Archives of Psychiatry and Psychotherapy, 2024; 1: 7–15

10.12740/APP/162950

The comparison of the coping styles between patients in ultra – high risk for psychosis state, first episode of psychosis and chronic schizophrenia

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Summary

The aim of the study: The aim of this study was to investigate differences in coping styles between individuals at ultra high risk for psychosis, with first episode psychosis, chronic schizophrenia and healthy controls.

Subject or material and methods: A total of 167 individuals with chronic schizophrenia (CHS; n=66), first episode psychosis (FEP; n=31), at ultra high risk for psychosis (UHR; n=16) and healthy controls (HC; n=54) were recruited to complete the Coping Inventory for Stressful Situations (CISS) to investigate their preferred coping styles. Demographic data were collected using a short self-designed questionnaire.

Results: Our results demonstrated all participants' preference for mixed coping (i.e. a strategy in which two or three styles are applied with similar frequency). The second choice across the control group was task-oriented, and in the clinical groups emotion-oriented coping. Interestingly, task-oriented coping was significantly more frequent in controls relative to the clinical groups, while the frequency of emotion-oriented coping did not differ significantly across our sample. Avoidance-oriented coping was reported significantly more frequently in the CHS compared to both HC and UHR.

Discussion: This study demonstrates differences in coping with stressful situations between patients at various stages of psychosis and healthy individuals.

Conclusions: Therapeutic interventions for patients from the psychosis spectrum should include education on coping with stress and practical training of coping skills.

coping styles; uhr; first psychosis; chronic schizophrenia; task-oriented coping; emotion-oriented coping; avoidance – oriented coping

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1.INTRODUCTION

Among several other factors, a particularly important role in the etiology of psychotic disorders is attributed to psychosocial stress [1, 2, 3]. Stress-vulnerability models of schizophre-

nia refer to both neurobiological mechanisms of stress as well as the psychological aspects of experiencing stressful events in the onset and course of psychosis [1, 4]. A recent systematic review identified certain specific environmental stressors, such as childhood trauma, drug and alcohol misuse, urban living, migration and discrimination as likely risk factors of developing psychosis [5]. However, results of different studies indicate that throughout their lives, patients diagnosed with schizophrenia experience a similar number of or even fewer stressful events compared to healthy individuals [6, 7]. Hence, the factor that differentiates healthy people from those diagnosed with psychotic disorders is their ability to cope with stressful situations, and not the frequency of exposure to stress [2,6].

Folkman and Lazarus [8] define coping with stress as "the cognitive and behavioral efforts made to master, tolerate or reduce external and internal demands and conflicts among them." A genetically and environmentally determined, individual way of dealing with stress is called a coping style [9]. The ability to cope with stress has a regulatory function and affects various areas of human life. Endler and Parker [10] identify three main coping styles, i.e. task-, emotion – and avoidance-oriented coping. Task-oriented coping comprises an active search for methods necessary to solve a problem and direct actions towards altering the situation. This style is generally related to good mental health and considered to be the most adaptive one [10, 11]. Emotion-oriented coping involves self-preoccupation, daydreaming, distancing, seeking emotional support, analysis of own emotional states or emotional regulation responses, such as crying or outbursts of anger [10, 12]. There is evidence that emotion-oriented coping is adversely correlated with good health and increases the risk of depression, anxiety and poor recovery from illness [10,11]. Avoidance-oriented coping includes undertaking activities aimed at avoiding the problem and related distress, assuming one of two forms: distraction or social diversion [10]. This type of coping offers significant short-term benefits, especially in the case of severe stress that is difficult or impossible to control [11,13]. On the other hand, a long-term use of avoidance-related strategies may contribute to increased experience of stress and its negative consequences [11,13].

Individual coping styles are shaped by multiple factors, such as life history, sensory sensitivity, emotional arousal level, cognitive beliefs and social knowledge shape [12]. Neurodevelopmental theory of schizophrenia posits that patients from the psychosis spectrum have a specific structure of the nervous system that determines the way they receive and respond to the environmental stimuli [14]. This, in turn, may have a significant impact on developing maladaptive coping strategies. Patients with psychosis are more likely to have poor self-efficacy and attribution styles, leading to poor perceived social support, all of which have been found to be related to greater use of avoidance strategies [12]. Various studies on schizophrenia patients reveal that they are more likely to use passive rather than active coping styles [15,16]. Psychotic patients manifest a tendency towards perceiving difficult events as less predictable and controllable. They also present a poorer ability to cope due to experiencing more intense emotions in response to their appraisal of everyday hassles as stressful [4].

There is evidence that symptom severity, quality of life, cognitive and social functioning and subjective illness-related distress affect coping styles [17]. On the other hand, coping styles are reported to impact symptom severity, quality of life, self-efficacy, cognitive functioning and psychosocial skills in patients with first episode psychosis (FEP) [17]. People at ultra high risk of psychosis (UHR), which is associated with higher risk of developing schizophrenia or another psychotic disorder compared to the general population, are more likely to use maladaptive coping (i.e. emotion-focused style) [5]. UHR individuals are also less likely to use active styles (i.e. task-oriented) relative to healthy control groups [5].

The aim of this study was to investigate differences in coping with stress between UHR, FEP, CHS chronic schizophrenia) patients and HC (healthy controls). Our first hypothesis was that participants at different stages of psychosis would differ from the healthy controls in terms of the most frequently used coping styles. We assumed that the controls would report the greatest preference for the task-oriented style, with a lesser preference for both the emotional – and

avoidance-oriented coping as compared to all the other (clinical) groups. The second hypothesis was that CHS patients would be more likely to use emotional – and avoidance-oriented coping and less likely to use task-oriented coping than UHR or FEP patients. This study aims to extend the existing body of evidence on the strategies of coping with stress in the investigated populations and thus contribute to the development of optimal psychological and psychotherapeutic interventions for patients with psychosis and those at ultra-high risk of psychosis.

2.METHODS

2.1. Participants

Sixty-six CHS patients were recruited from inpatients, day treatment patients, and outpatients of the Psychiatry Department of the Pomeranian Medical University in Szczecin, Poland. The inclusion criteria were: 1) diagnosis of schizophrenia based on International Statistical Classification of Diseases and Related Health Problems (ICD-10) and the Mini-International Neuropsychiatric Interview (MINI), 2) symptom duration of ≥5 years, 3) age 18-60 years, 4) European ethnicity. The exclusion criteria were: 1) substance use disorder, 2) other mental or neurological disorders, 3) severe somatic comorbidity.

Thirty-one FEP patients and sixteen help-seeking UHR individuals were recruited from inpatients, day treatment patients, and outpatients of the Psychiatry Department of the Pomeranian Medical University in Szczecin, Poland, in the years 2018-2021. FEP patients met the following inclusion criteria: 1) diagnosis of acute psychotic episode based on the ICD-10 and the MINI, 2) no previous history of psychosis, 3) no previous history of antipsychotic treatment, 4) age 18-40 years, 5) European ethnicity. The exclusion criteria were: 1) current symptoms due to substance use, 2) substance use disorder, 3) other mental or neurological disease, 4) severe somatic comorbidity. UHR patients met the following inclusion criteria: 1) a brief limited intermittent psychotic episode (BLIPS), attenuated psychotic symptoms (APSS) or genetic risk and deterioration syndrome (GRD) diagnosed with the Structured Interview for Psychosis-Risk Syndromes (SIPS), 2) seeking psychiatric help, 3) no substance use disorder, 4) no other mental or neurological disorder, 5) no severe somatic comorbidity.

The healthy control group consisting of fifty-four persons without mental or neurological disorders were recruited from the local community. All healthy controls underwent a standard psychiatric evaluation with the use of a structured interview. The inclusion criteria were: 1) age 18-40 years, 2) European ethnicity, 3) no history of mental disorder. Exclusion criteria for healthy controls were the same as those for patients.

2.2. Measures

Demographic data were collected using a short self-designed questionnaire. Coping styles were evaluated with the Polish version of the Coping Inventory for Stressful Situations (CISS) [18]. This self-report measure consists of 48 items describing common responses to psychological distress. The questionnaire was developed based on Endler and Parker's theory, which distinguishes three styles of coping with stress (task-, emotion – and avoidance-oriented). The CISS has therefore a three-factor structure, with three main scales and two subscales for the avoidance-focused style. The frequency of different behaviors manifested in stressful situations are rated on a five-point scale. The CISS has high internal consistency, satisfactory stability and confirmed factor validity [18]. Reliability index for each scale is high, with the following average values of Cronbach's alpha: 0.88 for task-oriented, 0.88 for emotion-oriented, and 0.80 for avoidance-oriented coping.

2.3. Data analysis

All statistical analyzes were performed with the use of the JASP statistical package, version 0.16.1. The distributions of continuous variables were assessed using the Shapiro-Wilk test, and the homogeneity of variance verified by Levene's test. All relationships between the investigated variables were verified through parametric and non-parametric ranking-based tests. Analysis of the differences in the frequency of applied coping styles between the controls and clinical groups was calculated with the x^2, ANOVA and post-hoc

LSD test and Kruskal-Wallis and post-hoc Dunn test. Whenever the assumption of homogeneity of variance was violated, we used the Welch's correction. Analysis of differences in the severity of particular types of symptoms between the groups with primary and chronic psychosis were carried out using the Mann-Whitney U test. If the assumption of normality was violated, robust statistics were used. The strength of the emerged intergroup differences was verified using Cramer's V (for the x^2), ω^2 (for ANOVA test), ε^2 (for the Kruskal-Wallis test), and rank – biserial correlations (for the Mann-Whitney U test).

3.RESULTS

3.1. Participants Characteristics

Detailed participant characteristics are presented in Table 1. The study included 167 participants, with 54 controls (32%), and 113 (68%) psychosis spectrum patients. The patients were further divided into three subgroups based on diagnosis – 16 at ultra high risk of psychosis(UHR) (9%), 31 with first episode psychosis (FP) (19%), and 66 with chronic schizophrenia (40%). There were no significant differences in sex. The sample included 75 females (45%), of whom 25 (33%) were healthy controls and 50 (66%) were in the clinical group; and 92 males (55%), among whom 29 (32%) were healthy controls and 63 (68%) were in the clinical group. Significant differences emerged in terms of age ($p < 0.001$) and years of education ($p < 0.001$). The mean age was 30.7 ± 7.9 years in the entire sample; 27.9 ± 6.1 years in the control group; and 32.1 ± 8.3 years in the clinical group. Patients with CHS were significantly older than those with FEP and UHR. In turn, FEP patients were older than UHR patients. There were no significant correlations between age and any of the coping styles (Table 2). The mean number of years of education was 14.6 ± 3.5 in the entire sample: 16.6 ± 2.6 years in the control group, and 13.7 ± 3.5 years in the clinical group. UHR patients had fewer years of education relative to FEP and CHS patients. Healthy controls reported the highest number of years of education.

First episode psychosis and chronic schizophrenia groups differed significantly in terms of positive symptom severity ($U = 732.00; p < 0.05$), with close to medium effect size (rrb = – 0.28). The groups also differed in the severity of negative symptoms ($U = 793.00; p < 0.1$). The effect size of the differences was small (rrb = – 0.21). No differences emerged in the severity of the disorganiz ation symptoms or the overall PANSS score.

Table 1. Demographic and clinical characteristics of participants.

N = 164	Healthy Control (HC) (N = 51)	Ultra High Risk (UHR) (N = 16)	First Psychosis (FP) N = (31)	Chronic Schizophrenia (CHS) N = (66)	*F* / *H* / *U* / χ^2	ω^2 / ε^2 / r^{rb} / [4] *V*
Age: *M* (*SD*)	26.86 (4,20)	24.13 (4.85)	27.72 (6.89)	35.97 (7.18)	[1] 29.68***	[1] 0.35
Sex: (*M* / *K*)	28 / 23	7 / 8	17 / 15	39 / 27	[4] 1.98	-
Years of education: *M* (*SD*)	16.53 (2.63)	12.81 (3.33)	13.22 (3.99)	14.14 (3.28)	[1] 9.90***	[1] 0.14
PANSS/SIPS P: *M* (*SD*)	-	[B] 6.27 (3.97)	[A] 15.68 (5.19)	[A] 13.55 (7.52)	[3] 732.00*	[3] -0.28
PANSS/SIPS N: *M* (*SD*)	-	[B] 11.47 (6.03)	[A] 18.00 (6.75)	[A] 15.44 (7.97)	[3] 793.00'	[3] -0.22
PANSS/SIPS D: *M* (*SD*)	-	[B] 4.53 (3.36)	[A] 16.10 (5.57)	[A] 16.15 (8.19)	[3] 943.50	-
PANSS/SIPS G: *M* (*SD*)	-	[B] 8.00 (3.98)	[A] 32.58 (8.49)	[A] 31.36 (14.33)	[3] 915.50	-

[A] PANSS – Positive and Negative Syndrome Scale

[B] SIPS – Structured Interview for Prodromal Symptoms

PANSS / SIPS – P – Positive symptoms / N – Negative symptoms / D – Disorganisation / G – Global score

[1] *F* Welch analysis of variance/ [2] *H* Kruskal-Wallis analysis of variance / [3] *U* Mann-Whitney'a test / [4] Chi^2 test

[1] ω^2 / [2] ε^2 / [3] r^{rb} / [4] Cramer's *V*

' p < 0.1 / * p < 0.05 / ** p < 0.01 / *** p < 0.001

Table 2. Correlation between age and coping styles.

	r	*p*
Age +/ – CISS TOCS	-0,6	0,43
Age +/ – CISS EOCS	-0,07	0,35
Age +/ – CISS AOCS	0,12	0,14
CISS – Coping Inventory for Stressful Situations CISS T-/E-/A-/ – Task / Emotions / Avoidance oriented Coping Style		

3.2. Differences in Coping Styles

As shown in Table 3 and Figures 1-3, there were significant differences in terms of the dominant coping styles (x2 = 66.94; p <0.001), with large effect size (V = 0.37). Mixed coping emerged as the preferred style across all the investigated groups. The second most frequently used form of coping was task-oriented in the control group, and emotion-oriented in the clinical groups.

The groups differed significantly in the frequency of using task-oriented coping (F = 23.75; p <0.001). The size of the observed differences was very high (2 = 0.29). Significant differences were found between the controls and the clinical groups (GK – / FP / CHP = p <0.001; GK-UHR = p < 0.01), as well as the chronic schizophrenia and first episode psychosis groups (CHP-FP = p <0.001), and first episode psychosis and ultra high risk groups (FP-UHR = p <0.05). There were no differences between the chronic schizophrenia and ultra high risk groups (Figure 1).

The groups did not differ significantly in the frequency of using emotion-oriented coping (F = 1.41; p = 0.25; see: Figure 2).

Significant inter-group differences emerged in the frequency of avoidance-oriented coping (H = 12.44; p <0.01), with moderate effect size (2 = 0.08). They were observed between the controls and chronic schizophrenia patients (HC-CHS = p <0.05) and the chronic schizophrenia and ultra high risk groups (CHS – UHR = p <0.05; see: Figure 3).

Table 3. Differences in coping styles between UHR, first psychosis, chronic schizophrenia and healthy controls.

N = 164	Healthy Control (HC) (N = 51)	Ultra High Risk (UHR) (N = 16)	First Psychosis (FP) N = (31)	Chronic Schizophrenia (CHS) N = (66)	*F / H / U* / χ^2	ω^2 / ε^2 / r^{rb}/ [4] *V*
CISS TOCS: *M* (*SD*)	62.33 (7.13)	53.47 (11.03)	45.32 (11.10)	53.81 (10.75)	[1] 23.15***	[1] 0.29
CISS EOCS: *M* (*SD*)	42.26 (12.19)	45.43 (13.57)	48.03 (13.15)	43.42 (9.31)	[1] 1.55	-
CISS AOCS: *M* (*SD*)	39.65 (7.36)	37.63 (9.00)	42.68 (9.62)	43.53 (5.83)	[2] 12.44**	[2] 0.08
CISS DCS: (T/E/A/M)	21 / 3 / – / 27	3 / 4 / – / 9	1 / 11 / 3 / 16	1 / 3 / 2 / 60	[4] 66.94***	[4] 0.37
CISS – Coping Inventory for Stressful Situations CISS T-/E-/A-/ – Task / Emotions / Avoidance oriented Coping Style DCS – Dominating Coping style T / E / A / M – Task / Emotions / Avoidance / Mixed [1] *F* Welch analysis of variance/ [2] *H* Kruskal-Wallis analysis of variance / [3] *U* Mann-Whitney'a test / [4] Chi^2 test [1] ω^2 / [2] ε^2 / [3] r^{rb}/ [4] Cramer's *V* ' p < 0.1 / * p < 0.05 / ** p < 0.01 / *** p < 0.001						

4. DISCUSSION

In this study we investigated and compared coping styles in ultra high risk of psychosis (UHR), first episode psychosis (FEP), chronic schizophrenia (CHS) and healthy control (HC) groups. Our results indicate that all participants show preference for mixed coping (i.e. a strategy in which two or three styles are applied with similar frequency). The second choice across the control group was task-oriented, and in the clinical groups – emotion-oriented coping. Interesting-

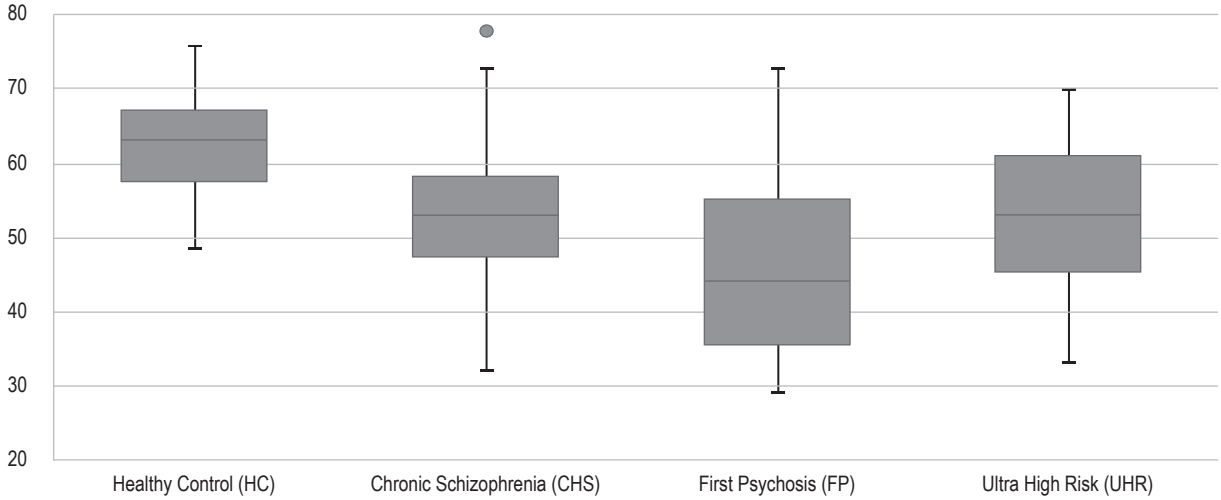

Figure 1. Frequency of using task-oriented coping in UHR, first psychosis, chronic schizophrenia and healthy control groups.

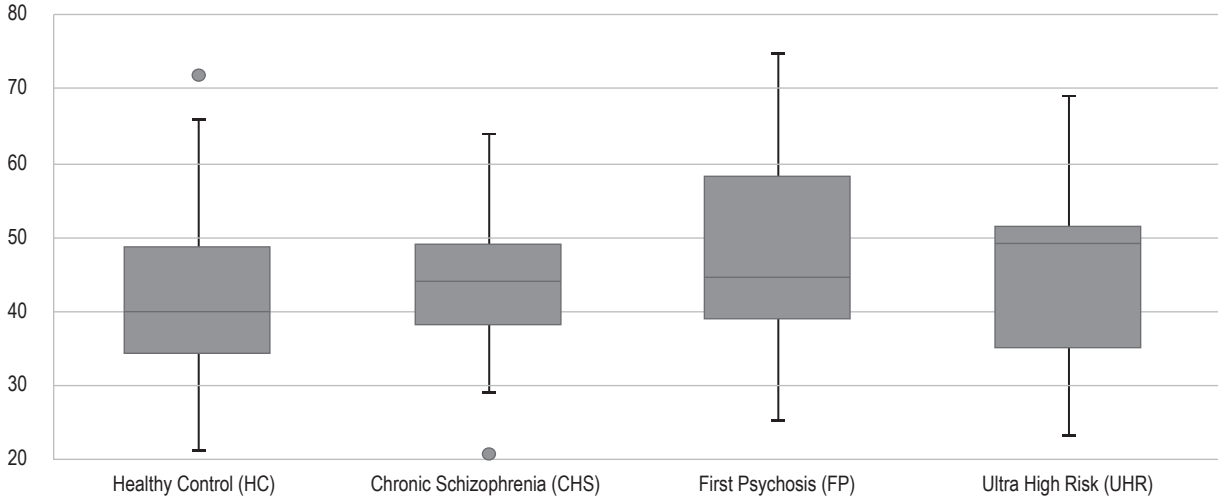

Figure 2. Frequency of using emotion-oriented coping in UHR, first psychosis, chronic schizophrenia and healthy control groups.

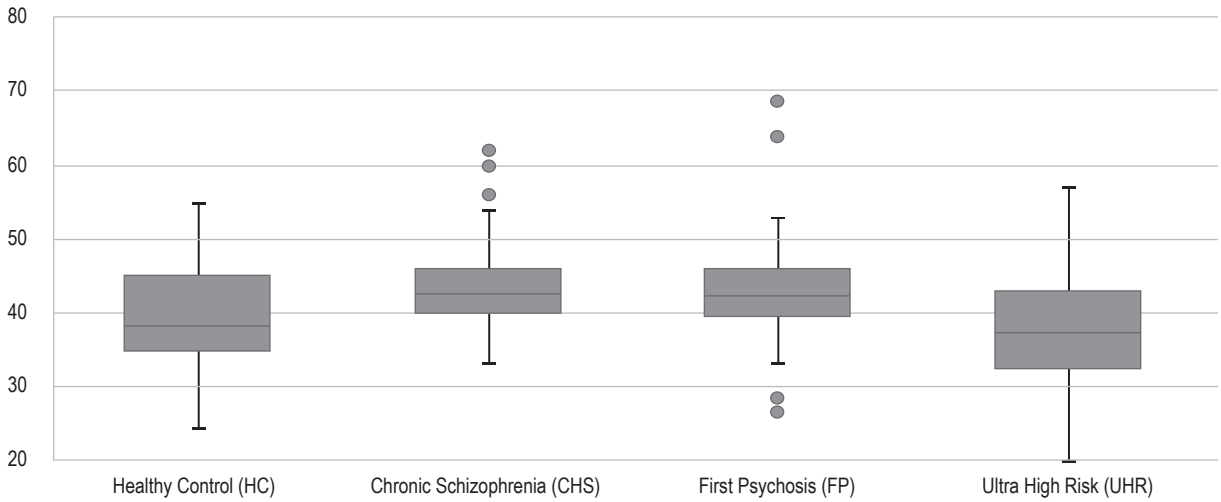

Figure 3. Frequency of using avoidance-oriented coping in UHR, first psychosis, chronic schizophrenia and healthy control groups.

ly, task-oriented coping was significantly more frequent in the controls relative to the clinical groups, while the frequency of emotion-oriented coping did not differ significantly across our sample. Avoidance-oriented coping was reported significantly more frequently in the CHS compared to both HC and UHR.

Our results demonstrate close to moderate differences in the severity of positive symptoms between the FEP and CHS groups. Positive symptom severity was greater in the FEP group. The severity of negative symptoms was also greater in the FEP group relative to the CHS patients. No differences emerged in the severity of disorganization symptoms or the overall PANSS score.

To our knowledge, this is the first study to compare coping with stress in UHR, first episode psychosis, chronic schizophrenia and healthy control groups. While research to date has investigated some samples from the psychosis spectrum, none has included all of them at once.

In most situations, task-oriented coping contributes to reducing stress through the elimination of its source. High levels of stress are among factors underlying the emergence of mental illnesses, including schizophrenia. On the one hand, intense or prolonged stress may lead to the disease onset, while on the other, the disease process may reduce the competence to cope with difficulties. In their study, Misiak et al. found FEP patients to report the use of the task-oriented style less frequently than the control group [3]. Allot et al. [19] obtained similar results. What is more, reduced task-focused coping in the FEP group was associated with higher levels of stress [19]. Our results are in line with these reports, demonstrating a lower frequency of task-oriented coping in the FEP group as compared to the controls. What is more, we found task-oriented coping to be the least preferred form of coping in the FEP patients as compared to all the other investigated groups.

A systematic review conducted in 2017 showed a more frequent use of avoidant and a less frequent use of task-oriented coping in UHR populations as compared to controls [5]. Our results are in line regarding the frequency of task-oriented coping, but conflicting as regards the use of avoidance-oriented style. What is more, Mian et al. [5] showed that UHR individuals used emotion-oriented strategies more frequently than task-oriented coping, which we did not observe in our sample. The authors suggested that UHR individuals were generally more likely to use maladaptive coping (including e.g. self-blame or denial) than healthy control groups, which translated to their overall poorer psychosocial functioning [5].

Much in line with other available evidence [20, 21, 22, 23], our study suggests a greater use of avoidant coping in CHS patients as compared to HC. Elevated use of avoidant strategies in patients with schizophrenia may result from various underlying processes. On the one hand, it may be the effect of long-lasting negative symptoms, including i.a. abulia and anhedonia, which are closely related to motivational processes. Patients who have been struggling with psychosis for a long time experience greater anxiety than healthy individuals, which leads to their avoidance of situations that may cause or intensify this anxiety. McAulay et al. [22] found that it is rather affective traits than cognitive performance that constitute a better predictor of attitude and avoidant coping strategies. Awareness of the use of avoidant strategies by CHS patients and their frequency is important as it may affect other aspects of functioning, resulting in e.g. their lesser awareness of the consequences of illness, exacerbating psychological distress or undermining social networks [24].

Our study shows that CHS patients use avoidant coping more frequently than UHR and FEP patients. Therefore, psychoeducation on techniques of coping with stress should be addressed to patients at all stages of psychotic disorders. In addition to education, it seems reasonable to offer patients psychotherapeutic interventions aimed at shaping more effective techniques of coping with stress. Developing adaptive coping strategies at the onset of mental health problems can protect the patient against the negative consequences of the experienced stress. What is more, strengthening competences in coping with stress can have a positive impact on shaping self-esteem and self-efficacy.

This study has several limitations. Firstly, the study groups were unequal, including fewer UHR than CHS, FEP or HC individuals. A bigger UHR sample could very likely contribute to

greater statistical power of the results. Secondly, our sampling was not random and single centre-based. Thirdly, our conclusions concerning the preferred coping strategies were drawn based on a self-report questionnaire. This type of research is less reliable and more subjective compared to a study involving a psychological interview and observation. Fourthly, this study provided information on the participants' coping preferences, but did not take into account positive or negative consequences of their use.

5. CONCLUSIONS

Patients at various stages of psychosis differ from healthy individuals in terms of their coping preferences. Healthy people use the task-oriented style significantly more frequently than people at the psychosis spectrum. Avoidance-oriented coping is more frequently reported by patients with chronic schizophrenia compared to healthy individuals or those in the high risk of developing psychosis. Avoidance-based strategies are considered less adaptive than those based on finding a solution to the problem. Therefore, therapeutic interventions for patients from the psychosis spectrum should include education on coping with stress and practical training of coping skills.

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