



# Research Paper: The Persian Version of “Meaningful Activity Participation Assessment” Questionnaire: Evaluation of Its Face and Content Validity in Elderly



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## Conflict of interest

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## ABSTRACT

**Background and Objectives:** “Meaningful Activity Participation Assessment” (MAPA) questionnaire is a suitable tool for examining the frequency and meaningfulness of 28 activities. The aim of this study was to assess the face and content validity of the Persian version of MAPA for older adults.

**Methods:** The face validity was assessed qualitatively using interviews and quantitatively using the item impact method (IIM) with 15 elderly aged 65-90 years old and MMSE $\geq$ 21. They measured the suitability simplicity and comprehensibility of the items. To assess the content validity using CVR and CVI, 15 occupational therapists (eight PhD. Candidates, seven masters) who had more than five years of experience in geriatric rehabilitation and aged $>$ 30 years old took part.

**Results:** All items of MAPA using IIM were more than 1.5. The CVR scores for each item were 0.6-1 (the cut-off base on Lawshe table 0.49). The average CVR value of MAPA was 0.84. The I-CVI of the Persian version of MAPA ranged from 0.86-1. All items scored higher than 0.79. The S-CVI/UA was 0.58 and the S-CVI/Ave was 0.96.

**Conclusion:** The Persian version of MAPA has acceptable content and face validity in the elderly. Investigation of test-retest and internal consistency reliability and construct validity (convergent, divergent, and factor analysis) is suggested.

**Keywords:** Validity, Meaningful activity, Participation, Assessment, Elderly



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↑ *What is “already known” in this topic:*

- *Persian version of MAPA has acceptable content and face validity in elderly.*
- *16 activities of Persian version of MAPA has universal agreement among elderly.*
- *MAPA can assess both meaningful and frequency of activities performance.*

## Introduction

One of the apparent consequences of participating in activities is to increase the well-being and quality of life of each person [1]. The most serious known problem of aging is the restriction on social participation and performing purposeful activities, such as basic and instrumental activities of daily living, which threatens their health and well-being and can cause their dependence and disability [2, 3]. A large body of literature confirmed the importance of participation in order to promote quality of life, somatic and mental health in the elderly [4]. Participation is defined as a substantial component of well-being in the aging process and regarded as a significant component of performance [5]. From a psychological point of view, participation in various forms of purposeful activity can reduce inactivity among the elderly, and engaging in meaningful activity prevent inappropriate behaviors, contributing to cognitive health and having a better life [6].

Aligned to the American Occupational Therapy Association (OTPF), the ultimate goal of occupational therapy for their clients is to derive optimal and achievable independence in life by engaging them in meaningful activities [7]. Thus, access to reliable and valid tools to measure participation in work, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), and leisure and socially meaningful activities is essential and crucial proceeding in occupational therapy [8].

There are numerous measurements, which assess different aspects of participation, such as the Assessment of Life Habit [9], the Personal and Social Performance Scale [10], and the Role Checklist [11]. One of the most common participation tools for assessing an elder's participation is the Meaningful Activity Participation Assessment (MAPA) [12, 13]. The MAPA was developed by Eakman et al. for the elderly population in 2007 and measured participation both objectively and subjectively

[1]. Furthermore, MAPA assesses the frequency of participation in each activity and also the amount of meaning that a person experiences participation. It consists of 28 activities. The high test-retest reliability (ICC=0.84) and internal consistency (Cronbach's  $\alpha=0.85$ ) of MAPA, as well as its high correlation with life satisfaction and life purpose, have been reported in older adults. A Higher MAPA score has been correlated with psychological wellbeing and higher quality of life in the elderly population [1]. The aim of this study was to assess the face and content validity of the Persian version of MAPA in the elderly.

## Materials and Methods

**Design** In this cross-sectional study, which was accomplished from April-Sep 2020, the content and face validity of MAPA was assessed. The local ethics committee of the Iran University of Medical Sciences reviewed and approved the study design (IR.IUMS.REC.1398.602). All participants signed informed consent and were aware of the aims of the study.

### Participants

**Face validity:** 15 eligible elderly people took part in the current study. The inclusion criteria were the age of  $\geq 65$  years, Mental Mini-State Examination Scale score  $\geq 21$ , and no history of neurological or orthopedical disorders. The participants with low cooperation during the interview and incomplete questionnaire were excluded from the study.

**Content validity:** 15 occupational therapists (eight Ph.D candidates and seven cases with MSc degrees) aged  $\geq 30$  years old and had more than five years of experience in geriatric rehabilitation participated in the study.

### Measures

The MAPA questionnaire was developed by Dr. Eakman (2007) in California USA. This self-report scale

contains 28 different activities in different areas of IADL and leisure activities. Participants rate each activity in two views, personal meaningfulness and the rate of repetition of performing each activity. The scoring of this tool using the Likert scale is as follow:

**Number of repetitions of the activity:** 0=never, 1=less than once a month, 2=once a month, 3=three times a month, 4=once a week, 5=many times a week, 6=every day, and Meaningfulness of activity: 0=not meaningful at all, 1=to some extent meaningful, 2=moderately meaningful, 3=very meaningful, and 4=extremely meaningful. The total score of MAPA, which ranged from 0 to 672 is achieved by adding the score of the frequency multiple meaningfulness of each activity [12].

### Face validity

Face validity was calculated quantitatively by determining the item impact method. Item impact score was calculated using the following formula “Item Impact Score=Frequency (%)×Importance”, which frequency means the number of people who gave a score of 4 and 5 is face validity that is divided by the total number of people and importance as an average of total answers [14]. In this method, the suitability of each item is assessed using a 5-point Likert from 1 (not suitable activity at all) to 5 (quite suitable activity). If the item impact score is more than 1.5, the item is suitable for further analysis [15]. Also, face validity was assessed qualitatively using face-to-face structured interviews. Each participant assesses each item in terms of item relevance, item ease of response, and ambiguous items.

### Content Validity

Content Validity Ratio (CVR) and content validity index CVI were used to determine the content validity [16, 17]. CVI is one of the most common approaches for investigating content validity. It can be measured by two methods: item-CVI (I-CVI) and the scale-level-CVI (S-CVI) [16]. I-CVI is described as the number of experts giving a rating of “very relevant” for each item divided by the total number of experts, which ranges from 0 to 1. If I-CVI is more than 0.79, it means that the item is relevant, the value between 0.70 and 0.79 means that the item needs revisions and if the value is below 0.70 means that the item is eliminated [18]. Furthermore, S-CVI is computed using the number of items in a questionnaire that have achieved a rating of “very relevant” [18]. The two common calculating methods for S-CVI are the Universal Agreement (UA) among experts (S-CVI/UA), and the second, a less conservative method,

the Average CVI (S-CVI/Ave) [18]. S-CVI/UA is calculated by adding all items with I-CVI equal to 1 divided by the total number of items, while S-CVI/Ave is calculated by taking the sum of the I-CVIs divided by the total number of items [18]. The S-CVI/UA  $\geq$  0.8 and S-CVI/Ave  $\geq$  0.9 have excellent content validity [19].

To determine the content validity ratio, the necessity and essentiality of each item based on a three-point Likert were assessed using 15 occupational therapists [20]. It ranged between 1 and -1, and a higher score indicates greater agreement among experts [18]. The formula for the CVR is  $CVR = (N_e - N/2) / (N/2)$ , where  $N_e$  is the number of experts participants indicating an item as “essential” and  $N$  is the total number of experts. Due to the critical number of the Lawshe table [16], the CVR above 0.49 for 15 participants was acceptable and should remain in the questionnaire.

## Results

### Face validity

Table 1 shows the characteristics of 15 elderly participants to assess face validity. The item impact score of MAPA ranged 3.46-5. The item impact score of 9 items marked 5. While the results revealed that all scores of the items of MAPA were higher than 1.5 indicating that all items in this tool were important to the elderly and remained in the final Persian version of MAPA (Table 2).

### Content Validity

Fifteen occupational therapists (eight PhD candidates and seven cases with 7 MSc degrees) weigh the content validity of the Persian version of MAPA. The value of CVR, which was calculated for each item should be higher than 0.49 (based on the total number of experts,  $N=15$  in the Lawshe table) [16]. The items with nonessential or less essential scores should be deleted, but in this case, all items remained. The CVR scores for each item were 0.6-1 and 14 out of 28 items that marked as 1. The average CVR value was 0.84 (Table 2).

The results of the relevancy of individual items (I-CVI) revealed that the I-CVI of the Persian version of MAPA ranged from 0.86-1. Sixteen items had an I-CVI=1, 7 items 0.93, and 5 items 0.86. All items scored higher than 0.79, which means that they are relevant.

The relevancy of the overall questionnaire S-CVI showed the S-CVI/UA=0.58 and the S-CVI/Ave=0.96. The universal agreement is calculated by adding all I-

Table 1: Descriptive characteristics of elderly

Variables		No. (%)
Age (y)	75≥	7(46.66)
	75<	8(53.33)
Gender	Male	7(46.66)
	female	8(53.33)
Education level	<12	5(33.33)
	≥12	10(66.66)
Employment status	housekeeping	5(33.33)
	employed	5(33.33)
	retired	5(33.33)
Living status	Living alone	5(33.33)
	Living with children	5(33.33)
	Living with a partner	5(33.33)

CVIs equal to 1.00 (16 items) divided by 28, while the average is determined by the sum of all I-CVIs (26.81) divided by 28. Overall, the universal agreement method demonstrated moderate content validity, while the average approach showed high content validity of the MAPA.

## Discussion

According to occupational therapy practice, improving participation in meaningful activities is recognized as one of the main purposes of life [5]. During normal aging and/or disease, the functional limitation may occur in participation in activities of daily living, leisure activities, etc. [21-23]. Participation may be investigated in various aspects. Thus, two interesting characteristics of participation in activities, are the amount of meaningfulness and the frequency of its use, which are measured by the MAPA [5]. Obviously, a fundamental stage of the scale development and evaluation of psychometric properties is content and face validity assessment. These two kinds of validity content and face validity are achieved through qualitative assessment by expert panels and test responders, respectively [24]. In this study, the face and content validity of the Persian version of MAPA was assessed qualitatively and quantitatively.

Appropriate face validity of a tool/questionnaire means that in the target group's view, each item of the tool was

suitable, simple, attractive, comprehensive, and appropriate to their culture [25]. The results of the current study were confirmed based on the decisions of elderly participants in this study, all items of MAPA were suitable, comprehensive, and without any ambiguous words. This result is consistent with that of Cheraghifard et al. in stroke patients [4]. These items were understandable for stroke and elderly who took part. It can be concluded that the activities of the Persian version of MAPA were very familiar, clear, and very common.

In the quantitative face validity assessment, while the impact score of all items was higher than 1.5 and the items were acceptable and suitable, if the item impact score is more than 1.5, the item is suitable for further analysis [15]. All activities of MAPA seemed suitable for elderly participants of the current study.

The content validity of MAPA was also determined by CVR and CVI. All activities in the opinions of an occupational therapist who took part in this study were essential (CVR > 0.49 ranged 0.6-1) and completely relevant (I-CVI > 0.79 ranged 0.86-1) for the elderly. The relevancy of 16 activities showed universal agreement among older adult participants and 13 activities showed universal approval in terms of essentially by participating occupational therapists. Eight activities of home-making/home maintenance, personal finances, using

**Table 2.** Face validity using Item Impact Score, Content validity using Content Validity Ratio (CVR), and Content Validity Index (CVI)

Row	Persian MAPA Items	Item Impact Score	CVR	Item-level content validity index (I-CVI)
1	Home Making/Home Maintenance	4.8	1	1
2	Personal Finances	4.53	1	1
3	Driving	3.86	0.73	1
4	Using Public Transportation	4.93	1	1
5	Medical Visits	5	1	1
6	Socializing	5	1	0.93
7	Writing Letters/Cards	4.43	0.6	0.86
8	Helping Others	4.93	0.73	1
9	Gardening	4.48	0.73	1
10	Physical Exercise	5	1	1
11	Crafts/Hobbies	4.53	1	0.93
12	Cultural Activities	4.34	1	0.86
13	Musical Activities	3.62	0.6	0.93
14	Taking Courses	4.03	1	0.93
15	Creative Activities	3.98	0.6	0.93
16	Traveling	4.93	0.86	1
17	Talking with Telephone	5	1	1
18	Reading Magazines / Newspapers	5	0.6	1
19	Reading	5	0.6	1
20	Playing Games	5	0.73	1
21	Radio/TV	4.41	1	1
22	Religious Activities	4.93	1	1
23	Prayer/Meditation	4.93	1	1
24	Community Organization Activities	3.93	0.6	0.93
25	Volunteer Activities	3.46	0.86	0.86
26	Pet Care/Activities	4.34	0.6	0.86
27	Computer Use for Email	5	1	0.93
28	Computer Use	5	0.6	0.86

public transportation, medical visits, physical exercise, talking with telephone, listening to the radio and watching TV, religious activities, and prayer/meditation, were found as activities that were maximally approved by the evaluators in terms of both relevance and importance. It

seems that these activities are very common and routine for the elderly. However, some activities had lower item impact scores although they are relevant and acceptable, such as driving or musical activities. It may be due to the fact that these activities were not suitable for the elderly.

## Conclusions

The Persian version of MAPA has acceptable content and face validity and can be used to assess participation in meaningful activities of the elderly if other psychometrics properties, such as test-retest, internal consistency reliability, and construct validity (convergent, divergent, and factor analysis) are confirmed.

## Ethical Considerations

### Compliance with ethical guidelines

The ethical protocol of this study was approved by the Ethics Committee of Iran University of Medical Sciences (IR.IUMS.REC.1398.602). All the participants signed an informed consent form.

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### Authors' contributions

All authors equally contributed to preparing this article.

### Conflict of interest

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## مقاله پژوهشی

# بررسی روایی صوری و محتوای نسخه فارسی پرسش نامه «ارزیابی مشارکت در فعالیت معنادار در سالمندان» (MAPA)

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## چکیده

**مقدمه:** پرسش نامه «ارزیابی مشارکت در فعالیت معنادار» (MAPA) ابزار مناسبی برای بررسی فراوانی و معناداری ۲۸ فعالیت است. هدف این مطالعه، بررسی روایی صوری و محتوایی نسخه فارسی MAPA برای سالمندان بود.

**مواد و روش ها:** روایی صوری با استفاده از مصاحبه کیفی و با استفاده از روش تأثیر آیتام (IIM) با ۱۵ سالمند ۶۵-۹۰ سال و MMSE بالاتر و برابر ۲۱ مورد ارزیابی قرار گرفت و تناسب و سادگی و قابل فهم بودن گویهها را اندازه گیری کردند. برای ارزیابی روایی محتوا با استفاده از CVR و CVI، ۱۵ کاردرمانگر (۸ داوطلب دکتری، ۷ کارشناسی ارشد) که بیش از ۵ سال سابقه کار در توانبخشی سالمندان داشتند و سن آنها بیشتر از ۳۰ سال بود، شرکت کردند.

**یافته ها:** تمامی آیتامهای نسخه فارسی MAPA با استفاده از IIM بیش از ۱/۵ بود. نمرات CVR برای هر آیتام ۰/۶-۱ بود (مبنای برش در جدول لاوشه ۰/۴۹ بود) میانگین آن CVR=۰/۸۴ بود. نسخه فارسی MAPA دارای CVI-I بین ۰/۸۶-۱ بود. همه موارد امتیاز بالاتر از ۰/۷۹ را کسب کردند. همچنین S-CVI/UA=۰/۵۸ و S-CVI/Ave=۰/۹۶ به دست آمد.

**نتیجه گیری:** نسخه فارسی MAPA از روایی صوری و محتوایی قابل قبولی در سالمندان برخوردار است. بررسی بازآزمایی و پایایی همسانی درونی و روایی سازه (تحلیل همگرا، واگرا و تحلیل عاملی) پیشنهاد می شود.

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