The Adaptation of The Easy-Care Standard Assessment Instrument into Turkish and Evaluation of Psychometric Properties among Turkish Older People

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ABSTRACT

Objective: The assessment of older people's needs is an important indicator for planning individual care and services that promote independence, health and well-being. However, there is not a valid tool to measure physical, mental, and social needs of older people in Turkey. The purpose of the study was to adapt of EASY-Care Standard, which is a comprehensive and holistic assessment tool, into Turkish and evaluate its psychometric properties.

Material and Method: The sample consisted of 400 older people. The EASY-Care Standard covers seeing, hearing and communicating, looking after yourself, getting around, accommodation and finance, safety and relationships, staying healthy, mental health and well-being. Scores representing overall level of independence, risk of breakdown in care and risk of falls are calculated from the selected items' scores. Forward-back translation method was used to adapt EASY-Care into Turkish. Reliability was assessed using internal consistency, item-total correlation and test-retest stability. Construct validity was analyzed by investigating associations between the three sub domains in EASY-Care and testing convergent and divergent validity.

Results: We found satisfactory evidence for reliability and construct validity. Kappa statistics were acceptable, Intraclass correlation coefficients (ICC) and Cronbach's alpha values were satisfactory. Convergent validity was supported by moderate to high negative correlations between EASY-Care Standard and the The MOS 36-item short-form health survey (SF-36). The EASY-Care scores were differentiated by living arrangements, educational status, perceived health, urinary incontinence, depression, malnutrition, and history of hospital admission within last three years.

Conclusion: In conclusion, the EASY-Care Standard is a reliable and valid instrument for older people in Turkey.

Keywords: Elderly, psychometric properties, reliability, validity **Nobel Med 2015; 11(2): 85-92**

EASY-CARE STANDARD DEĞERLENDİRME ARACININ TÜRKÇE'YE UYARLANMASI VE TÜRK YAŞLILARINDA PSİKOMETRİK ÖZELLİKLERİNİN DEĞERLENDİRİLMESİ

ÖZET

Amaç: Yaşlıların bağımsızlığını, sağlık ve esenliğini koruyacak ve geliştirecek bireyselleştirilmiş bakım ve hizmetlerin planlanmasında yaşlının gereksinimlerinin belirlenmesi iyi bir yol göstericidir. Ancak Türkiye'de yaşlıların fiziksel, mental ve sosyal gereksinimlerini bütün olarak belirleyebilecek bir değerlendirme aracı yoktur. Bu çalışmanın amacı yaşlıları bütüncül olarak değerlendirmeye yönelik geliştirilmiş olan EASY-Care Standard'ı Türkçe'ye uyarlamak ve psikometrik özelliklerini incelemektir.

Materyal ve Metot: Çalışmanın örneklemini 400 yaşlı birey oluşturmuştur. EASY-Care görme, işitme, iletişim kurabilme, kendine bakabilme, etrafı dolaşabilme, barınma koşulları, mali durum, kendini güvende hissetme, ilişkiler, sağlığını koruma ve sürdürebilme, mental sağlık ve esenlik gibi alanları değerlendiren sorular içerir. EASY-Care ile yukarıda sayılan her bir alanda yaşlıların sorun yaşayıp yaşamadıkları, desteklenmeye ihtiyaç duyup duymadıkları belirlenebilir; yanısıra bunlar arasından seçilmiş bazı sorular ile yaşlının global bağımlılık/ bağımsızlık düzeyi, kendi bakımını sağlayamama riski ve düşme riski gibi alt boyut puanları saptanabilir. Ölçeğin Türk dili ve kültürüne uyarlanması ileri-geri çeviri yöntemi ile yapılmıştır. Güvenirlik analizinde iç tutarlılık, madde-toplam korelasyonu ve test-retest korelasyonuna bakılmıştır. Yapı geçerliği EASY-Care'in üç alt boyutu arasındaki korelasyonlar, yanısıra yakınlaşım, uzaklaşım geçerliği ile incelenmiştir.

Bulgular: Bulgularımız EASY-Care Standard'ın güvenilir ve geçerli olduğunu göstermektedir. Kappa istatistikleri kabul edilebilir sınırlarda, ICC and Cronbach's alfa değerleri genel olarak tatmin edici düzeydedir. EASY-Care Standard ve SF-36 arasındaki orta, yüksek derecedeki negative korelasyon yakınlaşım geçerliğini desteklemektedir. Huzurevinde yaşayanlarda, eğitim görmemiş yaşlılarda, sağlığını kötü algılayanlarda, üriner inkontinansı olanlarda, depresyonu olanlarda, malnütrisyonu olan ya da malnütrisyon riski altında ve son üç yılda hastaneye yatma hikayesi olan yaşlılarda EASY-Care ortalama puanları daha düşüktür.

Sonuç: EASY-Care Standard Türk yaşlılarında kapsamlı ve bütüncül değerlendirme amacıyla kullanılabilecek güvenilir ve geçerli bir araçtır.

Anahtar Kelimeler: Yaşlı, psikometrik özellikler, güvenirlik, geçerlik **Nobel Med 2015; 11(2): 85-92**

INTRODUCTION

The population of older people is increasing gradually worldwide. By the year 2050, nearly 1 person in every 6 throughout the world is projected to be at least 65 years old. Europe is currently the world's major area with the highest proportions of older people and is projected to remain so far at least the next 50 years.[1,2] The older population increases in Turkey, just as in the whole world. The proportion of people aged 65 and above in Turkey has increased from 4.3 per cent in 1990 to 7.7 per cent in 2013, and is expected to reach 20.8 per cent by 2050.[3]

Not only there are more people surviving to old age worldwide, but also, they tend to live longer.[4] Thus, there is an increasing burden of disease and disability with older age; the increasing age also augments the risk of functional disability, and therefore the need of care. However, care of community living older people is getting more difficult everyday. Similar to other countries, in Turkey, as a result of industrialization and urbanization, transformation from a traditional large family to nuclear family, migration from rural areas to urban areas, residing in a apartment flat with two or three bedrooms usually, changes in the traditional culture and values, and working outside of both man and women in the family caused the older people to lose his/her previous role and prestige in the family and, in the end, community-based care for older people is encountered as a major problem. Thus, institutional care model, nursing homes were established to take care of older people, lodge them and meet their primary needs promptly. According to state statistics 5% of the total older people populations reside in these institutions.[5] In Turkey, older care services at institutional level, predominantly offered by nursing homes.[6]

However, most of older people prefer to live in their community although they face limitations as a result of chronic diseases and disabilities.[5-7] In a study, it was showed that nursing homes were perceived as an acceptable last resort by older people. Older people who live in nursing homes had also weaker social support and were perceived more loneliness than older people who live in their homes.[7]

Community based care for older people is encouraged by policy makers in Turkey as it has also been shown

to be more cost-effective as long as it is well planned. The first step for community based services planning is comprehensive assessment.[6]

The comprehensive assessment of functional disability and perceived needs is a vital step for planning of the health and social services that are needed to promote independence, well-being and quality of life (QOL). Previous studies have indicated that not addressing unmet needs among older people can lead to increased health problems, decreased QOL, increased emergency department visits, increased hospital and nursing home admissions, and increased morbidity and increased mortality rates.[8-11] A review of the literature on measuring health and social needs as perceived by older people yielded no instrument appropriate for use in Turkey. The purpose of the study was to adapt of EASY-Care Standard Assessment Instrument, as a comprehensive and holistic assessment tool, into Turkish and to evaluate the psychometric properties, in older people in Turkey.

MATERIAL AND METHOD

Participants

We used convenience sampling to recruit 400 study participants with a mean age 74 years (range 60-99 years), with 228 females and 172 males. The majority were from urban areas (92.3%), were widowed (37.5%), were educated to primary school level (55.6%), were living in the community (53.6%), were retired (52.5%), and were receiving social security (86.3%). More than half of the participants (52.3%) described their family financial status as "just enough to make ends meet".

Exclusion criteria were severe dementia and people at the terminal stage of a disease. We excluded the older people with Mini-Mental State Examination (MMSE) score of ≤10.[12]

Instrument

EASY-Care Standard: EASY-Care Instruments were developed in 1993 for the European Regional Office of the World Health Organization in order to assess older people's perceptions of their physical, mental, and social needs. Since then they have undergone regular updating for their reliability and validity and have been tested in 23 countries worldwide in their latest version, EASY-Care Standard 2010.[13]

The instrument covers seeing, hearing and communicating, looking after yourself, getting around, accommodation and finance, safety and relationships, staying healthy, mental health and well-being. Scores representing overall level of independence, risk of breakdown in care and risk of falls are calculated from the selected items' scores. Scores ranges from 0 to 100 for the overall level of independence, 0 to 8 for the risk of breakdown in care, and 0 to 12 for the risk of falls. Higher scores indicate a greater level of dependency or risk.[13]

EASY-Care Standard 2010-Turkish version can be obtained by correspondence author.

Procedures

The study was conducted from January to July in 2013 and consisted of three stages including translation, reliability and validity of EASY-Care Standard.

Translation included a three stage process. As a first stage, forward translations from English into Turkish, back translations from Turkish into English, examination of the original English, Turkish and back translated English forms by a group of panel were done. As a second stage, each of the items was scored by all panel members (based on a 4 ordinal points scoring system where 1=not acceptable, 2=somewhat acceptable, 3=acceptable, and 4=highly acceptable) as to whether the items would be easily understood by Turkish older people. The content validity index (CVI), as recommended by Polit et al., was then calculated.[14] The CVI value for the panel members was 0.91 which indicated perfect content validity. i.e. items in EASY-Care are clear, concise, readable and distinct. Finally, a pilot study among 20 older people showed clarity and comprehensibility of the EASY-Care Standard-Turkish version.

Reliability was assessed using internal consistency, item-total correlation and test-retest stability. To assess internal consistency Cronbach's alpha was computed. Based on the relevant literature, a minimum Cronbach's alpha of 0.90 was considered ideal, 0.80 was considered very acceptable and 0.70 acceptable. Corrected item-total consistency was tested by Pearson's correlation coefficient with an acceptable value being >0.20.[15] Test-retest stability was tested at both item and scale level. At the item level stability was investigated by Kappa statistics. For the scale level we computed intraclass correlation coefficients (ICC) with 95% confidence interval (CI). For this purpose, in a sample which consisted of 62 older people The EASY-Care tool was administered twice at a 15-day interval. Both Kappa and ICC results were interpreted as excellent stability for values >0.75, fair to good stability for values from 0.40 to 0.75 and poor stability for values <0.40, as suggested in the relevant literature.[16,17]

Construct validity was analyzed by investigating associations between the three sub domains in EASY-Care and testing convergent and divergent validity. A moderate correlation between the three

Table 1. Reliability findings for the EASY-Care Standard		
Domain / Item	**Item-Total correlation (n=400)**	**Test-retest Kappa agreement (n=62)**
Independence		
1.4. Can you use the telephone?	0.480	0.560
2.1. Can you keep up your personal appearance	0.630	0.649
2.2. Can you dress yourself?	0.750	0.628
2.4. Can you use the bath and shower?	0.750	0.806
2.5. Can you do your housework?	0.693	0.439
2.6. Can you prepare your own meals?	0.667	0.633
2.7. Can you feed yourself?	0.519	0.526
2.9. Can you take your own medicine?	0.590	0.658
2.11. Do you have urine incontinence?	0.457	0.755
2.12. Do you have gaita incontinence?	0.502	0.639
2.13. Can you use the toilet (or commode)?	0.677	0.640
3.1. Can you move yourself from bed to chair, if they are next to each other?	0.774	0.795
3.3. Can you get around indoors?	0.767	0.583
3.4. Can you manage stairs?	0.754	0.729
3.6. Can you walk outside?	0.775	0.548
3.7. Can you go shopping?	0.772	0.605
3.8. Do you have any difficulty in getting to public services?	0.501	0.632
5.2. Are you able to manage your money and financial affairs?	0.392	0.697
Cronbach's alpha	0.93	
**ICC	0.92	
Risk of breakdown in care		
2.2. Can you dress yourself?	0.577	0.628
2.4. Can you use the bath and shower?	0.540	0.806
2.7. Can you feed yourself?	0.481	0.526
2.11. Do you have urine incontinence?	0.430	0.755
2.13. Can you use the toilet (or commode)?	0.499	0.640
3.5. Have you had any falls in the last twelve months?	0.346	0.701
6.6. Do you have any concerns about your weight?	0.079	0.599
7.2. In general, would you say your health is:	0.466	0.558
7.6. Have you had much bodily pain in the past month?	0.249	0.757
7.7. During the last month, have you often been bothered by feeling down, depressed or hopeless?	0.393	0.802
7.8. During the last month, have you often been bothered by having little interest or pleasure in doing things?	0.396	0.756
7.9. Do you have any concerns about memory loss or forgetfulness?	0.261	0.606
Cronbach's alpha	0.75	
**ICC	0.61	
Risk of falls		
1.1. Can you see (with glasses if worn)?	0.252	0.741
3.1. Can you move yourself from bed to chair, if they are next to each other?	0.550	0.795
3.2. Do you have problems with your feet?	0.279	0.537
3.5. Have you had any falls in the last twelve months?	0.312	0.701
3.6. Can you walk outside?	0.584	0.548
4.1. Dou you feel safe inside your home?	0.244	0.742
4.2. Dou you feel safe outside your home?	0.354	0.684
6.4. Do you think you drink too much alcohol?	-0.061	*
Cronbach's alpha	0.64	
**ICC	0.56	
*:100%, **:ICC (Intraclass correlation coefficients)		

sub domains was expected because although each of them evaluates separate aspects of health they share some mutual points.

To evaluate convergent validity we examined the correlation between mean scores for the three sub domains in EASY-Care and the mean score for physical component score (PCS) and mental component score (MCS) in the MOS 36-item short-form health survey (SF-36).[18] A negative moderate (0.40-0.69) to high (0.70-0.89) correlation between EASY-Care and SF-36 scores was expected.

Divergent validity was tested to evaluate discriminative power of EASY-Care. We investigated whether mean scores for the sub domains of EASY-Care varied by socio-demographic variables including living arrangements and educational status or by health-related variables including perceived health, urinary incontinence, depression, malnutrition, and history of hospital admission. Geriatric Depression Scale (GDS) was used to evaluate depression. A cut-off score of 11 on the GDS was selected for the present study.[19] Malnutrition was assessed by using the Mini Nutritional Assessment (MNA).[20] We hypothesized that older people who were institutionalized, illiterate, had poor health perception, urinary incontinence, depression, malnutrition/risk of malnutrition, and history of hospital admission would report greater dependence and an increased risk of both breakdown in care and falls.

All statistical analyses were carried out using Statistical Package for the Social Sciences (SPSS), version 15.0 for Windows. Significance for all statistical tests was set at the p<0.05 level.

Ethical considerations

The study was approved by the Local Research Ethics Committee (Study reference number: FHS-EC27-2012). Written informed consent was obtained from participants.

RESULTS

Reliability

Reliability results are shown in Table 1. Kappa values for individual items ranged from 0.439 to 0.806. At the scale level, the ICC was found to be 0.92 (CI=0.90-0.93) for the independence subscale, 0.56 (CI=0.41-0.67) for the risk of breakdown of care subscale, and 0.61 (CI=0.55-0.67) for the risk of falls subscale. The Cronbach's alpha values were 0.93, 0.75, and 0.64 for the subscales of independence, risk of breakdown in care, and risk of falls respectively. All of the items, except two, correlated significantly with their subscale. One item (Do you have any concerns about

your weight?) in risk of breakdown subscale and another item (Do you think you drink too much alcohol?) in risk of falls subscale seemed problematic with item-total correlation coefficients of 0.079 and -0.061 respectively. When we deleted those items, Cronbach's alpha values for risk of breakdown in care and risk of falls sub domains were increased up 0.77 and 0.66.

Validity

To test construct validity the associations between the three sub domains in EASY-Care were investigated by calculating Pearson's correlation coefficient. As shown in Table 2 the correlation coefficients between sub domains ranged from 0.67 to 0.71 (p<0.001).

The results for convergent and divergent validity are presented in Table 3 and Table 4, respectively. There was a significant negative correlation between SF-36-physical component score (SF-36-PCS) and the risk of breakdown scores (r= -0.73, p<0.001). Other correlations between EASY-Care sub domains' scores and SF-36 scores were at the moderate level (Table 3).

By means of divergent validity, scores for EASY-Care sub domains were discriminated by living arrangements, educational status, perceived health, urinary incontinence, depression, malnutrition, and history of hospital admission (Table 4).

EASY-Care sub domain scores differed between older people in nursing homes and older people living in the community. There were clear differences between the uneducated (illiterate) group and the educated group in all sub domains of EASY-Care.

The perceived health was evaluated by a single item in the SF-36 and categorized as excellent, very good /good, fair or poor; 14% of older people perceived their health as excellent, 36% as very good, 38% as fair, and 12% as poor. The mean scores for the three sub domains of EASY-Care were all different among older people with various levels of perceived health.

Older people with urinary incontinence had higher EASY-Care scores than those without urinary incontinence. EASY-Care sub domains scores were also different between older people with a history of either occasional or frequent incontinence.

Using GDS we divided the sample into two groups: no depression and depression groups. Based on the cut-off score more than half of them (55%) were depressed. EASY-Care differentiated those who were depressed from those who were not.

The MNA was completed by 233 participants. Of those 19.3% had malnutrition, 43.5% were at risk

Table 2. Associations between EASY-Care subdomains		
	Risk of breakdown in care	**Risk of falls**
Independence	0.71 (95% CI= 0.65-0.76)*	0.68 (95% CI=0.62-0.73)*
Risk of breakdown in care		0.67 (95% CI=0.61-0.72)*
CI: Confidence intervals; *:p<0.001		

Table 3. Findings related to convergent validity			
	Independence	**Risk of breakdown in care**	**Risk of falls**
SF-36-PCS	-0.68 (95% CI=-0.61-0.74)*	-0.73 (95% CI=-0.67-0.78)*	-0.60 (95% CI=-0.53-0.68)*
SF-36-MCS	-0.56 (95% CI=-0.47-0.64)*	-0.69 (95% CI=-0.62-0.75)*	-0.54 (95% CI=-0.46-0.63)*
SF-36-PCS: The MOS 36-item short-form health survey (SF-36)-physical component score (PCS), **SF-36-MCS:**The MOS 36-item short-form health survey (SF-36)-Mental component score (MCS), *:p<0.001			

of malnutrition and 37.2% were well nourished. Older people who were malnourished or at risk of malnutrition had higher EASY-Care scores than those who were well nourished. The mean scores differences for the independence, risk of breakdown in care, and risk of falls subscales was all statistically significant.

Older people with a history of hospital admission in the last three years differed in their independence, risk of breakdown in care, and risk of falls scores compared with those who had no history of hospital admission.

DISCUSSION

This is the first study to test the use of EASY-Care Standard in Turkey. It has demonstrated that EASY-Care is a reliable and valid instrument for assessing the physical, mental and social needs of a sample of older people in Turkey, including use of derived scores for overall level of independence, risk of breakdown in care and risk of falls.

The Turkish EASY-Care Standard was shown to have evidence for good reliability of the individual items and for the subscales for independence and risk of breakdown in care. The highest reliability values were observed for the independence subscale with a Cronbach's alpha coefficient at an ideal level. Cronbach's alpha coefficient for risk of breakdown in care subscale exceeded the accepted minimal standard, although corrected item-total correlation coefficient for the item named "Do you have any concerns about your weight?" was lower than acceptable value being >0.20.[15] When we deleted this item, Cronbach's alpha value was increased up to 0.77, however we preferred to kept it in the EASY-Care Standard because of reality on increasing prevalence of obesity among older people in Turkey.[3] In addition, more than half of the sample in this study had primary school level education. Currently, everyone in Turkey receives at

Table 4. Findings related to divergent validity			
	Independence **Mean (SD)**	**Risk of breakdown** **in care** **Mean (SD)**	**Risk of falls** **Mean (SD)**
Living arrangements (n=399)			
Community living (n=214)	18.34 (23.49)	3.58 (2.73)	1.69 (1.65)
Institutional care (n=185)	29.48 (24.81)	4.16 (2.53)	2.16 (1.58)
	Z=-5.601	Z=-2.699	Z=-3.385
	p<0.001	p<0.01	p<0.01
Educational status (n=383)			
İlliterated (no formal education) (n=96)	29.35 (26.64)	4.51 (2.77)	2.33 (1.86)
Formal education (n=287)	20.93 (23.16)	3.56 (0.52)	1.73 (1.52)
	Z=-3.315	Z=-2.735	Z=-2.596
	p<0.01	p<0.01	p<0.01
Perceived health (n=400)			
Excellent (n=57)	15.18 (18.77)	2.32 (1.86)	1.30 (1.25)
Very good /good (n=143)	13.78 (18.20)	2.74 (1.87)	1.34 (1.35)
Fair (n=153)	27.35 (23.93)	4.26 (2.34)	2.13 (1.56)
Poor (n=47)	50.00 (28.12)	7.60 (2.45)	3.67 (1.76)
	KWχ^2=82.790	KWχ^2=116.767	KWχ^2=68.173
	p<0.001	p<0.001	p<0.001
GDS (n=291)			
No depression (Scores=0-11; n=131)	14.51 (19.42)	2.53 (2.22)	1.35 (1.30)
Depression (Scores:12-30; n=160)	30.33 (24.77)	4.75 (2.62)	2.36 (1.71)
	Z=-6.421	Z=-7.525	Z=-5.222
	p<0.001	p<0.001	p<0.001
MNA (n=233)			
Malnutrition (<17) (n=45)	51.58 (24.01)	6.78 (2.83)	3.56 (1.59)
Risk for malnutrition (17-23,5) (n=101)	23.52 (21.24)	3.69 (2.13)	1.94 (1.41)
Normal nutrition (scores=>24) (n=87)	10.99 (10.81)	2.43 (1.73)	1.08 (1.04)
	KWχ2=73.683	KWχ2=66.781	KWχ2=63.055
	p<0.001	p<0.001	p<0.001
Urine incontinence? (n=400)			
None (n=281)	15.87 (17.89)	2.96 (2.05)	1.52 (1.36)
Occasional (n=80)	31.51 (24.29)	5.49 (2.64)	2.37 (1.72)
Frequently (n=39)	62.18 (26.71)	6.90 (2.70)	3.74 (1.86)
	KWχ2=96.503	KWχ2=94.666	KWχ2=51.520
	p<0.001	p<0.001	p<0.001
Urine incontinence? (n=400)			
None (n=281)	15.87 (17.89)	2.96 (2.05)	1.52 (1.36)
Occasional / frequently (n=119)	41.17 (28.88)	5.93 (2.75)	2.81 (1.87)
	Z=-8.798	Z=-9.359	Z=-6.365
	p<0.001	p<0.001	p<0.001
Hospital in-patient admission in the last three years			
Yes (n=113)	30.01 (26.99)	4.69 (2.75)	2.49 (1.75)
No (n=238)	21.20 (22.57)	3.49 (2.48)	1.69 (1.44)
	Z=-2.995	Z=-3.843	Z=-4.036
	p<0.01	p<0.001	p<0.001

GDS: Geriatric depression scale, **MNA:** mini nutritional assessment, **SD:** standard deviation, **Z:** Mann-Whitney U test, **KWχ²:** Kruskal-Wallis test

least 12 years of compulsory education, so that the response to this item may be different for future older populations with a higher level of education. Further research efforts are needed to explore the effects of body weight and different educational level on risk of breakdown in care.

The internal reliability of the risk of falls subscale was slightly poor. This result may be related to the item (Do you think you drink too much alcohol?) which had extremely lower and negative item-total correlation coefficient. When we deleted this item, Cronbach's alpha value was increased up to 0.66, which was still lower than acceptable range of 0.70. However, we did not exclude this item, because first, we need this item for cross-cultural comparisons, second, ICC was 0.61 showing fair to good stability.[16,17]

Finally, similar problems were reported from other validation studies and there is a concensus between EASY-Care network members to further work on this item to make it much more understandable rather than to delete. All items in the EASY-Care Standard, except two items, had corrected item-total correlations higher than 0.20. We see these problematic items as a worthwhile goal for subsequent studies. By means of stability, Kappa statistics and ICC was excellent for the independence subscale. The risk of breakdown in care subscale and risk of falls subscale showed fair to good stability coefficients. This results supported stability of the Turkish EASY-Care Standard.[16,17]

The structure of EASY-Care was supported by the moderate associations observed between the three sub domains. This indicates that the subscales evaluate different things although there were some similarities. Convergent validity was achieved by confirming from moderate to high correlations between EASY-Care Standard and the SF-36, indicating that the constructs in the two measurement tool are not exactly similar; however, different constructs underlying of perceived health and perceived physical, mental, and social needs are universal.

In terms of divergent validity, mean scores for EASY-Care sub domains were influenced by living arrangements, educational status, perceived health, urinary incontinence, depression, malnutrition, and a history of hospital admission which demonstrates the discriminatory power of the instrument.

Education has been widely identified as a determinant of health outcomes. It shapes both health promoting and health seeking behaviours, as well the ability to take responsibility for one's own health and develop strategies to cope with health problems, with consequent effects on health and QOL.[21] In the current study EASY-Care scores differentiated between groups based on educational status: illiterate older people were more dependent and more at risk of breakdown in care and falls. Previous studies have demonstrated a similar relationship between lower educational status and poor health and/or reduced QOL.[22,23]

EASY-Care Standard was able to distinguish older people who had different level of perceived health indicating that EASY-Care can be used to evaluate health perceptions among older people.

All the EASY-Care subscales discriminated well in relation to urinary incontinence. This is consistent with the findings of previous studies which have shown that urinary incontinence has an adverse effect on health.[24,25]

The EASY-Care scores for study participants with depression indicated that they were significantly more dependent and at increased risk of breakdown in care and falling than participants without depression, consistent with other findings.[26-28.] The current study indicates that the three sub domains in EASY-Care are sufficiently sensitive to detect differing levels of depression in older people suggesting that depression is a useful predictor of an older individual's level of independence, risk of breakdown in his or her care and risk of falling due to poor health.

Results showed that EASY-Care can also be used to detect older people who are malnourished or at risk of malnutrition. EASY-Care scores were higher among older people who were malnourished or at risk of malnutrition than in older people who were well nourished. Study results are comparable with those from previous research which demonstrate a relationship between malnutrition and poor health and/or lower QOL.[29-33]

Older people who had a history of hospital admission in the last three years had higher scores in the independence, risk of breakdown in care, and risk of falls sub domains than older people who had no history of hospital admission. This was as expected based on previous studies which demonstrate that poor health statusand decreased QOL are both significant predictors for adverse health. [34-36]

CONCLUSION

In conclusion, this study has shown that the Turkish version of EASY-Care Standard is a reliable and valid instrument as a comprehensive and holistic assessment tool for older people in Turkey although Cronbach's alpha coefficient of the risk of falls subscale was slightly poor.

Use of EASY-Care Standard by health professionals can aid identification of older people with poor functional status and thus the delivery of appropriate health and social services. Strengths of this study include its large sample of older people and strict procedures for the psychometric properties including internal consistency, item-total correlations, test-retest stability, convergent and divergent validity.

However, our study has several potential limitations. First, the study sample was based on non-random sampling of older people which could limit the generalization of the findings. Second, the majority of older people in this study were living in urban areas. Currently, in Turkey, percentage of older people who live in rural areas is about 30 percent, so that the response to EASY-Care Standard may be different from older people in urban areas. This may be limits the applicability of the EASY-Care Standard for older people in rural areas.

Acknowledgments

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✔ **DELIVERING DATE:** 16 / 06 / 2014   •   **ACCEPTED DATE:** 12 / 11 / 2014

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