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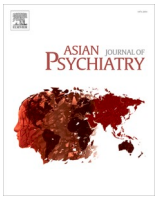

Letter to the Editor

Gender differences in resilience among patients with schizophrenia

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1. Introduction

Resilience is a multifactorial concept, commonly conceptualized as being composed of self-efficacy, competence, and acceptance (Ayed et al., 2019; Connor and Davidson, 2003). Resilience is one of the protective factors that can influence the development of the course, symptoms, and clinical condition of schizophrenia (Zizolfi et al., 2019). Higher resilience has shown an association with lower depression, better life functioning, and higher quality of life (Hofer et al., 2016; Kim and Jang, 2019; Yeo et al., 2022). Furthermore, resilience plays an important role in reducing the negative impacts of childhood trauma on people with schizophrenia (Lui et al., 2024).

Gender differences have been explored in schizophrenia in relation to incidence and symptom profiles, where female and male patients are different in terms of biological and psychosocial factors (Riecher-Rössler et al., 2018). Women showed a slightly lower incidence rate, later onset, shorter untreated illness and hospital stay, lower relapse, and higher life expectancy than men. These differences may support the evidence that women have better social functioning than men during the course of illness (Falkenburg and Tracy, 2012; Ochoa et al., 2012; Riecher-Rössler et al., 2018), in which higher resilience may play an important role between genders. Therefore, we aimed to examine gender differences in resilience among patients with schizophrenia in Indonesia.

2. Methods

Data were collected from a psychiatric hospital in Indonesia. A total of 265 patients met the criteria: diagnosed with schizophrenia, aged between 18 and 60 years old, in the rehabilitation phase, and capable of providing informed consent. We collected data using the demographic questionnaire and the Connor-Davidson Resilience Scale 10 (Davidson and Connor, 2018). The CD-RISC 10 reflects three key factors: self-competence, self-efficacy, and positive acceptance. All items were scored on five Likert scales, from 0 (strongly disagree) to 4 (strongly agree), with a total score ranging from 0 to 40, where a higher score indicates a greater level of resilience. In this study, patients were assessed using the Indonesian translation of the CD-RISC 10 by Lamsinar (Davidson and Connor, 2018). The Indonesian version of the CD-RISC 10 indicated good internal consistency (Cronbach's alpha = 0.86). The three key factors of self-competence, self-efficacy, and positive acceptance also had good internal consistency (Cronbach's alpha = 0.76, 0.82, 0.69, respectively).

Data were analyzed using descriptive statistics, *t*-test (or non-parametric equivalents) and chi-square test (or Fisher's exact test) to examine if characteristics of the participants differed by gender. An analysis of covariance (ANCOVA) was conducted to examine if there is any significant difference between genders in resilience score and its sub-scales, covarying for identified potential confounds, including age, age of onset, being single, being married, being employed, and not completing up to elementary school.

3. Results

Table 1 shows that 93 patients (35 %) were female. The age of onset was significantly higher in females ($p = 0.001$). Compared with males, females had higher ratios in being married and lower ratios in being single, employed, and completing up to elementary school ($p < 0.05$ for all). There were no significant differences between genders in other categories.

In terms of resilience, there was a significant difference by gender ($p = 0.015$), where females (26.6 ± 6.3) reported higher resilience than males (24.3 ± 7.5). Among the three subscales of resilience, only the self-efficacy was significantly different between genders ($p < 0.001$). The ANCOVA results showed that resilience total scores ($F(1258) = 6.689$, $p = 0.01$, partial eta squared= 0.025, small effect), self-efficacy scores ($F(1258) = 12.202$, $p < 0.001$, partial eta squared= 0.045, small effect), and positive acceptance scores ($F(1258) = 4.195$, $p = 0.042$, partial eta squared= 0.016, small effect) were significantly different between men and women. However, self-competence scores were not significantly different ($F(1258) = 0.590$, $p = 0.443$). In no case, did any of the covariates produce a significant difference in total resilience.

4. Discussion

Our study demonstrated that females have a higher level of resilience than males. Among the three subscales of resilience, self-efficacy and

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Table 1
Comparison of demographic characteristics, resilience, and three subscales between males and females.

Variable	Male	Female	t/X^2/Z	*p* value
	Mean(SD) or n (%)			
Age			18.389	< 0.001
18–40 years old	147 (85.5)	58 (62.4)		
41–60 years old	25 (14.5)	35 (37.6)		
Marital status			8.563	0.014
Single*	106 (61.6)	40 (43.0)		
Married*	55 (32.0)	43 (46.2)		
Divorced	11 (6.4)	10 (10.8)		
Education			15.119	0.007
No formal education	1 (0.6)	9 (9.7)		
Did not graduate from elementary school*	9 (5.2)	3 (3.2)		
Graduated from elementary school	39 (22.7)	20 (21.5)		
Graduated from junior high school	55 (32.0)	34 (36.6)		
Graduated from senior high school	63 (36.6)	25 (26.9)		
Graduated from university	5 (2.9)	2 (2.2)		
Employment**			30.214	< 0.001
Unemployed	72 (41.9)	48 (51.6)		
Employed	100 (58.1)	45 (48.4)		
Salary level			0.897	0.344
< 2300,000 IDR	155 (90.1)	87 (93.5)		
≥ 2300,000 IDR	17 (9.9)	6 (6.5)		
Living arrangement			0	0.986
Alone	11 (6.4)	6 (6.5)		
With someone/ family	161 (93.6)	87 (93.5)		
History of family with mental illness			0.957	0.361
Yes	22 (12.8)	16 (17.2)		
No	150 (87.2)	77 (82.8)		
Traumatic event			0.908	0.397
Yes	54 (31.4)	24 (25.8)		
No	118 (68.6)	69 (74.2)		
Age of onset (years old) *	27.4 8.9)	32.9 (12.1)	−4.254	< 0.001
Length of illness (years)	5 5.2)	4.15 4.8)	1.309	0.192
Number of hospitalizations (times)	2.8 2.2)	2.5 2.5)	.991	0.322
Length of hospital stay (days)	11.7 6.5)	13.1 11)	−1.322	0.187
Resilience*	24.3 (7.5)	26.6 (6.3)	−2.424	0.015
Self-competence	7.7 (2.5)	7.9 (2.4)	−0.614	0.539
Self-efficacy**	9.1 (3.5)	10.7 (3.0)	−3.795	< 0.001
Positive acceptance*	7.5 (2.4)	8.0 (2.4)	−1.467	0.142

Bold values indicate statistical significance at the * *p* value < 0.05, ** *p* value < 0.001; SD, standard deviation; IDR, Indonesian rupiah; the minimum wage for standard living = 2300,000 IDR.

acceptance were higher in females than in males.

This finding supports prior research that female patients have higher resilience than males (Bozikas et al., 2016). This study extends previous research by examining gender differences in schizophrenia patients with a longer duration of illness who are inpatients, while the previous study used cases diagnosed within 3 years living in the community (Bozikas et al., 2016). Despite this, the gender difference remains, indicating that higher resilience in females might consistently manifest across various illness durations and settings. However, this study differed from a previous study, which found no difference in resilience between genders in schizophrenia (Mizuno et al., 2016). These negative findings could reflect the complexities of subjective resilience, which is presumably influenced by a variety of biopsychological factors. To the best of our knowledge, the level of resilience based on gender differences is still underinvestigated in this population. Future research is warranted to reveal how resilience may differ by gender.

This study has added to the previous evidence that there are gender differences in resilience in schizophrenia. Our results indicate that resilience, self-efficacy, and acceptance are higher in female than male. Evidence showed that the level of functioning has an association with resilience (Luther et al., 2020; Zizolfi et al., 2019), self-efficacy (Chang et al., 2017), and acceptance (Vilardaga et al., 2013). These new findings have contributed to the understanding of why females outperform males in the level of functioning (Ochoa et al., 2012; Riecher-Rössler et al., 2018). Thus, a higher level of resilience, self-efficacy, and acceptance may, in turn, contribute to a higher level of functioning in female patients.

Some limitations are worthy of considering in our study findings, as there were some differences in the characteristics between the male and female patients. Moreover, this study did not measure the symptoms severity and domains in schizophrenia, including negative symptoms, cognitive symptoms, and depressive symptoms, which might be associated with resilience.

CRediT authorship contribution statement

Sri Padma Sari: Writing – review & editing, Writing – original draft, Validation, Resources, Methodology, Data curation, Conceptualization. **Halimah Wenny Yulina Astuti:** Writing – original draft, Project administration, Methodology, Formal analysis. **Haipeng Liu:** Writing – review & editing, Formal analysis, Data curation. **Andy Turner:** Writing – review & editing. **Faith Martin:** Writing – review & editing, Supervision, Methodology, Investigation, Formal analysis.

Ethical consideration

This study was approved by the Ethics Committee of the Psychiatric Hospital where this study took place (Project number 420/1/06074).

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Declaration of Competing Interest

All authors declare no conflict of interest.

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