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Coping styles and symptomatic manifestation of first-episode psychosis: Focus on cognitive performance

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ABSTRACT

Cognitive deficits are widely observed in patients with psychosis and represent one of most important determinants of functional outcomes. It has been shown that patients with psychosis prefer maladaptive coping strategies over active coping styles. However, it remains unknown whether cognitive impairments are related to coping styles in psychotic disorders. Therefore, the aim of this study was to assess whether cognitive deficits observed in patients with first-episode psychosis (FEP) might impact the use of specific coping strategies. We recruited 40 FEP patients and 35 healthy controls. In our study, FEP patients were more likely to use maladaptive coping styles after adjustment for education level and medication effects. The use of maladaptive coping strategies was associated with greater impairments of visuospatial/constructional abilities and language skills in FEP patients. In addition, lower odds of using adaptive coping were related to higher levels of depressive symptoms in the group of patients. Adaptive coping was associated with better global cognitive performance in healthy controls. Our results indicate that cognitive impairments, especially worse performance of visuospatial/constructional abilities and language skills, might be related to the preference of maladaptive coping strategies. Lower odds of using adaptive coping styles might be associated with more severe depressive symptomatology.

1. Introduction

Psychotic disorders are a clinically heterogeneous group of mental disorders that affects about 3% of the general population (Perala et al., 2007). Premorbid personality is meaningful and can impact the susceptibility of an individual to develop first-episode psychosis (FEP). Several studies highlight the role of traumatic life experiences, especially childhood adversities, and psychological stressors as risk factors that contribute to the development of psychosis (Misiak et al., 2017).

It has been hypothesized that stress coping strategies might moderate the effects of stressful life events on mental health outcomes. Coping is an action-oriented effort allowing the individual to deal with the requirements, resulting from stressful events and plays a significant role in mental health impairments occurring due to stressful experiences (Taylor and Stanton, 2007). Coping styles can be divided into maladaptive and adaptive strategies. Maladaptive coping strategies include for example avoidance, denial or substance use, while planning, active coping or the use of emotional support are the examples of adaptive coping styles.

Accumulating evidence indicates differences in the use of various coping styles between patients with psychotic disorders and healthy controls (Allott et al., 2015; Corrigan and Toomey, 1995; Horan and Blanchard, 2003; Lysaker et al., 2005; Ritsner et al., 2006; Takai et al., 1990; Ventura et al., 2004). These studies have revealed that the odds of avoidant coping strategies are higher, while the use of adaptive coping styles is less frequent in patients with psychosis compared to healthy controls. Importantly, maladaptive coping, which manifests in more frequent use of emotion-focused than task-focused coping, can be already observed in subjects at risk of psychosis (Mian et al., 2018). Moreover, it has been reported that less efficient coping might be

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related to symptomatic manifestation of psychotic disorders. For instance, Macdonald et al. (1998) reported that effective coping is correlated with lower severity of negative symptoms in patients with early psychosis. Other authors revealed that more severe psychotic symptoms are associated with lower odds of using active coping styles (Meyer, 2001).

Cognitive performance, which drives goal-directed activities, has also been found to impact individual appraisals of stressful situations and effective coping (Allott et al., 2015; Lysaker et al., 2005). Importantly, robust impairments across multiple domains of cognitive functioning are observed in more than 80% of patients with schizophrenia-spectrum disorders and can be detected in the premorbid phase of illness (Bora et al., 2010; Keefe and Fenton, 2007). In addition, cognitive performance is perceived as one of most important determinants of functional outcomes in patients with schizophrenia (Bowie and Harvey, 2006). Therefore, recognizing pathways from cognitive performance to functional capacity in psychosis might have important clinical implications. Previous studies, mostly performed among multiple-episode schizophrenia patients, have revealed that lower odds of using active coping and/or higher tendency to use maladaptive coping might be related to more robust cognitive deficits (Lysaker et al., 2005; MacAulay and Cohen, 2013; Van Den Bosch and Rombouts, 1997; Ventura et al., 2004; Wilder-Willis et al., 2002). Although coping styles are rather conceptualized as trait-dependent characteristics, there is some evidence that patients with early psychosis might use slightly different coping styles than those at other stages of illness (Kommescher et al., 2017). Additionally, patients who experienced multiple psychotic episodes might present more deficits in cognitive functioning. Therefore, in this study, we aimed to investigate the association between cognitive performance and coping styles in FEP patients and healthy controls. Moreover, we tested the hypothesis whether coping styles are related to clinical manifestation of FEP in terms of positive, negative and affective symptoms as well as general functioning.

2. Material and methods

2.1. Participants

Recruitment procedures were described in our previous article, addressing the impact of coping styles on biological dysregulations in FEP patients (Misiak et al., 2018a). Briefly, the study included 40 FEP inpatients (15 schizophrenia patients, 14 patients with schizophreniform disorder, 5 patients with brief psychotic disorder, 5 patients with schizoaffective disorder and 1 patient with delusional disorder), who were diagnosed using the DSM-IV criteria and represented a preliminary sample. There were 38 inpatients and 2 outpatients. Validation of clinical diagnosis was performed using the Operational Criteria for Psychotic Illness checklist (OPCRIT) (McGuffin, 1991). Additionally, we recruited 35 community healthy controls matched for age, sex and parental education as a proxy measure socioeconomic status. The study protocol was approved by the Wroclaw Medical University Ethics Committee (Wroclaw, Poland) and all participants provided written informed consent. All patients were recruited at Lower Silesian Centre of Mental Health (Wroclaw, Poland) and at Department and Clinic of Psychiatry at Pomeranian Medical University (Szczecin, Poland) in 2016–2018. Individuals with alcohol and/or drug dependence (except for nicotine) were excluded from the study. FEP patients were considered eligible if their antipsychotic treatment duration was no longer than 30 days. They were receiving the following antipsychotics: aripiprazole ($n = 4$), chlorprothixene ($n = 1$), clozapine ($n = 2$), haloperidol ($n = 2$), olanzapine ($n = 20$), perazine ($n = 3$), quetiapine ($n = 2$), risperidone ($n = 13$) and sulpride ($n = 1$) and zuclopenthixol ($n = 1$). There were 2 drug-naïve patients and 12 patients, who were receiving polytherapy of antipsychotics. To control for medication effects, a total chlorpromazine equivalent dosage (CPZeq) was recorded for each patient.

2.2. Measures

2.2.1. Clinical assessment

Psychotic symptomatology was evaluated using the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1987). Affective symptoms were recorded using the Hamilton Depression Rating Scale (HDRS) (Hamilton, 1960) and the Young Mania Rating Scale (YMRS) (Young et al., 1978). Functional capacity was assessed using the Global Assessment of Functioning (GAF) (Hall, 1995) and the Social and Occupational Functioning Assessment Scale (SOFAS) (Goldman et al., 1992). Cognitive performance was examined using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) (Randolph et al., 1998). The RBANS enables the examination of five cognitive domains: immediate memory (list learning and story memory), visuospatial/constructional functions (figure copy and line orientation), language (picture naming and semantic fluency), attention (digit span and coding) and delayed memory (list recall, list recognition, story memory and figure recall). Scores of tests for each domain are added to yield the total score that reflects global cognition.

2.2.2. Coping styles

Coping strategies were assessed using the COPE Inventory (Carver et al., 1989). The COPE is a self-administered questionnaire with 60 items that rate how often individuals use distinct coping styles on a 4-point Likert scale. Based on recent studies of patients with schizophrenia, two index scales, representing “adaptive” and “maladaptive” coping styles were formed (Horan and Blanchard, 2003; MacAulay and Cohen, 2013). The adaptive coping scale was created as a sum of scores from the following subscales: active coping (“taking action and exerting efforts to remove or circumvent stressors”), planning (“thinking about how to confront stressors”), suppression of competing activities (“limiting the activities not connected to the problem”), restraint (“passive waiting for the right time to resolve the problem”), acceptance (“accepting the situation as something irreversible, trying to live with a new situation”) and positive reinterpretation and growth (“to grow in light of a stressful situation that is perceived in a positive light”). In turn, the maladaptive coping scale represented a sum of scores from three subscales: denial (“ignoring the reality of a stressful situation”), mental disengagement (“withdrawing efforts by switching to other activities like sleeping, daydreaming or watching TV”) and behavioural disengagement (“withdrawing from activities that enable resolving a stressful situation”). The definitions of coping styles were provided in accordance with our previous article (Misiak et al., 2018a).

2.3. Statistics

Differences in the distribution of categorical variables between FEP patients and healthy controls were tested using the χ^2 test. The Kolmogorov-Smirnov test was used to assess distribution of continuous variables. Differences in continuous variables were tested using the *t*-tests in case of variables with normal distribution (language, attention, emotion-focused coping, avoidance-focused coping and distraction). Otherwise, the Mann–Whitney *U* test was used. Bivariate correlations were assessed using the Spearman rank correlation coefficients. The Benjamini–Hochberg correction with the false discovery rate of 25% was applied to the level of significance to control for the effects of multiple testing in case of bivariate comparisons and correlations. Results of bivariate tests were considered statistically significant if the *p*-value was ≤ 0.015. Subsequently, the analysis of co-variance (ANCOVA) was performed to test for differences in the use of coping styles and the scores of cognitive performance that were significant after multiple testing. Years of education and CPZeq were used as covariates since these variables might be related to cognitive

Table 1
General characteristics of FEP patients and controls.

	FEP (n = 40)	HCs (n = 35)	Significance
Age	27.6 ± 7.4	25.5 ± 6.7	U = 846.0, p = 0.119
Sex, M/F	21/19	14/21	χ^2 = 1.17, p = 0.279
Education, years	13.6 ± 2.5	15.3 ± 2.4	**U = 374.5, p = 0.002**
Paternal education, higher/other than higher	11/27	10/21	χ^2 = 1.14, p = 0.567
Maternal education, higher/other than higher	15/24	13/18	χ^2 = 0.09, p = 0.810
Adaptive coping	61.3 ± 13.5	64.4 ± 10.4	U = 528.0, p = 0.253
Maladaptive coping	22.7 ± 5.9	19.2 ± 4.2	**U = 837.5, p = 0.015**
RBANS – immediate memory	42.5 ± 8.4	53.1 ± 6.0	**U = 156.5, p < 0.001**
RBANS – visuospatial-constructional functions	34.6 ± 5.3	38.1 ± 2.4	**U = 329.0, p = 0.001**
RBANS – language	28.2 ± 6.2	35.5 ± 6.9	**t = −4.6, p < 0.001**
RBANS – attention	55.0 ± 12.3	69.4 ± 9.7	**t = −5.3, p < 0.001**
RBANS – delayed memory	46.8 ± 7.8	57.1 ± 4.0	**U = 117.0, p < 0.001**
RBANS – global cognition	207.3 ± 31.7	253.3 ± 20.2	**U = 109.0, p < 0.001**
CPZeq, mg/day	167.6 ± 206.9	0	–
Illness duration, weeks	26.1 ± 7.4	–	–
PANSS – positive symptoms	13.0 ± 5.2	–	–
PANSS – negative symptoms	18.4 ± 8.6	–	–
PANSS – general psychopathology	30.0 ± 8.8	–	–
HDRS	9.3 ± 9.2	–	–
YMRS	2.1 ± 5.1	–	–
SOFAS	52.5 ± 14.2	99.0 ± 3.4	**U < 1.0, p < 0.001**
GAF	54.5 ± 17.9	–	–

Abbreviations: CPZeq – chlorpromazine equivalent dosage, FEP – first-episode psychosis, HCs – healthy controls, GAF – the Global Assessment of Functioning, HDRS – the Hamilton Depression Rating Scale, PANSS – the Positive and Negative Syndrome Scale, RBANS – the Repetitive Battery for the Assessment of Neuropsychological Status, SOFAS – the Social and Occupational Functioning Assessment Scale, YMRS – the Young Mania Rating Scale,
Significant differences after adjustment for multiple testing were shown in bold characters ($p \leq 0.030$).

performance. Similarly, linear regression analysis was performed in case of bivariate correlations that appeared to be significant after adjustment testing to control for the effects of CPZeq and years of education. Variance inflation factor (VIF) was calculated to assess multicollinearity. Before performing ANCOVA and linear regression analysis, dependent variables with non-normal distribution were subjected to logarithmic or square root transformations. The alpha criterion level was set at 0.05 in ANCOVA and linear regression analysis. The Statistical Package for Social Sciences, version 20 (SPSS Inc., Chicago, Illinois, USA) was used to perform statistical analyses.

3. Results

The general characteristics of FEP patients and healthy controls are presented in Table 1. Both groups did not differ significantly in terms of age, sex and parental education. However, the number of education years was significantly lower in FEP patients compared to healthy controls. FEP patients were more likely to use maladaptive coping compared to healthy controls. Scores of performance on all cognitive domains and general functioning were significantly lower in the group of patients compared to healthy controls. Differences in the use of maladaptive coping and cognitive performance remained significant after co-varying for the number of education years and CPZeq (Table 2). Analysis of bivariate correlations revealed that neither the number of education years nor CPZeq were associated with adaptive and maladaptive coping (data not shown).

Bivariate correlations between coping styles, cognitive performance and symptomatic manifestation are shown in Table 3 and Table 4. There were significant negative correlations between the odds of using maladaptive coping and scores of visuospatial/constructional abilities as well as language skills in FEP patients. In healthy controls, only a significant positive correlation between global cognition and adaptive coping scores was found. There was a significant negative correlation between the HDRS score (depressive symptoms) and the use of adaptive coping in the group of patients. Other domains of symptomatic manifestation (the scores of PANSS subscales and YMRS) and general functioning (SOFAS and GAF scores) were not associated with the odds of using specific coping styles by FEP patients. Linear regression analysis revealed that the following correlations remained significant after controlling for potential confounders: 1) between adaptive coping and the HDRS score in FEP patients; 2) between maladaptive coping and the performance of visuospatial/constructional abilities as well as language skills; 3) between adaptive coping and the global cognition score in healthy controls (Table 5).

4. Discussion

This study examined whether cognitive deficits observed in FEP

Table 2
ANCOVA results testing for differences in coping styles and cognitive performance after co-varying for educational attainment and chlorpromazine equivalent dosage.

	Group (FEP/HCs)	Years of education	CPZeq
Maladaptive coping	F = 4.35, **p = 0.041**	F = 1.75, p = 0.191	–
Immediate memory	F = 16.31, **p < 0.001**	F = 6.41, **p = 0.014**	F = 0.67, p = 0.416
Visuospatial/constructional functions	F = 5.29, **p = 0.025**	F = 2.61, p = 0.111	F = 0.46, p = 0.500
Language	F = 16.83, **p < 0.001**	F = 2.02, p = 0.160	F = 3.11, p = 0.082
Attention	F = 13.02, **p = 0.001**	F = 3.09, p = 0.050	F = 0.53, p = 0.471
Delayed memory	F = 21.93, **p < 0.001**	F = 5.47, **p = 0.022**	F = 0.94, p = 0.334
Global cognition	F = 26.35, **p < 0.001**	F = 7.35, **p = 0.009**	F = 1.71, p = 0.196

Abbreviations: CPZeq – chlorpromazine equivalent dosage, FEP – first-episode psychosis, HCs – healthy controls.
Significant effects were marked with bold characters (p < 0.05).

Table 3
Correlations between cognitive performance and coping styles.

	Immediate memory	Visuospatial-constructional	Language	Attention	Delayed memory	Global cognition
FEP patients						
Adaptive coping	$r = 0.119$	$r = 0.241$	$r = 0.304$	$r = 0.184$	$r = 0.042$	$r = 0.225$
	$p = 0.475$	$p = 0.145$	$p = 0.063$	$p = 0.270$	$p = 0.802$	$p = 0.174$
Maladaptive coping	$r = -0.097$	$r = -0.413$	$r = -0.352$	$r = -0.199$	$r = -0.222$	$r = -0.274$
	$p = 0.567$	$\mathbf{p = 0.010}$	$\mathbf{p = 0.030}$	$p = 0.231$	$p = 0.180$	$p = 0.096$
Healthy controls						
Adaptive coping	$r = 0.335$	$r = 0.358$	$r = 0.267$	$r = 0.370$	$r = 0.322$	$r = 0.485$
	$p = 0.082$	$p = 0.061$	$p = 0.169$	$p = 0.053$	$p = 0.095$	$\mathbf{p = 0.009}$
Maladaptive coping	$r = 0.176$	$r = 0.270$	$r = -0.019$	$r = -0.118$	$r = 0.139$	$r = 0.022$
	$p = 0.369$	$p = 0.164$	$p = 0.924$	$p = 0.551$	$p = 0.482$	$p = 0.910$

Significant correlations after adjustment for multiple testing were shown in bold characters ($p \leq 0.030$).

Table 4
Correlations between coping styles, psychopathological manifestation and global functioning in FEP patients.

	HDRS	YMRS	PANSS-P	PANSS-N	GAF	SOFAS
Adaptive coping	$r = -0.374$	$r = 0.250$	$r = -0.040$	$r = -0.259$	$r = 0.030$	$r = 0.043$
	$\mathbf{p = 0.021}$	$p = 0.130$	$p = 0.812$	$p = 0.117$	$p = 0.857$	$p = 0.796$
Maladaptive coping	$r = 0.203$	$r = 0.021$	$r = 0.031$	$r = -0.098$	$r = 0.041$	$r = 0.134$
	$p = 0.221$	$p = 0.899$	$p = 0.853$	$p = 0.560$	$p = 0.808$	$p = 0.423$

Abbreviations: GAF – the Global Assessment of Functioning, HDRS – the Hamilton Depression Rating Scale, PANSS-N – the Positive and Negative Syndrome Scale (score of negative symptoms), PANSS-P – the Positive and Negative Syndrome Scale (score of positive symptoms), SOFAS – the Social and Occupational Functioning Assessment Scale.
Significant correlations after adjustment for multiple testing were shown in bold characters ($p \leq 0.030$).

patients might impact the use of specific stress coping strategies. FEP patients had significantly lower scores of all RBANS domains compared to healthy controls. These findings are in agreement with previous studies; however, there is some inconsistency regarding performance of visuospatial/constructional abilities in FEP patients. Indeed, there are studies showing similar (Hui et al., 2013) or worse (Zhang et al., 2015) performance of this cognitive domain in FEP patients compared to healthy controls. These inconsistencies might be attributed to a number of differences in general sample characteristics, including the use of various antipsychotics, psychopathological manifestation or duration of untreated psychosis.

In our study, we found that FEP patients are more likely to use maladaptive coping strategies compared to healthy controls. These observations stay in line with findings from previous studies (Allott et al., 2015; Horan and Blanchard, 2003; MacAulay and Cohen, 2013; Moritz et al., 2016; Ponizovsky, 2013; Ritsner et al., 2006; Van Den Bosch and Rombouts, 1997; Ventura et al., 2004). Higher odds of using maladaptive coping by FEP patients compared to healthy controls was found to be associated with more robust impairments of visuospatial/constructional abilities and language skills in our sample, even after controlling for educational attainment and medication effects. In healthy controls, only higher odds of using adaptive coping were related to better global cognitive performance. Currently, it is difficult to refer our findings to previous studies that were performed in patients at various stages of illness and used other tasks to measure cognitive performance. Interestingly, Lysaker et al. (2005) found that some maladaptive or passive coping strategies, such as ignoring and self-soothing, might be related to worse performance on the trail making task that also reflects some visuospatial abilities. Other studies also reported associations between adaptive or maladaptive coping styles and attention, distractibility, processing capacity, conceptual control, executive functions and memory performance (Van Den Bosch and Rombouts, 1997; Ventura et al., 2004; Wilder-Willis et al., 2002). Differential correlations between coping styles and cognition in FEP patients and healthy controls indicate that these associations are more complex than the linear models tested in correlational analyses. Similarly to our results, attention scores were associated with coping styles in patients with schizophrenia and psychometrically-defined schizotypy but not in healthy controls, in previous studies (MacAulay and Cohen, 2013; Ventura et al., 2004).

A cross-sectional study design does not allow to conclude on directions of causality. It might be implied that patients' preference of

Table 5
Linear regression analysis testing for the effects of cognition and depressive symptoms on coping styles, controlling for the effects of educational attainment and chlorpromazine equivalent dosage.

Coping style, group	Main determinant	Years of education	CPZeq
Adaptive coping, FEP	HDRS:		
	B = −0.547, $\mathbf{p = 0.023}$	B = 1.207, $p = 0.176$	B = −0.008, $p = 0.519$
Maladaptive coping, FEP	Language:		
	B = −0.376, $\mathbf{p = 0.026}$	B = −0.140, $p = 0.739$	B = 0.005, $p = 0.342$
Maladaptive coping, FEP	Visuospatial/constructional functions:		
	B = −0.789, $\mathbf{p = 0.046}$		
		B = −0.424, $p = 0.319$	B = 0.001, $p = 0.813$
Adaptive coping, HCs	Global cognition:		
	B = 0.203, $\mathbf{p = 0.048}$	B = 0.304, $p = 0.711$	-

Abbreviations: CPZeq – chlorpromazine equivalent dosage, FEP – first-episode psychosis, HCs – healthy controls, HDRS – the Hamilton Depression Rating Scale. VIF ≤ 1.358.
Significant effects were marked with bold characters ($p < 0.05$).

maladaptive coping styles can lead to over-activation of stress response mechanisms that appear to be deleterious for cognitive performance. For instance, according to several stress models of schizophrenia, enduring activation of the hypothalamic-pituitary-adrenal (HPA) axis leads to hypercortisolemia that is related to lower hippocampal volumes (Misiak et al., 2014; Walker and Diforio, 1997). Avoidant coping styles have been associated with enhanced cortisol suppression patterns induced by the administration of dexamethasone in healthy volunteers (Hori et al., 2010). We found that decreased use of active coping styles might be associated with higher levels of biological dysregulations related to stress response and captured as the allostatic load (AL) index (Misiak et al., 2018a). This effect appeared to be mediated by depressive symptomatology in FEP patients. Moreover, it has been reported that higher AL index is associated with reduced cortical volumes (Chiappelli et al., 2017), lower fornix structural connectivity (Savransky et al., 2017) and working memory deficits (Misiak et al., 2018b) in FEP and schizophrenia patients. Another direction of causality is that cognitive impairments might limit individual abilities to effectively appraise stressful situations and approach effective responses (Corrigan and Toomey, 1995; Lysaker et al., 2005; Penn et al., 1993).

Regarding the association with psychopathology, we found that depressive symptoms, but not positive or negative symptomatology, were related to lower preference of adaptive coping. These findings might provide important implications for studies investigating coping strategies in patients with psychosis. Indeed, a severity of depressive symptoms might be another factor accounting for differences in the use of active coping styles between patients with psychosis and healthy controls across various studies. Similar observations have been reported in previous studies (MacAulay and Cohen, 2013; Moritz et al., 2016; Orzechowska et al., 2013). In the study by Moritz et al. (2016) based on patients with psychosis, depression and healthy controls, depressive symptomatology was more closely related to dysfunctional coping than were positive symptoms. Surprisingly, we did not find any association between coping styles and global functioning. It might be assumed that the association between coping styles and general functioning is not linear. For instance, it might be important to investigate what is the extent of efficacy in applying particular coping strategies by patients with psychosis (Moritz et al., 2016; Westermann et al., 2013). Indeed, delusion-prone subjects were found to be less successful in applying reappraisal strategies (Westermann et al., 2013). Given that we found significant correlations between coping styles and cognitive performance, it should also be noticed that cognition is not a direct predictor of functional outcomes in patients with schizophrenia, and other factors mediate this relationship (Bowie and Harvey, 2006). Moreover, it should be noted that previous studies revealed significant associations between affective traits and coping styles in patients with schizophrenia (Horan et al., 2007; MacAulay and Cohen, 2013). In turn, affective traits and 'self-conscious emotions' have been associated with functional outcomes in patients with schizophrenia (Horan et al., 2008; MacAulay and Cohen, 2014). These findings together suggest that more research is needed to understand the relationship between general functioning, affect and coping. Finally, caution should be taken on the way these negative findings are interpreted since both tools – GAF and SOFAS provide only a limited insight into general functioning.

Our study has some limitations that need to be discussed. Firstly, our sample size was relatively low and the majority of patients were not drug-naïve. Therefore, our findings should be perceived as preliminary. However, acute phase of psychosis limits the possibilities of using self-administered questionnaires and performing assessment of cognitive performance. Additionally, medication effects were controlled by recording CPZeq on the day of assessment that was also included in statistical analysis as a co-variate. Another point is that the use of RBANS provides a limited insight into cognitive performance since this battery does not capture some domains, including motor abilities or executive functions (Hui et al., 2013; Hui et al., 2015; Hui et al., 2016). Finally, a cross-sectional study design limits insights into causal associations between cognitive performance, depressive symptoms and coping styles.

In summary, results of this study indicate that FEP patients might be more likely to use maladaptive coping styles than healthy controls. This profile of coping strategies might be related to more robust cognitive impairments, especially in the domain of language and visuospatial/constructional abilities. Lower odds of using adaptive coping might be associated with more severe depressive symptoms. However, longitudinal studies are required to disentangle direction of causality between cognitive deficits, depressive symptoms and coping styles. Results of this study might also have important clinical implications, providing novel mechanisms that link coping styles with cognitive impairments.

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Conflict of interest

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2018.12.083.

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