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Factors associated with schizophrenia among outpatients

Mutia Diah Annuur*, Hernida Warni, Aulia Rahman

Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

Abstract

Background: Schizophrenia is a chronic and severe mental disorder that affects thinking, perception, emotion, and behavior. The increasing number of mental disorder cases in the working area, highlights the importance of identifying factors associated with the incidence of schizophrenia.

Purpose: To determine the association between family/genetic history, personality type, parenting style, and family disharmony with the incidence of schizophrenia among outpatients.

Method: A quantitative approach with a case-control design. The population consisted of all outpatients registered at Kedaton Primary Health Center in 2026. A total of 104 respondents were selected as samples, consisting of case and control groups with a 1:1 ratio. The sampling technique used was purposive sampling based on predetermined inclusion and exclusion criteria. Data were collected using structured questionnaires and analyzed through univariate and bivariate analysis using the Chi-Square test.

Results: Family/genetic history was significantly associated with the incidence of schizophrenia ($p=0.001$). Meanwhile, personality type ($p=0.845$), parenting style ($p=0.130$), and family disharmony ($p=0.072$) were not significantly associated ($p>0.05$). Respondents with a family history of schizophrenia had a higher risk of developing schizophrenia compared to those without such history.

Conclusion: Genetic factors were significantly associated with schizophrenia in this study. Strengthening early detection and family-based mental health education at the primary health care level is essential to reduce the risk of schizophrenia in the community.

Keywords: Family Disharmony; Family History; Parenting Style; Personality Type; Schizophrenia.

INTRODUCTION

Schizophrenia is a chronic mental disorder that affects thinking, emotions, and behavior, and significantly impacts an individual's social and occupational functioning (Ginting & Siregar, 2024). The disorder is influenced by biological, psychological, and social factors, including family history, personality type, parenting style, and family disharmony (McCutcheon, Keefe, & McGuire, 2023). Globally, schizophrenia affects approximately 23 million people, and many patients do not receive adequate mental health services. In Indonesia, the prevalence of severe mental disorders remains high, with an increasing trend reported in several regions, including Lampung Province and Bandar Lampung

City. Data from the Kedaton Community Health Center also showed an increase in cases from 93 patients in 2023 to 104 patients in 2025, indicating that schizophrenia remains a significant public health concern requiring comprehensive management and prevention efforts.

Genetic factors are considered one of the strongest determinants of schizophrenia. Individuals with a family history of schizophrenia have a much higher risk of developing the disorder than the general population (Hariyadi & Rusdianah, 2021). In addition, psychological factors such as introverted personality types, poor emotional regulation, and maladaptive coping mechanisms contribute to increased vulnerability to psychotic disorders

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(Wahbeh & Avramopoulos, 2021). Family-related factors also play an important role. Maladaptive parenting styles, lack of emotional support, authoritarian parenting, and family disharmony can disrupt emotional and psychosocial development, increasing the likelihood of schizophrenia and emotional disorders (Neyra, Parro-Torres, Ros-Cucurull, Carrera, Echarri, & Torrens, 2024). Previous studies have shown that family disharmony has a significant relationship with emotional disturbances and psychological instability (Georgiades, Almuqrin, Rubinic, Mouhitzadeh, Tognin, & Mechelli, 2023).

Although many studies have discussed schizophrenia risk factors, research combining genetic factors, personality type, parenting style, and family disharmony simultaneously remains limited, particularly in primary healthcare settings such as community health centers. Preliminary surveys conducted at the Kedaton Community Health Center found variations in family history, personality type, parenting style, and family harmony among schizophrenia patients. In addition, Kedaton Community Health Center is one of the health centers with the highest number of severe mental disorder cases in Bandar Lampung City. Therefore, this study is important to identify factors associated with the incidence of schizophrenia among outpatients in the Kedaton Community Health Center area in 2025, so that the findings may contribute to the development of family- and community-based mental health prevention strategies.

RESEARCH METHOD

RESEARCH RESULTS

Table 1. Frequency Distribution of Respondent Characteristics (N= 52)

Variable	Control	Intervention	OR	OR 95% CI	P- Value
Age (n/%) (Mean±SD) (Range) (Year)	(41.5±13.0) (12-60)	(41.9±11.2) (12-60)			
12-16	0/0.0	1/1.9			
17-25	6/11.5	3/5.8			
26-35	15/28.8	10/19.2			
36-45	9/17.3	18/34.6			
46-55	9/17.3	12/23.1			
≥56	13/25.0	8/15.4			

Mutia Diah Annuur*, Hernida Warni, Aulia Rahman

Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

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A quantitative method with an analytical survey approach that examines risk factors retrospectively. This approach examines the effects or illnesses already present at the time of the study, then examines whether the risk factors have been previously experienced. This method is used to describe and analyze the relationship between independent variables (family/genetic history, personality type: An extrovert is someone who tends to gain energy from being around other people. An introvert is someone who tends to feel more comfortable and energized when alone or in quiet settings. Parenting styles are typically categorized based on two core dimensions: Responsiveness (warmth, support, emotional involvement); Demandingness (control, rules, expectations, discipline), and the dependent variable, the incidence of schizophrenia. The study employed a case-control design, comparing a case group (respondents with schizophrenia) and a control group (respondents without schizophrenia) to assess differences in exposure to causal factors between the two groups. Quantitative research is an approach based on the philosophy of positivism, using numerical data analyzed statistically to produce objective, measurable, rational, and systematic findings. In the context of this study, a case-control design is highly appropriate for identifying and analyzing factors associated with the incidence of schizophrenia, as it allows researchers to more efficiently compare exposure to specific risk factors between case and control groups over the same time period.

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Gender (n/%)					
Male	12/23.1	41/78.8			
Female	40/76.9	11/21.2			
Marital Status (n/%)					
Unmarried	10/19.2	30/57.7			
Married	42/80.2	22/42.3			
Education (n/%)					
Not in School	1/1.9	10/19.2			
Elementary School	6/11.5	12/23.1			
Junior High School	6/11.5	15/28.8			
Senior High School	29/55.8	15/28.8			
University	10/19.1	0/0.0			
Occupation (n/%)					
Unemployed	3/5.8	41/78.8			
Student	1/1.9	1/1.9			
Housewife	28/53.8	4/7.7			
Labor/Farmer/Fisherman	1/1.9	6/11.5			
Self-Employed	12/23.1	0/0.0			
Private Sector Employee	3/5.8	0/0.0			
Civil Servant/Military/Police	1/1.9	0/0.0			
Other	3/5.8	0/0.0			
Family/Genetic History (n/%)					
No	52/100.0	35/67.3	0.402	0.311-0.520	<0.001
Yes	0/0.0	17/32.7			
Personality Type (n/%)					
Extrovert	27/51.9	25/48.1	1.166	0.540-2.517	0.845
Introvert	25/48.1	27/51.9			
Parenting Style (n/%)					
Responsiveness	36/69.2	26/50.0	0.466	0.195-1.115	0.130
Demandingness	16/30.8	26/50.0			

Table 1 shows the demographic and psychosocial characteristics of respondents in the control and intervention groups. The mean age in the control group was 41.5 ± 13.0 years, while in the intervention group it was 41.9 ± 11.2 years, with an age range of 12–60 years in both groups. Most respondents in the control group were aged 26–35 years (28.8%), whereas the intervention group was dominated by respondents aged 36–45 years (34.6%). Based on

gender, females predominated in the control group (76.9%), while males predominated in the intervention group (78.8%). Most respondents in the control group were married (80.2%), whereas the intervention group had a higher proportion of unmarried respondents (57.7%). Regarding education level, most respondents in the control group had completed senior high school (55.8%), while respondents in the intervention group were mostly educated up to junior high school and

Mutia Diah Annuur*, Hernida Warni, Aulia Rahman

Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

Doi: 10.56922/mhc.v5i1.2854

senior high school levels (28.8% each). In terms of occupation, the majority of respondents in the control group were housewives (53.8%), while most respondents in the intervention group were unemployed (78.8%).

Family/genetic history showed a statistically significant association between the control and intervention groups (OR = 0.402; 95% CI = 0.311–0.520; $p < 0.001$), indicating that respondents with a family/genetic history were more likely to be in the intervention group. Personality type was predominantly balanced between extrovert and introvert personalities, with no statistically significant association (OR = 1.166; 95% CI = 0.540–2.517; $p = 0.845$). Similarly, parenting style showed no statistically significant relationship between groups (OR = 0.466; 95% CI = 0.195–1.115; $p = 0.130$), although responsiveness was more common in the control group (69.2%), while demandingness was equally distributed in the intervention group (50.0%).

DISCUSSION

The study reported that the 26-35 age group comprised the largest population, accounting for approximately 30%, followed by the 36-45 age group at approximately 27%. Meanwhile, the late adolescent and early adult age groups accounted for a lower proportion than the middle-productive age group. The predominance of productive age groups in this and previous studies indicates that schizophrenia most commonly occurs during a period when individuals are socially and economically active. Theoretically, the onset of schizophrenia is most common between the ages of 15 and 35. This is related to neurobiological factors, where the maturation of the prefrontal cortex continues into early adulthood. Genetic susceptibility, combined with environmental stressors such as academic pressure, work pressure, and social conflict, can trigger the onset of a first psychotic episode. This has significant implications for patients' quality of life. Individuals aged 26-45 generally have responsibilities as breadwinners, partners, or parents. When experiencing schizophrenia, cognitive, affective, and social functioning can be impaired, impacting work productivity and interpersonal relationships. Productive-age adult patients tend to undergo regular outpatient treatment because they still have family support and a sense of

responsibility to maintain their social functioning (Putri & Evi, 2023). However, this age group is also vulnerable to relapse if they are not compliant with pharmacological and psychosocial therapy. Productive-age adults not only dominate in terms of incidence but also have a relatively high risk of relapse (Adamu, Qiang, Nyatega, Younis, Kawuwa, Jabire, & Saminu, 2023). This is due to various factors, such as work stress, economic pressures, and a lack of insight into the disease. At younger ages, medication non-adherence often occurs because patients perceive they are improving, leading them to stop therapy without medical consultation. The proportion of patients aged over 45 in this and previous studies was lower than that of those of productive age. This may be due to an earlier onset and chronic course, or some patients with severe disease may have undergone long-term treatment. More than half of schizophrenia patients are in the productive adult age range. These findings indicate that schizophrenia has a significant impact on age groups in the career development, family formation, and social stability phases (Abbaspour, Bahreini, Akaberian, & Mirzaei, 2021).

Gender is an important demographic characteristic in research on mental disorders, including schizophrenia. Biological and psychosocial differences between men and women can influence the risk of developing, the age of onset, and the course of schizophrenia. More men than women suffer from schizophrenia. The male predominance in schizophrenia cases is associated with an earlier age of onset in men and a more severe course of the disease (Anwar, Mustafa, Abdou, Rabie, El-Shiekh, & El-Dessouki, 2025). Theoretically, men have a higher risk of developing schizophrenia than women. This is thought to be related to neurobiological factors, including the role of the hormone estrogen in women, which has a protective effect against psychotic symptoms. Furthermore, behavioral factors such as substance use, environmental stress, and social pressure are also more common in men, which may increase the risk of developing psychotic disorders. If this study finds a male preponderance in the case group, this would strengthen the theory that gender is a factor associated with the incidence of schizophrenia. However, if the distribution between men and women is relatively equal, it could be interpreted that the risk

Mutia Diah Annuur*, Hernida Warni, Aulia Rahman

Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

Doi: 10.56922/mhc.v5i1.2854

factors for schizophrenia are influenced not only by gender but also by other factors such as family history, education, occupation, and socioeconomic status (Javitt, 2023).

Marital status is an important demographic factor associated with schizophrenia because it relates to social support and emotional stability. In this study, most respondents were married (61.55%), but in the schizophrenia group, the majority were unmarried (57.7%), while the control group was dominated by married respondents (80.8%). This finding suggests that unmarried individuals may be more vulnerable to schizophrenia due to limited social and emotional support. Unmarried schizophrenia patients experience more relapses and lower quality of life compared to married patients. Thus, marital status may act as an important social factor influencing the occurrence and course of schizophrenia (Seri, 2022).

Education level also plays a role in the management and progression of schizophrenia. In this study, most respondents had secondary education, particularly senior high school/vocational education (42.3%). However, the schizophrenia group had a higher proportion of respondents with low education levels and unschooled individuals compared to the control group. Schizophrenia patients were predominantly from primary and secondary education groups (Bolhuis, Steenkamp, Blanken, Neumann, Jansen, Hillegers, & Kushner, 2022). Low educational attainment may limit an individual's understanding of health information, treatment adherence, and stress management, thereby increasing the risk of relapse and worsening conditions. Conversely, schizophrenia that develops during adolescence or early adulthood may also interfere with the continuation of formal education. Therefore, education level may function both as a risk factor and as an impact of schizophrenia itself.

Employment history is an important indicator of social functioning and independence in schizophrenia patients. In this study, the majority of respondents in the schizophrenia group were unemployed (78.8%), while the control group was mostly composed of housewives (53.8%) and self-employed individuals (23.1%). Overall, unemployment was the most common occupational status among respondents (42.3%). These findings suggest that unemployment is more prevalent among individuals with schizophrenia and may reflect

impaired social, cognitive, and motivational functioning associated with the disorder. Schizophrenia patients often experience unstable employment histories due to negative symptoms, cognitive impairment, and reduced productivity. However, many unemployed patients still showed motivation to work, indicating the importance of rehabilitation programs to improve social functioning and work capacity (Lavonius, Keltikangas-Järvinen, Lyytikäinen, Mishra, Sormunen, Kähönen, & Saarinen, 2025).

Family history or genetic factors are also considered important contributors to schizophrenia. According to the biopsychosocial theory, schizophrenia develops through interactions between biological, psychological, and social factors, with genetics acting as a predisposition rather than a direct cause. In this study, 32.7% of respondents in the schizophrenia group had a family history of mental disorders, while none of the respondents in the non-schizophrenia group reported such a history. Overall, most respondents did not have a family/genetic history (83.65%), but the presence of family history was found only in the schizophrenia group. Genetic or hereditary factors as one of the dominant perceived causes of mental disorders (Stuart, 2016). Therefore, family history may serve as an important biological risk factor contributing to the occurrence of schizophrenia in this study.

The results of this study indicate that family history or genetic factors contribute to schizophrenia, although they are not the sole cause. A family history of mental disorders was found only in the schizophrenia group (32.7%) and not in the non-schizophrenia group, suggesting that genetic predisposition may increase vulnerability to schizophrenia. However, because most respondents with schizophrenia had no family history, environmental and psychosocial factors likely play equally important roles. These findings support the concept that schizophrenia is a multifactorial disorder influenced by interactions between biological, psychological, and social factors. Therefore, mental health services should apply a holistic approach through early detection, family education, stress management, and social support strengthening.

Personality type is often associated with vulnerability to mental disorders because it influences how individuals respond to stress and

Mutia Diah Annuur*, Hernida Warni, Aulia Rahman

Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

Doi: 10.56922/mhc.v5i1.2854

social situations. Theoretically, introverted or schizotypal personality traits may increase susceptibility to psychotic symptoms. However, this study found a relatively balanced distribution of personality types between the schizophrenia and non-schizophrenia groups. In the schizophrenia group, 51.9% were introverted and 48.1% were extroverted, while the non-schizophrenia group showed the opposite pattern. Overall, extrovert and introvert personality types were equally distributed (50% each). These findings suggest that personality type was not a dominant factor associated with schizophrenia in this study. Personality may function more as a moderating factor that influences coping ability, stress response, and clinical course rather than acting as a direct cause of schizophrenia (Inyang, Gondal, Abah, Dhandapani, Manne, Khanna, & Challa, 2022).

Family parenting style plays an important role in shaping emotional regulation, self-concept, and coping abilities. Democratic parenting is generally associated with healthier psychological development, while authoritarian and permissive parenting may increase emotional and social difficulties. Parenting style can influence how individuals manage stress and adapt to social environments, which may affect vulnerability to mental disorders. Therefore, family dynamics and parenting practices remain important psychosocial aspects in understanding schizophrenia and developing preventive mental health interventions.

The results of this study indicate that parenting style was not significantly associated with the incidence of schizophrenia ($p = 0.130$). Although maladaptive parenting theoretically increases vulnerability to mental disorders, most respondents with schizophrenia in this study actually came from families with good parenting styles (78.8%). This finding suggests that schizophrenia cannot be explained solely by parenting factors, but rather by interactions between biological, psychological, and social factors. Authoritarian and permissive parenting may negatively affect emotional development and stress management, increasing vulnerability to mental disorders (Zulaikha & Bines, 2023). However, the findings of this study indicate that other factors, such as genetic predisposition, traumatic experiences, severe stress, and socioeconomic conditions, may play more dominant roles.

Therefore, parenting style may contribute indirectly to psychological vulnerability but is not a direct determinant of schizophrenia (Owen, Legge, Rees, Walters, & O'Donovan, 2023).

Family disharmony is theoretically associated with psychological stress, emotional instability, and impaired social development, which may increase vulnerability to mental disorders. In this study, harmonious family conditions were more common in the non-schizophrenia group, while respondents with schizophrenia were equally distributed between harmonious and disharmonious families. This indicates that family disharmony was present in some schizophrenia cases but was not the dominant factor. The findings suggest that schizophrenia is a multifactorial disorder in which family disharmony acts as an environmental stressor rather than a sole cause. Other factors such as genetic history, trauma, severe stress, and socioeconomic pressures may contribute more strongly to the development of schizophrenia. Therefore, strengthening family communication, emotional support, and family counselling remains important in mental health promotion and relapse prevention (Hashimoto, Ohi, Fujikane, Takai, Kuramitsu, Muto, & Shioiri, 2025).

The study also found a significant relationship between family/genetic history and the incidence of schizophrenia ($p < 0.001$). Respondents with a family history of mental disorders were found only in the schizophrenia group, reinforcing the role of genetics as a biological predisposition. Genetic factors are known to increase vulnerability to schizophrenia through abnormalities in neurotransmitter regulation and brain development. However, schizophrenia cannot be explained solely by hereditary factors because many respondents with schizophrenia had no family history. This supports the biopsychosocial model, which emphasizes interactions between genetic predisposition and environmental stressors. Meanwhile, personality type was not significantly associated with schizophrenia ($p = 0.845$). Although introverted personality traits were slightly more common in the schizophrenia group, the distribution between introvert and extrovert personalities was relatively balanced. This suggests that personality type may influence coping style and stress response but does not directly determine the occurrence of schizophrenia (Pollard, Fisher, Fearon, Morgan, Lappin, Hutchinson, & Dazzan, 2023).

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Corresponding author: *E-mail: mutiadih02@gmail.com

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Several personality dimensions, such as neuroticism, agreeableness, and conscientiousness, were not significantly associated with the genetic risk of schizophrenia ($p > 0.05$) (Jiang, Huang, Zhou, Li, Duan, Yao, & Luo, 2023). These findings indicate that personality traits are not primary causal factors for schizophrenia, which is more strongly influenced by genetic, neurobiological, and environmental factors. Although descriptively this study showed a slightly higher proportion of introverted personalities in the schizophrenia group (51.9%), statistical analysis demonstrated no significant relationship between personality type and schizophrenia incidence ($p = 0.845$). Thus, personality type may function more as a moderating factor influencing coping mechanisms and responses to stress rather than as a direct determinant of schizophrenia (Trifu, Kohn, Vlasie, & Patrichi, 2020).

Regarding family parenting style, this study found that most respondents in both the schizophrenia and non-schizophrenia groups reported good parenting patterns. Statistical analysis showed no significant relationship between parenting style and schizophrenia incidence ($OR = 0.466$; $p = 0.130$). Parenting dimensions were not significantly associated with schizophrenia. Although maladaptive parenting may theoretically increase psychological vulnerability, schizophrenia is considered a multifactorial disorder influenced by complex interactions among biological, psychological, and social factors (Chairil & Intan, 2021).

Similarly, family disharmony was not significantly associated with schizophrenia incidence in this study ($p = 0.072$; $OR = 2.250$). Although respondents with disharmonious families were more common in the schizophrenia group, harmonious family conditions were also found among many schizophrenia patients. This indicates that family disharmony alone is insufficient to explain the occurrence of schizophrenia. No significant relationship between family support and relapse rates in schizophrenia patients (Scala, Gori, Roca, Fabbri, Arroyo Iturra, Calvo García, & Serretti, 2025). Family disharmony may contribute as a psychosocial stressor, but schizophrenia remains a complex disorder involving interactions between genetic predisposition, psychological conditions, environmental stressors, and social factors (Videbeck, 2020).

CONCLUSION

Schizophrenia in the work area was more common among productive-age adults, males, unmarried individuals, respondents with lower educational attainment, and unemployed individuals. Family/genetic history showed a significant relationship with the incidence of schizophrenia, indicating that genetic predisposition contributes to increasing vulnerability to the disorder. Meanwhile, personality type, parenting style, and family disharmony were not significantly associated with schizophrenia, although these factors may still influence coping abilities, stress responses, and psychosocial functioning.

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Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

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Universitas Mitra Indonesia

Corresponding author: *E-mail: mutiadih02@gmail.com

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