

Associations of Schizotypal Personality and Paranoid Ideation With the Degree of Flow Experience in Daily Life

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Abstract

Background: Flow experience is thought to enhance health-related quality of life by mitigating stress and providing a sense of achievement. The associations between flow experience and subclinical psychiatric anomalies, such as schizotypal personality traits and paranoid ideation, have not been examined.

Objectives: This study aimed to evaluate the associations between flow experience and subclinical psychiatric anomalies in a healthy population.

Materials and Methods: This cross-sectional study included 64 undergraduates from Kibi international university, Japan (42 males, 22 females; mean age 20.1 ± 1.13 years). Schizotypal personality was measured using the Japanese version of the Oxford Schizotypal Personality Scale (STA). Paranoia was measured using the Japanese-version Paranoia Checklist (JPC). Flow experience was measured using the Flow Experience Checklist (FEC).

Results: Both the STA score and the JPC distress subscore were positively correlated with the FEC score. However, no correlation was observed between either the JPC conviction or the frequency subscore and the FEC score. Stepwise multiple regression analysis revealed that the FEC score was influenced only by the STA score.

Conclusions: Schizotypal personality traits appear to enhance the quality of flow experiences, but not their frequency or duration. We suggest that these intense flow experiences serve as a distraction from psychological abnormalities, such as paranoid ideation.

Keywords: Schizotypal Personality, Paranoia, Mental Health

1. Background

An individual with a schizotypal personality experiences a mental state with some similarities to schizophrenia (1). The continuity and commonality of schizophrenia with schizotypal personality is evidenced by comparable resting brain patterns on near-infrared spectroscopy (2), and similar pathogenic mechanisms are proposed that suggest a common underlying personality malfunction. Paranoia is a primary symptom of schizophrenia, but paranoid ideation is also observed in healthy individuals (3) at rates as high as 47% within a subclinical population (4). Thus, schizotypal personality traits and paranoid ideation are not unique to clinical populations.

Environmental stressors can exacerbate these traits in vulnerable individuals. For instance, in one study, peer victimization predisposed individuals to paranoid ideation and heightened schizotypal personality among 3,508 children and adolescents (5). Moreover, college students with schizotypal personality tend to experience higher levels of paranoid ideation and general health problems (6). Nevertheless, further evidence is necessary to identify meth-

ods to promote and preserve the health of individuals with schizotypal personality and to control paranoid ideation among subclinical populations.

Flow experience is a psychological construct closely related to a sense of purpose in life, vitality, and the ability to overcome hardship; it is a state diametrically opposite to depression and lethargy (7). Flow has been defined as “the holistic sensation that people feel when they act with total involvement” (8). Previous studies suggested that flow experience is positively associated with health-related quality of life, decreased subjective stress, a sense of coherence, and positive psychological tendencies (9-14).

The relationship between health status and flow experience has been extensively studied, but few studies have evaluated the relationships among schizotypal personality, paranoid ideation, and flow experience. We examined the effects of subclinical schizotypal personality and paranoid ideation on flow experience quality, duration, and frequency, by psychometric testing and correlation analyses.

2. Objectives

The objective of this study was to investigate the associations of flow experience (intensity, duration, and frequency) with schizotypal personality traits and paranoid ideation in a subclinical population. Greater knowledge of these interactions could facilitate the development of treatments for both subclinical and mentally ill populations.

3. Materials and Methods

3.1. Participants

This was a cross-sectional study of healthy Japanese volunteers. In total, 74 undergraduates (45 males, 29 females) were recruited from the Department of Occupational Therapy at Kibi international university, Japan. The cohort consisted of a convenience sample of young university undergraduates. The study was conducted in compliance with the Declaration of Helsinki; all participants were assured of anonymity, and all provided written informed consent. This study was approved by the institutional review board of Kibi international university, Okayama, Japan.

3.2. Measures

3.2.1. Schizotypal Personality

The Japanese version of the Oxford Schizotypal Personality Scale (STA) (15) was used to evaluate the character tendency of healthy individuals who experienced symptoms similar to the positive symptoms of schizophrenia. The scale comprises 37 items with yes or no responses, with a score range of 0–37. Higher scores indicate more schizotypal personality characteristics. The reliability and validity of this scale has been previously established (15).

3.2.2. Paranoia

The Japanese-version Paranoia Checklist (JPC) (16, 17) evaluates paranoid ideation in healthy individuals. The JPC is a validated self-report measure comprising nine items and yielding three subscales: frequency, conviction, and distress. The items are answered on a 5-point Likert scale (1–5), with a score range of 9–45. Higher subscores indicate greater frequency of paranoid ideation, stronger conviction, and greater associated distress. The reliability and validity of this scale has been previously established (17).

3.2.3. Flow Experience

The Flow Experience Checklist (FEC) (18) evaluates the frequency, degree, and duration of flow experience in daily life. Items are answered on a 7-point Likert scale (1–7). FEC is a validated self-report measure comprising one item

that measures flow experience frequency (FEC frequency score; range 1–7) and 10 items that measure the intensity of flow experience (FEC score; range 10–70). In addition, important activities in daily life were identified, and the time spent on each activity was determined. A higher FEC score indicates that flow is experienced more frequently, to a greater degree, and for longer durations in daily life. The reliability and validity of this scale has been previously established (18).

3.2.4. Statistical Analyses

Descriptive statistics were calculated for each variable. The relationship between two continuous variables was assessed using Pearson's partial correlation analysis, adjusted for age and gender. We analyzed correlations between STA and FEC, and between JPC and FEC. A correlation analysis was used to describe the strength and direction of the relationships between variables. To assess the relationship between FEC and the descriptive variables (STA and JPC), we conducted a stepwise multiple regression analysis adjusted for age and gender. A P value of < 0.05 was considered statistically significant. All analyses were performed using SPSS version 19 for Windows (Chicago, IL, USA).

4. Results

In total, 64 healthy Japanese volunteers (42 males, 22 females; mean age 20.1 ± 1.13 years) participated in this study. The response rate was 86.5%.

4.1. STA and Correlation With FEC

Table 1 presents the averaged STA and FEC scores. Table 2 indicates that the STA scores were positively correlated with the FEC scores ($r = 0.289$, P value = 0.022). However, the STA scores did not correlate with either the frequency of flow experience ($r = 0.051$, P value = 0.69) or the duration (hour/week) of the activity ($r = 0.241$, P value = 0.06).

4.2. JPC and Correlation With FEC

Table 1 presents the averaged JPC scores. As shown in Table 3, the JPC distress subscores were positively correlated with the FEC scores ($r = 0.27$, P value = 0.034) but not with either the frequency of flow experience ($r = 0.22$, P value = 0.083) or the duration (hour/week) of the activity ($r = 0.24$, P value = 0.056). The JPC frequency subscores did not correlate with the frequency of flow experience ($r = 0.002$, P value = 0.985), duration (h/week) of activity ($r = 0.09$, P value = 0.502), or FEC scores ($r = 0.13$, P value = 0.328). Similarly, the JPC conviction subscores did not correlate with the frequency of flow experience ($r = 0.11$, P value = 0.382), duration (hour/week) of the activity ($r = 0.23$, P value = 0.068), or FEC scores ($r = 0.16$, P value = 0.216).

Table 1. Participant Characteristics

	Mean \pm SD
Age, y	20.1 \pm 1.13
Gender	
Male	42
Female	22
FEC	
Frequency of flow experience	4.98 \pm 1.03
Duration of activity, h/week	8.73 \pm 5.15
FEC score	46.92 \pm 5.61
STA	
STA score	9.48 \pm 6.97
JPC	
JPC frequency subscore	17.83 \pm 6.74
JPC conviction subscore	16.83 \pm 6.41
JPC distress subscore	17.03 \pm 7.51

Abbreviations: FEC, Flow Experience Checklist; JPC, Japanese-version Paranoia Checklist; SD, standard deviation; STA, Japanese Version of the Oxford Schizotypal Personality Scale.

Table 2. Correlation Between STA and FEC Scores

FEC	STA Score
Frequency of flow experience	.051
Duration of activity, h/week	.241
FEC score	.289 ^a

Abbreviations: FEC, Flow Experience Checklist; STA, Japanese Version of the Oxford Schizotypal Personality Scale.

^aP < 0.05 is significant.

Table 3. Correlations Between JPC Subscores and FEC Score

FEC	JPC Subscores		
	Frequency	Conviction	Distress
Frequency of flow experience	.002	.11	.22
Duration of the activity, h/week	.09	.23	.24
FEC score	.13	.16	.27 ^a

Abbreviations: FEC, Flow Experience Checklist; JPC, Japanese-version Paranoia Checklist.

^aP value = 0.034 is significant.

4.3. Stepwise Multiple Regression Analysis of FEC Scores

This analysis was adjusted for age, gender (male, 1; female, 0), the STA score, and the JPC distress subscore. The results suggested that the FEC score was influenced only by

Table 4. Stepwise Multiple Regression Analysis of FEC Scores

	Coefficient	SE Coefficient	β	P Value
Constant	44.71	1.15		.00
STA score	0.233	0.098	.289	.02

Abbreviations: FEC, Flow Experience Checklist; JPC, Japanese-version Paranoia Checklist; SE, standard error; STA, Japanese Version of the Oxford Schizotypal Personality Scale. $R^2 = 0.084$, adjusted $R^2 = 0.069$ Stepwise multiple regression, adjusted for age and gender (male, 1; female, 0), the STA score and JPC distress scores.

the STA score ($R^2 = 0.084$, adjusted $R^2 = 0.069$, and P value = 0.02; Table 4).

$R^2 = 0.084$, adjusted $R^2 = 0.069$ Stepwise multiple regression, adjusted for age and gender (male, 1; female, 0), the STA score and JPC distress scores.

5. Discussion

The present study assessed the relationships between flow experience in daily life and both schizotypal personality and paranoid ideation in a healthy population. The results suggested that schizotypal personality and distress associated with paranoid ideation were related to a higher degree of flow experience in daily life. However, the results of the stepwise multiple regression analysis suggested that the FEC score was influenced only by the STA score.

We suggest that schizotypal personality is positively associated with the degree of flow experience in daily life. Our results are consistent with those of Nelson and Rawlings (19), who reported a positive association between schizotypy and flow experience in a sample of 100 artists. They suggested that low latent inhibition (LI) among schizotypal individuals may facilitate entry into flow states (19). Another study reported a greater frequency of high creative achievement in subjects with disorders of LI (20). Therefore, the state of low LI that is characteristic of the schizotypal personality may increase the degree of flow. In addition, we speculate that flow may not necessarily be a stable psychological condition in a person challenged to perform a task. In our study, schizotypal personality did not correlate with the frequency or duration of flow experience. In other words, qualitative aspects (i.e., degree) are more important than quantitative aspects (i.e., frequency and duration) of flow in the context of schizotypal personality.

We also found that distress associated with paranoid ideation was positively associated with the degree of flow experience in daily life. Flow experience helps organize the mind and mitigates psychological entropy (particularly counterproductive information and emotional states

that prevent an individual from performing the intended task) that may interfere with goal completion (21). Therefore, individuals experiencing a strong sense of distress related to paranoid ideation may seek to engage in an activity that distracts them from the distress. This is consistent with previous studies reporting that individuals take evasive action to reduce the distress associated with delusions (22). Therefore, such individuals probably represent a sub-clinical cohort of patients.

This study has several limitations. First, our data were from a limited Japanese population (young university-educated adults), which prohibits generalization. Second, we collected only basic demographic information, such as age and gender, and were unable to collect additional information that could have influenced flow experience, schizotypal personality, or/and paranoid ideation. Third, we investigated a single point in time, which limits conclusions about the directions of causality among variables. Therefore, further investigation requires a prospective, longitudinal study design with a larger cohort and control of potential confounders.

The present study indicates that schizotypal personality and distress associated with paranoid ideation are associated with the degree of flow experience in daily life. These findings suggest that schizotypal personality and paranoid ideation are related to increased quality of flow experience in daily life in subclinical populations. It can be argued that subclinical patients engage in greater flow experiences to distract themselves from the perceived threat of psychological deterioration.

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