

## Brief communication

# Tobacco and Alcohol and Cannabis Experience Questionnaires. Greek translation and test-retest reliability

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### ABSTRACT

The Tobacco and Alcohol Questionnaire (TAQ) and the Cannabis Experience Questionnaire (CEQ) are two instruments employed in the evaluation of substance use. The First Episode Psychosis (FEP) study in Athens employed two versions of those questionnaires, as part of a battery of psychometric tools, detecting environmental and genetic factors associated with FEP and addressed specifically the distinctive characteristics of patients with FEP. The goal of the present study is to present those two versions, regarding their content, their use in international research, their translation in Greek, and their test-retest reliability. The two questionnaires were translated by two independent translators and administered to 32 subjects with FEP twice, in order to be tested for test-retest reliability. Cohen's kappa was used to measure agreement between qualitative variables and ICC between quantitative variables. Significant agreement was found between the two measurements in all items of the TAQ version and almost all items of the CEQ version. Our study is an indication that both translations are reliable, although a more thorough test of their psychometric properties is needed. Both might be used in the Greek research field as part of a broad package of psychometric tools, specifically addressed to patients with FEP.

**KEYWORDS:** Psychosis, tobacco, alcohol, cannabis, translation, reliability.

### Introduction

First-episode psychosis (FEP) emergence and its clinical outcome might be attributed to various parameters and gene-environment interaction plays a pivotal role in it. The necessity of a battery of psychometric tools, to detect environmental and genetic factors associated with FEP and addressed specifically the distinctive characteristics of patients with FEP, is of importance to the relevant research field. The Athens FEP Study, a longitudinal prospective research project, has organized such an assessment schedule, oriented to FEP patients, which relies in a considerable amount on the working pack-

age of the EUGEL-versions of psychometric tools. EUGEL, (European Network of National Schizophrenia Networks Studying Gene-Environment interactions), is an international multi-center study aiming to explore gene-environment interaction in relation to the emergence and clinical course of schizophrenia.

Among the most important environmental risk factors for FEP is high potency cannabis (Adj OR from 4.5 to 8),<sup>1</sup> while other recreational substances, such as stimulants, tobacco, and alcohol, may have a role in the incidence variation of psychotic disorders.<sup>2</sup> Thus, two instruments employed in the evaluation of substance

use, the EUGEI versions of the Tobacco and Alcohol Questionnaire (TAQ) and the Cannabis Experience Questionnaire (CEQ), are included in the “Athens FEP Study” research battery.<sup>3,4</sup>

The TAQ<sub>EUGEI</sub> has been used in already published Multicenter EUGEI case-control studies, to address the potential confounding role of tobacco and alcohol, based on their possible association with cannabis use and variation in the incidence of psychotic disorders, as well as cannabis use and FEP symptom dimensions.<sup>5–7</sup>

The CEQ<sub>EUGEI</sub><sup>5</sup> is the second modified version of the original instrument.<sup>8,9</sup>

The information from the CEQ<sub>EUGEI</sub> was analyzed to investigate issues, such as differences in the patterns of cannabis use across Europe, the main effect of different cannabis exposure on the risk of psychosis, and the proportion of new cases of psychosis attributable to cannabis use across the different study sites.<sup>1</sup>

The CEQ<sub>EUGEI</sub> has been employed in several case-control studies across sites of the Multicenter EUGEI research project. Among the findings of those studies are the following:

1. Participants who used high-potency cannabis daily had nearly five times increased odds of psychosis, compared to never users, and the incidence of psychosis variation was associated with differences in frequency of cannabis daily use and in high-potency cannabis use.<sup>5</sup>
2. Regular cannabis use was among the environmental exposures that contributed, along with childhood trauma, to the positive additive interaction with genetic liability for schizophrenia spectrum disorders.<sup>10</sup>
3. FEP patients and controls who had ever used cannabis, exhibited a higher IQ by three points compared to never users. Furthermore, FEP patients who used cannabis occasionally or daily had better social premorbid adjustment than never-users. However, both patients and control daily-users had lower premorbid academic adjustment compared to occasional and never users.<sup>11</sup>
4. FEP patients with lifetime daily use of high-potency cannabis exhibited more positive and fewer negative symptoms compared to non-users or low-potency users. Schizophrenia-polygenic-score and cannabis use, independently from each other, are related to more severe positive symptomatology.<sup>2,6,12</sup>

The goal of the current study, which is part of the Athens-FEP Study, is to present the Greek translation of TAQ<sub>EUGEI</sub> and CEQ<sub>EUGEI</sub> and to examine the test-retest

reliability of the Greek translations of the two questionnaires.

## Material and Method

Both the English version of TAQ<sub>EUGEI</sub> as well as CEQ<sub>EUGEI</sub> were provided to the primary investigator of the Athens-FEP project and through him to our team by the EUGEI and its official web-based training area. The researchers were considered qualified in the administration of the English versions of the questionnaires after being trained with a word package and after assessing acceptable scores for the Inter-Rater reliability measurement videos, both provided by that web-training area.

Both questionnaires were translated into Greek by two independent qualified translators, who reached an agreement, after their initial translations, in repeated meetings. The principal investigator checked the final version of the questionnaires. Subsequently, the FEP-project researchers administered the translated questionnaires to three patients, in group sessions and then checked if there was agreement in their answers and if the translated tools were comprehensible and handy.

The reliability of the Greek version of the two psychometric tools was tested by the test-retest method.

The two translated questionnaires were administered to 32 patients by three qualified researchers twice, with an intermediate period of three weeks between the first and second administration. All were diagnosed with FEP. Their sociodemographic characteristics and final diagnoses, after one year of follow-up, are presented in table 1. The patients were recruited from the Early Psychosis Intervention Outpatient Service<sup>13</sup> of Eginition University Hospital and from the Psychiatric Clinic of Sismanoglion General Hospital. Twenty-four of our recruited subjects were followed up in Eginition and eight of them in Sismanoglion and all of them participated in the Athens-FEP research project. Informed consent was obtained from all patients, following a detailed description of the research objectives. The ethics committee and the Institutional Review Board at Eginition University Hospital approved the study protocol.

TAQ<sub>EUGEI</sub> was used as follows:

Lifetime tobacco use was divided into 3 categories: (a) smoked <10 cigarettes per day, (b) smoked ≥10 cigarettes or more per day, (c) never used. Alcohol consumption was measured through the mean number of alcoholic drinks consumed daily on an average week.<sup>5</sup>

Current use of tobacco cigarettes: smoking 10 cigarettes or more per day =1

**Table 1.** Participants' sociodemographic characteristics, diagnoses.

	N=32 (%)
Gender	
Males:	19 (59.4)
Females:	13 (40.6)
Age (years), mean (SD)	26.2 (7.7)
Age of Onset	23.7 (7.7)
Years of education, mean (SD)	13.6 (2.4)
Ever Employed	
Yes	22 (68.7)
No	10 (31.3)
Migration	
Yes	3 (9.4)
No	29 (90.6)
Final ICD-10 diagnoses	
Schizophrenia (F20)	16 (50%)
Acute and transient psychotic disorders (F23)	4 (12.5%)
Delusional Disorders (F22)	1 (3.1%)
Schizoaffective Disorder (F25)	1 (3.1%)
Other non-organic psychotic disorders (F28)	1 (3.1%)
Unspecified non organic psychosis F29	1 (3.1%)
Severe depressive episode with psychotic symptoms (F32.3)	2 (6.3%)
Bipolar Disorder (F31)	3 (9.4%)
Mental and behavioral disorders due to use of cannabinoids (F12.5)	2 (6.3%)

Current use of alcohol: drinking 10 alcohol units or more per week=1.

Low or no use scored as 0 and use scored as 1 in categorical variables.<sup>6</sup>

Other investigators proposed a different way to evaluate tobacco use, by separating subjects into cigarette and non-cigarette users, with emphasis on the last thirty days of use.<sup>7</sup>

CEQ<sub>EUGEI</sub> consists of 17 sections and its administration provides a thorough evaluation of the use of cannabis and other recreational drugs history. It includes the following dimensions: (1) age at first use, (2) frequency of current and lifetime use, (3) assessment of the type of use, through which cannabis potency is estimated, (4) methods of consuming cannabis, (5) money spent weekly on cannabis during the period of most frequent use, (6) subjective experiences reported by individuals as immediate effects of cannabis use, which are recorded in a list of nine predetermined paranoid-dysphoric and euphoric symptoms,<sup>9</sup> and (7) history of other drugs

used as inhalants, crack, cocaine, amphetamines/stimulants, sedatives, and opioids.

The lifetime cannabis use history section aims to identify the pattern of most frequent use during three age periods: 0–11 years old, 12–16 years old, and 17 and older. It comprises questions on the type of cannabis use, the quantity, the methods, the setting (socially and/or alone), and the frequency of use for each of the above three age periods.

Frequency of use is estimated by a seven-point scale fluctuating from “every day” to “I have only used cannabis once or twice”.

The potency of cannabis is estimated through the type of cannabis use most commonly met across Europe. Two potency cannabis categories are described: The low ( $\Delta^9$ -tetrahydrocannabinol - THC<10%) and the high (THC >10%).<sup>10</sup> “Hash (cannabis resin/solid)” and “Imported Herbal cannabis” are included in the low-potency, whereas “Home-grown skunk/Sensimilla” and “Super skunk” are in the high-potency category.<sup>14</sup>

The CEQ<sub>EUGEI</sub> “lifetime cannabis use” section comprises questions investigating symptoms of cannabis dependency, both lifetime and in the last twelve months.

The final section of the instrument explores other drugs, patterns of use, and symptoms of dependency.

The statistical significance was set at 0.05 and analyses were conducted using SPSS statistical software (version 22.0). Cohen's kappa was used to measure the agreement between qualitative variables and ICC the agreement between quantitative variables.

## Results

The translations of TAO<sub>EUGEI</sub> and CEQ<sub>EUGEI</sub> in Greek are presented as supplementary material.

A significant agreement was found between the two measurements in all items of TAO<sub>EUGEI</sub> (table 2) and almost all items of CEQ<sub>EUGEI</sub>, except seven (table S1). For five of those seven items, a tendency for the significant agreement was found between the two measurements ( $P<0.1$ ). The two items that differed in the answers between the two measurements were one sub-item about the reasons that led the patient to use cannabis, described as “other”, allowing the respondent to choose among a multitude of different answers and an item regarding the current use of cannabis, which is a situation that might have changed from first to the second measurement. That is why the overall test-retest reliability of CEQ<sub>EUGEI</sub> is not affected by the lack of agreement between those items. Significant agreement coefficients

**Table 2.** Tobacco and Alcohol Questionnaire (test-retest results)

		Test		Retest		Cohen's kappa or ICC	P
		N	(%)	N	(%)		
Section Tobacco: 1.a	NO	21	65.6	22	68.8	0.93+	<0.001
	YES	11	34.4	10	31.3		
Section Tobacco: 1.b	NO	30	96.8	32	100.0	0.65+	<0.001
	YES	1	3.2	0	0.0		
Section Tobacco: 1.c	NO	30	100.0	32	100.0	1.00+	<0.001
	YES	0	0.0	0	0.0		
Section Tobacco: 1.d	NO	30	100.0	32	100.0	1.00+	<0.001
	YES	0	0.0	0	0.0		
Section Tobacco: 2.a, mean (SD) median (interquartile range -IR)		21.9 (8)	22.5 (15–30)	23 (10)	23 (15–30)	0.96++	<0.001
Section Tobacco: 2.b, mean (SD) median (IR)		0 (0)	0 (0–0)			–	–
Section Tobacco: 2.c, mean (SD) median (IR)		0 (0)	0 (0–0)			–	–
Section Tobacco: 2.d, mean (SD) median (IR)		0 (0)	0 (0–0)			–	–
Section alcohol: 1.a	NO	23	71.9	24	75	0.92+	<0.001
	YES	9	28.1	8	25		
Section alcohol: 1.b, mean (SD) median (IR)		2.5 (2.3)	1.5 (1–3)	3 (2)	2 (1–3)	1.00++	<0.001
Section alcohol: 2.a	NO	31	96.9	31	96.9	1.00+	<0.001
	YES	1	3.1	1	3.1		
Section alcohol: 2.b, mean (SD) median (IR)		2 (–)	2 (2–2)	0 (0)	0 (0–0)	–	–
Section alcohol: 2.c, mean (SD) median (IR)		10 (–)	10 (10–10)	0 (2)	0 (0–0)	–	–
Section alcohol: 3.a	NO	30	96.8	31	96.9	1.00+	<0.001
	YES	1	3.2	1	3.1		
Section alcohol: 3.b, mean (SD) median (IR)		20 (–)	20 (20–20)	20 (–)	20 (20–20)	–	–
Section alcohol: 3.c, mean (SD) median (IR)		8 (–)	8 (8–8)	8 (–)	8 (8–8)	–	–

+Cohen's kappa (for qualitative variables), ++ICC (for quantitative variables)

ranged from 0.48 to 1.00, and insignificant agreement coefficients ranged from 0.07 to 1.00.

## Discussion

The translated TAQ<sub>EUGEI</sub> in Greek presents an excellent test-retest reliability for all items and the translated CEQ<sub>EUGEI</sub> for almost all items. Both of them are important psychometric tools that might be used among psychotic patients for epidemiologic research or research in the field of drug-abuse as well. No reference was found for

TAQ<sub>EUGEI</sub> or CEQ<sub>EUGEI</sub> being employed in non-psychotic samples.

Our study is an indication that the two translations are reliable. Among its limitations, is the lack of a more thorough test of their psychometric properties and especially of their validity.

Compared to the Alcohol Use Disorders Identification Test (AUDIT), another tool translated and weighed in Greek for the assessment of alcohol intake, TAQ<sub>EUGEI</sub> does not explore the levels of risk for alcohol use disorders as

AUDIT does,<sup>15</sup> but it has been developed as an easily administered questionnaire to briefly record quantitatively both tobacco and alcohol consumption, to explore their association with the development of psychotic symptoms. CEQ<sub>EUGEI</sub> on the other hand, with its list of paranoid-dysphoric and euphoric symptoms, is more suitable than any other psychometric tool for the evaluation

of the use of a wide range of recreational substances in patients with FEP.

More importantly, both questionnaires are part of a broad, well-established research package of psychometric tools, specifically addressed to patients with FEP, which might be used in the Greek research field.

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## Σύντομο άρθρο

# Ερωτηματολόγιο Καπνού και Αλκοόλ και Ερωτηματολόγιο για Εμπειρία από χρήση Κάνναβης. Ελληνική μετάφραση και αξιοπιστία ελέγχου-επανελέγχου

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### ΠΕΡΙΛΗΨΗ

Το Ερωτηματολόγιο Καπνού και Αλκοόλ και το Ερωτηματολόγιο Εμπειρίας Χρήσης Κάνναβης είναι δύο ψυχομετρικά εργαλεία που χρησιμοποιούνται στην εκτίμηση της χρήσης ουσιών. Η μελέτη FEP της Αθήνας χρησιμοποίησε δύο εκδοχές των δύο ερωτηματολογίων, ως μέρος ενός πακέτου ψυχομετρικών εργαλείων, που διερευνούν την αλληλεπίδραση γονιδιακών και περιβαλλοντικών παραγόντων στην εκδήλωση FEP, ειδικά σχεδιασμένων για ασθενείς με τα ειδικά χαρακτηριστικά των ατόμων με FEP. Στόχος της παρούσας εργασίας είναι η παρουσίαση των δύο εκδοχών αναφορικά με το περιεχόμενό τους, τη χρήση τους στη διεθνή έρευνα, την ελληνική τους μετάφραση και την test-retest αξιοπιστία τους. Τα δύο ερωτηματολόγια μεταφράστηκαν από δύο ανεξάρτητους μεταφραστές και χορηγήθηκαν σε 32 άτομα με FEP δύο φορές. Για τη στατιστική ανάλυση χρησιμοποιήθηκε το στατιστικό πακέτο SPSS (version 22). Οι συντελεστές Cohen's kappa χρησιμοποιήθηκαν για τον έλεγχο συμφωνίας μεταξύ ποιοτικών μεταβλητών και τα ICC μεταξύ ποσοτικών μεταβλητών. Στατιστικά σημαντική συμφωνία διαπιστώθηκε σε όλα τα λήμματα της εκδοχής του TAQ ερωτηματολογίου και σχεδόν σε όλα της αντίστοιχης του CEQ. Η μελέτη μας αποτελεί μια ένδειξη ότι οι δύο μεταφράσεις είναι αξιόπιστες, παρότι ένας πιο ολοκληρωμένος έλεγχος των ψυχομετρικών ιδιοτήτων τους είναι απαραίτητος. Επιπλέον, θα μπορούσαν να χρησιμοποιηθούν στην Ελλάδα, ως μέρος ενός εκτεταμένου πακέτου ψυχομετρικών εργαλείων για άτομα με FEP.

**ΛΕΞΕΙΣ ΕΥΡΕΤΗΡΙΟΥ:** Ψύχωση, καπνός, αλκοόλ, κάνναβη, μετάφραση, αξιοπιστία.