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## VALIDATION OF THE EASYCARE STANDARD 2010 INSTRUMENT TO IDENTIFY OLD PEOPLE'S FUNCTIONING AND WELLBEING IN AKTOBE, KAZAKHSTAN

### Resume

**Objective:** The purpose of this study was to assess the reliability of the EASYCare Standard 2010 questionnaire among older adults in a primary healthcare setting in Aktobe, Kazakhstan.

**Methods:** A group of 100 participants aged 65 and older, without cognitive impairments, were recruited from a local healthcare clinic. The Russian translation of the EASYCare questionnaire was administered to the participants. Two assessments were conducted with a time interval of 10-14 days. Concurrent validity was assessed by comparing the results of the EASYCare with the Barthel Index and Lawton scale, which measure physical and mental function, respectively. The three main indices of the EASYCare questionnaire, Independence score (IS), Risk of breakdown in care (RBC), and Risk of falls (RF), were evaluated.

**Results:** The Kappa Cohen coefficient for all domains was high, ranging from 0.89 to 0.99. There were no significant differences in IS, RBC, and RF between the two assessments ( $10.4 \pm 14.6$  vs.  $10.1 \pm 14.2$ ,  $3.9 \pm 2.5$  vs.  $3.9 \pm 2.5$ , and  $1.6 \pm 1.5$  vs.  $1.6 \pm 1.4$ , respectively).

**Discussion:** This study confirms that the Russian version of the EASYCare provides reliable results and can be used as a comprehensive tool for assessing the health and well-being of older adults. Additionally, most participants were found to be relatively independent. However, there were slight differences in the Barthel Index scores between males and females ( $88.9 \pm 14.6$  vs.  $95.6 \pm 7.4$ ,  $p < 0.01$ ), indicating that older men are more independent in performing basic activities of daily living compared to women of the same age. A similar pattern was observed for the Lawton scale ( $5.1 \pm 2.0$  vs.  $6.4 \pm 1.3$ ,  $p < 0.0001$ ). These findings suggest that in Kazakhstan, men maintain their activity and independence for a longer period compared to women.

**Keywords:** EASYCare, validation, older people, functional status.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫ, АҚТӨБЕ ҚАЛАСЫНДАҒЫ ЕГДЕ ЖАСТАҒЫ АДАМДАРДЫҢ ӘЛ-АУҚАТЫН,  
 ДЕНСАУЛЫҒЫН АНЫҚТАУ ҮШІН EASYCARE STANDARD 2010 ҚҰРАЛЫНЫҢ ВАЛИДАЦИЯСЫ

### Түйін

**Бұл зерттеудің мақсаты:** EASYCare Standard 2010 сауалнамасының Қазақстандағы Ақтөбе қаласындағы алғашқы медициналық-санитарлық көмек көрсету мекемелеріндегі егде жастағы адамдар арасындағы сенімділігін бағалау болды.

**Материал және зерттеу әдістері:** 65 жастан асқан, когнитивті бұзылыстары жоқ 100 қатысушыдан тұратын топ жергілікті емханадан алынды. Қатысушыларға EASYCare сауалнамасының орысша аудармасы ұсынылды. Сауалнама 10-14 күн аралықпен екі рет жүргізілді. Валидизация EASYCare ұпайларын физикалық және психикалық функцияларды өлшейтін Бартел индексімен және Лоутон шкаласымен салыстыру арқылы бағаланды. EASYCare сауалнамасының үш негізгі көрсеткіші бағаланды: тәуелсіздік көрсеткіші, ауруханаға жатқызуды бұзу қаупі және құлау қаупі.

**Нәтижелер:** Барлық домендер үшін Каппа Коэн коэффициенттері 0,89-дан 0,99-ға дейін жоғары болды. Екі сауалнама арасында тәуелсіздікті, ауруханаға жатқызуды бұзу қаупін және құлау қаупін бағалауда айтарлықтай айырмашылықтар болған жоқ ( $10,4 \pm 14,6$  қарсы  $10,1 \pm 14,2$ ,  $3,9 \pm 2,5$  қарсы  $3,9 \pm 2,5$  және  $1,6 \pm 1,6$  қарсы, тиісінше).

**Талқылау:** Бұл зерттеу EASYCare сауалнамасының орыс тіліндегі нұсқасы сенімді нәтижелер беретінін және егде жастағы адамдардың денсаулығы мен әл-ауқатын бағалаудың кешенді құралы ретінде пайдалануға болатынын растайды. Сонымен қатар, қатысушылардың көпшілігі салыстырмалы түрде тәуелсіз болып шықты. Дегенмен, ерлер мен әйелдер арасында Бартел индексі ұпайларында шағын айырмашылықтар болды ( $88,9 \pm 14,6$  қарсы  $95,6 \pm$

7,4,  $p < 0,01$ ), бұл егде жастағы ерлердің күнделікті негізгі өмірлік әрекеттерді орындауда тәуелсіз екенін көрсетеді. Лоутон шкаласы да осыған ұқсас нәтиже берді ( $5,1 \pm 2,0$ ,  $6,4 \pm 1,3$ ,  $p < 0,0001$ ). Бұл деректер Қазақстанда ерлер әйелдерге қарағанда ұзақ уақыт бойы белсенді және тәуелсіз болып келетінің көрсетті.

**Негізгі сөздер:** EASYCare, валидация, егде жастағы адамдар, функционалдық статус.

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## ВАЛИДАЦИЯ ИНСТРУМЕНТА EASYCARE STANDARD 2010 ДЛЯ ОПРЕДЕЛЕНИЯ ФУНКЦИОНИРОВАНИЯ И БЛАГОПОЛУЧИЯ ПОЖИЛЫХ ЛЮДЕЙ В АКТОБЕ, КАЗАХСТАН

### Резюме

**Цель:** Целью данного исследования было оценить надежность опросника EASYCare Standard 2010 среди пожилых людей в учреждениях первичной медико-санитарной помощи в Актобе, Казахстан.

**Методы:** Группа из 100 участников в возрасте 65 лет и старше, без когнитивных нарушений, была набрана из местной поликлиники. Участникам был предоставлен русский перевод анкеты EASYCare. Анкетирование было проведено дважды с интервалом 10-14 дней. Валидность оценивалась путем сравнения результатов EASYCare с индексом Бартеля и шкалой Лоутона, которые измеряют физическую и умственную функцию соответственно. Были оценены три основных показателя опросника EASYCare: оценка независимости, риск срыва в госпитализации и риск падений.

**Результаты:** Коэффициент Каппа-Коэна для всех доменов был высоким и колебался от 0,89 до 0,99. Существенных различий в оценке независимости, риск срыва в госпитализации и риск падений между двумя анкетированиями не было ( $10,4 \pm 14,6$  против  $10,1 \pm 14,2$ ,  $3,9 \pm 2,5$  против  $3,9 \pm 2,5$  и  $1,6 \pm 1,5$  против  $1,6 \pm 1,4$  соответственно).

**Обсуждение:** Данное исследование подтверждает, что русскоязычная версия EASYCare дает надежные результаты и может использоваться как комплексный инструмент для оценки здоровья и благополучия пожилых людей. Кроме того, большинство участников оказались относительно независимыми. Однако были небольшие различия в показателях индекса Бартеля между мужчинами и женщинами ( $88,9 \pm 14,6$  против  $95,6 \pm 7,4$ ,  $p < 0,01$ ), что указывает на то, что пожилые мужчины более независимы в выполнении основных повседневных действий по сравнению с женщинами того же возраста. Аналогичная картина наблюдалась и по шкале Лоутона ( $5,1 \pm 2,0$  против  $6,4 \pm 1,3$ ,  $p < 0,0001$ ). Эти данные свидетельствуют о том, что в Казахстане мужчины сохраняют активность и независимость в течение более длительного периода по сравнению с женщинами.

**Ключевые слова:** EASYCare, валидация, пожилые люди, функциональный статус.

**Introduction.** The global population of individuals aged 60 and above is increasing rapidly. Projections by the United Nations indicate that this number, which currently stands at around 7.7 billion worldwide, will rise by an additional two billion by 2050 [1]. To effectively respond to this demographic shift, it is crucial to accurately assess the health status of older individuals and identify their healthcare needs. Early identification of healthcare needs and prevention of health deterioration have become priorities in healthcare policy and practice for the elderly population. These priorities have led to the development of comprehensive geriatric assessment tools such as EASYCare, which focus on identifying individuals at risk of disability and falls, and address gaps in person-centered care. EASYCare goes beyond traditional clinical assessments, encompassing areas that impact health, such as quality of life and financial well-being [2]. Moreover, this approach involves a multidisciplinary team of healthcare and social professionals [2].

In line with global trends, the population of Kazakhstan, as well as other countries, is also expected to experience demographic aging, with a projected doubling of the percentage of individuals aged 60 and above by 2050 [3]. Therefore, it is crucial to proactively address questions related to elderly care. As the proportion of older adults in the country increases annually, many individuals are at risk of experiencing social isolation in old age, potentially adversely affecting their quality of life [4].

At present, research focusing on older individuals in Kazakhstan is limited but gradually gaining momentum. In our study, we utilized the internationally standardized questionnaire EASYCare 2010, which aims to assess the health and social needs of individuals. This questionnaire has not been previously used in Kazakhstan. The

EASYCare Standard 2010 version was introduced as an updated version from the original EASYCare questionnaire, which was first presented in 1997 [5]. While the EASYCare Standard 2010 has been translated into multiple languages in the World Health Organization (WHO) region [2], there are currently no validated translations in Russian and Kazakh. This article focuses on validation of this questionnaire in Russian, data on Kazakh validation will be published later. Thus, our research aims to validate the Russian version of EASYCare Standard 2010 questionnaire and to identify the health and social care needs of elderly individuals residing in Aktobe, Kazakhstan.

### The study procedure

The study procedure consisted of assessing the functional capacity of participants, which included evaluating their ability to independently perform basic and instrumental activities of daily living. The EASYCare questionnaire was then used to assess their health and social care needs. For the validation study, the EASYCare Standard Questionnaire was administered twice, with a time gap of 10-14 days, by trained researchers who were consistent throughout the data collection process.

The translation of the EASYCare Standard 2010 questionnaire into Russian language followed the guidelines set by the World Health Organization (WHO) for translation and adaptation of instruments.

To assess independence in basic activities of daily living (ADL), the Barthel Index was used, which evaluates activities such as feeding, bathing, grooming, dressing, and bowel control. The scoring range for the Barthel Index is from 0 to 100, with lower scores indicating greater dependency.

For assessing instrumental activities of daily living (IADL), the Lawton Scale was used. This scale measures more complex activities, such as using the telephone, doing laundry, shopping, transportation, meal preparation, medication management, housekeeping, and managing finances. Scores on the Lawton Scale range from 0 to 8, with lower scores indicating greater dependency.

The EASYCare questionnaire is composed of 49 questions divided into seven domains that assess the need for physical, mental, and social assistance. These domains encompass areas such as vision, hearing, communication, self-care, mobility, safety, housing and finances, physical health maintenance, and mental well-being. The questionnaire begins with personal information, including demographic factors such as sex, age, residence area, marital status, and education. It also explores aspects related to living arrangements, profession, caregiving responsibilities, and the support received from others.

The seven domains of the EASYCare questionnaire are as follows: 1) vision, hearing, and communication; 2) self-care; 3) mobility; 4) safety; 5) housing and finances; 6) physical health maintenance; and 7) mental well-being. Based on the collected data, three summary indexes are calculated [6-7]

1. Independence score: This index reflects the individual's level of functional dependency. Scores can range from 0 to 100, with higher scores indicating a greater degree of dependency.

2. Risk of breakdown in care: This index assesses the likelihood of hospitalization. Scores range from 0 to 12, and a higher score indicates an increased risk of hospitalization.

3. Risk of falls: This index evaluates the individual's susceptibility to falling. Scores can range from 0 to 8, with scores of 3 or higher indicating an increased risk of falls.

The specific procedures for calculating these indexes have already been published [8].

**Statistical analysis.** The statistical analysis of the data was performed using STATISTICA 13.0 software (TIBCO Software, Poland). Descriptive results were reported using means and standard deviations (SD), medians, and ranges. The number of individuals with concerns in each domain was presented as both absolute numbers and percentages (n=100). The normality of the data distribution was assessed using the Shapiro-Wilk test.

To compare the participants based on gender, various parameters such as sociodemographic characteristics, Bartel Index, Lawton scale, and three summarizing indexes of the EASYCare 2010 questionnaire were analyzed. The results showed that all studied parameters were similar between males and females, except for marital status. Due to the small number of individuals aged over 80 (only 7), they were not included in the comparison. The younger age group (65-79 years old) had more participants.

The agreement between two assessment scores on the individual items of the EASYCare Standard 2010 questionnaire was evaluated using the unweighted

Cohen's kappa statistic. Weighted Cohen's kappa was utilized to assess agreement for the seven domains of the questionnaire. The kappa statistic is a measure that corrects for chance and determines the agreement between raters.

According to Landis and Koch [9], the interpretation of the kappa statistic is as follows: less than 0.40 indicates poor to fair agreement, 0.41-0.60 represents moderate agreement, 0.61-0.80 indicates good agreement, and 0.80-1.00 suggests excellent agreement.

To analyze the differences between the average scores of the EASYCare summarizing indexes in the two assessments, the Wilcoxon signed-rank test was used. The Chi-square test was employed to compare dichotomous data. Spearman's rank correlation coefficient was used to examine the correlations between the two assessments and their comparison with reference instruments (ADL and IADL). A statistically significant result was considered when the p-value was less than 0.05.

**Results.** The sociodemographic characteristics of the study participants are as follows. The mean age of the participants was 70.3±5.2, ranging from 65 to 90 years old. Among the participants, 65% were females. Approximately 43% of the participants were single, with the majority being women (37%). Interestingly, 57 participants lived in extended families, while only 8 individuals lived alone. This can be attributed to a cultural norm in Kazakhstan where the youngest son remains living with the parents and takes care of them in their old age.

Furthermore, nearly 90% of the correspondents had either secondary or higher education, indicating that they possessed professional degrees. Surprisingly, 36 respondents mentioned having some money left over at the end of the month despite 85% of them being pensioners. This could be because they reside in large families where their adult children serve as the primary earners. For more detailed information regarding sociodemographic indicators, including sex, please refer to Table 1.

Regarding caregiving, 26 individuals reported receiving care from someone, while only 2 participants served as caregivers themselves.

Self-assessment results showed strong correlations between the scores of all three summarizing indexes of the initial assessment and the results obtained from the reference instruments: Bartel Index and IADL. The independence score had a strong negative correlation (r = -0.94, p = 0.000) with the Bartel Index and a strong negative correlation (r = -0.82, p = 0.000) with the IADL. Similarly, the risk of breakdown in care score had a moderate negative correlation (r = -0.62, p = 0.000) with the Bartel Index and a moderate negative correlation (r = -0.49, p = 0.000) with the IADL. Lastly, the risk of falls score had a moderate negative correlation (r = -0.60, p = 0.000) with the Bartel Index and a moderate negative correlation (r = -0.58, p = 0.000) with the IADL. The Spearman coefficient (r) was used to measure these correlations.

**Table 1 -** Socio-demographic characteristics of the study sample including sex

| Variable       | Total                   | Male (n; %)             | Female (n; %)           |        |
|----------------|-------------------------|-------------------------|-------------------------|--------|
| Age            | 70.3±5.2<br>69.0; 65-90 | 71.0±5.7<br>70.0; 65-90 | 70.0±5.0<br>68.0; 65-86 | p=0.25 |
| Residence area |                         |                         |                         |        |
| Urban          | 100                     | 35 (100.0)              | 65 (100.0)              |        |

|                               |    |           |           |         |
|-------------------------------|----|-----------|-----------|---------|
| Marital status                |    |           |           |         |
| Single                        | 43 | 7 (20.0)  | 36 (55.4) | p<0.001 |
| Married                       | 57 | 28 (80.0) | 29 (44.6) |         |
| Marital status                |    |           |           |         |
| Single                        | 7  | 0 (0)     | 7 (10.8)  | p<0.05  |
| Married/cohabiting            | 57 | 28 (80.0) | 29 (44.6) |         |
| Separated/divorced            | 8  | 2 (5.7)   | 6 (9.2)   |         |
| Widowed                       | 28 | 5 (14.3)  | 23 (35.4) |         |
| Living arrangements           |    |           |           |         |
| Alone                         | 8  | 1 (2.9)   | 7 (10.8)  | p<0.05  |
| With spouse                   | 35 | 18 (51.4) | 17 (26.1) |         |
| With extended family          | 57 | 16 (45.7) | 41 (63.1) |         |
| Education                     |    |           |           |         |
| Primary                       | 7  | 4 (11.4)  | 3 (4.6)   | p=0.35  |
| Secondary                     | 41 | 12 (34.3) | 29 (44.6) |         |
| Higher education              | 52 | 19 (54.3) | 33 (50.8) |         |
| Financial situation           |    |           |           |         |
| Not enough to make ends meet  | 17 | 2 (5.7)   | 15 (23.1) | p<0.05  |
| Just enough to make ends meet | 47 | 21 (60.0) | 26 (40.0) |         |
| Some money left over          | 36 | 12 (34.3) | 24 (36.9) |         |
| Employment status             |    |           |           |         |
| Employed full-time            | 8  | 3 (8.6)   | 5 (7.7)   | p=0.07  |
| Employed part-time            | 4  | 2 (5.7)   | 2 (3.1)   |         |
| Pensioner                     | 85 | 27 (77.1) | 58 (89.2) |         |
| Retired                       | 3  | 3 (8.6)   | 0 (0.0)   |         |

There were no significant differences found in the Independence score, Risk of breakdown in care, and Risk of falls between the two assessments (10.4±14.6 vs 10.1±14.2, 3.9±2.5 vs 3.9±2.5, and 1.6±1.5 vs 1.6±1.4; respectively). However, when examining the Independence score, there were differences in 11 items, with the second assessment showing a higher score (10.4±14.6 vs 10.1±14.2, p=0.09). The differences in responses were particularly notable for the items "Do you have accidents with your bladder?" where 69 subjects in the second assessment responded with "No," compared to 66 subjects in the first assessment, and "Can you use the toilet (or commode)?" where in the first assessment 98

subjects responded with "Without help," 2 subjects with "Some help," and 2 subjects with "Unable," whereas in the second assessment 96 subjects responded with "Can use without help" and 4 subjects with "Some help." Regarding the Risk of breakdown in care and Risk of falls, the differences were negligible. Overall, there was excellent to good agreement between the two assessments for all 49 individual items of the EASYCare questionnaire. The Kappa Cohen coefficient ranged between 0.89 and 0.99 across all domains, indicating a high level of internal consistency. For more detailed information, please refer to Table 3.

**Table 2 - Characteristics of the study sample: reference instrument results**

| Instrument      | Total          | Male           | Female          |          |
|-----------------|----------------|----------------|-----------------|----------|
| <b>Barthel</b>  |                |                |                 |          |
| Mean ± SD       | 93.3 ± 10.9    | 88.9 ± 14.6    | 95.6 ± 7.4      | p<0.01   |
| (median; range) | (95.0; 45-100) | (95.0; 45-100) | (100.0; 65-100) |          |
| <b>IADL</b>     |                |                |                 |          |
| Mean ± SD       | 5.9 ± 1.7      | 5.1 ± 2.0      | 6.4 ± 1.3       | p<0.0001 |
| (median; range) | (7.0; 0-7)     | (6.0; 0-7)     | (7.0; 1-7)      |          |

**Table 3 - Weighted Cohen's kappa values for the two assessments in all domains of the questionnaire**

| № | EASYCare domain                    | Kappa value |
|---|------------------------------------|-------------|
| 1 | Seeing, hearing, and communicating | 0.989       |
| 2 | Looking after yourself             | 0.977       |
| 3 | Mobility (getting around)          | 0.993       |
| 4 | Safety                             | 0.916       |
| 5 | Accommodation and finances         | 0.898       |
| 6 | Staying healthy (prevention)       | 0.976       |
| 7 | Mental health and well-being       | 0.962       |

**Discussion.** This study validates that the Russian edition of EASYCare effectively produces reliable outcomes and can be utilized as a comprehensive tool for assessing the well-being of older individuals, enabling the identification of any improvement or deterioration in their health over time. The translated questionnaire maintains internal consistency, as observed through the self-assessment scores derived from three key indices: *independence score*, *risk of breakdown in care*, and *risk of falls*. The obtained scores align with those obtained from the Barthel Index and Lawton scale, demonstrating the concurrent validity of the Russian version in relation to functional disability among the elderly. These findings further support existing research that highlights the strong measurement properties and unidimensionality of the EASYCare tool [7,10,12].

Based on our study findings, the level of dependence among our participants was generally low, as all of them demonstrated some ability to care for themselves. None of the participants reported complete inability to hear, see, or move. Limited dependency was observed in specific activities, such as accessing public services (21%), managing medication (17%), and handling finances (9%). Nearly half of the participants (49%) reported oral health issues, including tooth decay, dentures, or missing teeth, which could potentially be associated with the poor mineral composition of water in the Aktobe region [10-11].

Based on the findings of the study, it was noted that a majority of the participants displayed a relatively high level of independence. Additionally, the analysis revealed slight variances in the Bartel Index scores between male and female participants in the first phase, with males scoring  $88.9 \pm 14.6$  and females scoring  $95.6 \pm 7.4$  ( $p < 0.01$ ). These results indicate that older men tend to exhibit a higher degree of self-sufficiency in performing basic daily activities compared to women of the same age group. Similar trends were observed in relation to the Instrumental Activities of Daily Living (IADL) scores, where men scored  $5.1 \pm 2.0$  and women scored  $6.4 \pm 1.3$  ( $p < 0.0001$ ). These findings suggest that men tend to maintain their independence and activity levels for a longer period of time compared to women. Interestingly, a study conducted in Kosovo also reported a notable disparity in the level of independence between older males and females, a concerning trend considering women have generally longer life expectancies [13].

We intend to share the results of our study with general practitioners and chief doctors in primary healthcare settings, highlighting the reliability and efficacy of the Russian version of the EASYCare Standard 2010 as a valuable tool for addressing the needs of older individuals and preventing the decline of health and independence. Additionally, this tool can be utilized by healthcare providers both in hospital settings and by individuals themselves, as self-assessment has been shown to yield valid results comparable to professional assessment, offering a practical and convenient option [8].

On one hand, incorporating the EASYCare questionnaire in the assessment of elderly patients can greatly facilitate the healthcare process in primary health care centers and inpatient care hospitals specializing in geriatric and gerontological care. On the other hand, nearly half of the participants expressed concerns about the questionnaire's length, suggesting that a shorter format with fewer questions and multiple-choice options would be preferable [12]. Emphasized the need for simplifying

the presentation of EASYCare-2010 items, proposing binary responses instead of polychotomous ones, as the latter require additional concentration. This suggests that as individuals age, they may find it challenging to complete lengthy questionnaires that demand concentration and time.

One limitation of this study is that we only validated the Russian version of the EASYCare questionnaire, despite Kazakh being the native language in Kazakhstan. However, as part of our broader research project, we plan to further assess the translation into Kazakh and expand the scope of our study to include a larger number of older adults.

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