Research article

Factor structure and reliability of the Greek version of Attitudes Towards Mentally Ill Offenders (ATMIO) Scale in a general population sample

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ABSTRACT

Mentally ill offenders constitute a group with a unique set of characteristics since they are doubly stigmatized by both their mental illness and the offense they have committed. The coexistence of these two circumstances significantly heightens negative public attitudes towards these people. The group of mentally ill offenders has been shown to elicit more stigmatic attitudes than offenders without a mental health condition. Nevertheless, research on stigma towards mentally ill offenders is rather limited, while the number of psychometric tools used to measure this stigma is even smaller compared to the number of relevant tools assessing mental illness stigma. The purpose of this study was to explore the attitudes towards mentally ill offenders in a Greek sample in terms of demographic characteristics, and at the same time to assess the psychometric properties of a specialized tool on stigma towards this patient group, namely the Attitudes Towards Mentally Ill Offenders (ATMIO) scale in Greek. The study included 1031 participants from the general population who completed an online questionnaire on sociodemographic data as well as the ATMIO scale. The scale's structural validity was tested based on the exploratory factor analysis after Quartimax rotation, and the internal relevance of its factors recorded a Cronbach's alpha value of more than 0.7, both for the whole scale and its factors. It was shown that more negative stereotypes towards mentally ill offenders were correlated with less compassion and less desire for their rehabilitation, with stronger belief and conviction that they represent a danger to the community, with less diminished responsibility, and a lot fewer positive attitudes in general. Women, older people, individuals with a lower education level, and participants with children were found to hold more negative attitudes. The ATMIO scale translated in Greek is the first tool to measure attitudes towards mentally ill offenders in the country and shows satisfactory internal consistency and interpretation of its four-factor structure. It is a comprehensible and easy-to-complete scale, which can become a reliable tool to record attitudes towards mentally ill offenders also in our country.

KEYWORDS: Mentally ill offenders, stigma, attitudes, attitudes toward mentally ill offenders (ATMIO) scale, reliability.

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Introduction

Mentally ill offenders (MIO) constitute a population group preoccupying the psychiatric system and criminal justice. The particularity of this co-existence of psychiatric and criminal problems in their history makes them doubly stigmatized. Offenders with mental illness have been shown to elicit more negative attitudes.[1] In general, fear of harm seems to play a primary role in shaping the public's negative attitudes towards mentally ill offenders, while a further enhancement of this feeling leads to increasingly negative behaviors and discrimination towards them.[2] In particular, in terms of attitudes towards mental illness, significant variations were observed between mental health diagnoses, with schizophrenia and personality disorders eliciting higher levels of stigmatic attitudes associated with dangerousness, violence, frustration, fear, and unpredictability.[3–5] On the other hand, in terms of the offenses committed, violent behavior was found to negatively affect public perception and serve as an important stigmatizing factor,[6] mainly associated with the development of the stereotypes of dangerousness and dishonesty.[7] The coexistence of both circumstances tends to generate more negative stereotypes towards mentally ill offenders when compared to non-mentally ill offenders,[8] while offenders with mental illness have been shown to elicit significantly more negative attitudes than control groups with neither a criminal history nor a mental illness.[9,10] Mentally ill inmates are even considered to be less predictable, rational, and understandable, but also more dangerous than other inmates without mental illness.[11,12]

The majority of studies on offender mental health stigma have used specialized tools related to mental health stigma,[2,13–16] either as such or in combination with a vignette to specify a criminal offense or a particular mental health history. These are mainly associated with a specific public (police officers, judges, mental health professionals)[13–21] and with students (social work, law, criminology, psychology, sociology),[14,22–26] and far less with the general population. In particular, as regards the attitudes of the general population, the public has been found not only to hold negative attitudes but also to have the desire to maintain distance from mentally ill offenders.[27] Men and younger persons desire greater social distance from individuals –mainly male– with schizophrenia who have a history of felony criminal conduct, than from people with a history of misdemeanor criminal conduct. In addition, research has shown that the general public tends to hold more negative attitudes toward mentally ill offenders when compared to police officers and forensic mental health

professionals.[27] Employers also hold negative attitudes towards them and are thus reluctant to hire such individuals.[17,24] Yet, it remains unclear whether stigma that arises from a mental health condition is more dominant or important than stigma related to a criminal history, and to what extent the relationship between the two sources of stigma is interactive or additive.[2] Furthermore, researchers point out that these studies focus on one, rather than both sources of stigma, while they comment on the lack of research on the stigmatization of forensic psychiatric groups.[8,28]

There are however few studies in the general population that approach exclusively the stigma on mentally ill offenders through specialized scales.[1,25,29,30] Their use substantially contributes to the differentiation of various stigma forms and allows for an understanding of how stigmatic attributes continue to affect the behavior of individuals with a mental illness and criminal history. Among these scales, the Attitudes Towards Mentally Ill Offenders (ATMIO) scale appears in a large number of attitudes studies[14,17,23,25,31,32] but not in general population studies and was therefore selected for use in this study. The ATMIO scale is a 23-item tool designed to identify both general and specific attitudes about offenders living with mental illness through acceptable psychometric properties.[25,32]

In Greece, mental health stigma has been the subject of several general population studies.[33–37] However, no studies assess the public's stigmatizing attitudes towards mentally ill offenders. The primary purpose of this study was to investigate the attitudes of the general population toward mentally ill offenders in Greece about demographic data, familiarity with mental illness, and the effect of living with a mental disorder. Secondarily, it is designed to present the psychometric properties of the ATMIO scale to depict the dynamic interaction of the dual stigma experienced by mentally ill offenders.

Material and Method

Participants and procedures

The study sample included 1031 subjects from the general population. The survey was conducted online from 1–10 July 2022 through voluntary responses using a non-probability sampling method. The conduct of the study was approved by the Ethics Committee and the Scientific Committee of Eginition Hospital. The questionnaire was anonymous and remained uploaded during the above-mentioned period, while the participants completed the questionnaire on their own time. Participants gave their consent by choosing to complete the questionnaire.

Translation and adaptation

The Attitudes Toward Mental Health Offenders (ATMIO) scale was developed by Brannen et al (2004)[32] and revised by Church et al (2009).[25] Permission was obtained from the authors before using the scale for the Greek sample.

By following the World Health Organization's (WHO)[38] guidelines on the process of translation and cross-cultural adaptation of research instruments, we used forward-translations and back-translations. The process involved three mental health professionals highly proficient in English and familiar with the terminology related to the measurement instrument. In particular, two of them translated the scale into Greek and the third one re-translated the content from the target language back to English. Any discrepancies identified were discussed and this led to the initial form of the scale in Greek. Thereafter, the conceptual value of the Greek version items was tested with the help of ten mental health professionals who completed the pilot questionnaire and provided precious feedback on their understanding of each question. Their comments were taken into account and led to the final version of the Attitudes Towards Mentally Ill Offenders (ATMIO) scale in Greek.

Measures

The first tool was a list of demographic data containing information on gender, age, profession, place of residence, marital and economic status. Participants were also allowed to state whether they had been officially diagnosed with a mental health condition and whether they had a family member, a friend, or even someone in their workplace with a mental health issue.

The second tool was the 23-item Attitudes Toward Mental Health Offenders (ATMIO) scale. Each item is rated on a 6-point Likert scale, where (0) is "Strongly disagree" and (5) is "Strongly agree". Higher scores indicate a less negative attitude, while 13 items are reverse scored. Following a trial use of the scale, we decided to combine the initial statements "Somewhat disagree" and "Somewhat agree" in one answer "No opinion", a modification already applied in previous studies.[23,32] The ATMIO scale assesses four attitudinal dimensions: Negative Stereotypes with 10 items (6, 7, 9, 12, 13, 16-18, 20, 21), Rehabilitation/Compassion with 5 items (2, 3, 8, 14, 23), Community Risk with 5 items (4, 5, 10, 11, 22), and Diminished Responsibility with 3 items (1, 15, 19). Among these items, 13 items are reverse scored: 3-7, 9, 12-13, 16-18 and 20-21. The Cronbach's alpha reliability of the scale was 0.73.[32]

Statistical analysis

Exploratory factor analysis (EFA) was carried out to evaluate construct validity, disclose underlying structures, and reduce the number of variables in the ATMIO questionnaire. Principal component analysis (PCA) was chosen as the extraction method using Quartimax 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. Confirmatory factor analysis (CFA), with a maximum likelihood estimation method, was conducted to test how well the original ATMIO 4-factor model, as well as the one that emerged from the EFA, fits the data. We used the CFI, the TLI, the RMSEA, and the SRMR as goodness-of-fit indices[39] and these parameters were considered adequate when CFI ≥.90, TLI ≥.90 RMSEA ≤.05 and SRMR<0.08.[40–43] Internal consistency reliability was determined by the calculation of Cronbach's α coefficient. Scales with reliabilities equal to or greater than 0.70 were considered acceptable. Intercorrelations among the four ATMIO factors were examined via Pearson's r. Student's t-tests and Analysis of Variance (ANOVA) were used to evaluate ATMIO's discriminant construct validity and associate its subscales with participants' characteristics. Bonferroni correction was used in the case of multiple testing to control for type I errors. All reported p values are two-tailed. Statistical significance was set at p<0.05 and analyses were conducted using SPSS statistical software (version 26.0).

Results

Sample characteristics

The sample consisted of 1031 participants (52.8% males) with a mean age of 42.9 years (SD=14.2 years). Participants' characteristics are presented in table 1. Most participants were living in urban areas, had a high educational level, were married, had children, had a 1000€ average income, and were not working in the public sector. 10% of the participants suffered from a mental illness and 72.8% knew at least one mental health patient, mainly from their circle of friends.

Internal structure

ATMIO-23 items are described analytically in table 2. Higher percentages of the agreement were found in items "You should be constantly on guard with mentally ill offenders", "Mentally ill offenders deserve a second chance" and "Mentally ill offenders need affection and praise just like anybody else", while lower percentages of the agreement were found in items "Physical punishment of mentally ill offenders is occasionally necessary" and "Mentally ill offenders respect only brute force". Via

Table 1. Sample characteristics.

	N (%)
Gender	
Men	544 (52.8)
Women	487 (47.2)
Age (years), mean (SD)	42.9 (14.2)
Residence	
Urban	896 (86.9)
Rural	135 (13.1)
Education	
Primary	28 (2.7)
Middle	203 (19.9)
High	791 (77.4)
Married/Living with partner	686 (67.9)
Children	641 (63.3)
Income	
Above 1000 €/month	187 (18.9)
Average =1000 €/month	518 (52.4)
Below 1000 €/month	284 (28.7)
Employment status	
In public sector	243 (24)
Not in public sector	631 (62.2)
Unemployed	140 (13.8)
Mental illness	98 (10)
Know at least one mental patient	713 (72.8)
within family	287 (41.4)
within friends	480 (68.6)
within close environment	152 (21.7)

CFA we examined the fitting of the original 4-factor structure. Several indices assessing the degree to which the model fits the data were computed. RMSEA, CFI, TLI, and SRMR indexes were not in acceptable ranges, the need for exploratory factor analysis emerged.

The results of exploratory factor analysis, after Quartimax rotation, are presented in table 3. ATMIO items were grouped into 4 factors with eigenvalues greater than 1 as suggested by the scree plot (figure S1). KMO value was 0.89 and Bartlett's criterion was significant, $x^2(253)=5,678.3$; p<.001. All loadings were above 0.4 and the factors explained 52% of the total variance, as described in table 3. All items had loadings over 0.4, thus no item needed to be excluded by the analysis. Via CFA we examined the fitting of the 4-factor structure that emerged from EFA and the indexes were in acceptable ranges (table S1). The negative Stereotypes scale included 11 items (all 10 items of the original structure plus item 3) and explained 21% of the variance. The rehabilitation/Compassion scale included 8 items (items 2,8,10,11,14,19,22 & 23), in contrast to the original structure by which this scale had 5 items (items 2,3,8, 14 & 23), and explained 17.5% of the variance. Community risk scale included 2 items (4 & 5), while in the original structure, it included additional items 10, 11 & 22, and explained 8.2% of the variance. The diminished Responsibility scale included 2 items (1 & 15), while in the original structure, it included, in addition, item 19, and explained 5.3% of the variance.

Item-total correlations and Cronbach's alphas for each subscale are presented in table S1. All Item-Total correlations were greater than 0.3 and all Cronbach's alphas were greater than 0.7, indicating acceptable reliability of the questionnaire. Moreover, no item needed to be excluded by any of the factors since no item removal increased the alpha coefficient within each subscale. The mean Negative Stereotypes score was 2.79 (SD=0.62) and the mean Rehabilitation/Compassion was 3.39 (SD=0.59). The mean Community risk was 3.74 (SD=0.78) and the mean Diminished Responsibility was 3.24 (SD=0.77). The mean total ATMIO-23 score was 3.18 (SD=0.46).

Intercorrelations among ATMIO subscales are presented in table S2. More negative stereotypes were significantly correlated with less compassion, greater community risk, less diminished responsibility, and less positive attitudes in general towards mentally ill offenders. Also, lower compassion was significantly correlated with greater community risk, less diminished responsibility, and less positive attitudes in general towards mentally ill offenders. Moreover, lower community risk and more diminished responsibility were significantly correlated with more positive attitudes in general towards mentally ill offenders.

Association of ATMIO subscales with participants' demographics

ATMIO-23 scores associated with participants having a mental illness and knowing at least one mental patient are presented in table 4. Patients with mental illness had significantly more negative stereotypes towards mentally ill offenders, but at the same time, they had significantly greater compassion towards them. Knowing at least one mental patient was associated with significantly fewer negative stereotypes, significantly more compassion, and significantly more positive attitudes in general towards mentally ill offenders.

ATMIO subscales' association with participants' characteristics is presented in table 5. Women had significantly lower rehabilitation/compassion, diminished responsibility scores as well as total scores, compared to men, while the Community risk score was signifi-

Table 2. Description of ATMIO-23 items.

Item		Strongly disagree	Disagreee	No opinion	Agree	Strongly agree
		N (%)	N (%)	N (%)	N (%)	N (%)
1	Mentally ill offenders don't fully understand their crimes	32 (3.3)	117 (12)	384 (39.5)	349 (35.9)	91 (9.4)
2	Mentally ill offenders need affection and praise just like anybody else	12 (1.2)	67 (6.8)	265 (26.8)	486 (49.2)	158 (16)
3	Trying to rehabilitate mentally ill offenders is a waste of time and money	152 (15.3)	417 (42)	265 (26.7)	118 (11.9)	41 (4.1)
4	I should be informed if a mentally ill offender is living in my community	16 (1.6)	90 (9)	303 (30.3)	401 (40.1)	191 (19.1)
5	You should be constantly on guard with mentally ill offenders	9 (0.9)	61 (6.1)	236 (23.5)	495 (49.4)	202 (20.1)
6	Mentally ill offenders are always trying to get something out of somebody	42 (4.4)	226 (23.9)	415 (43.9)	199 (21)	64 (6.8)
7	My taxes should not be used to support mentally ill offenders.	139 (14)	382 (38.5)	304 (30.6)	122 (12.3)	45 (4.5)
8	Most mentally ill offenders can be rehabilitated	23 (2.4)	155 (16.5)	387 (41.1)	313 (33.3)	63 (6.7)
9	Mentally ill offenders respect only brute force	115 (12.7)	334 (36.9)	347 (38.3)	83 (9.2)	26 (2.9)
10	If a mentally ill offender does well in prison, he or she should be let out on parole	62 (6.4)	265 (27.5)	390 (40.5)	209 (21.7)	37 (3.8)
11	Only a few of the mentally ill offenders are dangerous	69 (7.3)	264 (28.1)	354 (37.7)	207 (22)	46 (4.9)
12	It doesn't pay to give privileges to mentally ill offenders because they only take advantage of them	58 (6)	270 (27.8)	404 (41.6)	188 (19.4)	51 (5.3)
13	If you give a mentally ill offender an inch, he or she will want to take a mile	31 (3.2)	222 (23.2)	393 (41.1)	250 (26.1)	61 (6.4)
14	Mentally ill offenders deserve a second chance	9 (0.9)	50 (5.1)	281 (28.5)	519 (52.7)	126 (12.8)
15	Mentally ill offenders are not completely responsible for their crimes	52 (5.3)	172 (17.5)	399 (40.7)	308 (31.4)	50 (5.1)
16	For mentally ill offenders, preventing escape is more important than the treatment for their mental illness	71 (7.4)	298 (30.9)	330 (34.2)	191 (19.8)	74 (7.7)
17	If mentally ill offenders had simply used willpower, they wouldn't be in trouble in the first place	55 (5.8)	213 (22.3)	356 (37.2)	272 (28.5)	60 (6.3)
18	Physical punishment of mentally ill offenders is occasionally necessary	235 (24.1)	392 (40.1)	240 (24.6)	87 (8.9)	23 (2.4)
19	Despite their crimes, mentally ill offenders deserve sympathy	29 (3)	127 (13)	397 (40.5)	372 (38)	55 (5.6)
20	Given a chance, most mentally ill offenders would try to escape from prison or a hospital	26 (2.8)	133 (14.3)	359 (38.6)	324 (34.9)	87 (9.4)
21	Most mentally ill offenders should be in prison rather than a hospital	83 (8.7)	335 (35)	372 (38.9)	139 (14.5)	28 (2.9)
22	Mentally ill offenders should have the same rights as any other mentally ill person	23 (2.3)	142 (14.5)	286 (29.2)	429 (43.8)	99 (10.1)
23	Mentally ill offenders deserve to be helped	8 (0.8)	25 (2.5)	172 (17.2)	619 (62)	175 (17.5)

cantly greater in women. Greater age was significantly associated with higher Community risk score (r=0.06; p=0.006) and lower Diminished Responsibility score (r=-0.06; p=0.040). Negative Stereotypes and Total ATMIO-23 scores differed significantly by participants'

educational levels. After Bonferroni correction, it was found that primary school graduates had significantly greater Negative Stereotypes scores and significantly greater Total ATMIO-23 scores compared to middle school graduates (p<0.001 and p=0.005 respectively)

Table 3. Exploratory factor analysis results with Quartimax rotation

Item		Negative Stereotypes	Rehabilitation/ Compassion	Community risk	Diminished Responsibility
1	Mentally ill offenders don't fully understand their crimes				0.74
2	Mentally ill offenders need affection and praise just like anybody else		0.54		
3*	Trying to rehabilitate mentally ill offenders is a waste of time and money	0.58			
4*	I should be informed if a mentally ill offender is living in my community			0.71	
5*	You should be constantly on guard with mentally ill offenders			0.71	
6*	Mentally ill offenders are always trying to get something out of somebody	0.66			
7*	My taxes should not be used to support mentally ill offenders.	0.66			
8	Most mentally ill offenders can be rehabilitated		0.69		
9*	Mentally ill offenders respect only brute force	0.71			
10	If a mentally ill offender does well in prison, he or she should be let out on parole		0.65		
11	Only a few of the mentally ill offenders are dangerous		0.54		
12*	It doesn't pay to give privileges to mentally ill offenders because they only take advantage of them	0.68			
13*	If you give a mentally ill offender an inch, he or she will want to take a mile	0.66			
14	Mentally ill offenders deserve a second chance		0.71		
15	Mentally ill offenders are not completely responsible for their crimes				0.42
16*	For mentally ill offenders, preventing escape is more important than the treatment for their mental illness	0.56			
17*	If mentally ill offenders had simply used willpower, they wouldn't be in trouble in the first place	0.49			
18*	Physical punishment of mentally ill offenders is occasionally necessary	0.73			
19	Despite their crimes, mentally ill offenders deserve sympathy		0.68		
20*	Given a chance, most mentally ill offenders would try to escape from prison or a hospital	0.57			
21*	Most mentally ill offenders should be in prison rather than a hospital	0.65			
22	Mentally ill offenders should have the same rights as any other mentally ill person		0.65		
23	Mentally ill offenders deserve to be helped		0.65		
Eigenvalue		5.9	3.3	1.7	1.0
% Variance explained		21.0	17.5	8.2	5.3

*Reverse coded for total score

Table 4. ATMIO–23 scores associated with participants' having a mental illness and knowing at least one mental patient.

	Mental illness				Know at least one mental patient			
	No	Yes			No	Yes		
	Mean (SD)	Mean (SD)	t (df)	P[+]	Mean (SD)	Mean (SD)	t (df)	P[+]
Negative Stereotypes	2,76 (0,59)	3,02 (0,8)	-3.96 (978)	<0,001	2,84 (0,56)	2,76 (0,65)	2.03 (972)	0,043
Rehabilitation/ Compassion	3,37 (0,57)	3,6 (0,64)	-3.58 (977)	<0,001	3,3 (0,56)	3,44 (0,59)	-3.22 (971)	0,001
Community risk	3,75 (0,77)	3,7 (0,78)	0.55 (969)	0,584	3,75 (0,71)	3,74 (0,8)	0.23 (965)	0,818
Diminished Responsibility	3,22 (0,76)	3,34 (0,88)	−1.39 (963)	0,165	3,19 (0,76)	3,27 (0,77)	−1.29 (959)	0,199
Total ATMIO–23 score	3,19 (0,46)	3,16 (0,47)	0.56 (980)	0,576	3,12 (0,42)	3,22 (0,48)	-2.90 (974)	0,004

[+]Student's t–test

and high school graduates (p<0.001 for both scores). Moreover, participants who had children had significantly greater Community risk scores and significantly lower Diminished Responsibility scores. Regarding participants' income, it was found, after Bonferroni correction, that participants with income above average had significantly greater Rehabilitation/Compassion scores compared to participants with income below average (p=0.001). Also, participants with income above average had significantly greater Diminished Responsibility scores compared to those with average income (p=0.013) and those with below-average income (p=0.001). Participants with income below average had significantly lower Total ATMIO-23 scores compared to those with average (p=0.005) or above average (p=0.004) income.

Discussion

This study examined the attitudes of a Greek population sample towards mentally ill offenders and highlighted the psychometric properties of the Greek version of Attitudes Toward Mentally Ill Offenders (ATMIO) scale.

In terms of attitudes, it became clear that participants who reported suffering from a mental illness expressed more negative stereotypes towards mentally ill offenders, however endorsed more compassionate attitudes. A similar contradiction is detected in other studies which have indicated a reverse correlation between attitudes and behaviors.[44] This finding could also be interpreted through the personal stigma of the mentally ill. The social belief linking mental illness with the risk of committing a criminal act seems to be widespread in the views of the mentally ill (perceived stigma). At the same time, the emotional experience of discrimination suffered by those with a mental illness (experienced stigma) could explain the compassion expressed by them. Furthermore, participants who mentioned having a friend, family member, or someone in the workplace with a mental health issue endorsed more positive attitudes, less negative stereotypes, and a more compassionate attitude. This finding confirms similar observations from other studies about positive attitude change resulting from personal contact with a mentally ill person, as well as participant's familiarity in general with mental illness.[45–48]

In terms of demographic characteristics, results suggest that older participants having children and a basic education level were associated with more negative attitudes, and perceived mentally ill offenders as a greater risk to the community without, however, diminished responsibility. Our findings about education level and

Table 5. ATMIO subscales' association with participants' characteristics.

	Negative Stereotypes			Rehabilitation/Compassion			Community risk			Diminished Responsibility			Total ATMIO-23 score		
	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P
Gender															
Men	2.81 (0.62)	0.98 (1017)	0.327[+]	3.48 (0.56)	4.97 (1016)	<0.001[+]	3.69 (0.78)	−2.10 (1007)	0.036[+]	3.29 (0.74)	2.47 (1002)	0.014[+]	3.22 (0.44)	2.54 (1020)	0.011[+]
Women	2.77 (0.62)			3.3 (0.6)			3.79 (0.77)			3.17 (0.8)			3.15 (0.48)		
Residence															
Urban	2.78 (0.62)	−1.43 (1017)	0.154[+]	3.38 (0.59)	−1.42 (1016)	0.157[+]	3.74 (0.78)	0.45 (1007)	0.650[+]	3.24 (0.77)	0.01 (1002)	0.988[+]	3.19 (0.46)	0.53 (1020)	0.599[+]
Rural	2.86 (0.65)			3.46 (0.58)			3.71 (0.74)			3.24 (0.79)			3.17 (0.45)		
Education															
Primary	3.46 (0.65)	19.6 (2,1008)	<0.001[++]	3.4 (0.65)	1.02 (2,1007)	0.362[++]	4 (0.73)	2.12 (2,999)	0.121[++]	3.16 (0.91)	0.22 (2,993)	0.800[++]	2.85 (0.33)	9.98 (2,1011)	<0.001[++]
Middle	2.86 (0.61)			3.34 (0.63)			3.78 (0.78)			3.26 (0.81)			3.14 (0.49)		
High	2.75 (0.61)			3.41 (0.57)			3.72 (0.78)			3.23 (0.75)			3.21 (0.45)		
Married/ Living with partner															
No	2.83 (0.68)	−1.57 (998)	0.116[+]	3.39 (0.6)	0.04 (997)	0.969[+]	3.7 (0.82)	1.07 (989)	0.287[+]	3.3 (0.77)	−1.71 (983)	0.087[+]	3.17 (0.46)	0.67 (1001)	0.504[+]
Yes	2.77 (0.6)			3.39 (0.58)			3.75 (0.76)			3.21 (0.76)			3.19 (0.46)		
Children															
No	2.8 (0.68)	−0.30 (1001)	0.766[+]	3.43 (0.58)	−1.34 (1000)	0.182[+]	3.66 (0.8)	2.42 (992)	0.016[+]	3.31 (0.74)	−2.20 (988)	0.028[+]	3.21 (0.45)	−1.12 (1004)	0.262[+]
Yes	2.78 (0.58)			3.37 (0.59)			3.78 (0.76)			3.2 (0.78)			3.18 (0.47)		
Income															
Above average	2.76 (0.72)	2.77 (2,979)	0.063[++]	3.51 (0.64)	6.54 (2,978)	0.002[++]	3.77 (0.76)	1.20 (2,970)	0.301[++]	3.42 (0.81)	7.25 (2,966)	0.001[++]	3.25 (0.5)	6.68 (2,982)	0.001[++]

Continues

Table 5. Continued.

	Negative Stereotypes			Rehabilitation/Compassion			Community risk			Diminished Responsibility			Total ATMIO–23 score		
	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P	Mean (SD)	Test statistic‡ (d.f.)	P
Average	2.75 (0.55)			3.41 (0.52)			3.7 (0.77)			3.23 (0.74)			3.22 (0.41)		
Below average	2.86 (0.65)			3.31 (0.65)			3.78 (0.8)			3.15 (0.8)			3.11 (0.5)		
Employement status															
In public sector	2.8 (0.63)	1.21 (2,1001)	0.298[++]	3.41 (0.59)	0.30 (2,1000)	0.741[++]	3.72 (0.8)	0.69 (2,992)	0.500[++]	3.26 (0.8)	0.25 (2,986)	0.781[++]	3.19 (0.49)	0.27 (2,1004)	0.766[++]
Not in public sector	2.8 (0.62)			3.39 (0.59)			3.76 (0.77)			3.24 (0.77)			3.18 (0.46)		
Unemployed	2.71 (0.61)			3.36 (0.58)			3.69 (0.79)			3.2 (0.75)			3.21 (0.45)		

[+]Student's t–test; [++]ANOVA; ‡t–value (d.f.) when Student's t–test was conducted and F–value (df1, df2) when ANOVA was conducted.

desired social distance towards mentally ill people are consistent with prior similar research.[27,49]

An interesting finding in our study is related to gender, as women were associated with more negative attitudes than men in terms of Rehabilitation/Compassion towards mentally ill offenders, as well as in terms of Diminished Responsibility and Community risk. Studies focusing exclusively on mental illness show that women hold more positive attitudes towards mental illness than men.[50–53] It is therefore highly probable that this finding illustrates a sense of fear and danger experienced by women towards individuals with both a mental illness and criminal history, which may be influenced by the high number of femicides recorded in our country in the last years.

As regards the scale's psychometric properties, the Greek version employs a differentiated structure. The four structural factors remain in their original form, while the differences recorded were only related to the different placement of the items within the existing factors. In particular, while moving (adding or removing) the items within the four factors, it became obvious that many of the items already present in the initial factor structure were maintained, while a significant differentiation was observed mainly for Community Risk and Rehabilitation/Compassion factors. In this respect, it should be noted that the three items removed from the Community Risk factor, and the one item removed from the Diminished Responsibility factor, were added to the Rehabilitation/Compassion factor. This may reflect more positive attitudes held by the Greek population sample about dangerousness, rights, compassion, and potential rehabilitation of mentally ill offenders. As the existing studies using ATMIO have not modified the initial form of the original scale, this finding cannot undergo such a comparison.

The Greek version of the ATMIO scale exhibited satisfactory reliability with Cronbach's alpha score being 0.85 both for the whole scale and its factors. These values are consistent with other studies' findings.[14,23,25,31]

This study is the first attempt in our country to record the stigma attached to mentally ill offenders among the general population and one of the few studies conducted at an international level. However, this effort is subject to a series of constraints. In the first place, the Greek version of the ATMIO scale is the first translated version of the original one, which means that it is impossible to make a comparison with any other similar effort to translate and adapt the scale to the data of another population with different linguistic features and particularities. Another weak point is related to the possible limited number of participants who do not use

the Internet in their daily lives. Furthermore, the online completion of similar tools excludes the interpersonal contact between interviewer and interviewee which provides the opportunity to share explanations and address any questions that may arise during completion.

In conclusion, the Greek version of the ATMIO scale is a comprehensible and easy-to-complete scale with satisfactory psychometric properties, a consistent four-factor structure, and good internal reliability.

Acknowledgments

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi: 10.22365/jpsych.2023.025

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Ερευνητική εργασία

Παραγοντική δομή και αξιοπιστία της ελληνικής έκδοσης της Κλίμακας Στάσεων Έναντι Ψυχικά Ασθενών Παραβατών (ΑΤΜΙΟ) σε δείγμα γενικού πληθυσμού

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ΠΕΡΙΛΗΨΗ

Οι ψυχικά ασθενείς παραβάτες συνιστούν μια ομάδα με ιδιαίτερα χαρακτηριστικά, διπλά στιγματισμένη εξαιτίας της ψυχικής νόσου αλλά και του ποινικού αδικήματος που έχουν διαπράξει. Η συνύπαρξη αυτών των δύο συνθηκών αυξάνει σημαντικά τις αρνητικές στάσεις του κοινού απέναντί τους. Η ομάδα αυτή έχει διαπιστωθεί πως αντιμετωπίζει περισσότερες στιγματι- στικές στάσεις από τους παραβάτες που δεν παρουσιάζουν ψυχική διαταραχή. Ωστόσο, η έρευνα για το στίγμα προς τους ψυχικά ασθενείς παραβάτες είναι περιορισμένη και πολύ μικρότερος εμφανίζεται ο αριθμός των ψυχομετρικών εργαλείων που χρησιμοποιούνται για την αποτύπωσή του σε σχέση με τον αριθμό των αντίστοιχων εργαλείων που αφορούν στο στίγμα της ψυχικής νόσου. Σκοπός της παρούσας μελέτης ήταν η διερεύνηση των στάσεων σε δείγμα ελληνικού πληθυσμού προς τους ψυχικά ασθενείς παραβάτες σε σχέση με δημογραφικά χαρακτηριστικά και συγχρόνως η αξιολόγηση των ψυχομετρικών ιδιοτήτων ενός εξειδικευμένου εργαλείου για το στίγμα προς αυτήν την ομάδα ασθενών, της Κλίμακας Στάσεων Έναντι Ψυχικά Ασθενών Παραβατών (Attitudes Toward Mentally Ill Offenders, ΑΤΜΙΟ) στην ελληνική γλώσσα. Στη μελέτη συμμετείχαν 1031 άτομα από τον γενικό πληθυσμό που συμπλήρωσαν ηλεκτρονικά ένα ερωτηματολόγιο κοινωνικοδημογραφικών στοιχείων και την κλίμακα ΑΤΜΙΟ. Η δομική εγκυρότητα της κλίμακας εξετάστηκε με τη διερευνητική παραγοντική ανάλυση μετά από περιστροφή Quartimax και η εσωτερική συνάφεια των παραγόντων της κατέγραψε Cronbach's alpha μεγαλύτερο από 0,7, τό- σο για το σύνολο όσο και για τους επιμέρους παράγοντές της. Διαφάνηκε πως τα πιο αρνητικά στερεότυπα προς τους ψυχικά ασθενείς παραβάτες συσχετίστηκαν με λιγότερη συμπόνια και επιθυμία για αποκατάστασή τους, πιο υψηλή πεποίθηση και εκτίμηση ότι αποτελούν κοινοτικό κίνδυνο, χαμηλότερη απόδοση σε αυτούς του ελαφρυντικού της μειωμένης υπευθυνότη- τας και γενικότερα πολύ λιγότερες θετικές στάσεις. Πιο αρνητικά διακείμενοι βρέθηκαν οι γυναίκες, τα μεγαλύτερα σε ηλικία άτομα, όσοι είχαν χαμηλό μορφωτικό επίπεδο και οι συμμετέχοντες με παιδιά. Η μεταφρασμένη στα Ελληνικά κλίμακα ΑΤΜΙΟ αποτελεί την πρώτη εφαρμογή ενός εργαλείου μέτρησης των στάσεων προς τους ψυχικά ασθενείς παραβάτες στη χώρα, με ικανοποιητική εσωτερική συνέπεια και ερμηνεία της δομής των τεσσάρων παραγόντων της. Πρόκειται για μια κατανοητή και εύκολα συμπληρούμενη κλίμακα που μπορεί να αποτελέσει ένα αξιόπιστο εργαλείο για χρήση στην αποτύπωση των στάσεων προς τους ψυχικά ασθενείς παραβάτες και στη χώρα μας.

ΛΕΞΕΙΣ ΕΥΡΕΤΗΡΙΟΥ: Ψυχικά ασθενείς παραβάτες, στίγμα, στάσεις, κλίμακα Attitudes Toward Mentally Ill Offenders (ΑΤΜΙΟ), αξιοπιστία.

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