Psychotic-like experiences in the adolescent general population

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Objective. The main purpose of this study was to analyze the distribution of psychotic-like experiences in nonclinical adolescents. Likewise, we studied in depth the role of gender and age in phenotypal expression of these symptoms.

Method. A total of 1438 adolescents entered the study, 691 (48.1%) were men, with a mean age of 15.9 years (SD = 1.2).

Results. The results indicated that attenuated psychotic symptoms are a very common phenomenon in this age group, since 43% of the sample reported symptoms belonging to magical thinking, ideas of reference, and/or delusion or hallucination experiences, and 8.9% reported 4 or more psychotic-like experiences. Statistical significant differences were found in ideas of reference and paranoid ideation between genders, but not among age groups.

Conclusion. Our results coincide with those found in previous studies and have clear implications for a better understanding of these psychological phenomena in the framework of developmental psychopathology, and for the implementation of early detection and prevention programs in the population sector.

Keywords:
Schizotypy, Psychosis, Subclinical Symptoms, Adolescents, Psychotic-like experiences, Risk.

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Síntomas psicóticos subclínicos en población general adolescente

Objetivo. El principal propósito de este trabajo fue analizar la distribución de los síntomas psicóticos atenuados en población adolescente no clínica. Asímismo, se profundizó en el papel que desempeñan el sexo y la edad en la expresión fenotípica de dichas experiencias.

Método. En el estudio participaron un total de 1.438 adolescentes, 691 (48,1 %) varones, con una edad media de 15,9 años (DT = 1,2).

Resultados. Los resultados mostraron que los síntomas psicóticos subclínicos son un fenómeno bastante común dentro de este grupo de edad. El 43% de la muestra informó de algún síntoma relacionado con el pensamiento mágico, la ideación referencial y/o las experiencias delirantes o alucinatorias. El 8,9% refirió 4 o más experiencias psicóticas subclínicas. Se encontraron diferencias estadísticamente significativas en función del sexo en ideación referencial e ideación paranoide, en cambio no se hallaron diferencias estadísticamente significativas en función de la edad.

Conclusión. Estos resultados son convergentes con los datos encontrados en la literatura previa y tienen claras implicaciones de cara a la comprensión de este fenómeno psicológico dentro de los modelos de psicopatología del desarrollo, así como en lo relativo al establecimiento de programas de prevención y detección temprana en este sector de la población.

Palabras clave:
Esquizotipia, Psicosis, Síntomas Subclínicos, Adolescentes, Experiencias psicóticas, Riesgo.

INTRODUCTION

Psychotic symptoms, such as hallucinatory experiences, magic thinking or delusional symptoms are a very common and psychological phenomenon among the general population.[1-3] This combination of experiences, known as pseudo-psychotic or subclinical psychotic symptoms occurs

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below the clinical threshold or is not necessarily associated with a psychopathological, medical disorder or disorder of another type.[3] Within the dimensional models of psychosis, it is considered that the psychotic phenotype is distributed along a severity *continuum*, the clinical picture being located in most extensive part. In this sense, pseudo-psychotic symptoms could be considered as an "intermediate" variant or phenotype that is quantitatively less severe but qualitatively similar to the symptoms seen in patients with schizophrenia, these occurring with less intensity, persistence, frequency and associated discapacity.[4-7]

Independent longitudinal studies performed in samples of the general population show that the presence of these psychotiform signs at early ages increases the future risk of developing a disorder on the schizophrenic spectrum,[8-11] and also predicts the delusional experiences in the adult stage.[12] For example, Poulton et al.,[9] in a longitudinal study carried out in New Zealand in a sample of children, found that more than 25% of the participants who reported these experiences at the age of 11 years developed a disorder of schizophreniform type at the age of 26 years. In the same way, as the temporal persistence and frequency of these subclinical psychotic symptoms increase, the probability of evolving towards a clinical picture also increases.[5, 13] The predictive value of these experiences is not only restricted to the studies conducted in samples of the general population but also in high-risk samples. In this sense, the presence of these symptoms plays an important role in the subsequent transition towards disorders on the schizophrenic spectrum, both in first-degree family members of patients with schizophrenia[14] as well as in individuals with high clinical risk.[15, 16] These data suggest that attenuated psychotic experiences could be considered as the behavioral expression of vulnerability to schizophrenic psychosis and its related disorders (e.g. schizoid, paranoid and schizotypal personality disorders).

Epidemiological studies conducted in the adult population situated the mean prevalence of subclinical psychotic experiences at about 5%.[3] In the adolescent population, similar rates as those found in the adult population are found. For example, Scott et al.,[17] analyzing a sample of 1261 Australian adolescents, found that 8.4% of them reported having experienced some visual or auditory hallucinatory experience at some time. On his part, Horwood et al.,[18] using a sample of 6455 English adolescents, found that 38.9% scored on more than one item regarding psychotic experiences. In Spain, the interest in subclinical psychotic symptoms studies in the adolescent population has also increased. For example, Obiols et al.,[19] using the *Community Assessment of Psychic Experiences* (CAPE)[20] in a sample of 777 adolescents, found that 44.1% reported at least one quasi-psychotic symptom and 19.7% manifested 3 or more experiences of this type. On his part, Fonseca-Pedrero et al.,[21] using 10 items from the *Cuestionario Oviedo para la Evaluación de la Esquizotipia* (ESQUIZO-Q)[22] (Oviedo Questionnaire for the Evaluation of Schizotypy) in a sample of 1653 adolescents, found that from 2.7% to 17.4% of the participants reported some type of subclinical experience. In this same work, in a sample of 4868 nonclinical adolescents, they analyzed two items from the *Youth Self Report* (YSR)[23] that evaluated auditory and visual hallucinatory phenomena. The results indicated that approximately 11-12% of the sample contested affirming at least one item and that 5.2% stated they had experienced some hallucinatory phenomena.

As occurs with schizophrenia, the phenotypal expression of these experiences on the subclinical level seems to vary based on gender and age.[1, 2, 24, 25] Based on gender, adult women generally report a greater number of positive psychotic symptoms compared to adult males.[24] In the same way, adolescent women generally have more subclinical psychotic symptoms than the males.[26, 27] However, both in the adult population[28, 29] as well as in the adolescent one, results that do not indicate this association have been found.[17, 19, 30] In relationship with age, younger participants generally have higher scores in attenuated psychotic symptoms in comparison with older subjects,[3, 27, 31] although works that only compare adolescent groups have not confirmed these findings,[17, 30] or have even found results to the contrary.[26]

Up to now in Spain, few empirical works have been carried out that attempt to analyze and understand the phenotypal expression of subclinical psychotic symptoms in the adolescent population. On the other hand, the role of gender and age in the expression of these symptoms has also not been clearly defined. Within this context of research, the principal objective of the present work was to examine the presence of attenuated psychotic symptoms in a representative sample of adolescents from the general population. Furthermore, the role played by gender and age in the phenotypal expression of this type of pseudo-psychotic experiences was also studied in greater depth. These objectives are interesting since they make it possible to: a) improve the understanding of the attenuated psychotic symptoms, as markers of risk or vulnerability for schizophrenia, without the compounding effects frequently found in patients (e.g. medication and stigmatization) and before the clinical expression of the disorder; b) the early detection of individuals at risk for disorders on the schizophrenic spectrum and the establishment of action lines within the early intervention programs in a period of special risk for the development of the psychopathological picture as in adolescence; c) have empirical data available in the general Spanish population that can be used within the psychoeducational programs (e.g., patients with schizophrenia or at high clinical risk) in order to demystify the presence of these symptoms only within the psychotic picture and d) go deeper into the dimensional models of psychoses within the paradigm of the psychopathology of development.

METHOD

Participants

The selection of the participants was made using random stratified sampling by clusters in the classroom in a population of approximately 36,000 students belonging to the regional community of the principality of Asturias. The strata were created based on geographic zone (East, West, Central and Mining Zone) and the school period (obligatory and post-obligatory). The likelihood of choice of each center was directly proportional to the number of students corresponding to it. The students belonged to different public, charter and private school centers of Obligatory Secondary Education (ESO) and Vocational Training Cycles. The initial sample was made up of 1628 students, although the following participants were eliminated: those having a) more than 2 points on the *Escala Oviedo de Infrecuencia de Respuesta (Oviedo Scale of Infrequency of Response)* (*n* = 64); b) learning difficulties (*n* = 6), c) age over 18 years (*n* = 35); d) omission of demographic data or elevated percentage of items that are unanswered (*n* = 49); and e) *outliers* scores (*n* = 36). In this way, the final sample was made up of a total of 1438 students, 691 males (48.1%) and 747 (51.9%) females, belonging to 28 schools centers and 90 classrooms. The mean age was 15.92 years (SD = 1.17), age ranging from 14 to 18 years. Distribution based on age for the sample was the following: 14 years (*n* = 191; 13.3%), 15 years (*n* = 349; 24.3%), 16 (*n* = 409; 28.4%) years, 17 years (*n* = 355; 24.7%) and 18 years (*n* = 134; 9.3%).

Measurement instruments

The *Cuestionario Oviedo para la Evaluación de la Esquizotipia* (ESQUIZO-Q)[22] is a self report developed for the evaluation of schizotypal traits in the Spanish adolescent population that can also be used for epidemiological purposes.[21] It is based on the diagnostic criteria proposed in the DSM-IV-TR[32] and in the Meehl schizotaxia model[33] on genetic predisposition to schizophrenia. The items of the ESQUIZO-Q were selected based on an extensive review of the literature on schizotypia and related constructs[34]. Its construction was performed according to the steps proposed for the elaboration of tests[35] and the guidelines for construction of multiple-choice items.[36] Its response format is 5-category *Likert* type with 1 being "*completely disagree*" and 5 "*completely agree*." The ESQUIZO-Q is made up of a total of 10 subscales in Paraguay derived using factorial techniques: Ideas of Reference, Magical Thinking, Unusual Perceptual Experiences, Strange Thoughts and Language, Paranoid Ideation, Physical Anhedonia, Social Anhedonia, Odd Behavior, Lack of Close Friends and Social Anxiety. These subscales are grouped into three general second order dimensions: Reality Distortion (Positive), Negative and Interpersonal Disorganization. The construction and validation of the ESQUIZO-Q were performed in a sample of 1653 non-clinical adolescents, and had adequate psychometric properties. The internal consistency levels for the subscales ranged from 0.62 to 0.90, and different evidences of validity were obtained with other self-reports that evaluated emotional and behavioral symptoms.[22, 37] For the present study, only 21 items belonging to the dimension of Reality Distortion were used. This includes the subscales: Ideas of Reference, Magical Thinking, Unusual Perceptual Experiences and Paranoid Ideation. The items corresponding to the dimension Reality Distortion of the ESQUIZO-Q are presented in the Annex.

Escala Oviedo de Infrecuencia de Respuesta (INF-OV)[30] is a self-report made up of 12 items with *Likert* type format having 5 categories (1 "*totally disagree" and* 5 "*totally agree*") that has also developed following the guidelines for the construction of tests[35, 38] and multiple choice items.[36] Its purpose has been to detect those participants who have responded randomly, pseudo-randomly or dishonestly in self-report measurements (e.g. "*The distance between Madrid and Barcelona is greater than between Madrid and New York").* This type of self-report is frequently used in studies on tendency to psychosis[24] and makes it possible to obtain greater evidence of validity. The individuals who score more than two items incorrectly were removed from participation in the research.

Procedure

The questionnaires were administered collectively, with groups of 10 to 35 students, during class hours and in a room prepared for this purpose. The study was presented to the participants as an investigation on the different characteristics of the personality, assuring them that their responses would be confidential and about the voluntary character of their participation. In those cases in which it was considered to be appropriate, consent was requested from the parents of those participants under 18 years. Administration of the questionnaire was always performed under the supervision of an investigator. This study is included within a more extensive investigation on the early detection and intervention in disorders of the schizophrenic spectrum.

RESULTS

Prevalence of the attenuated psychotic symptoms in the total sample

In table 1, the data related with the mean and standard deviation of the subscales and total score on the Reality

Table 1 Descriptive statistics than number of items answered positively by the participants for the total score and the subscales selected from the ESQUIZO-Q

Subscales	Total M (SD)	Men M (SD)	Women M (SD)	They scored affirmatively* 1 ítem n (%)	2 ítems n (%)	3 or more items n (%)
Ideas of Reference	5.93 (2.5)	6.13 (2.7)	5.70 (2.3)	139 (9.7)	41 (2.9)	10 (0.7)
Magical Thinking	7.31 (2.8)	7.10 (2.7)	7.40 (2.9)	194 (13.5)	49 (3.4)	13 (0.9)
Perceptual Experiences	9.83 (3.8)	9.96 (3.9)	9.72 (3.8)	221 (15.4)	76 (5.3)	21 (1.5)
Paranoid Ideation	7.72 (3.2)	7.94 (3.3)	7.46 (3.1)	166 (11.5)	55 (3.8)	50 (3.4)
Total Score	60.80 (9.5)	31.13 (9.8)	30.28 (9.3)	268 (18.6)	134 (9.3)	216 (15)

* It is considered that an item has been answered positively when scored 4 or 5 in the response options of the questionnaire

Distortion dimension of the ESQUIZO-Q are presented, both in the total sample and separately for the men and women. Furthermore, the number of participants who reported one, two or three or more pseudo-psychotic experiences in the total sample was collected. It was considered that an adolescent responded positively to an item on the ESQUIZO-Q when he/she chose their 4 or 5 response options. As can be observed, a considerable percentage of the participants, that is 43%, reported some type of subclinical psychotic experience. Breaking this percentage down, 18.6% of the adolescents responded positively to one item, 9.3% to two, 6.1% to three and 8.9% to more than four items. The number and percentage of participants of the total sample who responded affirmatively to each one of the 21 items on the ESQUIZO-Q are shown in Table 2. As can be observed, from 1.9% to 8.4% of the adolescents manifested symptoms related with ideas of reference (items 1 to 4); from 1.5 % to 6.7% reported experiences related with magical thinking (items 5 to 9); from 1.5% to 11.5% manifested symptoms related with paranoid ideation (items 10 to 14) and finally from 1% to 8.8% of the adolescents reported symptoms related with unusual perceptual experiences (items 15 to 21). The items that obtained a higher rate of affirmative responses were item 11 (*Someone has sworn to get me*) and item 19 (*I have such real thoughts that it seems as if someone is talking to me*). The items that obtained a lower rate of affirmative responses were item 18 (*I feel as if someone was sending occult messages that only I could understand*) and item 9 (*When something goes wrong for me it is because someone has put a curse on me*). (Table 1).

Expression of attenuated psychotic symptoms based on gender and age

After, the relationship of gender and age with subclinical psychotic symptoms was studied. To do so, a Multivariate Analysis of Variance (MANOVA) was performed, using gender and age as fixed factors and the subscales and total score of the positive dimension of the ESQUIZO-Q as dependent variables. Wilk's λ value showed statistically significant differences based on gender (Wilk's $\lambda = 0.978$, $p < 0.001$), but not based on age (Wilk's $\lambda = 0.992$, $p = 0.802$). Males scores higher than women on the Ideas of Reference subscales ($F = 8.535$, $p = 0.004$) and Paranoid Ideation ($F = 6.984$, $p = 0.004$). In both cases, the estimations of size of effect were irrelevant. No statistically significant interactions were found between gender and age of the participants. (Tables 2 and 3).

DISCUSSION AND CONCLUSIONS

The principal objective of this work was to analyze the prevalence of the attenuated psychotic symptoms in the general adolescent population and examine the role played by gender and age in the phenotypal expression of these experiences. The results indicate that 43% of the participants reported positively having experienced at least one attenuated psychotic symptom. The rates of subclinical experiences found in this work are slightly superior to those found in previous investigations in community samples of the general population,[1-3] and quite similar to those found in other studies performed in nonclinical adolescents.[17, 19, 21, 39] However, it should be mentioned that rigorous comparison with other investigations was hindered because of the characteristics of the sample and measurement instrument as well as by the definition per se of the concept "Attenuated psychotic symptoms" or "subclinical" symptoms. For example, recently van Os et al.[3] conducted a meta-analysis, finding that the mean rate of these experiences in the adult population was approximately 5%. However, in studies with adolescent populations, slightly different percentages were found, ranging from 2.2% to 73.1%.[21] Specifically, previous works performed in Spain have found similar results to those

Table 2 Percentage of participants of the total sample and men and women separately who scored 4 or 5 on the items selected from the ESQUIZO-Q

Item	Total (n =1438) n (%)	Men (n = 691) n (%)	Women (n = 747) n (%)
1	54 (3.8)	30 (4.3)	24 (3.2)
2	121 (8.4)	64 (9.3)	97 (7.6)
3	48 (3.3)	36 (5.2)	12 (1.6)
4	28 (1.9)	16 (2.3)	12 (1.6)
5	52 (3.6)	26 (3.8)	26 (3.5)
6	96 (6.7)	50 (7.2)	46 (6.2)
7	68 (4.7)	26 (3.8)	42 (5.6)
8	94 (6.5)	40 (5.8)	54 (7.2)
9	21 (1.5)	7 (1.0)	14 (1.9)
10	83 (5.8)	50 (7.2)	33 (4.4)
11	165 (11.5)	91 (13.2)	74 (9.9)
12	38 (2.6)	17 (2.5)	21 (2.8)
13	40 (2.8)	20 (2.9)	20 (9.2)
14	21 (1.5)	11 (1.6)	10 (1.3)
15	86 (6.0)	40 (5.8)	46 (6.2)
16	26 (1.8)	17 (2.5)	9 (1.2)
17	38 (2.6)	16 (2.3)	22 (2.9)
18	14 (1.0)	12 (1.7)	2 (0.3)
19	126 (8.8)	60 (8.7)	66 (8.8)
20	123 (8.6)	60 (8.7)	63 (8.4)
21	125 (8.7)	63 (9.1)	62 (8.3)

found in the present study in regards to percentages, such as the work of Obiols et al.[19] who found that 44.1% of the adolescents reported having experienced some pseudo-psychotic symptom. On the contrary, Fonseca-Pedrero et al.[21] found some slightly lower psychotiform experience rates, with positive responses since some item between 2.7% and 17.4% of the participants. These results indicate that the psychotic symptoms expand beyond the frontiers proposed by the international classification symptoms (e.g. DSM-IV-TR), supporting the continuity of the psychotic phenotype in the population and therefore the dimensional models of psychosis.

Regarding the second purpose of this study, the study of the role of gender and age in the phenotypal expression of these symptoms indicated that men obtained a mean higher score than women on the Ideas of Reference and Paranoid Ideation subscales. On the other hand, no statistically significant differences were found based on age. The results found based on gender are partially contrary to those found in the previous literature, although it is also true that the mean scores are almost identical and the sizes of effect were insignificant. Previous studies found that adolescent women generally have more subclinical psychotic symptoms then men,[26, 27] although there are some studies that did not find this association[17, 19, 30] in the adult population[28, 29] and adolescent population. In regards to the age variable, and consistent with the previous literature, both in the general adults as well as adolescent population, no significant association was found regarding the symptoms evaluated with age.[17, 30] However, as occurred with gender, other works have found such an association.[1, 27, 31] This variability in the results stresses the need to continuing studying and to go deeper into depth regarding the role played by gender and age in the phenotypal expression of this symptomatology.

Adolescence is a period of development in which attenuated psychotic symptoms such as magical thinking, paranoid thinking or hallucinatory experiences may occur with much frequency, similar to those found in patients with schizophrenia, although with a milder pattern of severity, lower persistence, intensity, associated discomfort and not invariably linked to a psychopathological disorder.[4-7] Specifically, these experiences are maintained persistently and evolve unfavorably and reach clinical expression causing a clinically significant impact only in a reduced group of adolescents.[5, 10] The temporal persistence of this phenomenon during the adult and adolescent stages occurs in approximately 10-35%.[3, 40] Logically, these experiences should interact synergically or additively with other environmental risk factors (e.g. first-degree relatives with a psychotic disorder) and/or psychological (e.g. depressive symptoms) for this to result in a clinical case.[41] The possible evolutional pathways towards psychotic disorders may be heterogeneous and diverse and the mere presence of them does not presuppose a severe psychopathological disorder in a near future.

The results found in the present study should be interpreted considering the following limitations. In the first place, age is a significant factor to consider in the phenomenological expression of these symptoms. Adolescence is a maturation period of development in which there are a series of changes on different levels (biological, affective, cognitive and social) that could be playing an important role in the results of the study. In the second place, there are the problems inherent to the application of any type of self-report, with the possible difficulties in the interpretation and understanding of some of the items by the participants as well as the possibility of elevated rates of false positives. Therefore, it would have been interesting to have used external informers, such as the parents or professors, via hetero-reports. In the third place, the cross-

Table 3 Percentage of participants, based on age, who scored 4 or 5 on the items selected from the ESQUIZO-Q

Items	14 years (n=191) n (%)	15 years (n=349) n (%)	16 years (n=409) n (%)	17 years (n=355) n (%)	18 years (n=134) n (%)
1	5 (2.6)	18 (5.2)	16 (3.9)	14 (3.9)	1 (0.7)
2	12 (6.3)	27 (7.7)	34 (8.3)	35 (9.9)	13 (9.7)
3	2 (1.0)	13 (3.7)	22 (5.4)	7 (2.0)	4 (3.0)
4	6 (3.1)	5 (1.4)	5 (1.2)	7 (2.0)	5 (3.7)
5	5 (2.6)	12 (3.4)	14 (3.4)	13 (3.7)	8 (6.0)
6	11 (5.8)	23 (6.6)	36 (8.8)	22 (6.2)	4 (3.0)
7	9 (4.7)	17 (4.9)	22 (5.4)	15 (4.2)	5 (3.7)
8	9 (4.7)	23 (6.6)	22 (5.4)	30 (8.5)	10 (7.5)
9	3 (1.6)	6 (1.7)	8 (2.0)	3 (0.8)	1 (0.7)
10	13 (6.8)	22 (6.3)	28 (6.8)	11 (3.1)	9 (6.7)
11	19 (9.9)	40 (11.5)	51 (12.5)	39 (11)	16 (11.4)
12	7 (3.7)	8 (2.3)	10 (2.4)	8 (2.3)	5 (3.7)
13	2 (1.0)	9 (2.6)	13 (3.2)	11 (3.1)	5 (3.7)
14	3 (1.6)	4 (1.1)	9 (2.2)	3 (0.8)	2 (51)
15	9 (4.7)	27 (7.7)	19 (4.6)	22 (6.2)	9 (6.7)
16	2 (1.0)	8 (2.3)	8 (2.0)	7 (2.0)	1 (0.7)
17	5 (2.6)	14 (4.0)	6 (1.5)	11 (3.1)	2 (1.5)
18	2 (1.0)	3 (0.9)	2 (0.5)	4 (1.1)	3 (2.2)
19	17 (8.9)	31 (8.9)	35 (8.6)	30 (8.5)	13 (9.7)
20	18 (9.4)	22 (6.3)	32 (7.8)	33 (9.3)	18 (13.7)
21	12 (6.3)	28 (8.0)	43 (10.5)	77 (7.6)	15 (11.2)

sectional nature of this research must not be overlooked, so that it is not possible to establish cause -effect interferences. In the fourth place, and no less important, these psychotic experiences should always be understood and analyzed within a bio-psychosocial model in which the interaction and combination of a wide diversity of variables are considered. In this sense, as already mentioned, in order to develop a severe mental disorder, the combination of multiple factors (genetic, environmental, etc.) and the necessary presence of other psychopathological signs and symptoms (social withdrawal, flattened affectivity, thinking problems, odd behavior, significant alteration of the social and work life, etc.) is necessary.

Future lines of investigation should continue to study the role of subclinical psychotic symptoms in the prediction of schizophrenic spectrum disorders both in the general population and in the participants at risk and through the combined use of different measurement instruments.[42-44] Furthermore, it is also interesting to determine the type of relationship between these psychotiform experiences with other biochemical, physiological, environmental, behavioral and psychosocial variables in order to predict the possible clinical picture. Finally, the development of programs for early detection and intervention within the national public and private health systems is of great importance. These should have the basic and priority objective of early prevention of schizophrenia and its related disorders, in order to mitigate the possible impact that may be caused on the personal, familial and social level by this devastating psychological disorder.

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Annex | **Items and subscales making up the Positive dimension of the ESQUIZO-Q**

1. I believe that what appears on the radio or television has a special significance for me, that my friends do not understand
2. I notice that certain things have a hidden significance that only I can understand
3. I believe that I can detect hidden messages on the television or radio
4. I have the rare sensation that the things that appear on the radio or television are especially aimed to me
5. My lucky charms can even make me pass an examination
6. I believe that there are people who can read the minds of others
7. The dreams I have are signs that something bad is going to occur
8. I believe that there are persons who can control the thoughts of others
9. When something goes wrong for me, it is because someone has put a curse on me
10. I believe that someone is plotting against me.
11. Someone has sworn to get me
12. People look at me with disdain
13. The others think I am a bad person
14. My classmates have it in for me
15. When I am alone at home, I have the sensation that someone is speaking to me
16. I hear voices that others cannot hear
17. When I am alone, I have the sensation that someone is whispering my name
18. I feel as if someone sends occult messages that only I can understand)
19. I have such real thoughts that it seems as if someone is talking to me
20. I have felt like my body was not under my control
21. I have heard sounds that I cannot distinguish whether they are coming from my head or from outside

Items from 1 to 4 indicate Ideas of Reference
Items from 5 to 9 indicate Magical Thinking
Items from 10 to 14 indicate Paranoid Ideation
Items from 15 to 21 indicate Unusual Perceptual Experiences

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