	Most old people seem to be quite clean and neat	.24*
15N	Most old people are irritable, grouchy and unpleasant	.26*
15P	Most old people are cheerful, agreeable and good humored	.19*
16N	Most old people are constantly complaining about the behavior of the younger generation	.25*
16P	One seldom bears old people complaining about the behavior of the younger generation	.22*
17N	Most old people make excessive demands for love and reassurance	.34*
17P	Most old people need no more love and reassurance than anyone else	.17*

*p<0.01.

tion of similarity and difference factor of our scale includes items P13 and P17, which are either not covered, or covered in different factor structures of the above mentioned versions. All of the items of the Turkish version of KOP scale are same as the original and previous versions of the scale, but the headings or items of factor structures vary.

Although the Spearman's Rank correlation coefficients for the items yielded statistical significance, there were weakly correlated items (>0.3) possibly due to relatively large sample size (Table 2). Although test and re-test reliability of the items yielded statistically significant correlation (p<0.01), the correlation values were low, and this issue may be investigated in further studies in order to make a thorough comment about the reliability of the Turkish version of the KOP scale.

Analysis of the scores of subscales and total KOP scale among independent groups indicated that neither favorable and unfavorable dispositions, nor the total attitude towards

Table 4— Factor Loadings After Varimax Rotation for the KOP Scale (n=399)

Item	Factor 1 *Prejudice*	Factor 2 *Appreciation*	Factor 3 *Recognition of similarity and difference*
N1	.21	.23	.00
P1	-.15	.16	.12
N2	.35	.01	-.26
P2	-.21	.22	.22
N3	.36	.15	-.30
P3	-.24	.27	.28
N4	.32	.14	-.06
P4	-.20	.26	-.07
N5	**.40**	.08	.09
P5	-.27	.38	-.13
N6	**.41**	-.05	.34
P6	-.36	.36	-.34
N7	-.12	.37	.12
P7	-.07	.35	.10
N8	**.52**	.08	.26
P8	-.30	**.41**	-.01
N9	**.45**	.13	.04
P9	-.12	.27	-.31
N10	**.52**	.30	-.29
P10	.09	.34	.35
N11	.34	.31	-.16
P11	-.11	.29	-.24
N12	**.42**	.13	.17
P12	-.10	**.52**	.04
N13	.31	.24	-.32
P13	-.06	.34	**.45**
N14	**.45**	.19	.13
P14	-.24	**.51**	.05
N15	**.56**	.19	.19
P15	-.17	**.49**	-.16
N16	.38	.16	-.35
P16	-.16	.37	.33
N17	.14	.35	-.25
P17	.15	.13	**.49**
Contribution (%)	**9.45**	**8.34**	**5.91**
Cronbach's α	**0.64**	**0.55**	**0.24**

elderly people changed according to gender, class and cohabitation with the elderly people.

As a conclusion, the Turkish version of the scale indicates good content validity (CVI=0.85), but moderate level of construct validity, explaining only 23.7% of the variance, and low but statistically significant correlation of test-retest reliability of the items. Although we think that further studies are required for; making a thorough comment about the reliability of the scale, examining convergent validity, and including different populations such as health care professionals, Turkish version of the KOP may be used to assess the attitudes toward older people among students in health sciences departments such as nursing, and physiotherapy & rehabilitation, until a more reliable and adequate scale is introduced to the related field.

Table 5— OP-, OP+ and Total KOP Scale Mean Scores of the Subjects According to Their Gender, Class and Cohabitation with the Elderly People

Score	Groups	n	Mean	SD	p
OP-					
	Female	219	59.35	9.57	0.09
	Male	180	57.76	9.38	
OP+					
	Female	219	63.12	8.03	0.99
	Male	180	63.13	8.70	
Total					
	Female	219	122.75	12.50	0.80
	Male	180	124.37	12.69	
OP-					
	Class 1	123	59.37	9.90	0.67
	Class 2	106	59.72	10.52	
	Class 3	101	57.81	9.28	
	Class 4	69	58.37	7.34	
OP+					
	Class 1	123	61.97	8.41	0.14
	Class 2	106	64.49	7.92	
	Class 3	101	63.41	8.36	
	Class 4	69	62.70	8.58	
Total					
	Class 1	123	121.60	13.12	0.21
	Class 2	106	124.73	13.83	
	Class 3	101	124.59	12.23	
	Class 4	69	123.32	9.70	
OP-					
	Cohabitation +	74	58.53	8.74	0.92
	Cohabitation –	325	58.65	9.68	
OP+					
	Cohabitation +	74	63.28	7.90	0.86
	Cohabitation –	325	63.09	8.43	
Total					
	Cohabitation +	74	123.76	11.56	0.84
	Cohabitation –	325	123.42	12.83	

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