CROSS-CULTURAL ADAPTATION OF INDONESIAN VERSION OF ACTIVITIES-SPECIFIC BALANCE CONFIDENCE SCALE FOR ELDERLY IN SURABAYA

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ABSTRACT

Falling is a major health problem and is also a major cause of morbidity and mortality in the elderly. The more serious consequences of falling on the elderly are the increased risk of injury and fear of falling. Activities-Specific Balance Confidence (ABC) scale is one of the assessment instruments for fear of falling. This instrument is used to assess balance confidence in various ambulation activities. The purpose of this study was to carry out the process of adaptation of the cross cultural ABC English questionnaire to ABC Indonesian. This study was a cross sectional study with participants of five elderly members of the Posyandu Lansia who were in accordance with the inclusion and exclusion criteria. The output is the correlation between the score of ABC English with ABC Indonesian and the score of ABC Indonesian with ABC English Back Translation which are tested at different times. All the question score in the ABC English questionnaire correlated with ABC Indonesian, as well as the Indonesian Language ABC correlated with ABC English back translation, have a significant correlation (r>0.3). The conclusion of this study is that the ABC English has a close meaning with the ABC Indonesian version of ABC questionnaire is needed to obtain a valid and reliable questionnaire.

Keywords: Cross cultural adaptation; ABC scale; elderly

ABSTRAK

Jatuh merupakan masalah kesehatan utama dan juga menjadi penyebab utama dari morbiditas dan mortalitas pada lansia. Konsekuensi lebih serius dari jatuh pada lansia adalah bertambahnya risiko cidera. Activities-Spesific Balance Confidence (ABC) scale merupakan salah satu instrumen penilaian takut jatuh. Instrumen ini digunakan menilai balance confidence pada berbagai aktivitas ambulasi . Tujuan penelitian ini adalah melakukan proses adaptasi cross cultural kuesioner ABC bahasa Inggris menjadi ABC bahasa Indonesia. Penelitian ini merupakan studi cross sectional dengan partisipan lima orang lansia anggota Posyandu Lansia yang sesuai dengan kriteria inklusi dan eksklusi. Keluaran yang dinilai adalah korelasi antara nilai kuesioner ABC Inggris dengan ABC Bahasa Indonesia dan nilai kuesioner ABC Bahasa Indonesia dengan ABC balik Inggris yang diujicobakan pada waktu yang berbeda. Semua poin pertanyaan pada kuesioner ABC Inggris yang dikorelasikan dengan ABC Bahasa Indonesia, demikian juga ABCBahasa Indonesia yang dikorelasikan dengan ABC balik Inggris, mempunyai korelasi yang signifikan (r>0,3). Kesimpulan dari penelitian ini adalah kuesioner ABC versi Inggris memiliki kedekatan arti dengan kuesioner ABC translasi Indonesia dan kuesioner ABC translasi Indonesia memiliki kedekatan arti dengan kuesioner ABC balik Inggris. Uji validitas dan reliabilitas kuesioner ABC versi Indonesia perlu dilakukan untuk mendapatkan kuesioner yang sahih dan reliabel.

Kata kunci: Adaptasi cross cultural; ABC scale; lansia

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INTRODUCTION

Falling is a major health problem and is also a major cause of morbidity and mortality in the elderly. The more serious consequences of falls on the elderly are the increased risk of injury and fear of falling/FOF (Svantesson et al 2014, Moiz et al 2016).

28-35% of people over 65 year experience falls each year and increase for those over 70 years old by 32-42%. Fall cases that occurred in the elderly integrated service clinic Cipto Mangunkusumo Hospital (RSCM), in 2000 amounted to 15.53% (285 cases). 15 elderly patients (out of 146 patients) in 2001 were treated for instability and frequent falls. The number of patients who had to be treated for femur fractures due to falls in 1999, 2000, and 2001 respectively were 25 patients, 31 patients, and 42 patients (Wijaya 2015).

Community-based epidemiology research in Jakarta found that fall incidence is by 32-83% in the elderly, around 33-46% of the elderly who did not fall were afraid of falling, while in the elderly who experienced fear of falling almost 70% avoided activities because they were afraid to fall. Epidemiological studies in Surabaya found that 23.38% of the elderly who have never fallen experience fear of falling. Fear of falling can cause a decrease in overall quality of life and increase the risk of falling through a decrease in the activities needed to maintain confidence, confidence, strength and balance. Fear can also cause maladaptive changes in balance control which can increase the risk of falling (Wijaya 2015, Anggarani 2016).

The FOF assessment followed by appropriate interventions is very important to promote the independence, function, health and safety of the elderly. Knowledge of the variability of FOF levels can be very helpful in identifying persons who are at risk of falling. The simplest approach to find out about FOF is to ask directly whether they feel afraid of falling or not. This approach is easy but has weaknesses, namely that assessments tend to vary among individuals, so another approach is needed so that it can be used generally in the community without causing differences in perceptions between individuals (Tinetti et al 1990). Several approaches and instruments for measuring FOF have been made in an effort to identify FOF, one of which is the instrument approach in the form of a questionnaire (Halaweh et al 2016).

The development of research on health requires an adaptation of measuring health status by using language that is in accordance with the local demographics. Questionnaires that are generally used in the world are developed in English-speaking countries. Cultural

adaptation in the use of questionnaires regarding health status is needed when the questionnaire is used in target countries, cultures, and or languages so that equivalence between the English questionnaire and the target language is achieved. The use of foreign language questionnaires that do not match the language used by the target population will cause the measurement results are not equivalent to the standard questionnaire in the target country. This will bring further consequences in the form of conclusions that are not in accordance with the real situation and ineffective decision making (Beaton et al 2000).

The Activities-Specific Balance Confidence (ABC) scale is one of the FOF assessment instruments, which was made and published in English by Powell and Myers in 1995. This instrument was applied to populations in Canada, and was used to assess balance confidence in various ambulation activities (Moiz et al 2016).

Activities-Specific Balance Confidence (ABC) scale has the advantage of being more detailed in assessing FOF, because the assessment criteria are based on a range of values, how confident they are in carrying out daily activities. ABC scale also has a value of validity and reliability that is almost the same as other questionnaires that assess fear of falling such as the Falls Efficacy Scale - International (FES-I) and the Survey of Activities and Fear of Falling in the Elderly (SAFE). ABC scale has been translated into several languages, namely Indian, French, Chinese, Turkish, English, Persian, Swedish, and Portuguese (Powell & Myers 1995, Moiz et al 2016, Zarei et al 2016, Figueiredo & Santos 2017). This questionnaire consists of 16 items, each item is assessed starting from a score of 0 (without confidence) to a score of 100 (full confidence), and finished within 5-10 minutes. The overall score is obtained from the total score divided by the number of questions (Hassan et al, 2015).

Changes from the ABC English-language questionnaire into Indonesian are needed in Indonesia to provide good linguistic translation into Indonesian and also cultural adaptation process to achieve content validity at the same concept level. This study aimed to carry out the process of adaptation of cross cultural ABC English questionnaire to ABC Indonesian.

MATERIALS AND METHODS

This study was a cross sectional involving five respondents who were members of the Posyandu Lansia Sejahtera in Airlangga Sub-District, Gubeng District, Surabaya City according to inclusion and exclusion criteria. The time for taking respondent data was conducted in August to September 2018. Inclusion criteria were age 60 years and over, understand and follow verbal instructions well, and were willing to participate in research and sign the research inform consent. Exclusion criteria are unable to speak Indonesian, unable to speak English, and experience hearing loss. Ethical feasibility in this study was issued by the Health Research Ethics Committee of the Faculty of Medicine, Universitas Airlangga, Surabaya.

The cross cultural adaptation process consists of 2 steps, which are initial translation and back translation. Initial

translation is the process of translating the original language version questionnaire (English) into the target language (Indonesian) version by two translators, resulted in two questionnaires from the initial translation of two different translators (ABC Indonesian 1 and 2). Back translation is the process of re-translating by the original language version resulting in two questionnaires on the results of the back translation of two different translators (the ABC English back translation 3 and 4) (in accordance with the protocol of the research in Fig. 1).

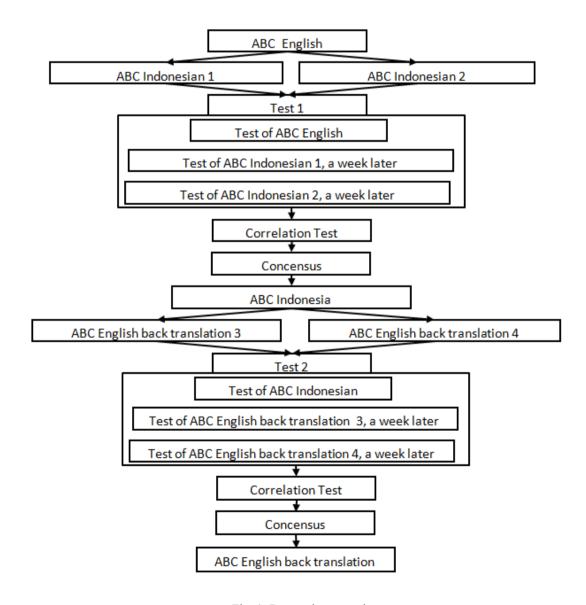


Fig. 1. Research protocol.

The initial translation aims to produce two ABC English translation questionnaires from two different translators, so that the two questionnaires can be compared, whether there are differences in the choice of words when doing the translation process. The next process is to arrange the consensus of the translation results of two translators into one translation result. This consensus was carried out after testing both the questionnaire results of the translation and the original language version questionnaire to five respondents. The correlation between the two translated questionnaires and the original language questionnaire was taken into consideration in the consensus of the translation results. This process produced an ABC Indonesian questionnaire.

The objective of back translation is to produce two questionnaires from two different translator, so that the two questionnaires from the results of the reverse translation can be compared, whether there are differences in the choice of words when doing the translation process. The next process is the consensus of the translation results into one translation result. This consensus was carried out after testing both the questionnaire results of the back translation and the questionnaire of the initial translation results for the five respondents. The correlation between the two questionnaires from the results of the back translation with the questionnaire from the initial translation results is taken into consideration in the integration of the translation results. This process produced the ABC English back translation questionnaire.

Statistical analysis is using the Statistical Package for Social Science (SPSS) program version 22.0. The normality of data is calculated using the Shapiro-Wilk. Correlation Test between ABC English questionnaire with ABC Indonesian questionnaire 1 and ABC Indonesian questionnaire 2 is using Pearson Test if the data is normally distributed, if the data is not normally distributed, Spearman test is used. Correlation Test between the Indonesian translation ABC questionnaire and the ABC English back translation questionnaire 3

and 4 using the Pearson Test if the data are normally distributed, if the data is not normally distributed, the Spearman test is used. The correlation coefficient is stated to be significant if > 0.3.

RESULTS

Characteristics of respondents

Respondents included in this study amounted to 5 people. The age range of the respondents was the lowest age of 63 years and the highest age was 70 years. The education level of the research respondents consisted of 3 people with S1 education and 2 people with S2 education. The occupation of all research respondents was retired from government officer in various institutions. The characteristics of the respondents can be seen in Table 1.

Translation of ABC English to Indonesian

Translation of ABC English is done by two sworn translators (translator 1 and translator 2). Translators 1 and 2 are not related or communicate with each other. Translator 1 was not given an explanation of the translated questionnaire, while translator 2 was given an explanation of the questionnaire. This process resulted ABC Indonesian 1 and 2.

Test 1 is a test of 3 questionnaires (ABC English, ABC Indonesian 1, and ABC Indonesian 2) to five respondents. This step begins with testing the ABC English, then ABC Indonesian 1 at 1 week later, and ABC Indonesian 2 for the next 1 week. The results were processed and calculated correlation between the ABC English and Indonesian 1 and ABC English and ABC Indonesian 2 (according to Table 2).

Table 1. Characteristics of respondents

	Respondent	Respondent	Respondent	Respondent	Respondent
	1	2	3	4	5
Name	HA	MH	KO	ST	TH
Gender Male		Male	Male	Male	Male
Age (years)	65	66	70	69	63
Education Level	Master	Bachelor	Bachelor	Bachelor	Master
	Retired	Retired	Retired		Retired
Occupation	officer	officer of	officer of	Retired	officer
	Ministry of	City	City	Contractor	Ministry of
	Finance	Government	Government		Finance

Table 2. Correlations each question of ABC English with ABC Indonesian 1 and ABC English with ABC Indonesian 2

No	ABC English score	ABC Indonesia 1 score	ABC Indonesia 2 score	Correlation ((English -Inc		Correlation (Engli Indone	ish -
1	90+10	92+8.37	92+8.37	0.90	0.003	0.90	0.022
2	80+10	82.4+10.9	85.2+9.88	0.69	0.199	0.38	0.529
3	80.4+10.04	81+5.48	80.4+7.13	0.67	0.213	0.71	0.179
4	82+10.95	84+11.4	84+8.94	0.69	0.199	0.79	0.111
5	79.6+7.13	79.8+7.08	78.2 <u>+</u> 8.44	0.99	0.000	0.81	0.098
6	82.2+14.8	79+8.94	73.6+13.22	0.78	0.123	0.22	0.728
7	88.4+12.76	89.2+11.21	90+10	0.99	0.001	0.94	0.017
8	88+13.04	91.4+8.35	88.2+10.78	0.90	0.040	0.82	0.096
9	9 0 +10	91 + 8.94	88+10.78	0.97	0.005	0.75	0.144
10	86.2+8.79	83.2+9.68	84+8.94	0.39	0.133	0.75	0.165
11	79+ 8 .94	85+7.07	75.2 + 12.36	0.75	0.144	0.67	0.215
12	78.4+8.53	80.4+12.28	78+8.37	0.97	0.006	0.99	0.000
13	78 <u>+</u> 8.37	78 <u>+</u> 6.71	75 <u>+</u> 11.32	1	0.000	0.94	0.015
14	85.2 ± 13.14	86+16.73	84+15.17	0.96	0.010	0.99	0.000
15	79 <u>+</u> 11.4	78.2 <u>+</u> 11.01	76 <u>+</u> 11.4	0.80	0.121	0.92	0.025
16	77 <u>+</u> 9.75	76 <u>+</u> 11.4	73.8 <u>+</u> 13.31	0.99	0.001	0.98	0.004
Total	82.8 <u>+</u> 8.84	83.5 <u>+</u> 8.32	81.8 <u>+</u> 8.12	0.98	0.003	0.93	0.022

Note: ABC score in mean + standard deviation

r = correlation coefficient, p = significance value

Significant if correlation coefficient >0.3

Table 3. Correlation between ABC Indonesian with ABC English back translation 3 and 4

No	ABC Indonesian score	ABC English back translation 3 score	ABC English back translation 4 score	Correlation (Indonesian-		Correlation (Indonesian-	
				r	р	r	р
1	88.4 <u>+</u> 10.62	88 <u>+</u> 8.38	88 <u>+</u> 10.95	0.91	0.039	0.91	0.039
2	82.2 + 10.92	84.2 ± 11.32	80.2 <u>+</u> 7.08	0.92	0.027	0.96	0.008
3	80 <u>+</u> 7.07	78 <u>+</u> 8.37	78 <u>+</u> 8.37	0.85	0.071	0.85	0.071
4	82.2 <u>+</u> 8.32	78.2 <u>+</u> 8.44	77 <u>+</u> 9.45	0.43	0.47	0.56	0.322
5	79 <u>+</u> 8.95	75.4 <u>+</u> 10.27	75.4 <u>+</u> 10.13	0.82	0.000	0.83	0.098
6	74 <u>+</u> 11.40	73 <u>+</u> 12.04	73 <u>+</u> 12.04	0.89	0.042	0.89	0.042
7	89 <u>+</u> 11.40	87 <u>+</u> 14.83	85.2 <u>+</u> 14.92	0.98	0.005	0.94	0.017
8	86 <u>+</u> 13.42	84.2 <u>+</u> 11.32	84 <u>+</u> 11.40	0.94	0.016	0.95	0.014
9	86.2 <u>+</u> 13.31	84 <u>+</u> 11.40	97.2 <u>+</u> 11.90	0.95	0.014	0.99	0.001
10	80+12.47	79 ± 13.42	80.4 ± 12.28	0.99	0.001	1	0.000
11	81 ± 10.25	$79.\overline{2} + 8.98$	81 ± 12.45	0.89	0.041	0.82	0.087
12	79.2 <u>+</u> 8.98	77.2 + 9.83	79+13.42	0.89	0.043	0.87	0.053
13	80 <u>+</u> 7.07	78 <u>+</u> 8.37	75.2 <u>+</u> 10.34	0.84	0.071	0.87	0.058
14	80 ± 7.07	78 + 8.37	81.2 + 12.44	0.84	0.071	0.99	0.000
15	78.2 + 14.87	77 + 9.47	77 + 9.75	0.81	0.092	0.80	0.092
16	74 <u>+</u> 11.40	75 <u>+</u> 12.45	73 ± 12.04	0.81	0.100	0.89	0.042
Total	81.3 <u>+</u> 10.10	79.8+9.66	79.6 <u>+</u> 9.82	0.93	0.023	0.94	0.016

Note: ABC score in mean + standard deviation

r = correlation coefficient, p = significance value Significant if correlation coefficient >0.3

All questions of ABC Indonesian 1 and 2 have a correlation value (r)> 0.3 except in question number 6 on ABC Indonesian 2. All questions of ABC Indonesian 1 and 2 have a significance value (p) <0.05 except for questions number 2, 3, 4, 6, 9, 10, and 15 (ABC

Indonesian 1) and questions number 2, 3, 4, 5, 6, 8, 9.10, and 11 (ABC Indonesian 2).

The ABC Indonesian 1 and 2 are then concentrated into ABC Indonesian, based on the correlation test results in

table 2. Higher correlation coefficient values will be included as appropriate word choices for the consensus questionnaire. Higher correlation coefficients on ABC English correlation with ABC Indonesia 1 are questions number 2, 5, 6, 7, 9, 11, 13, 16, and total score. Higher correlation coefficients on ABC English correlation with ABC Indonesian 2 are questions number 3, 4, 8, 10, 12, 14 and 15. The same correlation coefficient value is in question number 1. Conclusion of the Test 1 results produces a consensus questionnaire (ABC Indonesian) taken from the ABC Indonesia 1 in questions number 2, 5, 6, 7, 9, 11, 13, and 16; and from ABC Indonesian 2 on questions number 1, 3, 4, 8, 10, 12, 14 and 15.

Back translation ABC Indonesia to ABC English back translation

Translation of the ABC Indonesian was carried out by two sworn translators (translator 3 and translator 4). Translators 3 and 4 are not related or communicate with each other. Translator 3 was not given an explanation of the translated questionnaire, while translator 4 was given an explanation of the questionnaire. This process produces ABC English back translation 3 and ABC English back translation 4.

Test 2 is a test of 3 questionnaires to five respondents (ABC Indonesian, ABC English back translation 3, and ABC English back translation 4). This step begins by testing the ABC Indonesian, then ABC English back translation 3 at 1 week later, and ABC English back translation 4 for the next 1 week. The results of test 2 are processed and calculated correlations between ABC Indonesian with ABC English back translation 3 and the between ABC Indonesian with ABC English back translation 4 (according to Table 3).

All ABC English back translation 3 and 4 have a correlation value (r) >0.3. All ABC English back translation 3 and 4 questions have a significance value (p) <0.05 except in questions number 3, 4, and 15 (ABC English back translation 3) and questions number 3, 4, 11, and 15 (ABC English back translation 4).

The ABC English back translation 3 and 4 is then concentrated into ABC English back translation, based on the results of the correlation test in table 5.3. Higher correlation coefficient values will be included as the appropriate choice of words for consensus questionnaire. Higher correlation values for ABC Indonesian with ABC English back translation 3 are questions number 7, 11, and 12. Higher correlation values on ABC English back translation 4 are questions number 2, 4, 5, 8, 9, 10, 13, 14, 16, and total score. Questions number 1, 3, 6, and 15 show the same correlation value between the two questionnaires. Questions number 1 and 6 have the same meaning between the two questionnaires.

DISCUSSION

Characteristics of respondents

All of the research respondents were male and none of the female were found to be in accordance with the inclusion and exclusion criteria. The level of English proficiency of the subjects of this study was also not known because there was no assessment of the level of English proficiency of each subject.

Translation of ABC English to Indonesia

The two translators involved in this process were sworn translators in accordance with the Decree of the Governor of East Java. Both are also graduates of the Faculty of English and have undergone the course as sworn translators, but both have no medical background. The difficulty in this process is finding translators who have medical backgrounds.

Differences in translation results are events that often occur in the process of translating a questionnaire. Translation by two translators is an attempt to find a translation gap that can lead to ambiguity in understanding the translated sentence (Beaton et al, 2000). Both of these translation results have several differences in the choice of words used. Words that experience differences in the translation process are the words "confident", "around", "reach", "stand on your tip toes", "driveway", "mall", "ramp", "escalator", "railing", and "parcels".

Test 1 is a trial of three questionnaires, then calculated correlation between ABC English and ABC Indonesian 1 and ABC English with ABC Indonesian 2. ABC Indonesian 1 and 2 show a significant relationship (the correlation value is more than 0.3) with ABC English except for question number 6 on ABC Indonesian 2. Some questions also show striking differences in the value of the correlation coefficient between ABC English - Indonesian 1 and ABC English - Indonesian 2 in question number 2, 6, and 10. Significance values > 0.05 were found in several questions of ABC Indonesian 1 and 2. This was because the number of research subjects was only 5 people.

The ABC Indonesia 1 and 2 were subsequently concentrated into a questionnaire, namely ABC Indonesia. Higher correlation coefficient values will be included as word choices in the consensus

questionnaire. All questions selected for inclusion in the consensus questionnaire have a correlation coefficient of more than 0.3. This shows the similarity of meaning between the ABC Indonesia and ABC English.

Back translation of ABC Indonesian to English

The two translators involved in this process were sworn translators in accordance with the Decree of the Governor of East Java. Both are also graduates of the Faculty of English and have undergone the Course as Sworn Translators, but both have no medical background. The difficulty in this process is finding translators who have medical backgrounds.

The process of back translating to English is one of the processes to ensure that the translation version gives the same meaning to each questionnaire question translated back to the initial version (Beaton et al, 2001). Different words in this process are "bent", "standing with your toes", "cars parked in the driveway", "up and down the ramp", "holding on to the railing", and "holding the railing".

Test 2 is a test of three questionnaires, then a correlation test between the ABC Indonesian and ABC English back translation 3 and between the ABC Indonesian and ABC English back translation 4. ABC English back translation 3 and 4 shows a significant relationship (correlation value of more than 0.3) with ABC Indonesian. A striking difference in the value of the correlation coefficient between ABC Indonesian with ABC English back translation 3 and ABC Indonesian with ABC English back translation 4 is not obtained. This shows that the ABC English back translation 3 and 4 have similar meanings to the ABC Indonesia.

Significance values> 0.05 were found in several questions of ABC English back translation 3 and 4. This is because the number of research subjects was only 5 people.

The ABC English back translation 3 and 4 is then concentrated into one questionnaire, namely ABC English back translation, based on the correlation test results in table 3. Higher correlation coefficient values will be included as word choices in the consensus questionnaire. All questions selected for inclusion in the consensus questionnaire have a correlation coefficient of more than 0.3. This shows the similarity of meaning between the ABC Indonesian and ABC English back translation. Out of the 16 original questions in the ABC original scale, 10 questions were considered to be culturally and semantically unsuitable and were modified (Table 4). The questions are number 1, 3, 8, 10, 11, 12, 14, 15, and 16.

CONCLUSION

ABC English has a close meaning with the ABC Indonesian and the ABC Indonesian has a close meaning with the ABC English back translation. The validity and reliability of the Indonesian version of ABC questionnaire is needed to obtain a valid and reliable questionnaire.

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Table 4. Original and modified items in the cross-cultural adaptation of the ABC

No	ABC English	Modified
1	walk around the house	walk around your home
3	bend over and pick up a slipper from the front of a closet floor	bowing and taking sandal from the front of a closet floor
8	walk outside the house to a car parked in the driveway	walk outside the house to a car parked in the entrance
10	walk across a parking lot to the mall	walk across a parking area to the mall
11	walk up or down a ramp	walk up or down a sloping place
12	walk in a crowded mall where people rapidly walk past you	walk in a crowded mall where people walk quickly past you
13	are bumped into by people as you walk through the mall	being hit by people as you walk through the mall
14	step onto or off of an escalator while you are holding onto a railing	step onto or off of an escalator while you are holding onto a handrail
15	step onto or off an escalator while holding onto parcels such that you cannot hold onto the railing	step onto or off an escalator while holding onto package such that you cannot hold onto the railing
16	walk outside on icy sidewalks	walk outside on slippery sidewalks

REFERENCES

- Anggarani APM (2016). Risk Analysis of Fear of Fall of the Elderly in Panti Wreda Surabaya. Airlangga University Repository Journal
- Beaton DE, Bombardier C, Guillemin F, Bosi-Ferras M (2000). Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. Journal of Spine 25, 3186-91
- Figueiredo D, Santos S (2017). Cross-cultural validation of the Falls Efficacy Scale-International (FES-I) in Portuguese community-dwelling older adults. Archieves of Gerontology and Geriatrics 68, 168-73
- Halaweh H, Svantesson U, Rosberg S, Willen C (2016). Cross-cultural adaptation, validity and reliability of the Arabic version of the Falls Efficacy Scale-International (FES-I). Journal of Medical Principles and Practice 25, 1-7
- Hassan H, Zarrinkoob H, Jafarzadeh S, Baghban AA (2015). Psychometric evaluation of persian version of activities-specific balance confidence scale for elderly Persians. Journal of Auditory and Vestibular Research 24, 54-63

- Moiz JA, Banshal V, Noohu MM, Gaur SN, Hussain ME (2016). Cross Cultural Adaptation and Psychometric Analysis of the Hindi-Translated Activies-Specific Balance Confidence Scale. Middle East Journal of Rehabilitation and Health 3, 1-9
- Powell LE, Myers AM (1995). The Activities-specific Balance Confidence (ABC) Scale. Journal of Gerontology and Medical Scince 50A, M28-M34
- Svantesson U, Babagbemic B, Fosterc L, Alricsson M (2014). Influences on modern multifactorial falls prevention interventions and fear of falling in non-frail older adults: a literature review. Journal of Clinical Medicine Research. 6, 314-20
- Tinetti ME (2003). Preventing falls in elderly persons. New England Journal of Medicine 344, 42-49
- Wijaya CP (2015) Relationship between fear of fall with balance and functional status of elderly. Widya Mandala Catholic University Repository Journal
- Zarei M, Lajevardi L, Zarei MA, Azad A, Mollazadeh E (2016). Construct Validity and Test-Retest Reliability of Survey of Activities and Fear of Falling in the Elderly Among Iranian Patients With Parkinson Disease. Middle East Journal of Rehabilitation and Health 3, 437-4H