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Psychotic Experiences Questionnaire. Part 1

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ABSTRACT

BACKGROUND: The rationale for the concept of psychotic and psychotic-like experiences, delusions and auditory hallucinations, on the basis of which the Psychotic Experiences Questionnaire was developed.

AIM: The purpose of this study is to present the results of testing and validating of a questionnaire that assesses the severity of psychotic experiences. The study aims to determine the content of the experience at different phases of manifestation, including the phase of psychotic-like experiences, as well as metacognitive appraisals of the experience and its relationship to social anxiety.

MATERIAL AND METHODS: The sample of 122 respondents includes non-clinical and two clinical groups — with symptoms of the affective spectrum and with symptoms of the psychotic spectrum. To assess the convergent validity of the Questionnaire, the Russian-language Symptom Check List-90-Revised was used. Metacognitive appraisals of psychotic experience and the overall severity of social anxiety (“Social Anxiety and Social Anxiety Disorder Questionnaire”) were measured.

RESULTS: The structure of the Questionnaire obtained by cluster analysis was verified by confirmatory factor analysis, and optimal agreement between theoretical and empirical models was demonstrated (CFI=0.998; TLI=0.998; SRMR=0.102; RMSEA=0.02; RMSEA *p*-value=0.986). Three scales and corresponding subscales (six categories) defining the phases of unfolding of psychotic experience were identified. The high reliability and item consistency of the Questionnaire was determined using Cronbach's alpha coefficient. Convergent validity was assessed using Pearson correlation analysis of the questionnaire scales with the SCL scales — psychoticism, paranoid ideation and obsessive-compulsive symptoms; reliable and adequate statistical relationships were obtained. The role of social anxiety and metacognitive appraisals of psychotic experiences in their actualisation and maintenance is shown. The conceptualisation of thought the emergence of intrusions, “voices” as a dialogical embodiment of the internalised experience of social defeat in re-expanded inner speech is presented.

CONCLUSION: The results of approbation and validation of the questionnaire are presented, and the relationships of the psychotic experiences component with its metacognitive appraisals and social anxiety are described. The concept of psychotic experiences is considered a continuum in which disruptions in the usual controllability of mental processes vary range from mild (objectification of thinking) — to moderate (disturbance of self-perception, intrusive phenomena, including “voices”) — to severe (disturbance of the sense of agency, including command “voices”).

Keywords: Psychotic Experiences Questionnaire; psychotic and psychotic-like experiences; auditory hallucinations; “voices”; social anxiety; inner speech; impaired mental agency; impaired self-perception; intrusive phenomena; metacognitive appraisals.

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Опросник психотических переживаний. Часть 1

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АННОТАЦИЯ

Обоснование. Представлено обоснование концепции психотических и сходных с психотическими переживаний, бреда и слуховых галлюцинаций, на основе чего разработан опросник психотических переживаний.

Цель. Представить результаты апробации и валидизации опросника, направленного на оценку выраженности психотических переживаний, определить содержательные особенности опыта на разных фазах проявления, включая этап переживаний, схожих с психотическими, а также метакогнитивные оценки данного опыта и связь с социальной тревогой.

Материал и методы. Выборка — 122 респондента, включает неклиническую и две клинические группы — с симптомами аффективного спектра и с симптомами психотического спектра. Для оценки конвергентной валидности опросника применяли русскоязычный «Опросник выраженности психопатологической симптоматики». Определены метакогнитивные оценки психотического опыта, общая выраженность социальной тревоги («Опросник социальной тревоги и социального тревожного расстройства»).

Результаты. Полученная с помощью кластерного анализа структура опросника верифицирована с помощью факторного анализа, продемонстрирована оптимальная согласованность теоретической и эмпирической моделей (CFI=0,998; TLI=0,998; SRMR=0,102; RMSEA=0,02; RMSEA p -value=0,986). Выявлены три шкалы и соответствующие субшкалы (шесть категорий), определяющие фазы разворачивания психотических переживаний. Определены высокая надёжность и согласованность пунктов опросника с помощью коэффициента альфа Кронбаха. Конвергентная валидность оценена с помощью корреляционного анализа Пирсона шкал опросника со шкалами SCL — психотизм, симптомы паранойи и обсессивно-компульсивные симптомы, получены достоверные и адекватные проверке валидности статистические связи. Показана роль социальной тревоги и метакогнитивных оценок психотических переживаний в их актуализации и поддержании. Представлены осмысление объективации мышления, возникновение интрузий, «голосов» как диалогического воплощения интернализованного опыта социального поражения в повторно развёрнутой внутренней речи.

Вывод. Представлены результаты апробации и валидизации опросника, описаны связи компонент психотических переживаний с его метакогнитивными оценками и социальной тревогой. Конструкт психотических переживаний рассматривается в виде континуума, в котором нарушения привычной управляемости психических процессов располагаются от лёгкой (объективация мышления) к умеренной (нарушение самовосприятия, интрузивные феномены, включая «голоса») и до выраженной (нарушение чувства агентности, включая командные «голоса») степени.

Ключевые слова: опросник психотических переживаний; психотические переживания и переживания, схожие с психотическими; слуховые галлюцинации; «голоса»; социальная тревога; внутренняя речь; нарушение агентности психики; нарушение самовосприятия; интрузивные явления; метакогнитивные оценки.

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Психотик кичерешлэр сораулыгы. 1 нче өлеш

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Аннотация

Нигезләмә. Психотик һәм психотик кичерешләргә охшаш кичерешләр, акылдан шашу һәм ишетү галлюцинацияләре концепциясенә нигезләмәсә тәкъдим ителә, шуның нигезендә психотик кичерешләр сораулыгы төзелә.

Максат. Психотик кичереш билгеләренә чагылышын бәяләүгә юнәлдерелгән сораулыкны апробацияләү һәм раслау нәтижеләрен тәкъдим итү, тәҗрибәнең төрле фазаларының эчтәлек ягыннан үзгәрешләрен билгеләү, шул исәптән психотик кичерешләргә охшаш кичерешләр этабын, шулай ук әлеге тәҗрибәгә метакогнитив бәя биреп, аның социаль шомлану белән бәйләнешенә билгеләмә бирү.

Материал һәм ысуллар. Клиник булмаган – бер, аффектив спектр симптомнары һәм психотик спектр симптомнары күзәтелгән ике клиник төркемгә кертелгән 122 респондент сайлап алынган. Сораулыкның конвергент валидлыгына бәя бирү өчен русча төзелгән «Психопатологик симптомнар чагылышы сораулыгы» кулланыла. Психотик тәҗрибәгә метакогнитив бәяләмә бирелә, социаль шомлануның гомуми чагылышы («Социаль шомлану һәм социаль шомлану тайпылышы сораулыгы») билгеләнә.

Нәтиҗә. Кластер анализы ярдәмендә төзелгән сораулык структурасы конфирматор фактор анализы ярдәмендә верификацияләнгән, теоретик һәм эмпирик модельләренң оптималь ярашуы күрсәтелә ($CFI=0,998$; $TLI=0,998$; $SRMR=0,102$; $RMSEA=0,02$; $RMSEA\ p\text{-value}=0,986$). Психотик кичерешләрнең үсеш фазаларын билгеләүче өч шкала һәм субшкалалар (алты категория) ачыклана. Альфа кронбах коэффициентлары ярдәмендә сораулык пунктларының югары ышанычлылыгы һәм үзара ярашуы билгеләнә. Конвергент валидлык scl — психотизм шкалалары белән сораулык шкалаларының Пирсон корреляцион анализы ярдәмендә бәяләнә, паранойя симптомнары һәм обсессив-компульсив симптомнар, валидлыкны тикшерүгә адекват статистик бәйләнешләр ачыклана. Психотик кичерешләрне актуальләштерүдә һәм саклауда социаль борчу һәм метакогнитив бәяләмәләрнең роле күрсәтелә. Представлено осмысление объективации мышления, возникновение интрузий, «голосов» как диалогического воплощения интернализованного опыта социального поражения в повторно развёрнутой внутренней речи. Фикерләүне объективлаштыруның, кабат жәелдерелгән эчке сөйләмдәге социаль зарарлану тәҗрибәсенә диалогик гәүдәләнеш буларак, интрузияләр, «тавышлар» барлыкка килүнең мәгънәсен аңлату тәкъдим ителә.

Нәтиҗә. Сораулыкны апробацияләү һәм раслау нәтижеләре тәкъдим ителә, психотик кичерешләр компонентларының метакогнитив бәяләмәләр һәм социаль шомлану белән бәйләнешә тасвирлана. Психотик кичерешләр конструкциясе континуум рәвешендә карала, анда психик процессларның гадәти идарә ителешенә бозылулары жинелчә дәрәжәдән (фикерләүне объективлаштыру) уртача дәрәжәгә (үз-үзенә кабул итүнең бозылуы, интрузив феноменнар, шул исәптән «тавышлар») һәм аеруча ачык чагылган (агентлык хисенә бозылуы, шул исәптән команда «тавышлары») дәрәжәгә таба урнаша.

Төп сүзләр: психотик кичерешләр сораулыгы, психотик кичерешләр һәм психотик кичерешләргә охшаш кичерешләр, ишетү галлюцинацияләре, «тавышлар», социаль шомлану, эчке сөйләм, психика агентлыгындагы тайпылышлар, үз-үзенә кабул итүнең бозылуы, интрузив күренешләр, метакогнитив бәяләмәләр.

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BACKGROUND

In traditional psychiatry, hallucinations and delusions were once regarded as primary symptoms, indicating schizophrenia. However, modern scientific understanding suggests that these experiences are not exclusive to psychotic spectrum disorders [1] but also manifest in affective disorders, Alzheimer's disease, and borderline personality disorder [2]. The lifetime incidence of auditory hallucinations (AH) is 9.6%, with "voices" (verbal AH) occurring in 7.3% of cases [3]. Among adults, the prevalence rates for visual hallucinations are 7.3%, whereas tactile and olfactory hallucinations are reported at 2.6% and 1.5%, respectively [4].

Experiences similar to delusions and hallucinations are prevalent in the general population, with a prevalence of 7.2% and a range of 1.2%–25.5%, among individuals who do not meet the criteria for a mental disorder [5]. Delusion-like experiences have an incidence ranging from 3% to 91% in the global population [6].

In a dimensional framework of psychopathology, as opposed to a categorical one, the Research Domain Criteria (RDoC) research methodology has verified a model where hallucinations and delusions represent a continuum of severity and stability, escalating from health to psychotic disorders [5]. Consequently, the conventional view in pathophysiology regarding the unity of mental activity mechanism in normal pathological conditions [7] finds affirmation in current scientific models of mental disorders, providing a reasonable guide based on general psychological patterns for understanding these disorders.

Efforts have been made to consistently operationalize the definition of experiences similar to delusions and/or hallucinations observed in the population. However, proposed terms often have a clinical focus, such as "abnormal", "prepsychotic", "subclinical", "prodromal" experiences [8]. The concept of "Psychotic-Like Experiences (PLEs)" is gradually being established in the scientific thesaurus, contributing to the depathologization of these experiences [9].

PLEs have been documented in children and adolescents, where non-malignant PLEs are typical at this age but can indicate the risk of future Psychotic Experiences (PEs) and comorbid disorders [10, 11]. Distress and dysfunction associated with PLE are key indicators of the need for medical attention [12]. Factors that may distinguish more significant PLEs include the simultaneous presence of internalizing manifestations (such as anxiety disorders and obsessive thoughts) and/or externalizing manifestations (like impulsive behavior and addictions) of disorders. PLEs can also be associated with somatic diseases [13], socio-demographic factors [14], and may be triggered by conditions like sleep deprivation, sensory, and social factors [15].

Current models examining PLE, delirium, and AH discuss the influence of psychological factors on symptom development and maintenance. The evolution of psychological concepts surrounding "voices" is evident in the progression

from transforming dysfunctional thoughts about these experiences and their associated maladaptive behavioral responses to analyzing hallucinations as a perceptual-cognitive activity, characterized by a distorted perception of inner speech as a result of a disruption in the sense of agency [16]. This path further leads to viewing hallucinations as a psychosocial phenomenon that embodies the internalized dialogical experience in a system of relationships [17], often associated with negative social emotions [18, 19].

The concept of violation of the sense of agency, which is integral to the RDoC methodology, represents the highest form of self-perception distortion, (perception of oneself as a subject), indicating a loss of authorship over one's mental processes. This violation manifests as derealization, depersonalization, and uncontrollable intrusions when self-perception disruption does not reach its maximum extent of psychic alienation [20].

A similar concept is present in the works of A.A. Mehrabyan, who emphasizes that both the syndrome of mental automatism and the phenomenon of depersonalization result from a violation of specialized systemic "gnostic feelings", whose disintegration is evident in cases of psychopathology [21]. In psychological explorations of delusions, significant emphasis is placed on metacognitive factors (such as hasty conclusions, and a predisposition to discount contradicting evidence), the proximity of formation mechanisms, increased Social Anxiety (SA) and paranoia, impaired mental control, and interpersonal events [22].

When studying PLE and PE, it is crucial to consider the degree of alienation of these experiences from habitual experience as a stationary mode of mental activity. Experiments conducted by T.A. Klimusheva under the guidance of B.V. Zeigarnik revealed that error awareness and the complexity of tasks requiring mental exertion create conditions conducive to the manifestation of symptoms of mental automatism (wherein erroneous decision is attributed to "interference" from external sources) [23]. For a psychological understanding of PLE, it is essential to analyze circumstances that intensify alienation and make symptoms of impaired mental agency more conspicuous, often occurring in social interaction situations [24].

The concept has been advanced that PEs are triggered and perpetuated cyclically by traumatic experiences [17], which may include instances of social defeat. It has been proposed to view verbal AHs as *dissociative rather than solely as a psychotic one* [25]. Delusions, hallucinations, and dissociation appear to exist along a common continuum with normal functioning, constituting transdiagnostic phenomena [26].

In psychology, there is a shortage of modern research, diagnostic tools, and experimental psychological studies of PE and PLE. In broader scientific discourse, a contradiction is observed between the significant interest in understanding PLE, delirium, and AH and the lack of a methodological model for these experiences and their components. Consequently, international researchers are actively developing and

implementing methodologies to assess both the quantitative and qualitative attributes of PE and PLE, exemplified by tools such as “Voice and You” [27], the “Questionnaire of Beliefs about Voices” [28], and the “Questionnaire of Tendency to Delusions and Persecutory Ideas” [29], etc. However, existing diagnostic tools mainly focus on recording these phenomena without considering the psychological mechanisms underlying phase transitions characterized by increasing alienation. Addressing the patterns of PE development will expand our understanding of the dynamics of psychotic conditions.

This article outlines the results derived from testing and validating the PE questionnaire, which was designated to assess the intensity of these experiences and determine their substantive characteristics across various phases of manifestation, including the stage of PLE or initial and moderately severe PE. Additionally, the questionnaire assesses the metacognitive aspects associated with these experiences. The objectives of this study include assessing the psychometric properties of this diagnostic tool, statistically verifying the identified structural model of the questionnaire, and interpreting the relationships between the components of PE and SA.

MATERIALS AND METHODS

The development process of the Psychotic Experiences Questionnaire (PEQ) comprised several stages:

1. During Stage 1, an exhaustive literature review of PLE and PE was conducted. Drawing from key theoretical models, the core manifestations of these experiences, as self-reported by patients with various disorders and conditions, were generated. Expert input from clinical psychologists and psychiatrists specializing in PLE and PE refined the descriptions, yielding 23 questionnaire items. The questionnaire's instructions were developed with an emphasis on the normativity aspect of PLE under certain conditions (Table 1).

Final adjustments were made following tests for question clarity and respondent understanding, ensuring alignment with intended experiences. Discussions with patients undergoing treatment in a psychiatric clinic in a hospital environment, particularly those in partial remission, informed these refinements.

Additionally, PE severity was assessed through *metacognitive assessments, covering experiences such as shame, guilt, anxiety, difficulty controlling experiences, and attempts to conceal them*. These were rated on a Likert scale from 0 to 3 (No, Rather no, Yes, Rather yes), assessing the role of metacognitive processing in maintaining PE.

To characterize the sample, analyze the role of additional variables, and exclude deviating values, a questionnaire of information regarding the respondent was used. Gender, age, education, and experience of seeking psychological and medical help for PE and PLE were recorded.

2. Stage 2 comprises studying the cluster structure of the questionnaire and its verification using confirmatory factor analysis, and determining the reliability and internal consistency of the questionnaire items.

3. In Stage 3, a study of the convergent validity of PEQ was conducted. Thus, we used the “Questionnaire for the Severity of Psychopathological Symptoms” [30], which is an adaptation of the Symptom Check List-90-Revised methodology for a Russian-speaking sample (authored by L.R. Derogatis et al., adapted from N.V. Tarabrin). We focused on the scales of “psychoticism” (10 items), “symptoms of paranoia” (6 items), and “obsessive-compulsive symptoms” (10 items). The severity of symptoms was rated on a Likert scale ranging from 0 (Not at all) to 4 (Very much).

4. In Stage 4, to determine the role of psychological components in the structure of PE, we not only analyzed metacognitive assessments but also explored the connections of PEQ, its scales, and subscales with SA. Thus, we used the author's “Questionnaire for SA and SA Disorder” [24], which comprises 29 questions. The questionnaire assesses anxiety levels in various social situations, considering their severity, tendency toward avoidance, and post-event rumination. Responses were rated on a Likert scale ranging from 0 (No) to 3 (Yes).

The study involved 122 respondents aged between 18 and 50 years (Me=26.1 years, SD=8.6 years), comprising 26.2% men and 73.8% women. Participants were categorized based on mental health characteristics into three groups: (1) non-clinical and two clinical groups based on the International Classification of Diseases, 10th revision criteria: (2) those with symptoms of the affective spectrum (57.1% with F41.2 mixed anxiety and depressive disorder; 42.9% with F32.0 depressive episode), and (3) those with psychotic spectrum symptoms (57.1% with F20.0 paranoid schizophrenia; 23.8% with F25.0 schizoaffective disorder; 19.0% with F21.0 schizotypal disorder).

The general criteria for inclusion in the study were age between 18 and 60 years and a minimum of secondary general education. In particular, for inclusion in clinical samples, participants have to be in remission or a state of partial remission where the severity of PLE and/or PE decreases but remains relevant. The non-clinical group consisted of participants without a psychiatric diagnosis.

The exclusion criteria included cognitive-mnemonic decline, emotional-volitional defect, and severe mental illness leading to frequent re-hospitalizations. Table 2 presents the characteristics of the groups.

The study was conducted at Yu.K. Erdman Altai Regional Clinical Psychiatric Hospital, and part of the data (from the non-clinical group) was collected through a random online survey. Participants completed the methods using the PsyToolkit web service [31]. The study was conducted voluntarily and anonymously, and the obtained results were analyzed collectively.

For mathematical and statistical data processing, we used software packages including IBM SPSS 26, JASP 0.16.4, and

Table 1. Psychotic Experiences Questionnaire
Таблица 1. Опросник психотических переживаний

<i>Below is a list of sensations or experiences that individuals sometimes experience. These experiences can occur from time to time and are common during certain states such as insomnia, extreme fatigue, after illness, or during times of stress. Rate the extent to which this statement applies to you.</i>				
Points	False	Probably false	Probably true	True
1. People around me can know what I am thinking				
2. Others can read my mind				
3. My thoughts are spoken by others				
4. The results of my activities are perceived as if they were “replaced” (not mine)				
5. My thoughts seem to be voiced inside my head				
6. The taste of familiar food is changed				
7. Unusual images or scenes appear inside my head, as if imposed from outside				
8. At times, thoughts seem to stop in my head				
9. I find it difficult to control the way I think				
10. A voice is sometimes heard inside or near the head				
11. At times there are so many thoughts in my head that it is difficult to concentrate				
12. At times, the surroundings are perceived as not quite real, as if I were watching a film				
13. Someone is controlling my thoughts				
14. I look at myself as if from the outside or perspective				
15. I perceive my surroundings as if through a barrier — water or glass				
16. My movements can be controlled				
17. My sensations in the body are caused from the outside (they are “made” by someone)				
18. Voices can make me do things I do not want to do				
19. What I do ends up being different from what I did				
20. I am being tested for technologies that influence the psyche				
21. I can transmit messages to others at a distance with the power of my thoughts				
22. At times, it is as if certain sounds or scenes are “turning on” in my head				
23. My emotions and feelings seem not to be mine as if they are changed or imposed by some force from the outside				

Processing the results involves assessing answers on a 4-point scale: 0 points — false; 1 point — probably false; 2 points — probably true; and 3 points — true.
Scores on scales and subscales are calculated as the sum of scores on items that make up their content.
For Scale 1 “Objectification of thinking and control deficit”, consider items 5, 8, 9, and 11.
For Scale 2 “Impaired self-perception and intrusive phenomena”, calculate the sum of scores of its constituent subscales:
(1) “Derealization, depersonalization” — items 12, 14, and 15.
(2) “Alienation of habitual experience” — items 4, 6, and 19.
(3) “Intrusive experiences inside the head (voices, sounds, scenes)” — items 7, 10, and 22.
For Scale 3 “Violation of psychic agency”, sum the points of the subscales that form it:
(1) “Openness of thoughts” — items 1, 2, 3, and 21.
(2) “Experience of controllability from the outside” — items 13, 16, 17, 18, 20, and 23.
The overall severity of PE is calculated as the sum of points on three scales.

Table 2. Group characteristics
Таблица 2. Характеристики групп

Characteristics		Non-clinical group (n=73)	Clinical groups	
			Group with affective symptoms (n=28)	Group with psychotic symptoms (n=21)
Gender. %	Women	82.2	75.0	42.9
	Men	17.8	25.0	57.1
	Range	18–55	18–38	18–49
Age. years	Me	25.9	24.5	30.0
	SD	8.5	5.6	11.1
	Higher	34.2	27.6	23.8
	Incomplete higher	31.5	23.3	19.7
Education. %	Secondary vocational	9.6	16.4	20.8
	General secondary	17.8	32.7	35.6
	Not reported	6.8	—	—

Jamovi 2.2.3.0. The methods of mathematical and statistical data analysis comprised cluster analysis (using Ward's method and squared Euclidean distance), confirmatory factor analysis, Cronbach's alpha coefficient calculation, correlation analysis (Pearson, Spearman, Kendall), one-way analysis of variance, and post hoc test (specifically Fisher's least significant difference test).

RESULTS AND DISCUSSION

The PEQ scales were analyzed alongside correlations of PE with Symptom Check List (SCL) scales¹. By using clustering on the matrix of responses to PEQ items from non-clinical and clinical samples (using Ward's method and squared Euclidean distance), three scales and corresponding subscales for PLE and PE (totaling six categories) were formed. The approach allowed for the differentiation of items across scales, illustrating the logical grouping of symptoms from mild to moderate (Scales 1 and 2) and severe manifestations of mental alienation (Scale 3).

The assessment of PE yielded six categories: Scale 1: "Objectification of Thinking and Control Deficit" (including "objectification of the thinking process"). Scale 2: "Impaired Self-Perception and Intrusive Phenomena" (comprising subscales such as "derealization and depersonalization", "alienation of habitual experience", and "intrusive experiences inside the head" like voices, sounds, scenes)]. Scale 3: "Violation of Mental Agency" (including subscales like "openness of thoughts" and "experience of controllability from the outside").

The six categories that form three scales represent the desired empirical structure of the experience of PLE and PE. Confirmatory factor analysis was used to verify

the resulting structure of the PEQ, demonstrating optimal consistency between the theoretical and empirical models (CFI=0.998; TLI=0.998; SRMR=0.102; RMSEA=0.02; RMSEA *p*-value=0.986) (Table 3).

The high reliability and consistency of the PEQ scale items were established through Cronbach's alpha coefficient analysis (Table 4). This internal consistency enables the calculation of scores on scales and facilitates the determination of an integrative indicator of PE severity.

The convergent validity of PEQ was assessed using Pearson's correlation analysis (*r*) of its scales with the SCL scales such as "psychoticism", "paranoia symptoms", and "obsessive-compulsive symptoms".

Significant direct relationships were observed between the severity of response on the SCL "psychoticism" scales and all PEQ scales, subscales, and the total PEQ indicator (correlation coefficient *r*=0.355–0.669; *p* <0.0001). Specifically, the subscale "experience of controllability from the outside" was associated with "psychoticism" (*r*=0.379; *p* <0.0001) and "symptoms of paranoia" (*r*=0.279; *p* <0.01), whereas the association with "obsessive-compulsive symptoms" did not reach statistical significance (*r*=0.168; *p*=0.065). Notably, the only association that did not reach statistical significance was between obsessive-compulsive symptoms and a violation of mental agency at the height of alienation ("the experience of controllability from the outside"), although the trend toward a direct connection remained evident.

The observed decrease in the clarification of correlation with symptoms indicative of anxiety [18, 19], as alienation intensifies, suggests not the absence of associations but rather the challenge of capturing them through linear psychometric methods (which rely on subjective self-reflection).

¹ SCL — Symptom Check List.

Table 3. Results of confirmatory factor analysis
Таблица 3. Результаты конфирматорного факторного анализа

Factors	Factor loadings
<i>I. Objectification of thinking and control deficit</i>	
<i>Factor 1. Objectification of the thinking process</i>	
5. My thoughts seem to be voiced inside my head	0.478
8. At times, thoughts seem to stop in my head	0.723
9. I find it difficult to control the way I think	0.898
11. At times there are so many thoughts in my head that it is difficult to concentrate	0.762
<i>II. Impaired self-perception and intrusive phenomena</i>	
<i>Factor 2. Derealization, depersonalization</i>	
12. At times, the surroundings are perceived as not quite real, as if I were watching a film	0.820
14. I look at myself as if from the outside or perspective	0.856
15. I perceive my surroundings as if through a barrier — water or glass	0.914
<i>Factor 3. Alienation of habitual experience</i>	
4. The results of my activities are perceived as if they were “replaced” (not mine)	0.815
6. The taste of familiar food is changed	0.674
19. What I do ends up being different from what I did	0.681
<i>Factor 4. Intrusive experiences “inside the head” (voices, sounds, scenes)</i>	
7. Unusual images or scenes appear inside my head, as if imposed from outside	0.801
10. A voice is sometimes heard inside or near the head	0.802
22. At times, it is as if certain sounds or scenes are “turning on” in my head	0.724
<i>III. Violation of mental agency</i>	
<i>Factor 5. Openness of thoughts</i>	
1. People around me can know what I am thinking	0.815
2. Others can read my mind	0.846
3. My thoughts are spoken by others	0.634
21. I can transmit messages to others at a distance with the power of my thoughts	0.721
<i>Factor 6. Experience of controllability from the outside</i>	
13. Someone is controlling my thoughts	0.829
16. My movements can be controlled	0.955
17. My sensations in the body are caused from the outside (they are “made” by someone)	0.758
18. Voices can make me do things I do not want to do	0.793
20. I am being tested for technologies that influence the psyche	0.638
23. My emotions and feelings seem not to be mine as if they are changed or imposed by some force from the outside	0.747

Note. All factor loadings in the model are presented in Table 2, at $p < 0.001$.
Примечание. Все факторные нагрузки в модели, представленной в табл. 2, при $p < 0,001$.

The “openness of thoughts” subscale had significant correlations with the SCL scales (“obsessive-compulsive symptoms” with $r=0.372$, $p < 0.0001$; “symptoms of paranoia” with $r=0.380$, $p < 0.0001$; “psychoticism” with $r=0.355$, $p < 0.0001$). The strongest correlations of the SCL scales were observed with subscales of scale 2 (“derealization, depersonalization”; “alienation of habitual experience, intrusive experiences”),

Scale 1 (“objectification of thinking”) of the PEQ ($r=0.411–0.584$; $p < 0.0001$), and its total indicator ($r=0.539–0.669$; $p < 0.0001$). Both the PEQ and SCL items assess the experience of “voices”. In the PEQ, the two items specifically measure the experience of AH. The item “Voices can make me do things I do not want to do” is part of the Scale 3 “violation of mental agency”, in the

subscale “experience of controllability from the outside”. This item captures the experience of commanding “voices” that exert “control over a person”, leading to the implementation of unwanted actions, often resulting in confrontation and attempts to suppress such AHs.

This scale represents a pattern of pronounced experience regarding the unfamiliarity of mental phenomena and external influences. It signifies a phase marked by intensified alienation, during which individuals struggle to perceive themselves as agents of their psyche, and the execution of actions loses its inherent volitional nature. This paragraph contains the contrasting concept of “I/mine versus not me/ not mine/voice”, attributing this attribution to one’s own experience becomes progressively challenging as alienation increases.

This particular item within the PEQ significantly correlates with a statement from the SCL “psychoticism” scale, specifically “You hear voices that others do not hear” [Spearman’s rho (ρ)=0.382; p <0.0001]. However, despite its high reliability, it demonstrates a lower correlation coefficient than the question about “voices inside the head”.

The item “A voice is sometimes heard inside or near the head” encodes AH with a moderate level of psyche alienation. In this phase, characterized by impaired self-perception, there exists a distorted subject position concerning one’s experiences, indicative of weakened mental control possibilities. This item is part of the “impaired self-perception and intrusive phenomena” scale in the subscale “intrusive experiences inside the head” (voices, sounds, scenes). These intrusions include experiences of mental phenomena that manifest against one’s will, vividly and realistically.

The item under discussion has a significant correlation with the SCL question “You hear voices that others do not hear” (ρ =0.663; p <0.0001), confirming its diagnostic relevance. Unlike SCL, the PEQ lacks the information component “others do not hear”, which requires not only identifying experiences but also comparing them to others’ perceptions. This complicates the item discussed in PEQ, as it is not merely about the dyad “I hear and others do not hear”, which is challenging to differentiate when self-perception is impaired. Instead, it involves contemplating the proximity of the “voice” source localization. The item’s ambiguity regarding localization and periodicity over time provides the necessary spread of data for assessing agreement or disagreement with the item.

The emergence of intrusive, partially alienated mental phenomena “inside the head” (such as “Unusual images or scenes appear inside my head, as if imposed from outside” and “At times, it is as if certain sounds or scenes are ‘turning on’ in my head”) within the subscale significantly correlates with the item about AH in the SCL (ρ =0.367; p <0.0001 and ρ =0.359; p <0.0001, respectively).

The experiences of “voices” were compared between the clinical and non-clinical groups. A one-way analysis of variance revealed a statistically significant difference in the severity of “voices” experience recorded by PEQ items

Table 4. Cronbach’s alpha coefficient of the scales and the total summary score of the Psychotic Experiences Questionnaire
Таблица 4. Коэффициент альфа Кронбаха шкал и общего суммарного показателя опросника психотических переживаний

Coefficient	Scale 1	Scale 2	Scale 3	Total PE indicator
Cronbach’s Alpha	0.724	0.842	0.744	0.890

among the non-clinical and two clinical groups. Fisher’s test yielded a value of $F(2, 119)=13.10$; p <0.0001, for the item regarding the presence of “voice inside or near the head”, and $F(2, 119)=3.21$; p <0.05 for the item concerning the presence of commanding “voices”.

Post hoc testing using Fisher’s least significant difference test for pairwise mean differences demonstrated that the non-clinical and clinical groups with affective symptoms were statistically indistinguishable, whereas both differed significantly from the clinical group with psychotic symptoms (Group 2) for both points (p <0.01).

The emergence of “voices” may precede extensive psychotic experience, but it is rarely recorded before this stage due to varying perceptions of PLEs, their non-representation in clinical terms, and societal stigma leading to concealment. While the item concerning the presence of “voices inside the head” may be observed in both clinical and non-clinical groups, the item concerning “voices” is predominantly characteristic of the clinical group, indicating its severity as a measure of condition severity. Command AHs reflect negative content (“... can force me to do something I do not want”) and highlight a non-assertive relationship with the “voice”.

Understanding the alienation of thinking involves viewing “voices” as a dialogical manifestation of negative relationships and adverse social experiences in “extended” inner speech. PE, AH, and metacognitive assessments of experiences, including SA, are interconnected in this framework. Before individuals can identify episodes of mental distortions, anomalies in the structure of PE and PLE emerge, altering the perception of thinking, oneself, and the environment. These experiences become increasingly alienated and reattributed beyond the boundaries of the subject. The progression of PLE is directed toward increasing alienation, necessitating the study of phase transition mechanisms as a priority.

In the author’s model, the continuum of “voices” development signifies the reverse extension of internalized, automated mental activity. This progression ranges from the objectification of the thinking process and a lack of cognitive control to dissociative processes and a violation of self-perception, culminating in a violation of psyche agency.

Table 5. Scales of the Psychotic Experiences Questionnaire and metacognitive assessments of experience. social anxiety: Pearson correlation analysis

Таблица 5. Шкалы опросника психотических переживаний и метакогнитивные оценки опыта, социальной тревоги: корреляционный анализ Пирсона

Scales	Occur frequently	Accompanied by shame	Accompanied by guilt	Accompanied by anxiety	Difficult to control	Attempt to conceal	SA
1 Objectification of the thinking process	0.506***	0.347***	0.428***	0.562***	0.554***	0.433***	0.46***
Derealization. depersonalization	0.381***	0.397***	0.324***	0.363***	0.415***	0.420***	0.45***
2 Alienation of familiar experience	0.470***	0.425***	0.427***	0.479***	0.529***	0.459***	0.39***
Intrusive experiences "inside the head"	0.379***	0.422***	0.320***	0.487***	0.480***	0.423***	0.260*
Open-mindedness	0.175	0.187*	0.138	0.242**	0.274**	0.224*	0.318**
3 Experience of controllability from the outside	0.250**	0.392***	0.200*	0.197*	0.340***	0.324***	0.039

*** $p < 0.0001$; ** $p < 0.001$; * $p < 0.01-0.05$.

C. Fernyhough [16] elaborated on an explanatory model of AH, focusing on dialogical thinking. Drawing from L.S. Vygotsky's concept of inner speech as a product of ontogenetic development, which retains dialogical qualities from socially mediated interactions, Fernyhough delineates expanded and compressed forms of inner speech with varying syntactic and semantic configurations.

The four-phase model of speech internalization (including external speech, private speech, extended internal speech, and compressed internal speech) provides insights into the formation of AH:

1) The "violation of the internalization model" posits AH as a developmental deficit during the transition from expanded internal private speech to compressed internal speech.

2) The "re-extended model" suggests that compressed inner speech can re-extended during stressful situations, particularly those associated with social stress related to defeat. This model elucidates the negative content of "voices" and their corresponding communication manifestations.

When exploring the psychological characteristics of PLE and PE, significant direct correlations were found between the integrative indicator of PEQ and the frequency of PE experiences, along with metacognitive assessments of PE ($r=0.432-0.602$; $p < 0.0001$) (Table 5).

Individual PEQ scales also have significant direct connections with metacognitive assessments, including emotional support for PE. Negative social emotions like shame and guilt, anxiety, difficulties in control, and attempts to conceal experiences, are associated with all parameters of the experience. However, only with the "openness of thoughts" scale, the correlation coefficients with the frequency of experience and the actualization of guilt do not reach the level of significance ($p > 0.05$), although a direct relationship tendency existed.

The Pearson correlation analysis of SA and PEQ (Table 4) showed a significant influence of adverse social experiences and distress measures in assessment situations on the development of PE and PLE. Direct associations of SA were observed with all categories of PE, including "openness of thoughts", except for the maximum level of alienation ("experience of controllability from the outside"). The absence of SA registration in cases of total violation of psyche agency through linear correlation analysis might stem from the challenge of correlating questionnaire statements with experiences as "own". However, mediator models could demonstrate the presence of an association. In the early stages of PE, the role of the social-anxious component is evident in destabilizing the constrained nature of the psyche, thereby increasing the violation of self-perception, as indicated in self-reports. Over time, this connection may become more indirect [18, 19].

The use of Kendall's correlation analysis to examine the relationship between SA and individual items of the PEQ concerning "voices" and the objectification of thinking showed statistically significant direct correlations with the following statements: "At times, thoughts seem to stop in my head" ($\tau=0.315$; $p < 0.0001$), "I find it difficult to control the way I think" ($\tau=0.315$; $p < 0.0001$), and "At times there are so many thoughts in my head that it is difficult to concentrate" ($\tau=0.277$; $p < 0.0001$). Furthermore, statements about intrusive phenomena were significantly correlated with SA: "A voice is sometimes heard inside or near the head" ($\tau=0.193$; $p < 0.01$) and "Unusual images or scenes appear inside my head, as if imposed from outside" ($\tau=0.159$; $p < 0.05$).

Social experience acts as both the psychological content and mechanism for the condensing and reverse extending of internal speech, leading to the transformation of internal dialogue into an external extended process.

An important finding when analyzing AH in this context was the frequent negative content of AH or negative properties associated with the “voice” itself, which were linked to SA and sensitivity to interpersonal assessments. The connections observed between PE and SA provide evidence supporting the significance of social motives in an individual’s experiences.

CONCLUSION

This article highlights the modern theoretical concepts surrounding PE and PLE, including delirium and AH. Based on these concepts, the PEQ was developed, tested on both clinical and non-clinical samples, and subsequently validated. The theoretical configuration of the PE components underwent statistical verification. The structure of the questionnaire, identified through cluster analysis, was further validated through confirmatory factor analysis, demonstrating optimal consistency between the theoretical and empirical models.

The PEQ comprises three scales, conceptualized as stages of PE development or phase states, with transitions determined by systemic restructuring leading to escalating violations of self-perception and agency influenced by psychological patterns. These scales include subscales (six categories) that characterize the internal structure of each phase of PLE and PE:

Scale 1: “Objectification of thinking and control deficit” (with one subscale, “objectification of the thinking process”).

Scale 2: “Impaired self-perception and intrusive phenomena” (comprising three subscales: “derealization and depersonalization”, “alienation of habitual experience”, “intrusive experiences “inside the head” including voices, sounds, and scenes”).

Scale 3: “Violation of mental agency” (including two subscales: “openness of thoughts”, “experience of controllability from the outside”).

Cronbach’s alpha coefficient confirmed the high reliability and consistency of the questionnaire items. Convergent validity was established through Pearson correlation analysis, linking the PEQ scales with the SCL scales of “psychoticism”, “symptoms of paranoia”, and “obsessive-compulsive symptoms”, revealing significant statistical relationships.

Correlations of questionnaire items assessing the experience of “voices” validated the developed diagnostic tool’s adequacy in assessing the presence of AH. This assessment was observed at two stages: intrusions indicating a violation of self-perception (voices inside the head or nearby”) and a complete loss of agency (command voices).

The study also highlighted the enhancing role of shame, anxiety, SA, and guilt as metacognitive assessments in perpetuating PE. Shame, specifically retained a highly significant direct relationship with PE, even during the stage of maximum alienation. It acted as a negative social emotion, indicative of social defeat and self-stigmatization.

Understanding shame’s reinforcing role in PE during phase transitions toward increased alienation was discussed in scientific contexts. SA was interconnected with all aspects of psychotic experience, influencing the objectification of thinking, actualization of voices, and complete inversion of agency. These relationships were statistically explained through the reinforcing influence of metacognitive strategies [18].

The subjective experience of uncontrollable obsessive intrusions into consciousness, vivid in their sensory-perceptual intensity, leads to a strong desire to regain control and stop the flow of unpleasant elements that interfere with the usual adaptation of thought content and mental imagery. Dissociative processes are intensified by SA and metacognitive assessments of experience, acting as mediators in the association between the objectification of thinking (the recurrent unfolding of inner speech under stress), which includes dialogical imagery and social situations, and the tendency to experience AH and PE.

PEQ serves as a valuable tool for screening studies on PLE and PE. It helps assess the severity of their overall presentation in a clinical context and individual scales that reflect the phases of extending PEs. Furthermore, it aids in determining the metacognitive assessment of these experiences, providing valuable information for constructing psychological intervention strategies that target the psychological variables supporting PE. *This aspect will be discussed in more detail in the second part of this article.*

RESTRICTIONS

The diagnosability of AH, despite the study’s anonymity, remains challenging. This challenge does not necessarily imply a low prevalence of such experiences. Instead, it reflects the resistance to acknowledging AH or the tendency to stigmatize/self-stigmatize PE, thereby reducing the probability of agreeing with questionnaire statements.

A part of the sample experiencing PE may interpret it differently (e.g., without labeling extended dialogues, voiced thoughts, or phrases from past conversations as “voices” or “hallucinations”). Some individuals may not currently experience PE or may not verbalize or share their experiences. Additionally, the scientific community lacks a consistent theory or model of PE that can integrate descriptive and experimental findings, explaining the systemic dynamic restructuring with increasing psychological alienation.

In clinical practice, maintaining confidentiality and ensuring optimal compliance are crucial when using the questionnaire. Negative attitudes toward the examination may distort the data due to symptom denial. In some cases, a response like “probably false” might indicate the presence of PE, but the impact of stigmatization/self-stigmatization may hinder agreeing with the experience.

ADDITIONAL INFORMATION

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Authors' contribution. O.A. Sagalakova — basic idea, project management, formulation of basic points, research concept and design, collection and processing of materials, analysis and describing obtained data, literature review, text writing; D.V. Truevtsev — formulation of basic points, concept and design of the study, collection and processing of materials, analysis of obtained data, literature review, text writing; O.V. Zhirnova — concept and design of the study, literature review, collection and analysis of materials, text writing.

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Конфликт интересов. Авторы заявляют об отсутствии конфликта интересов.

Вклад авторов. Сагалакова О.А. — основная идея, руководство проектом, формулировка базовых положений, концепция и дизайн исследования, сбор и обработка материалов, анализ и описание полученных данных, обзор литературы, написание текста; Труевцев Д.В. — формулировка базовых положений, концепция и дизайн исследования, сбор и обработка материалов, анализ полученных данных, обзор литературы, написание текста; Жирнова О.В. — концепция и дизайн исследования, обзор литературы, сбор и анализ материалов, написание текста.

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