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Psychotic-like experiences, emotional and behavioral problems and coping strategies in nonclinic adolescents*

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*Individuals who reported psychotic-like experiences (PLEs) are at increased risk for future clinical psychotic disorders. Furthermore, those with PLEs report more emotional problems and less effective coping strategies. The main goal of the present study was to compare the emotional and behavioral problems and the coping strategies used by adolescents with and without PLEs. In addition, the relationship between the emotional and behavioral problems and the coping strategies in adolescents with PLEs was explored. A total of 1,713 nonclinical adolescents participated in the study, 832 males (48.6 %), with a mean age of 14.7 years (*SD*=1.7). Participants with PLEs presented a greater number of behavioral and emotional problems in comparison to those participants who did not report such experiences. Likewise, adolescents with PLEs used Avoidance coping strategies more frequently and Positive coping strategies less frequently in comparison to the adolescents without PLEs. The emotional and behavioral problems were found to be positively related to Avoidance coping and negatively related to Positive coping strategies in the adolescents with PLEs. These findings converge with data found in previous studies of both patients with schizophrenia and psychosis-prone individuals and have clear implications toward the establishment of prevention and early detection strategies in high-risk individuals*

Keywords: *Psychotic-like symptoms, psychosis, emotional problems, coping strategies, adolescents.*

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Experiencias psicóticas atenuadas, problemas emocionales y comportamentales y estrategias de afrontamientos en adolescentes no clínicos

*Individuos que informan de experiencias psicóticas atenuadas presentan un mayor riesgo futuro de transitar hacia los trastornos psicóticos. Además, aquellos que informan de este tipo de experiencias también presentan problemas emocionales y estrategias de afrontamiento menos efectivas. El principal objetivo de este estudio fue comparar los problemas emocionales y comportamentales y las estrategias de afrontamiento en adolescentes que informaron o no de síntomas psicóticos atenuados. También se examinó la relación entre los problemas emocionales y de comportamiento y las estrategias de afrontamiento en adolescentes que autoinformaron de experiencias alucinatorias. Un total de 1.713 adolescentes no clínicos participaron en el estudio, 832 hombres (48,6%), con una edad media de 14,7 años (*DE*=1,7). Los participantes con experiencias pseudopsicóticas presentaron un mayor número de problemas de conducta y emocionales en comparación con aquellos participantes que no informaron de tales experiencias. Del mismo modo, los adolescentes que informaron de esta sintomatología utilizaron estrategias de afrontamiento evitativas con mayor frecuencia y estrategias de afrontamiento positivas con menor frecuencia en comparación con los adolescentes del grupo control. Los problemas emocionales y de comportamiento se relacionaron de forma positiva con el afrontamiento evitativo y negativamente con las estrategias positivas de afrontamiento en el grupo de adolescentes con experiencias psicóticas subclínicas. Estos resultados convergen con los datos encontrados en estudios previos de pacientes con psicosis y en individuos adultos sanos con propensión de psicosis y tienen claras implicaciones hacia el establecimiento de estrategias de prevención y detección precoz en individuos de alto riesgo teórico.*

Palabras clave: *síntomas psicóticos atenuados, psicosis, problemas emocionales, estrategias de afrontamiento, adolescentes.*

Introduction

Psychotic symptoms present in patients with psychosis, such as paranoid ideation or hallucinations, can also be found in the general population without necessarily being associated to psychopathological alterations (Van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009). This set of experiences which do not reach clinical threshold and that are distributed along a continuum of severity with clinical psychosis situated in its extreme, are known as Psychotic-Like Experiences (PLEs). Epidemiological studies, conducted in community samples as well as in nonclinical adolescents, reveals a median prevalence of about 5-8% for PLEs (Fonseca-Pedrero, Santaren-Rosell, *et al*., 2011; Kelleher *et al*., 2012; Linscott & Van Os, in press; Scott, Martin, Welham, *et al*., 2009; Van Os *et al*., 2009). Follow-up studies suggests that individuals who report PLEs are at heightened risk for

subsequent development of schizophrenia-spectrum disorders (Domínguez, Wichers, Lieb, Wittchen, & Van Os, 2011; Poulton *et al*., 2000; Scott, Martin, Welham, *et al*., 2009; Werbeloff *et al*., 2012). Poulton *et al*. (2000), in a longitudinal study conducted in New Zealand in a sample of children from the general population, found that more than 25% of the participants who had reported such experiences at the age of 11 developed a schizophreniform-type disorder at the age of 26. Also, Welham *et al*. (2009) also conducted a longitudinal study where information was obtained from both parents and adolescents at different moments, and found that the presence of auditory hallucinatory experiences was associated, after 14 years, to a greater risk for the later development of non-affective psychosis.

Similar to what occurs in patients with psychosis, PLEs have been found to be closely related to the presence of affective psychopathology, for example, high levels of anxiety, stress, dysphoria or depression, in both adult populations (Cella, Cooper, Dymond, & Reed, 2008; Krabbendam *et al*., 2005; Kwapil, Barrantes Vidal, & Silvia, 2008) and in nonclinical adolescents (Armando *et al*., 2010; Barragan, Laurens, Navarro, & Obiols, 2011; Scott, Martin, Bor, *et al*., 2009; Wigman *et al*., 2011; Yoshizumi, Murase, Honjo, Kanedo, & Murakami, 2004). In this regard, Scott, Martin, Bor, *et al*. (2009), using a sample of 1,261 Australian adolescents found that those adolescents with auditive and/or visual hallucinations displayed higher levels of depressive symptoms than the control group. These data suggest that nonclinical adolescents with PLEs show similar affective and behavioral alterations, although to a lesser degree, to those found in patients with schizophrenia, and that, at the same time, they could be in interaction and/or synergy with other variables (e.g., genetic factors, coping strategies, substance abuse, cannabis, depression symptoms) playing an important role in the transition to a schizophrenia-spectrum disorders (Linscott & Van Os, in press; Van Os *et al*., 2009).

Coping strategies were defined by Lazarus and Folkman (1984) as the cognitive-behavioral efforts in continuous change made by a subject in order to manage internal and/or external demands which exceed his/her personal resources. Coping strategies have been extensively investigated in patients with schizophrenia (Ritsner *et al*., 2006), in psychosis-prone individuals (Dangelmaier, Docherty, & Akamatsu, 2006; Horan, Brown, & Blanchard, 2007; Lin *et al*., 2011; Rim, 1993; Schuldberg, Karwacki, & Burns, 1996) and in relation to other psychosis-vulnerability markers (e.g., sustained attention; Álvarez-Moya, Barrantes-Vidal, Navarro, Subira, & Obiols, 2007). Patients with schizophrenia display inflexible coping strategies focused more on emotion and less on the problem, and are associated to higher severity of symptomatology and higher emotional distress (Ritsner *et al*., 2003; Ritsner *et al*., 2006; Wilder-Willis, Shear, Steffen, & Borkin, 2002). On their part, psychosis-prone individuals usually show a deficit in strategies for coping with stress similar to that found in patients with schizophrenia (Dangelmaier *et al*., 2006; Horan *et al*., 2007; Rim, 1993; Schuldberg *et al*., 1996). For example, Schuldberg *et al*. (1996), in a sample of American university

students, found that participants with high scores in positive schizotypy used a greater number of escape-avoidance-type coping strategies, Positive-reappraisal, Acceptance of responsibility, and reported less social support in comparison to the control group. However, Dangelmaier *et al*. (2006) found that psychosis-prone individuals did not significantly differ from the control group regarding the type of coping strategies employed, although these subjects scored higher in the non-adaptive coping strategies. Nevertheless, although coping strategies have been widely investigated in nonclinical adolescents, how adolescents with PLEs cope with stressful events still remains to be investigated in depth.

Within this research context, the main objective of the present study was to examine if there are significant differences in the emotional and behavioral problems reported by adolescents with and without PLEs, as well as in the coping strategies used. In addition, the relationship between emotional and behavioral problems and coping strategies in adolescents with PLEs was also explored. These objectives are of interest as they allow us to: (a) gain a deeper understanding of the emotional and behavioral factors present in participants with PLEs without the possible masking effects of medication or stigmatization and at a developmental period of special risk for psychosis; (b) improve our comprehension of how and what type of coping strategies are used by psychosis-proneness individuals; and (c) establish lines of action within the programs for the detection and early intervention in high-risk individuals, aimed at modifying the emotional problems and deficient coping patterns in response to environmental stimuli.

Method

Participants

The sample was composed of 1,713 Spanish adolescents incidentally selected from ten Compulsory Secondary Education and Vocational Training Centers of the Principality of Asturias. The sample was selected to cover different geographical areas and socioeconomic strata of this geographical area. Of the total sample, 832 (48.6 %) were males and 881 (51.4%) females. The mean age of the participants was 14.7 years (*SD*=1.7), with an age range of 12-18 years. The age distribution of the sample was the following: 12 years (*n*=170), 13 years (*n*=323), 14 years (*n*=357), 15 years (*n*=279), 16 years (*n*=304), 17 years (*n*=207) and 18 years (*n*=73).

Instruments

– *Youth Self-Report* (YSR; Achenbach & Edelbrock, 1987). It is an easy to administer self-report composed of 118 items for the assessment of a wide variety

of emotional and behavioral problems in 11-18 year-old adolescents. Items in the YSR are presented in a Likert-response format with three categories (0: *it is not true*; 1: *it is somewhat true*; 2: *it is true or frequently true*). All items refer to symptoms and events experienced by the adolescent in the last six months. Following the guidelines by Ivanova *et al*. (2007) can be obtained scores for 8 dimensions: Anxious-Depressed, Somatic Complaints, Withdrawn, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior and Aggressive Behavior. The Spanish adaptation by Lemos, Fidalgo, Calvo, and Menéndez (1992), which has shown in a wide variety of studies to have adequate psychometric properties in reference to its validity, internal consistency and test-retest reliability, was employed in this study (Fonseca-Pedrero, Sierra-Baigrie, Lemos Giráldez, Paino, & Muñiz, 2012; Lemos, Vallejo, & Sandoval, 2002).

– *Adolescent Coping Scale* (ACS; Frydenberg & Lewis, 1996). The ACS is a self-report composed of 80 items in a five-point Likert response format (1: *it never happens to me or I never do it*; 5: *it happens very frequently or I very frequently do it*). The ACS allows the evaluation of a total of 18 coping strategies, namely: Seek social support, Focus on solving problem, Work hard and achieve, Worry, Invest in close friends, Seek to belong, Wishful thinking, Not coping, Tension reduction, Social action, Ignore problem, Self-blame, Keep to self, Seek spiritual support, Focus on the positive, Seek professional help, Seek relaxing diversions and Physical recreation. The study of the validity of the ACS internal structure in a Spanish population revealed a solution of four general dimensions of coping: Positive Action, Avoidance, Positive-hedonist, and Introversion. The Positive action dimension is composed of the Focus on solving the problem, Worry and Work hard to achieve scales, with an inverse relationship with Ignore the problem. The Avoidance dimension includes the Not coping, Tension reduction and Self-blame scales. The Positive-hedonist dimension consists of the Seek relaxing activities, Focus on the positive, Wishful thinking, Physical distraction and Invest in close friends scales. The Introversion dimension includes Keep to self with an inverse relationship with the Seek professional help, Social action and Seek social support scales. In the present study, the general version of the ACS validated in a Spanish population was used, which has shown adequate psychometric properties in wide range of studies with regards to its validity, internal consistency (Mean Cronbach's alpha=.70-.76) and test-retest reliability (Mean=0.69; Frydenberg & Lewis, 1996).

– *Psychotic-like experiences*: Item 40 (*I hear sounds or voices that other people think aren't hear*) and 70 (*I see things that other people think aren't there*) of the YSR (Achenbach & Edelbrock, 1987) were used for their assessment. These two YSR items have been used in previous studies to assess hallucinatory experiences in adolescents (Scott, Martin, Bor, *et al*., 2009; Welham *et al*., 2009).

Procedure

The questionnaire was applied in groups of 15-25 participants, who were informed of the confidentiality of their responses and the voluntary nature of their participation. Written informed consent was obtained from all participants. For those under 18, parents were requested to provide written informed consent for their child's participation in the study. Participants received no kind of incentive, monetary or otherwise. Application of the questionnaire took place under the supervision of the researchers. The study was approved by the Research and Ethics Committees at the University of Oviedo, and Department of Education of the Principality of Asturias.

Data analysis

The criterion used for the selection of participants presenting PLEs was a total score based on the sum of the scores on items 40 and 70 of the YSR. The control group was composed by those participants whose sum in these items was zero. These two items were excluded from the Thought problems dimension of the YSR. Subsequently, a Multivariate Analysis of Covariance (MANCOVA) was conducted, with the YSR dimensions as the dependant variables and the group of adolescents with and without PLEs as the fixed factor. Gender and age were introduced as covariates. This same procedure was also used to test whether there were significant differences in the coping strategies used by participants with and without PLEs. Wilks's Lambda was used to determine the existence of significant differences in all dependant variables taken together. In those cases where Wilk's Lambda was significant ($p < .05$), the results of the individual ANCOVA were analyzed. Finally, the relationship between emotional and behavioral problems and coping strategies in individuals with PLEs was analyzed using Pearson correlations.

Results

Psychotic-like experiences and emotional-behavioural problems

Wilk's lambda showed the existence of statistically significant differences between the group with PLEs and the control group (Wilk's λ=.770, $p < .001$) in the eight YSR dimensions. Table 1 displays the means and standard deviations in the YSR dimensions for the group with PLEs and the control group, after controlling for the effect of age and gender, as well as the estimation of the effect size. As can be observed, the participants with PLEs presented higher scores in the

Anxious/Depressive, Somatic Complaints, Withdrawn, Social Problems, Thought problems, Attention problems, Delinquent behavior and Aggressive behavior dimensions in comparison to the adolescents in the control group.

TABLE 1. MULTIVARIATE ANALYSIS OF VARIANCE COMPARING THE SCORES ON THE YOUTH SELF-REPORT DIMENSIONS BETWEEN ADOLESCENTS WITH AND WITHOUT PSYCHOTIC-LIKE EXPERIENCES (PLES) CONTROLLING FOR THE EFFECTS OF GENDER AND AGE

Youth Self -Report dimensions	*Adolescents without PLEs (n=1407) Mean (SD)*	*Adolescents with PLEs (n=306) Mean (SD)*	*F*	*p*	*Partial η^2*
Anxious/Depressive	5.50 (3.98)	8.69 (4.71)	180.090	<.001	.095
Somatic complaints	2.56 (2.57)	4.83 (3.87)	182.277	<.001	.096
Withdrawn	2.94 (3.34)	4.58 (2.67)	125.558	<.001	.068
Social problems	2.52 (2.51)	5.57 (4.08)	279.589	<.001	.141
Thinking problems	2.45 (2.56)	6.28 (3.99)	446.506	<.001	.207
Attention problems	4.01 (2.56)	5.71 (2.64)	110.965	<.001	.061
Delinquent behavior	3.68 (3.23)	6.82 (4.88)	184.025	<.001	.097
Aggressive behavior	7.15 (4.73)	11.30 (5.85)	180.376	<.001	.095

Psychotic-like experiences and coping strategies

Wilk's λ revealed the existence of statistically significant differences between the group with PLEs and the control group (Wilk's λ=.932, $p < .001$) in the coping strategies used measured by the ACS. Table 2 shows the means and standard deviations on the ACS for the group of adolescents with PLEs and the control group, after controlling the effect of age and gender, as well as the estimation of the effect size. As can be observed, the participants with PLEs obtained higher scores on the strategies of Wishful thinking, No coping, Tension reduction, Social action, Ignore problem, Self-blame, Keep to self and seek spiritual support in comparison to the control group.

Next, a MANCOVA was conducted considering the ACS four general dimensions of coping as the dependent variables and gender and age as the covariates. In this case, Wilk's λ also revealed statistically significant differences between the group with PLEs and the control group (Wilk's λ=.959; $p < .001$) in the general coping strategies used. The participants with PLEs obtained higher scores in the Avoidance dimension (F=70.386; $p < .001$), and lower in the Positive action dimension (F=4.181; p=.041), compared to the control group. In the Positive-Hedonist and Introversion dimensions, no statistically significant differences were found.

TABLE 2. MULTIVARIATE ANALYSIS OF VARIANCE COMPARING THE COPING STRATEGIES USED BY ADOLESCENTS WITH AND WITHOUT PSYCHOTIC-LIKE EXPERIENCES (PLES) CONTROLLING FOR THE EFFECTS OF GENDER AND AGE

Coping strategies	*Adolescents without PLEs (n=1407) Mean (SD)*	*Adolescents with PLEs (n=306) Mean (SD)*	*F*	*p*	*Partial η^2*
Seek social support	65.12 (17.8)	61.76 (17.9)	3.481	.062	.002
Focus on solving the problem	66.36 (13.4)	64.46 (15.4)	2.044	.153	.001
Work hard and achieve	67.46 (14.3)	66.73 (36.1)	0.312	.577	<.001
Worry	70.74 (14.8)	70.00 (15.2)	0.051	.822	<.001
Invest in close friends	66.11 (19.1)	66.15 (16.6)	0.053	.818	<.001
Seek to belong	70.10 (14.2)	69.76 (15.1)	0.010	.919	<.001
Wishful thinking	56.77 (15.4)	60.17 (14.9)	14.288	<.001	.008
Not coping	40.06 (13.7)	46.25 (15.4)	51.098	<.001	.029
Tension reduction	37.97 (14.5)	45.46 (15.9)	82.180	<.001	.046
Social action	37.28 (12.6)	40.82 (13.7)	17.244	<.001	.010
Ignore problem	39.43 (14.5)	43.25 (15.5)	12.758	<.001	.007
Self-blame	49.31 (17.5)	53.56 (17.5)	16.675	<.001	.010
Keep to self	48.63 (16.3)	54.97 (16.8)	35.211	<.001	.020
Seek spiritual support	39.71 (13.5)	43.97 (15.9)	22.593	<.001	.013
Focus on the positive	64.53 (15.9)	62.66 (15.7)	2.775	.096	.002
Seek professional help	49.34 (18.3)	50.60 (18.6)	0.886	.347	.001
Seek relaxing diversions	75.94 (17.1)	74.03 (17.8)	2.718	.099	.002
Physical recreation	71.50 (21.4)	72.08 (21.9)	0.070	.792	<.001

Relationship between emotional and behavioral problems and coping strategies in individuals with psychotic-like experiences

Table 3 shows the Pearson correlations between the YSR dimensions and the four general coping dimensions for the individuals with PLEs. As can be observed, the YSR dimensions of Social Problems, Delinquent behavior and Aggressive behavior are negatively related with the Positive action coping dimension. On the other hand, the eight YSR dimensions are positively correlated with the Avoidance coping strategy. No statistically significant correlation was found between the YSR dimensions and the Positive-Hedonist and the Introversion coping strategies dimensions.

TABLE 3. PEARSON CORRELATIONS BETWEEN EMOTIONAL AND BEHAVIORAL PROBLEMS AND COPING STRATEGIES IN ADOLESCENTS WITH PSYCHOTIC-LIKE EXPERIENCES.

	Anxious/ Depressive	*Somatic Complaints*	*Withdrawn*	*Social problems*	*Thinking problems*	*Attention problems*	*Delinquent behavior*	*Aggressive behavior*
Positive action	-.066	-.140*	-.059	-.138*	-.061	-.096	-.226**	-.216**
Avoidance	.519**	.387**	.432**	.375**	.368**	.363**	.346**	.396**
Positive-Hedonist	.060	-.064	-.017	.029	.002	.089	-.003	-.024
Introversion	-.070	-.002	.108	-.017	.021	- .011	.004	.022

Note: *$p < .05$; **$p < .01$.

Discussion and conclusions

The main objective of the current study was to compare the emotional and behavioral problems reported by nonclinical adolescents with and without Psychotic-Like Experiences (PLEs) as well as the coping strategies used. In addition, the relationship between the emotional and behavioral problems and the coping strategies used by adolescents with PLEs was further explored. The nonclinical adolescents with PLEs compared to those who did not report such experiences, presented a greater number of emotional and behavioral problems, and used Avoidance coping strategies more frequently and Positive coping strategies less frequently. The results were quite similar to those found in previous studies conducted with both patients with schizophrenia and psychosis-prone individuals (Dangelmaier *et al*., 2006; Horan *et al*., 2007; Lin *et al*., 2011; Rim, 1993; Scott, Martin, Bor, *et al*., 2009; Schuldberg *et al*., 1996; Yoshizumi *et al*., 2004).

Adolescents with PLEs had higher mean scores on all YSR dimensions than the adolescents who did not report such experiences. It is worth mentioning that the effect sizes obtained for the Thought problems and Social problems dimensions were large in magnitude, which should be taken into account when determining the practical significance of the results. Previous studies carried out using clinical samples as well as psychosis high-risk individuals (clinical and psychometric), have found a high number of emotional and behavioral problems (Krabbendam *et al*., 2005; Kwapil *et al*., 2008; Yung *et al*., 2003). In this regard, PLEs have been found to be closely linked with the presence of affective psychopathology in both adult populations (Cella *et al*., 2008; Krabbendam *et al*., 2005; Kwapil *et al*., 2008) and adolescent populations (Armando *et al*., 2010; Barragan *et al*., 2011; Fonseca-Pedrero, Paino, *et al*., 2011; Wigman *et al*., 2011; Yoshizumi *et al*., 2004). For example, on their part, Yoshizumi *et al*. (2004), using a sample of 761 children, found that those participants with auditive and visual hallucinations

obtained higher mean scores in measures of anxiety and dissociation in comparison to those who did not report such symptoms. For instance, Wigman *et al*. (2011), using the Community Assessment of Psychic Experiences-42 (CAPE-42) and the Strengths and Difficulties Questionnaire (SDQ) in a large sample of non-clinical adolescents, found that those individuals who reported PLEs also presented higher levels of emotional and behavioral symptoms. The adolescents with PLEs showed the same pattern of emotional and behavioral problems than patients with schizophrenia and psychosis-prone adults, but with a lower level of severity (Linscott & Van Os, in press; Van Os *et al*., 2009). According to the dimensional models of psychosis (extended psychosis phenotype), PLEs could be conceived as an intermediate "phenotype", quantitatively less severe and qualitatively similar to that found in patients with schizophrenia, which is present with less intensity, persistence, frequency and associated impairment (Linscott & Van Os, in press; Van Os *et al*., 2009).

The adolescents with PLEs also obtained higher scores on the Avoidance coping dimension and lower on the Positive action dimension than the adolescents in the control group. Taking a closer look at the variables which comprise these two dimensions, this means that these high-risk adolescents use strategies such as Self-blame and Ignore problem, among others, more often and strategies such as Focus on solving the problem, Worry and Work hard and achieve less often. When the relationship between the YSR dimensions and the ACS coping dimensions were analyzed in the adolescents with PLEs, a negative relationship was found between the YSR problem behavior and the Positive action coping dimension. However, the eight dimensions of the YSR were found to be positively correlated with the Avoidance coping dimension. Similar results have been obtained in studies that have analyzed coping strategies in clinical samples (Ritsner *et al*., 2006) and in psychosis-prone individuals (Dangelmaier *et al*., 2006; Horan *et al*., 2007; Rim, 1993; Schuldberg *et al*., 1996). In this regard, patients with schizophrenia use inflexible, emotion-focus coping strategies which are associated to a greater severity in the symptomatology (Ritsner *et al*., 2003; Ritsner *et al*., 2006; Wilder-Willis *et al*., 2002). On their part, psychosis-prone individuals usually show a pattern of deficit in stress coping strategies, which is similar to that found in patients with schizophrenia (Bak *et al*., 2001; Dangelmaier *et al*., 2006; Horan *et al*., 2007; Lin *et al*., 2011; Rim, 1993; Schuldberg *et al*., 1996). For example, Schuldberg *et al*. (1996), in a sample of American university students, found that the participants with high scores in positive schizotypal traits used a greater number of avoidance coping strategies, Positive-reappraisal, and Acceptance of responsibility. Likewise, Dangelmaier *et al*. (2006) found that high-prone individuals obtained higher scores on non-adaptive coping strategies than the control group, although these differences were not statistically significant. Specifically, these PLEs can interact synergetically and/or additively with other environmental (e.g., cannabis, urbanicity, traumatic events, etc.), genetic (e.g., presence of first degree

relatives with a psychotic disorder) and/or psychological factors (e.g., previous depression, inappropriate coping strategies) to surpass the subclinical threshold and evolve into a psychotic disorder and need to care (Cougnard *et al*., 2007; Linscott & Van Os, in press; Van Os *et al*., 2009).

Nevertheless, the results obtained in the present study should be interpreted in the light of the following limitations. First, the adolescence is a developmental period where a series of affective, cognitive, social and biological changes take place, which could play an important role in the results of the study. Second, the adolescents with PLEs were selected based on two items in the YSR; it might have been more interesting to use other more comprehensive measures for the detection of these participants (e.g., CAPE-42). Third, the problems inherent to the administration of any type of self-report should be taken into account, with the possible difficulties in the interpretation and comprehension of some of the items, for which a good addition might have been the use of external informants such as parents or teachers, via hetero-applied self-reports, although the costs would have been quite considerable.

Future lines of research should continue examining the role of emotional problems and coping strategies as causal and/or moderator variables in the transition toward schizophrenia-spectrum disorders in high-risk individuals. Moreover, it is also of great interest to determine the type of relationship between these set of variables and their temporal evolution in the prediction of psychotic disorders.

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