Original Article

Adaption and Construct Validity in the Greek Context of the Appraisal of Self-Care Agency Scale –Revised (ASAS – R scale)

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Abstract

Background: Self-care, is one of the key issues regarding the context of psychosocial rehabilitation for people with mental illness. The sector of self-care includes both physical and mental health care, which is important for the prevention of relapses, but also for their quality of life.

Objective: The purpose of this study was the translation and psychometric adaptation of the Appraisal of Self-Care Agency Scale -Revised (ASAS-R) for Greece.

Methods: A total of 100 adult mental ill patients from psychiatric hospitals in Attica completed the ASAS-R. The scale consisted of 15 questions. Exploratory factor analysis was carried out to evaluate construct validity. Principal component analysis was chosen as extraction method using Varimax rotation. Kaiser-Meyer-Olkin procedure for measuring sample adequacy was applied. Internal consistency reliability was determined by the calculation of Cronbach's a coefficient. Convergent validity was assessed with the association between ASAS-R and Internalized Stigma of Mental Illness (ISMI) scales and WHO Disability Assessment Schedule 2.0 (WHODAS 2.0) via Spearman's correlation coefficients.

Results: The sampling adequacy of exploratory factor analysis was evaluated through a KMO of 0.82 and a significant Bartletts' sphericity (p<.001). Principal component analysis of the 15 items revealed 3 factors, after Varimax rotation. Each one of the three factors had eigenvalue greater than 1. All factors combined explained 57.9% of the variance. All factors had acceptable reliability since their alpha coefficient of Cronbach was above .7. Also, all items had inter-item correlations above the minimum criteria of at least r=.30, fact that endured the inclusion of all items in the factor analysis.

Conclusions: The ASAS-R appeared to be a valid and reliable tool for the evaluation of self-care in a mentally ill population. In terms of convergent validity, the correlations between ASAS-R and ISMI and WHODAS showed a positive correlation of the three scales, which reinforces validity.

Keywords: ASAS_R scale, mental illness, physical functioning, quality of life, self-care, validity

Introduction

The present study deals with one of the key issues of psychosocial rehabilitation for the mentally ill, that of self-care. The existence of a mental illness, in addition to changes at a neurobiological level, brings about a series of

psychosocial problems induced by stigma and social exclusion, which are perpetuated even in modern times. In addition to withdrawal due to the existence of psychiatric symptoms, as in the case of depression, anxiety disorders or in the case of negative symptoms of schizophrenia, social isolation, lack of supportive environment or loss of motivation often coexist in these individuals. All the above often result in a decline in functionality on a physical, emotional, and social level. This fact can be reversed to a significant extent through the daily planning of these daily activities It has also been observed that the reverse happens, namely that through the daily planning of self-care activities, the individual can reduce the feeling of helplessness (Rosmini & Sutria, 2020).

According to Dorothea Orem (1995), the concept of self-care in the context of nursing theory is defined as the "practice of activities that individuals initiate and perform for their own benefit, for the preservation of life, health and well-being". A person's capacity for self-care can be both innate and learned within the framework of developing basic skills of independent living (Guo et al., 2017.

Three basic personality traits can describe the concept of self-care, such as a) the ability of a person to cope with any form of goal-oriented energy beyond self-care, b) the ability of a person to act in an organized manner and have self-care skills and c) the ability to make decisions and the functional ability to act for self-care and meet the needs of the individual (Orem, 1995; Sousa, 2002).

The concept of self-care also describes the condition according to which people are able to implement everything they need in order to maintain their health and well-being (Çiftçi et al., 2015). The ability is influenced by people's age, gender, sociocultural and economic status and the level of information available to them (Orem, 2001)

From systematic reviews on the evaluation of self-care in people with mental disorders, the level was found to be lower than the levels of self-care of patients with other diseases (Ciftci et al., 2015). Other studies confirmed that self-care is age-related. In particular, levels of self-

care appear to be higher at younger ages. Especially in people with mental illness, levels of self-care seem to gradually decrease with age both due to aging and due to the chronicity of the disease. In addition, it has been shown that women seem to pay more attention in maintaining their self-care than men. Educational attainment seems to play an important role in individuals' levels of self-care, as the higher it is, the more it motivates individuals to take care of their health and overall well-being. Even in patients with schizophrenia, people with higher educational and socioeconomic levels appeared to have higher levels of self-care. The fact that patients with higher socio-economic levels have fewer financial stressors may be a result of their easy access to healthcare institutions and other sources related to self-care. Furthermore, people with mental illnesses living in supportive (family) environments seemed to maintain fairly high levels of self-care, as they received satisfactory levels of social and psychological support in the event of problems (Isik et al., 2020 ; Sousa et al., 2008).

People with mental illness, regardless of gender, the socioeconomic level and chronicity of the disorder seems to reduce the levels of self-care. An important role in this recession is played by the lack of motivation over the years. Among the population of people with a mental illness, it appeared that people with anxiety disorders had better levels of self-care than people with non-organic psychoses. One possible explanation is that people with anxiety disorders have sufficient cognitive functions to understand their problem of taking care of themselves on their own or asking for help in relation to people with psychosis. Reduced self-care in people with schizophrenia appears to be an expected outcome based on the nature of the disorder. The deficits of these people seem to be reduced through nursing interventions in the context of group therapy and training conducted by nurses. This type of intervention seems to significantly help people with severe self-care deficits through a targeted group support effort provided to its members. The field of self - care, functionality and pharmaceutical compliance are key - pillars in prevention or psychosocial

rehabilitation in the field of psychiatry. (Ciftci et al., 2015).

Several self-care assessment tools can be found in the international literature, such as the Exercise of Self-care Agency (ESCA) (Kearney & Fleische, 1979), the Denyes Self-care Agency Instrument (DSCAI), the Self-As-Carer Inventory (SCI) (Geden & Taylor, 1991), and the Self-Care Service Assessment Scale (ASAS).

One of the widely used tools for measuring self-care is the Appraisal of Self-care Agency Scale Revised (ASAS – R) (Guo et al., 2017). The initial ASAS scale was originally developed with the aim of creating a tool that would be applicable to an adult population and different health conditions. The original scale included 24 elements rated on a Likert-like scale ranging from 1 (I totally disagree) to 5 (I totally agree). Subsequently, Souza and colleagues (Sousa et al., 2010), in an ASAS improvement study, showed that the revised 15-element scale (ASAS-R) appeared to be more effective at measuring self-care service among individuals in the general population. ASAS-R is a short, valid and reliable tool with easy application for the evaluation of self-care in various population groups. This short version consists of 15 items rated as on the original scale and with an overall rating ranging between 15 and 75. Adaptation, has been carried out in several countries and in different population groups (Alhambra-Borrás et l., 2017; Damasio & Koller, 2013; Guo et al., 2017; Martinez et al., 2021; Stacciarini & Pace, 2017). ASAS-R has been used and adapted in many countries, including the Netherlands, Norway, Switzerland, Mexico and Hong Kong. Despite its widespread use, some authors have shown that the original version has a complex structure of factors that may compromise the construction validity of the tool. (Evers et al., 1986; Fok et al., 2002; Lorensen et al., 1993; Soderhamn et al., 1996)

Objective

The psychometric adaptation and the use of such questionnaires in Greece, will contribute the evaluation of self-care, functionality, and pharmaceutical compliance and the implementation of plans for their improvement in the Greek context of psychosocial rehabilitation and community psychiatry.

Methods

The translation of the ASAS_R into Greek was carried out as follows: In order to use the ASAS R Scale in the study, written permission was requested and given by the University of Kansas. The translation of the ASAS R into Greek was carried out as follows: a) Translation into Greek by two people (a registered nurse, PhD© University of Athens and a psychiatrist who was living and working in the USA) who had excellent knowledge of the Greek and English language as well as of the concepts mentioned in the questionnaires. b) Reverse translation of the Greek texts into English by an independent bilingual person (Professor of Psychiatric Nursing, University of Athens).

Internal consistency reliability was determined by the calculation of Cronbach's a coefficient. Convergent validity was assessed with the association between ASAS-R and scales ISMI and WHO-DAS via Spearman's correlation coefficients. ISMI scale translated and weighted in Greek among a sample of 272 outpatients recruited from the hospital-based and community mental health services of Eginition Hospital, First Department of Psychiatry, National and Kapodistrian University of Athens. The Greek version of the Brief Interanlized Stigma of Mental Illness scale can be used as a valid tool to reliably measure mental illness related internalized stigma in Greek people with severe mental illness. The WHO Disability Assessment Schedule 2.0 (WHODAS 2.0) scale was translated and weighted by WHO. in a cross-cultural applicability study at a global level, including many countries, including Greece. The psychometric properties of the WHODAS 2.0 were tested in two waves/phases internationally, using a multicenter design with identical protocols. The 12-item short version was used in our study.

The ASAS–R scale was derived from the evolution of the ASAS scale which was created using a sample of 141 adult insulin dependents with diabetes mellitus in the USA. This scale consisted of 28 Likert-type scale questions. The scale has 18 elements with positive wording and

10 elements with negative wording. All positive elements are scored in reverse before data analysis. The scores ranged from 28 to 128 points, with higher scores suggesting greater self-efficacy in managing diabetes (Sousa et al., 2008) This scale was constructed by Sousa and her collaborators. For its creation, a cross-sectional study was conducted in a general adult population of the USA. In total, the sample consisted of 629 people (Sousa et al., 2010).

The ASAS-R scale was used to measure self-care and is the revised version of the ASAS scale, in which four elements were revised. The four revised elements were: 1) Whenever needed, I manage to take the time to take care of myself, 2) Over the years, I have developed a circle of friends to whom I can call when I need help to take care of myself, 3) When needed I receive information about my health, I rarely ask for clarification of terms that I do not understand in order to adequately take care of myself, and 4) I am not always able to take care of myself in a way that I would like. The ASAS-R scale is a 15-element scale that captures some of the characteristics of the concept of self-care and uses a Likert-type scale ranging from 1 (I completely disagree) to 5 (I completely agree), with cumulative scores indicating a higher rate of self-care. Nine elements of the scale are formulated negatively and scored in reverse (Sousa et al., 2010).

When a person possesses an adequate level of self-care, they are more likely to attribute appropriate health promoting behavior to prevent disease and/or engage in chronic disease self-management to achieve control and prevention or reduction of complications of a disease. ASAS-R is a short, reliable and authoritative tool for measuring self-care among individuals from the general population, but further psychochometric evaluation is needed in people with chronic diseases, such as diabetes mellitus or mental illness (Sousa et al., 2008).

Participants: The population of the quantitative study consists of mentally ill patients aged 18-65 years, who are located in rehabilitation units of Psychiatric Hospitals in Attica. The sample size is 100 individuals. Criteria for admission to the study:

1.   People who have received the diagnosis of a mental illness according to ICD10
2.   People aged 18-65
3.   People who do not show active psychopathology
4.   People with a good knowledge of the Greek language
5.   Persons with Greek citizenship

Exclusion criteria in the study: People who will declare that they do not wish to participate in the study.

1.   People who will not want to complete the interview process and answer the study questionnaires.
2.   Persons placed under guardianship.

Ethical considerations: In order to comply with the rules of ethics and morals, the University of Kansas School of Nursing was formally asked for permission to use a questionnaire. The questionnaire was examined by the Ethics Committee of the Department of Nursing of the University of Athens and by the respective committees of the hospitals. The researcher obtained informed consent from all participants, who took part in the study voluntarily. They were offered assurance of anonymity and confidentiality of the information provided. Also, they were informed that they could cease completing the questionnaire at any time if they wished to do so. They also took assurance that the collected data would be used only for the study and that their decision to withdraw would in no way compromise the standards of the care provided.

Statistical analysis: Quantitative variables were expressed as mean values (SD) and median (IQR), while qualitative variables were expressed as absolute and relative frequencies. Exploratory factor analysis was carried out to evaluate construct validity, disclose underlying structures and reduce the number of variables in ASAS-R. Principal component analysis (PCA) was chosen as extraction method using Varimax rotation. Kaiser-Meyer-Olkin procedure for measuring sample adequacy was applied. The cut-off point for factor loadings was 0.40 and for eigenvalues it was 1.00.   Internal consistency reliability was determined by the calculation of Cronbach's a coefficient. Scales with reliabilities equal to or greater than 0.70 were considered acceptable.   Convergent

validity was assessed with the association between ASAS-R and scales ISMI and WHO-DAS via Spearman's correlation coefficients (rho). All reported p values are two-tailed. Statistical significance was set at p<0.05 and analyses were conducted using SPSS statistical software (version 22.0).

Results

Sample characteristics

Sample consisted by 100 patients from three psychiatric hospitals in Attica (50% women) with mean age 49.5 years (SD=13.9 years). Their characteristics are presented in table 1. Most patients were unmarried (63%), living with friends or family (59%), having siblings (80%) and high school graduates (39%). The descriptive statistics of ASA-R items are presented in table 2.

Psychometric characteristics

The sampling adequacy of exploratory factor analysis was evaluated through a KMO of 0.82 and a significant Bartletts' sphericity (p<.001). Principal component analysis of the 15 items revealed 3 factors, after Varimax rotation (Table 3). Each one of the three factors had eigenvalue greater than 1 (5.39, 2.02 and 1.28 respectively). All factors combined explained 57.9% of the variance. Factor "Having power to self-care" had 7 items and explained 22.4% of the variance. Factor "Lacking power for self-care" had 4 items and explained 20.4% of the variance. Factor "Developing power for self-care" had also 4 items and explained 15.1% of the variance. All 15 items had loading at least .40, thus no item was eliminated from the analysis. The structure found in the present study was similar with other studies, with the exception of item 8 that in other studies was loaded in factor "Developing power for self-care". Items were summed across the factors and their scores are described in the same table.

All factors had acceptable reliability, since their alpha coefficient of Cronbach was above .7 (Table 4). When an item was removed from the factor that was included, Cronbach's alpha was not increased. Also, all items had inter-item correlations above the minimum criteria of at least r=.30, fact that endured the inclusion of all items in the factor analysis.

All three factors were significantly correlated with each other. More particularly, factor "Lacking power for self-care" was negatively correlated with factors "Having power to self-care" (rho=-.44, p<.001) and "Developing power for self-care" (rho=-.35, p<.001). Also, factor "Having power to self-care" was positively correlated with factor "Developing power for self-care" (rho=.64, p<.001).

ISMI and WHO-DAS descriptive measures and their correlation with ASAS-R factors are presented in table 5. Significant correlations were found between ASAS-R factors and ISMI and WHO-DAS scales, indicating satisfying convergent validity of ASAS-R questionnaire.

Table 1. Sample characteristics

	N (%)
Gender	
Men	49 (49.0)
Women	50 (50.0)
Other	1 (1.0)
Age, mean (SD)	49.2 (13.9)
Family status	

Unmarried	63 (63.0)
Married	14 (14.0)
Divorced	13 (13.0)
Widowed	5 (5.0)
In a relationship	5 (5.0)
Place of Birth	
Attica	67 (67.0)
Out of Attica	26 (26.0)
Abroad	7 (7.0)
Living status	
Alone	37 (37.0)
With friends/ family	59 (59.0)
In care unit	4 (4.0)
Siblings	80 (80.0)
Number of siblings, median (IQR)	1 (1 - 2)
Children	29 (29.0)
Number of children, median (IQR)	2 (1 - 2)
Educational level	
None	0 (0.0)
Primary school	10 (10.0)
Middle school	17 (17.0)
High school	39 (39.0)
University	29 (29.0)
MSc/ PhD holder	5 (5.0)
Employed	23 (23.0)

Table 2. ASAS-R descriptive statistics

	Totally disagree	Disagree	Neither agree neither disagree	Agree	Totally agree
	N (%)	N (%)	N (%)	N (%)	N (%)
As circumstances change, I make the needed adjustments to stay healthy	7 (7.0)	14 (14.0)	11 (11.0)	30 (30.0)	38 (38.0)

If my mobility is decreased, I make the needed adjustments	3 (3.0)	15 (15.0)	11 (11.0)	30 (30.0)	41 (41.0)
When needed, I set new priorities in the measures that I take to stay healthy	5 (5.0)	12 (12.0)	22 (22.0)	25 (25.0)	36 (36.0)
I often lack energy to care for myself in the way that I know I should	17 (17.0)	24 (24.0)	13 (13.0)	27 (27.0)	19 (19.0)
I look for better ways to take for myself	4 (4.0)	11 (11.0)	17 (17.0)	37 (37.0)	31 (31.0)
When needed, I manage to take time to care for myself	3 (3.0)	14 (14.0)	21 (21.0)	29 (29.0)	33 (33.0)
If I take a new medication, I obtain information about the side effects to better care for myself	3 (3.0)	8 (8.0)	14 (14.0)	33 (33.0)	42 (42.0)
In the past, I have changed some of my old habits in order to improve my health	5 (5.0)	11 (11.0)	17 (17.0)	36 (36.0)	31 (31.0)
I routinely take measures to ensure the safety of myself and my family	3 (3.0)	14 (14.0)	20 (20.0)	34 (34.0)	29 (29.0)
I regularly evaluate the effectiveness of things that I do to stay healthy	7 (7.0)	16 (16.0)	18 (18.0)	26 (26.0)	33 (33.0)
In my daily activities I seldom take time to care for myself	25 (25.0)	25 (25.0)	23 (23.0)	17 (17.0)	10 (10.0)
I am able to get information I need, when health is threatened	7 (7.0)	12 (12.0)	9 (9.0)	30 (30.0)	42 (42.0)
I seek help when unable to care for myself	5 (5.0)	8 (8.0)	16 (16.0)	38 (38.0)	33 (33.0)
I seldom have time for myself	28 (28.0)	20 (20.0)	22 (22.0)	22 (22.0)	8 (8.0)
I am not always able to care for myself in a way I would like	20 (20.0)	11 (11.0)	27 (27.0)	31 (31.0)	11 (11.0)

Table 3. Exploratory factor analysis results with Varimax rotation

		Having power to self-care	Lacking power for self-care	Developing power for self-care
1	As circumstances change, I make the needed adjustments to stay healthy	0.80		
2	If my mobility is decreased, I make the needed adjustments	0.87		

3	When needed, I set new priorities in the measures that I take to stay healthy	0.80		
4	I often lack energy to care for myself in the way that I know I should		0.63	
5	I look for better ways to take for myself	0.52		
6	When needed, I manage to take time to care for myself	0.46		
7	If I take a new medication, I obtain information about the side effects to better care for myself			0.55
8	In the past, I have changed some of my old habits in order to improve my health	0.42		
9	I routinely take measures to ensure the safety of myself and my family			0.67
10	I regularly evaluate the effectiveness of things that I do to stay healthy	0.41		
11	In my daily activities I seldom take time to care for myself		0.69	
12	I am able to get information I need, when health is threatened			0.58
13	I seek help when unable to care for myself			0.74
14	I seldom have time for myself		0.65	
15	I am not always able to care for myself in a way I would like		0.48	
Eigenvalue		5.39	2.02	1.28
% Variance explained		22.4	20.4	15.1
Minimum		12	4	6
Maximum		35	20	20
Mean (SD)		26.4 (6.1)	11.3 (3.7)	15.5 (3.4)
Median (IQR)		26 (22.5 - 31)	11.5 (9 - 14)	16 (13 - 18)

Table 4. **Inter-item correlations and reliability indexes**

Factor	Item	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
	As circumstances change, I make the needed adjustments to stay healthy	0.56	0.84	0.85

Having power to self-care	If my mobility is decreased, I make the needed adjustments	0.69	0.82	
	When needed, I set new priorities in the measures that I take to stay healthy	0.68	0.82	
	I look for better ways to take for myself	0.64	0.83	
	When needed, I manage to take time to care for myself	0.65	0.82	
	In the past, I have changed some of my old habits in order to improve my health	0.49	0.85	
	I regularly evaluate the effectiveness of things that I do to stay healthy	0.57	0.84	
Lacking power for self-care	I often lack energy to care for myself in the way that I know I should	0.47	0.72	0.75
	In my daily activities I seldom take time to care for myself	0.48	0.71	
	I seldom have time for myself	0.67	0.58	
	I am not always able to care for myself in a way I would like	0.51	0.69	
Developing power for self-care	If I take a new medication, I obtain information about the side effects to better care for myself	0.52	0.68	0.74
	I routinely take measures to ensure the safety of myself and my family	0.62	0.62	
	I am able to get information I need, when health is threatened	0.55	0.66	
	I seek help when unable to care for myself	0.42	0.73	

Table 5. ISMI and WHO-DAS descriptive measures and their correlation with ASAS-R factors

	Mean (SD)	Median (IQR)	Having power to self-care		Lacking power for self-care		Developing power for self-care	
			rho	P	rho	P	rho	P
ISMI								
Alienation	12.8 (4)	13 (10 − 15)	-0.31	0.002	0.28	0.005	-0.27	0.006
Stereotype Endorsement	14.4 (4.2)	15 (12 − 17)	-0.32	0.001	0.24	0.018	-0.40	<0.001

Discrimination Experience	11.2 (3.6)	11 (8.5 ─ 14)	-0.33	0.001	0.17	0.100	-0.32	0.001
Social Withdrawal	13.2 (4.2)	13 (9.5 ─ 17)	-0.33	0.001	0.24	0.014	-0.42	<0.001
Stigma Resistance	10.8 (2.5)	11 (9 ─ 13)	-0.21	0.032	0.31	0.001	-0.24	0.018
WHO-DAS								
Motor ability	33.5 (21.9)	33.3 (16.7 ─ 50)	-0.43	<0.001	0.48	<0.001	-0.48	<0.001
Participation & cognition	32.2 (22.4)	37.5 (12.5 ─ 50)	-0.26	0.010	0.35	<0.001	-0.40	<0.001
Self care	20.3 (24.3)	8.3 (0 ─ 33.3)	-0.50	<0.001	0.44	<0.001	-0.44	<0.001
Total disability score	29.5 (20)	27.1 (13.5 ─ 45.8)	-0.45	<0.001	0.48	<0.001	-0.51	<0.001

Discussion

The present study aimed to analyze the psychometric properties of the ASAS-R scale in a sample of Greek adult individuals diagnosed with an ICD diagnosis of a psychiatric disease. Mental illness significantly affects the levels of self-care. Sousa and colleagues based on the original ASAS scale created the three-factor scale (ASAS-R) with a reduced number of elements with the corresponding validity and reliability. This scale was constructed with significant efficiency in measuring self-care in the general population. The 3-factor model of ASAS-R 15 elements seemed to give the same results in the Greek version with the exception of factor 8 ("In the past I have changed some of my old habits to improve my health"), which seemed to correlate with factor 1 ("Having power to self-care"). In previous adaptations of the scale and studies, factor 8 was related to factor 3 ('Developing power for self-care'). This factor appeared to be different from the adaptation in the study of Sousa and her collaborators and has the same differentiation as the adaptation in Brazilian population by Damasio and his colleagues (2013), but also by the study of Stacciarini and his colleagues (2017).

However, the ASAS-R 15 data scale appeared to be a valid and reliable tool for assessing self-care in a mentally ill population. In terms of convergent validity, the correlations between ASAS-R and ISMI and WHODAS showed a positive correlation of the three scales, which enhances validity. It appeared that alienation, the integration of stereotypes about mental illness, experience of discrimination, social withdrawal and resistance to stigma are associated with incomplete levels of self-care. Respectively, on the ASAS-R and WHODAS scales, it was shown that mobility, participation and cognitive level, as well as self-care and the overall disability score are associated with incomplete self-care in factor 2 of ASAS-R. These associations seem to be explained as people who have higher levels of functionality, but also reduced levels of self-stigmatization and alienation, may have better behaviors that promote their mental and physical health.

In conclusion, this study is considered to contribute significantly to research in the field of psychiatry, as ASAS-R seems to be a reliable and valid tool for the evaluation of self-care in a population of Greek mentally ill people. However, there are several limitations to the present study. Although the sample size was sufficient to conduct a psychometric analysis of

ASA S -R, it is based only on one region of Greece, which does not allow to generalize the results for the Greek population as a whole. Another limitation is the lack of a large number of previous research studies testing the psychometric properties of ASAS-R in a psychiatric population worldwide, which makes it difficult to compare our results with previous findings. In addition, this questionnaire was administered for its weighting in a population of mentally ill people, therefore the psychometric properties of the scale in a sample of the general population or in a sample of patients with other chronic diseases are clear.

As future recommendations, it is proposed to conduct studies on the validity of the Greek version of ASAS-R in other regions of Greece and in other population groups of people with chronic diseases. The use of this scale in the field of mental health in Greece can be used to implement health promotion interventions in the context of prevention and psychosocial rehabilitation of people with a mental illness. The evaluation of self-care, recording it and framing interventions in these populations will contribute to the effective management of the multidimensional problems that occur in these populations. This scale is a short, simple and reliable method of assessing the levels of self-care in populations with chronic diseases such as the mentally ill.

Conclusion: The Greek version of the ASAS_R 15 item scale is both reliable and valid and has adequate psychometric properties. Moreover, it is highly acceptable by the participants because it is brief, comprehensible, and easy to complete. Consequently, it can be used to evaluate the self-care in a mentally ill population. In terms of convergent validity, the correlations between ASAS-R and ISMI and WHODAS showed a positive correlation of the three scales, which reinforces validity. It is proposed to conduct studies on the validity of the Greek version of ASAS-R in other regions of Greece and in other population groups of people with chronic diseases, as the evaluation of self-care in these populations will contribute to the effective management of the multidimensional problems that occur in these populations.

References

Alhambra-Borras T., Dura-Ferrandis E., Garces-Ferrer J. & Sanchez-Garcia J. (2017). The Appraisal of Self-Care Agency Scale - Revised (ASA-R): Adaptation and Validation in a Sample of Spanish Older Adults. *The Spanish Journal of Psychology*, 20, E48.

Centers for Disease Control and Prevention (2009). Health Protection Goals: Criteria and Objectives. Available at: https://www.cdc.gov/nchs/healthy_people/hp2020.htm [Accessed 15 December 2022].

Ciftci B., Yıldırım N., Sahin Altun O. & Avsar G. (2015). What level of self-care agency in mental illness? The factors affecting self-care agency and self-care agency in patients with mental illness. *Archives of psychiatric nursing*, 29(6): 372-376.

Damasio BF & Koller SH (2013). The Appraisal of Self-Care Agency Scale - Revised (ASAS-R): adaptation and construct validity in the Brazilian context. *Cadernos de Saude Publica*, 29(10): 2071-2082. https://doi.org/10.1590/0102-311X00165312

Denyes M., (1980). Development of an instrument to measure self-care agency in adolescents. Michigan: University of Michigan.

Evers G.C., Iseberg M., Philipsen H., Brouns G., Halfen R. & Smeets H. (1986). The Appraisal of Self-Care Agency's ASA-Scale: Research program to test reliability and validity. In: Stinson SM, editor. New frontiers in nursing research: Proceedings of the International Nursing Research Conference. Edmond, Canada: University of Alberta.

Fok M.S.M., Alexander M.F., Wong T.K.S. & McFadyen A.K. (2002). Contextualising the Appraisal of Self-care Agency Scale in Hong Kong. *Contemporary Nurse*, 12: 124-34.

Funnell M.M., Brown T.L., Childs B.P., Haas L., Hosey G., Jensen B., Maryniuk M., Peyrot M., Piette, J., Reader D., Siminerio L., Weinger K. & Weiss M. (2008). National standards for diabetes self-management education. *Diabetes Care*, 31 Suppl 1(Suppl 1): S97-S104. https://doi.org/10.2337/dc08-S097

Geden E. & Taylor S. (1991). Construct and empirical validity of the self-as-carer inventory. *Nursing Research*, 40: 47-50.

Guo L, Zauszniewski JA, Ding X, Zhang L, Gao H, Guo Q & Liu Q (2017). The Appraisal of Self-Care Agency Scale-Revised (ASAS-R): Reliability and Validity Among Older Chinese People. *Western Journal of Nursing Research*, 39(11):1459-1476. https://doi.org/10.1177/0193945916672821

Isik K., Cengiz Z. & Dogan Z. (2020). The Relationship Between Self-Care Agency and Depression in Older Adults and Influencing Factors. *Journal of Psychosocial Nursing and Mental Health Services*, 58(10): 39-47. https://doi.org/10.3928/02793695-20200817-02

Kearney B. & Fleischer B.L. (1979). Developments of an instrument to measure exercise of self-care agency. *Research in Nursing & Health*, 2:25-34.

Lorensen M., Holter I.M., Evers G.C., Isenberg M.A. & van Achterberg T. (1993). Cross-cultural testing of the Appraisal of Self-care Agency: ASA scale' in Norway. *International Journal of Nursing Studies*, 30:15-23.

Martinez M., Luis E.O., Oliveros E.Y., Fernandez-Berrocal P., Sarrionandia A., Vidaurreta M. & Bermejo-Martins E. (2021). Validity and reliability of the Self-Care Activities Screening Scale (SASS-14) during COVID-19 lockdown. *Health and Quality of Life Outcomes*, 19(1):1. https://doi.org/10.1186/s12955-020-01607-6.

Oliveira L., Teixeira A. & Duarte I. (2022). The Appraisal of Self-Care Agency Scale-Revised (ASAS-R): Reliability and Validity among Portuguese Medical Students. *International Journal of Environmental Research and Public Health*;19(17):10848.

Orem D.E., (1995). Nursing Concepts of Practice. Boston: Mosby.

Orem D., (2001). Orem Nursing: Concept of practice. Boston: Mosby.

Rosmini E. & Sutria W. (2020). Intervention Of Nurse Deficit Self Care In The Skizofrenia Patient: Systematic Review. *Journal of Nursing Practice*, 3(2):244-252. https://doi.org/10.30994/jnp.v3i2.94

Soderhamn O., Evers G. & Hamrin E. (1996). A Swedish version of the appraisal of Self-Care Agency (ASA) scale. *Scandinavian Journal of Caring Sciences*, 10:3-9. https://doi.org/10.1111/j.1471-6712.1996.tb00302.x

Sousa V.D. (2002). Conceptual analysis of self-care agency. *Online Brazilian Journal of Nursing*, 1:3–12. https://doi.org/10.17665/1676-4285.20024811

Sousa V.D., Zauszniewski J.A., Zeller R.A. & Neese J.B. (2008). Factor analysis of the Appraisal of Self-care Agency Scale in American adults with diabetes mellitus. *The Diabetes Educator*, 34(1):98-108.

Sousa V.D., Hartman S.W., Miller E.H. & Carroll M.A. (2009). New measures of diabetes self-care agency, diabetes self-efficacy, and diabetes self-management for insulin-treated individuals with type 2 diabetes. *Journal of Clinical Nursing*,1 8(9):1305-1312.

Sousa V.D., Zauszniewski J.A., Bergquist-Beringer S., Musil C.M., Neese J.B. & Jaber A.F. (2010). Reliability, validity and factor structure of the Appraisal of Self-Care Agency Scale-Revised (ASAS-R). *Journal of Evaluation in Clinical Practice*, 16(6):1031-40.

Stacciarini T.S. & Pace A.E. (2017). Confirmatory factor analysis of the Appraisal of Self-Care Agency Scale - Revised. *Revista Latino-Americana de Enfermagem*, 25:e2856. https://doi.org/10.1590/1518-8345.1378.2856

Yang H., Xie X., Song Y., Nie A. & Chen H. (2018). Self-care agency in systemic lupus erythematosus and its associated factors: a cross-sectional study. *Patient Preference and Adherence*, 12: 607-613.

Appendix. The Greek version of ASAS – R scale

ΚΛΙΜΑΚΑ ΕΚΤΙΜΗΣΗΣ ΤΗΣ ΑΥΤΟΦΡΟΝΤΙΔΑΣ (ΑΝΑΘΕΩΡΗΜΕΝΗ)

Παρακαλώ κυκλώστε τη σωστή απάντηση για κάθε δήλωση που αναφέρεται παρακάτω, χρησιμοποιώντας της ακόλουθη κλίμακα:

1 = Διαφωνώ απόλυτα, 2 = Διαφωνώ, 3 = Ούτε Συμφωνώ/ Ούτε διαφωνώ, 4 = Συμφωνώ, 5 = Συμφωνώ απόλυτα

1. Όταν αλλάζουν οι συνθήκες, κάνω τις απαραίτητες προσαρμογές που χρειάζονται για να παραμείνω υγιής.	1	2	3	4	5
2. Εάν η κινητικότητά μου μειωθεί, κάνω τις απαραίτητες προσαρμογές.	1	2	3	4	5

3. Όταν απαιτείται, θέτω νέες προτεραιότητες στα μέτρα που παίρνω για να παραμείνω υγιής.	1	2	3	4	5
4. Μου λείπει συχνά η ενέργεια να φροντίσω τον εαυτό μου με τον τρόπου που γνωρίζω ότι πρέπει.	1	2	3	4	5
5. Αναζητώ καλύτερους τρόπους προκειμένου να φροντίζω τον εαυτό μου.	1	2	3	4	5
6. Όταν χρειάζεται, καταφέρνω να αφιερώσω χρόνο για να φροντίσω τον εαυτό μου.	1	2	3	4	5
7. Εάν πάρω νέα φαρμακευτική αγωγή, λαμβάνω πληροφορίες σχετικά με τις παρενέργειες, για την καλύτερη φροντίδα του εαυτού μου.	1	2	3	4	5
8. Στο παρελθόν έχω αλλάξει κάποιες από τις παλιές μου συνήθειες προκειμένου να βελτιώσω την υγεία μου.	1	2	3	4	5
9. Λαμβάνω τακτικά μέτρα για να διασφαλίσω την ασφάλεια του εαυτού μου και της οικογένειάς μου.	1	2	3	4	5
10. Αξιολογώ τακτικά την αποτελεσματικότητα των πραγμάτων που κάνω προκειμένου να παραμείνω υγιής.	1	2	3	4	5
11. Στα πλαίσια των καθημερινών μου δραστηριοτήτων, σπάνια παίρνω χρόνο για να φροντίσω τον εαυτό μου.	1	2	3	4	5
12. Είμαι ικανός/η να λάβω τις πληροφορίες που χρειάζομαι, όταν απειλείται η υγεία μου.	1	2	3	4	5
13. Αναζητώ βοήθεια όταν δεν είμαι σε θέση να φροντίσω τον εαυτό μου.	1	2	3	4	5
14. Σπάνια έχω χρόνο για τον εαυτό μου.	1	2	3	4	5
15. Δεν είμαι πάντα σε θέση να φροντίσω τον εαυτό μου με τον τρόπο που θα ήθελα.	1	2	3	4	5