รูปแบบและแนวโน้มอาการของโรคจิตในกรุงเทพมหานคร: การศึกษาเพื่อพัฒนาการบริการดูแลระยะแรกเริ่มที่สถาบันจิตเวชศาสตร์สมเด็จเจ้าพระยา

สุทธา สุปัญญา*
**สถาบันจิตเวชศาสตร์สมเด็จเจ้าพระยา*

บทคัดย่อ

วัตถุประสงค์ เพื่อศึกษาความชุกของอาการคล้ายโรคจิตในกรุงเทพมหานครเมื่อเทียบกับภูมิภาคอื่น วิเคราะห์การกระจายทางเศรษฐกิจและสังคม และระบุปัจจัยที่เกี่ยวข้อง เพื่อใช้เป็นข้อมูลในการพัฒนาการบริการดูแลระยะแรกเริ่มสำหรับผู้มีอาการของโรคจิตที่สถาบันจิตเวชศาสตร์สมเด็จเจ้าพระยา โดยเปรียบเทียบกับผลการสำรวจระบาดวิทยาสุขภาพจิตแห่งชาติปี 2556

วิธีการศึกษา ทำการวิเคราะห์ข้อมูลจากการสำรวจระบาดวิทยาสุขภาพจิตแห่งชาติปี 2566 โดยเปรียบเทียบความชุกของอาการคล้ายโรคจิตระหว่างกรุงเทพมหานคร (n = 643) และภูมิภาคอื่น (n = 3,517) การวิเคราะห์หลักมุ่งเน้นข้อมูลของกรุงเทพมหานคร ศึกษาความสัมพันธ์ระหว่างอาการคล้ายโรคจิตกับตัวแปรทางเศรษฐกิจและสังคม รวมถึงการใช้สารเสพติด ด้วยการวิเคราะห์การถดถอยโลจิสติกแบบหลายตัวแปร และเปรียบเทียบกับข้อมูลในปี 2556

ผลการศึกษา ความชุกของอาการคล้ายโรคจิตในกรุงเทพมหานคร อยู่ที่ 2.9% (95% confidence interval (95% CI): 1.3 - 4.5) เมื่อเทียบกับ 3.0% (95% CI: 2.2 - 3.8) ในภูมิภาคอื่น โดยความชุกในกรุงเทพมหานคร ลดลงอย่างมีนัยสำคัญจาก 5.9% ในปี 2556 ปัจจัยที่สำคัญซึ่งสัมพันธ์กับอาการคล้ายโรคจิต ได้แก่ การศึกษาระดับสูง (adjusted odds ratio (aOR) 1.89, 95% CI: 1.15 - 3.12) การว่างงาน (aOR 1.76, 95% CI: 1.08 - 2.87) สถานภาพโสด (aOR 1.67, 95% CI: 1.12 - 2.49) และการใช้สารเสพติด (aOR 2.34, 95% CI: 1.42 - 3.86)

สรุป แม้ว่าความชุกของอาการคล้ายโรคจิตในกรุงเทพมหานคร จะลดลงอย่างมีนัยสำคัญจากข้อมูลของปี 2556 และไม่มีความแตกต่างเมื่อเทียบกับภูมิภาคอื่น แต่ปัจจัยทางเศรษฐกิจและสังคมหลายประการยังคงมีความสัมพันธ์ที่สำคัญกับอาการคล้ายโรคจิต การลดลงของความชุกอาจสะท้อนถึงความก้าวหน้าของระบบบริการสุขภาพจิตและการตระหนักรู้ของสังคม อย่างไรก็ตาม การพัฒนาการบริการดูแลระยะแรกเริ่มยังคงจำเป็นต้องให้ความสำคัญกับระดับการศึกษา สถานะการจ้างงาน สถานภาพสมรส และการใช้สารเสพติด เพื่อสร้างความสำเร็จต่อเนื่องในการลดความชุกโดยรวม

คำสำคัญ อาการคล้ายโรคจิต กรุงเทพมหานคร ระบาดวิทยา การบริการดูแลระยะแรกเริ่ม ความเป็นเมือง ปัจจัยทางเศรษฐกิจและสังคม

Corresponding author: สุทธา สุปัญญา
สถาบันจิตเวชศาสตร์สมเด็จเจ้าพระยา
E-mail: Suttha.supanya@hotmail.com
วันรับ 27 พฤศจิกายน 2567 วันแก้ไข 27 กุมภาพันธ์ 2568 วันตอบรับ 7 เมษายน 2568

Trends in Psychotic Experiences in Bangkok: Informing the Planned Early Intervention Service at Somdet Chaopraya Institute of Psychiatry

Suttha Supanya*
Somdet Chaopraya Institute of Psychiatry

ABSTRACT

Objective: To examine the prevalence of psychotic experiences (PE) in Bangkok compared to other regions, analyse their socioeconomic distribution, and identify associated factors to inform the development of early intervention services for psychosis at Somdet Chaopraya Institute of Psychiatry, with comparison to the 2013 Thai National Mental Health Survey findings.

Methods: Data from the 2023 Thai National Mental Health Survey were analysed to compare PE prevalence between Bangkok (n = 643) and other regions (n = 3,517). The primary analyses focused on Bangkok data, examining associations between PE and socioeconomic variables using multivariate logistic regression and then comparing the results to the prevalence in the 2013 survey.

Results: The prevalence of psychotic experiences in Bangkok was 2.9% (95% confidence interval (95% CI): 1.3 - 4.5), compared to 3.0% (95% CI: 2.2 - 3.8) in other regions, representing a significant decrease from the 5.9% prevalence reported in 2013. Important factors associated with PE included higher education (adjusted odds ratio (aOR) 1.89, 95% CI: 1.15 - 3.12), unemployment (aOR 1.76, 95% CI: 1.08 - 2.87), unmarried status (aOR 1.67, 95% CI: 1.12 - 2.49), and substance use (aOR 2.34, 95% CI: 1.42 - 3.86).

Conclusion: While the prevalence of PE has significantly decreased since 2013 and shows no urban-rural difference, several socioeconomic factors maintain significant associations with PE. The reduction in prevalence may reflect improvements in mental health services and public awareness. However, these findings suggest that early intervention services should continue to address educational level, employment status, marital status, and substance use in their development approach while building upon the apparent successes in reducing overall prevalence.

Keywords: psychotic experiences, Bangkok, epidemiology, early intervention service for psychosis, urbanicity, socioeconomic factors

Corresponding author: Suttha Supanya
E-mail: Suttha.supanya@hotmail.com
Received: 27 November 2024 Revised: 27 February 2025 Accepted: 7 April 2025

INTRODUCTION

Psychotic experiences (PE) are subclinical psychotic phenomena that occur in the general population, resembling symptoms of psychotic disorders but with less severity and impact.[1] Global studies over the past two decades have consistently shown that PE are relatively common, with prevalence ranging from 5 - 8% in general populations,[2,3] and may serve as important indicators of risk for subsequent mental health problems.[4,5]

Bangkok, Thailand's capital and largest urban centre, with a population exceeding 8 million, presents unique challenges and opportunities for mental health service delivery. Urban environments have been consistently associated with increased risk of both PE and psychotic disorders, potentially due to factors such as social fragmentation, environmental stress, and socioeconomic inequalities.[6]

Established in 1889, Somdet Chaopraya Institute of Psychiatry is still Bangkok's only major tertiary psychiatric facility. With 500 beds and a comprehensive mental health workforce, including 18 psychiatrists, 166 nurses, and various allied health professionals, it serves 36 districts in Bangkok and neighbouring provinces. The institute cares for approximately 470 psychiatric outpatients daily and maintains an active teaching and research program.

Early intervention in psychosis has emerged as a crucial approach in modern psychiatric care.[7] International evidence suggests that PE may represent an important target for early intervention, as individuals reporting these experiences show an increased risk of developing clinical psychotic and other psychiatric disorders.[8-11] Therefore, understanding the epidemiology of PE is essential for planning and implementing early intervention services.

While many previous Thai studies have examined psychiatric epidemiology,[12-14] detailed studies of PE in urban settings, particularly Bangkok, remain limited. The 2013 Thai National Mental Health Survey reported a general PE prevalence of 5.6%, but regional variations and socioeconomic patterns were not extensively analysed.[15]

The primary objective of this study was to compare the prevalence of psychotic experiences between Bangkok and other regions of Thailand, examine the sociodemographic and economic patterns of PE in Bangkok's general population, and identify factors associated with PE occurrence in urban settings. These epidemiological insights would inform evidence-based development of mental health services in Bangkok and, by extension, in urban Thailand. Moreover, the data could also help to support the planned development of early intervention services at Somdet Chaopraya Institute of Psychiatry.

METHODS

This cross-sectional study analysed data from the 2023 Thai National Mental Health Survey, focusing specifically on Bangkok compared to other regions. The target population comprised Thai residents aged 18 years and above who could communicate in Thai. The study sample included 643 participants from Bangkok and 3,517 from other regions.

Participant selection employed multi-stage sampling, proceeding from district to sub-district to community levels within Bangkok, with final participant selection using the Kish Grid method, in line with the 2013 Thai National Mental Health Survey[12] that strictly follow the methods of the World Health Organization's (WHO) World Mental Health (WMH) Survey.[16] The primary assessment tool was the Thai version of the WHO-Composite International Diagnostic Interview (WHO-CIDI) version 3.0,[17,18] which included the Psychosis Screener (PS) section,[19,20] substance use screening, and service utilisation assessment. The detailed methodology of the Thai National Mental Health Surveys has been described elsewhere.[12]

The variables of interest in this study included demographic factors, i.e., gender and age, and socioeconomic factors, i.e., education, categorised as below bachelor's degree vs. bachelor's degree or higher; marital status, as married vs unmarried; employment

status, as employed vs unemployed; and substance use, as present vs. absent.

The survey was conducted between January and December 2023 by trained interviewers, through face-to-face interviews at participants' residences. Quality control included random verification of 10% of all interviews.

Statistical analysis included descriptive statistics with standard errors and 95% confidence intervals for prevalence estimates. Chi-square tests were used for between-group comparisons, and multiple logistic regression analysis examined associations between socioeconomic factors and PE. Results were presented as odds ratios with 95% confidence intervals and p-values. The analysis adjusted for potential confounding factors in multivariate models.

This study received approval from the Ethics Committee of the Department of Mental Health, Ministry of Public Health (approval number DMH.IRB.COA 044/2565). All participants provided written informed consent before participation.

RESULTS

Significant demographic and socioeconomic differences were observed from 643 participants from Bangkok and 3,517 from other regions (Table 1). Bangkok showed a higher proportion of individuals with a bachelor's degree or higher education (19.9% vs 10.1%, $p < 0.001$), unmarried status (44.0% vs 35.2%, $p = 0.018$), and substance use (4.7% vs 3.1%, $p = 0.034$) compared to other regions.

The prevalence of psychotic experiences showed distinct patterns between Bangkok and other regions (Table 2). The lifetime prevalence in Bangkok was 2.9% (95% CI= 1.3 - 4.5), comparable to 3.0% (95% CI = 2.2 - 3.8) in other regions. Hallucinations were more commonly reported than delusions nationally.

TABLE 1 Demographic and socioeconomic characteristics of participants in Bangkok compared to other regions

Characteristics	Bangkok (n = 643) (%)	Other regions (n = 3,517) (%)	p-value
Gender			
Male	32.0 (46)	37.5 (54)	0.324
Female	68.0 (52.1)	62.5 (47.9)	
Age (years)			
18 - 24	2.2 (33.8)	4.3 (66.2)	0.042*
25 - 40	16.9 (53.7)	14.6 (46.3)	
41 - 59	39.0 (49.5)	39.8 (50.5)	
≥ 60	41.9 (50.4)	41.3 (49.6)	
Education			
Below bachelor's	80.1 (47.1)	89.9 (52.9)	< 0.001*
Bachelor's or higher	19.9 (66.3)	10.1 (33.7)	
Marital status			
Married	56.0 (46.4)	64.8 (50.6)	0.018*
Unmarried	44.0 (51.8)	35.2 (48.2)	
Employment			
Employed	73.5 (49.4)	75.3 (50.6)	0.245
Unemployed	26.5 (51.8)	24.7 (48.2)	
Substance use			
Present	4.7 (60.3)	3.1 (39.7)	0.034*
Absent	95.3 (49.6)	96.9 (50.4)	

*Statistically significant at $p < 0.05$

TABLE 2 Prevalence of psychotic experiences in Bangkok compared to other regions

Type of experience	Bangkok: n = 643 (95% CI)	Other regions: n = 3,517 (95% CI)	p-value
Lifetime prevalence			
Any psychotic experience	2.9 (1.3 - 4.5)	3.0 (2.2 - 3.8)	0.856
Hallucinations	2.9 (1.3 - 4.5)	2.5 (1.9 - 3.1)	0.624
Delusions	0.2 (0.0 - 0.4)	0.8 (0.4 - 1.2)	0.042*
Both	0.2 (0.0 - 0.4)	0.3 (0.1 - 0.5)	0.548
12-month prevalence			
Any psychotic experience	0.9 (0.1 - 1.7)	1.1 (0.5 - 1.7)	0.724
Hallucinations	0.9 (0.1 - 1.7)	1.0 (0.6 - 1.4)	0.812
Delusions	0.1 (0.0 - 0.3)	0.2 (0.0 - 0.4)	0.386
Both	0.1 (0.0 - 0.3)	0.2 (0.0 - 0.4)	0.442

*Statistically significant at $p < 0.05$

Multivariate analysis using Bangkok as the reference group revealed no significant differences in psychotic experiences between Bangkok and other regions (aOR 1.09, 95% CI: 0.76 - 1.56). Several socioeconomic factors showed substantial associations with psychotic experiences. Higher education (aOR 1.89, 95% CI: 1.15 - 3.12), unemployment (aOR 1.76, 95% CI: 1.08 - 2.87), unmarried status (aOR 1.67, 95% CI: 1.12 - 2.49), and substance use (aOR 2.34, 95% CI: 1.42 - 3.86) were independently associated with increased odds of experiencing psychotic experience. These associations remained significant after adjusting for gender, age, and other socio-demographic characteristics of interest and substance use (Table 3).

DISCUSSION

This study provides the first detailed analysis of psychotic experiences in Bangkok compared to other regions of Thailand. Understanding prevalence and associated factors can inform early intervention service development in several ways. The identified prevalence of 2.9% indicates that approximately one in every 35 adults in Bangkok may experience psychotic symptoms, providing crucial data for service capacity planning and resource allocation. The socioeconomic patterns observed, particularly the associations with higher education, unemployment, and substance use, enable evidence-based development of targeted intervention strategies for specific high-risk populations.

The comparable lifetime prevalence of psychotic experiences between Bangkok (2.9%) and other regions (3.0%) represents a notable decrease from the 5.9% national prevalence reported in the 2013 Thai National Mental Health Survey.[15] When comparing these findings, it is important to note the methodological consistency between the two surveys. Both studies employed identical WHO-WMH Survey protocols and assessment tools (the Thai version of the WHO-CIDI 3.0), with similar sampling methods, interviewer training programs, and quality control procedures.[12] This methodological continuity strengthens the validity of the observed reduction, suggesting that the decrease may likely reflect fundamental changes rather than measurement differences, even if the systematic bias in individual interviewers and recalling PE is inevitable. The reduction could be attributed to improved mental health services and intervention strategies, enhanced public mental health awareness leading to earlier help-seeking, or broader improvements in mental health infrastructure over the past decade.

Interestingly, both the current and 2013 surveys challenge the assumption that urban environments necessarily lead to higher rates of psychotic experiences

TABLE 3 Factors associated with psychotic experiences in Bangkok: Results from multivariate logistic regression analysis

Factor	Crude OR (95% CI)	Adjusted OR (95% CI)†	p-value*
Region			
Bangkok	1.00	1.00	0.856
Other regions	1.03 (0.72 - 1.47)	1.09 (0.76 - 1.56)	
Education			
Below bachelor's	1.00	1.00	0.012*
Bachelor's or higher	1.58 (1.12 - 2.24)	1.89 (1.15 - 3.12)	
Employment			
Employed	1.00	1.00	0.024*
Unemployed	1.52 (1.08 - 2.14)	1.76 (1.08 - 2.87)	
Marital status			
Married	1.00	1.00	0.015*
Unmarried	1.45 (1.06 - 1.98)	1.67 (1.12 - 2.49)	
Substance use			
Absent	1.00	1.00	0.001*
Present	2.12 (1.38 - 3.26)	2.34 (1.42 - 3.86)	

*Statistically significant at $p < 0.05$ † adjusted for gender, age group, education, employment, marital status and substance use

despite robust evidence from numerous epidemiological studies establishing urbanicity as a significant risk factor for both psychotic experiences and schizophrenia.[21-26]

Several factors might explain this consistent finding in the Thai context; first, the definition of urbanicity might differ from Western studies, as many rural areas in Thailand have undergone rapid development and urbanisation, while inequalities remain the same.[27,28] Second, protective sociocultural factors in the Thai culture, such as maintaining family structures and community ties despite urbanisation, might buffer against the typically observed urban risk effects.[29,30] Third, Thailand's traditionally high mobility between urban and rural areas might blur the distinctions typically observed in Western studies, where urban-rural divisions are more static.[31]

The socioeconomic associations identified in this study require careful interpretation regarding causality. The cross-sectional design means that observed relationships could be bidirectional. For instance, the strong association between higher education and psychotic experiences (aOR 1.89) presents an interesting contrast to other findings. This might reflect better mental health literacy and reporting among educated individuals[32-34] and, consequently, better recognition and reporting of psychotic experiences. Second, the competitive nature of Bangkok's professional environment might create stressors for the educated workforce that can be interpreted as threats and potentially contribute to the emergence of psychotic experiences and seeking help.[34-36] Similarly, while unemployment shows increased risk (aOR 1.76), aligning with established evidence outcomes,[37-41] the relationship could be bidirectional; unemployment might contribute to psychotic experiences through increased stress, or psychotic experiences might impact employment opportunities.

The relationship with substance use (aOR 2.34) presents similar complexity in causality. While consistent

with global evidence,[42-45] the higher prevalence of substance use in Bangkok (4.7% vs 3.1%) could represent either a risk factor for or a consequence of psychotic experiences. This highlights the importance of integrated assessment and treatment approaches in urban mental health services.[7,46]

These findings suggest several key strategies for developing urban mental health services. In educational settings, particularly universities where higher rates of psychotic experiences were observed, early detection programs could be integrated into existing student health services. These could include systematic screening protocols, mental health literacy programs, and clear referral pathways to specialised care. For the working-age population, given the significant association with unemployment, vocational support should be a core component of mental health services - encompassing both preventive workplace mental health programs and rehabilitation services. The strong association with substance use necessitates integrated substance use assessment and treatment capabilities within mental health services, moving beyond traditional parallel service models to truly integrated care pathways.

These findings particularly support the development of specialised early intervention services for psychosis at centres with adequate resources and infrastructure. Such services require specific components for success, i.e., dedicated multidisciplinary teams (including psychiatrists, psychologists, occupational therapists, and case managers), standardised assessment protocols, evidence-based psychosocial interventions, and precise care pathways from detection to specialised care. Implementation should emphasise accessibility and acceptability through flexible service delivery models, including extended operating hours, multiple entry points, mobile outreach capabilities, and culturally sensitive engagement strategies, considering Bangkok's diverse population.

While this study was initially aimed to inform the development of early intervention services at Somdet Chaopraya Institute of Psychiatry, Bangkok's major tertiary psychiatric facility, its findings have broader implications for mental health service development across Thailand. The epidemiological patterns and associated factors identified here can inform service planning at various levels of care, from tertiary hospitals to community mental health centres. This broader applicability is particularly valuable given the population-based sampling approach, which provides insights representative of the general urban population rather than clinical samples. However, as noted, implementation strategies may need to be tailored based on each facility's available resources, local demographics, and existing service infrastructure. Centres with adequate resources might implement comprehensive early intervention services, while others could adopt specific components or develop staged implementation plans based on available capacity.

The study has several strengths, including its large sample size, comprehensive assessment tools, and detailed analysis of socioeconomic factors. However, limitations should be noted. The cross-sectional design prevents causal inference, as discussed above, and self-reported psychotic experiences may be subject to recall and reporting biases. Additionally, the study did not assess the severity or impact of psychotic experiences, which could provide valuable information for service planning.

CONCLUSION

This study provides compelling evidence for establishing early intervention services at Somdet Chaopraya Institute of Psychiatry. While the prevalence of psychotic experiences in Bangkok represents a marked decrease from 2013, suggesting possible improvements in mental health infrastructure and intervention strategies over the past decade, the identified risk patterns and socioeconomic associations present unique challenges that necessitate specialised urban mental health services. The significant associations between psychotic experiences and higher education, unemployment, unmarried status, and substance use point to specific vulnerable groups that require targeted intervention approaches.

The findings suggest that early intervention services at Somdet Chaopraya should be tailored to Bangkok's unique urban context, with particular attention to educated young professionals, the unemployed, and those with substance use issues. Given the institute's position as Bangkok's only major tertiary psychiatric facility, services should emphasise accessibility through flexible operating hours, multiple entry points, including community outreach, and integration with the existing Bangkok Metropolitan Administrative primary care and social services.

Furthermore, preventive strategies should include early detection programs in educational institutions and workplaces, collaborative partnerships with substance use treatment services, and community education about early warning signs. Establishing such comprehensive early intervention services at Somdet Chaopraya Institute of Psychiatry is not just warranted but essential for addressing the complex needs of Bangkok's urban population. The institute's existing infrastructure and expertise, combined with these evidence-based insights, provide a strong foundation for developing services that could serve as a model for other urban centres in Thailand. Future research should focus on evaluating the implementation and effectiveness of these services, particularly their impact on reducing the progression of psychotic experiences to more severe mental health conditions in Bangkok's unique socio-cultural context.

Acknowledgements

The author thanks the 2023 Thai National Mental Health Survey Working Group, the data collection teams, and the participants for their contributions. Special thanks to Ms. Thitima Narongsak for assistance with formatting and editing. The Department of Mental Health funded the survey with partial support from the Thai Health Promotion Foundation. The analysis and manuscript preparation received no financial support.

Conflict of Interest

None

REFERENCES

1. Supanya S, The Thailand National Mental Health Survey Working Group, Morgan C, Reininghaus U, editors. Prevalence of Psychotic Experiences and Traumatic Events in the 2013 Thai National Mental Health Survey (SU59). Schizophr Bull 2017;43:S182.
2. Staines L, Healy C, Murphy F, Byrne J, Murphy J, Kelleher I, et al. Incidence and persistence of psychotic experiences in the general population: systematic review and meta-analysis. Schizophr Bull 2023; 49(4):1007-21.
3. Linscott RJ, van Os J. An updated and conservative systematic review and meta-analysis of epidemiological evidence on psychotic experiences in children and adults: on the pathway from proneness to persistence to dimensional expression across mental disorders. Psychol Med 2013;43(6):1133-49.
4. McGrath JJ, Saha S, Al-Hamzawi A, et al. Psychotic experiences in the general population: a cross-national analysis based on 31,261 respondents from 18 countries. JAMA Psychiatry 2015;72(7):697-705.
5. Supanya S, Morgan C, Reininghaus U, editors. Systematic review and meta-analysis of the prevalence of psychotic experience in countries outside of North America, Europe and Australasia (S145). 5th Biennial Schizophrenia International Research Society Conference; 2016; Firenze Fiera Congress Centre, Florence, Italy: NPJ Schizophrenia 2016; 2 (16009):53.
6. Jaya ES, Wusten C, Alizadeh BZ, van Amelsvoort T, Bartels-Velthuis AA, van Beveren NJ, et al. Comparing psychotic experiences in low-and-middle-income-countries and high-income-countries with a focus on measurement invariance. Psychol Med 2022;52:1509-16.
7. Beyer M, Brick TR, Kühn S. Urbanicity and psychotic experiences: social adversities, isolation and exposure to natural environments predict psychosis. J Environ Psychol 2024;96:1-14.
8. Williams R, Ostinelli EG, Agorinya J, Minichino A, De Crescenzo F, Maughan D, et al. Comparing interventions for early psychosis: a systematic review and component network meta-analysis. EClinicalMedicine 2024;70:102537.
9. Andreou C, Eickhoff S, Heide M, de Bock R, Obleser J, Borgwardt S. Predictors of transition in patients with clinical high risk for psychosis: an umbrella review. Transl Psychiatry 2023;13:286.
10. Radez J, Waite F, Izon E, Johns L. Identifying individuals at risk of developing psychosis: A systematic review of the literature in primary care services. Early Interv Psychiatry 2023;17:429-46.
11. Shadowen N, Meehan Z, Webb C, Fowles T, Beveridge R. Early intervention in youth psychosis: Novel approaches to understanding change. Psychiatry Res 2023;326:115269.
12. Poletti M, Pelizza L, Preti A, Raballo A. Clinical High-Risk for Psychosis (CHR-P) circa 2024: Synoptic analysis and synthesis of contemporary treatment guidelines. Asian J Psychiatr 2024;100:104142.
13. Kittirattanapaiboon P, Tantirangsee N, Chuta W, Assanangkornchai S, Supanya S. Thai national mental health survey 2013: methodology and procedure. J Ment Health Thai 2016;24:1-14.
14. Sooksompong S, Kwansanit P, Supanya S, Chutha W, Kittirattanapaiboon P, Udomittipong D, et al. The Thai national Mental Health Survey 2013: Prevalence of Mental Disorders in Megacities: Bangkok. J Psychiatr Assoc Thailand 2016;61:75-88.

15. Kittirattanapaiboon P, Tantirangsee N, Chuta W, Tanaree A, Kwansanit P, Assanangkornchai S, et al. Prevalence of mental disorders and mental health problems: Results from Thai National Mental Health Survey 2013. Nonthaburi, Thailand.: The Department of Mental health, Ministry of Public Health, Royal Thai government; 2017.
16. Kessler RC, Ustun TB. The World Mental Health (WMH) survey initiative version of the World Health Organization (WHO) composite international diagnostic interview (CIDI). Int J Methods Psychiatr Res 2004;13:93-121.
17. Cooper L, Peters L, Andrews G. Validity of the Composite International Diagnostic Interview (CIDI) psychosis module in a psychiatric setting. J Psychiatr Res 1998;32:361-8.
18. Heeringa SG, Wells JE, Hubbard F, Mneimneh ZN, Chiu WT, Sampson NA, et al. Sample designs and sampling procudures.1St ed. New York: Cambridge University Press; 2008.
19. Hanssen MSS, Bijl RV, Vollebergh W, van Os J. Self-reported psychotic experiences in the general population: A valid screening tool for DSM-III-R psychotic disorders? Acta Psychiatr Scand 2003;107:369-77.
20. Degenhardt L, Hall W, Korten A, Jablensky A. Use of a brief screening instrument for psychosis: results of an ROC analysis. Sydney: National Drug and Alcohol Research Centre, University of New South Wales; 2005.
21. Pederson CB, Mortensen PB. Evidence of a dose-response relationship between urbanicity during upbringing and schizophrenia risk. Arch Gen Psychiatry 2001;58:1039-46.
22. Heinz A, Deserno L, Reininghaus U. Urbanicity, social adversity and psychosis. World Psychiatry 2013;12:187-97.
23. DeVylder JE, Kelleher I, Lalane M, Oh H, Link BG, Koyanagi A. Association of Urbanicity with Psychosis in Low- and Middle-Income Countries. JAMA Psychiatry 2018;75:678-86.
24. Pries LK, Guloksuz S, Ten Have M, de Graaf R, van Dorsselaer S, Gunther N, et al. Evidence That Environmental and Familial Risks for Psychosis Additively Impact a Multidimensional Subthreshold Psychosis Syndrome. Schizophr Bull 2018;44:710-9.
25. Del-Ben CM, Shuhama R, Loureiro CM, Ragazzi TCC, Zanatta DP, Tenan SHG, et al. Urbanicity and risk of first-episode psychosis: incidence study in Brazil. Br J Psychiatry 2019;215:726-9.
26. Pignon B, Szoke A, Ku B, Melchior M, Schurhoff F. Urbanicity and psychotic disorders: Facts and hypotheses. Dialogues Clin Neurosci 2023;25:122-38.
27. Kittipong R. The urban-rural income inequality in Thailand: 1996-2011. The Economic Science 2012;60:25-43.
28. Fang Z, Sakellariou C. Evolution of urban-rural living standards inequality in Thailand: 1990-2006. Asian Econ J 2013;27:285-306.
29. Suavansri P, Pichayayothin N, Espinosa PR, Areekit P, Nilchantuk C, Jones TS, et al. Well-being in Thailand: A Culturally driven grounded inquiry exploration of a complex construct. ARQOL 2022;17:3327-47.
30. Zhan C, Mao Z, Zhao X, Shi J. Association between parents' relationship, emotion-regulation strategies, and psychotic-like experiences in adolescents. Children 2022;9:815.
31. Pholphirul P. Labour migration and the economic sustainability in Thailand. J Curr Southeast Asian Aff 2012;31:59-83.
32. O'Keeffe D, Turner N, Foley S, Lawlor E, Kinsella A, O'Callaghan E, et al. The relationship between mental health literacy regarding schizophrenia and psychiatric stigma in the Republic of Ireland. J Ment Health 2016;25:100-8.
33. Sutton M, O'Keeffe D, Frawley T, Madigan K, Fanning F, Lawlor E, et al. Feasibility of a psychosis information intervention to improve mental health literacy for professional groups in contact with young people. Early Interv Psychiatry 2018;12:234-9.
34. Skrobinska L, Newman-Taylor K, Carnelley K. Psychosis and help-seeking behaviour-a systematic review of the literature. Psychol Psychother 2024;97:583-605.
35. Reininghaus U, Kempton MJ, Valmaggia L, Craig TK, Garety P, Onyejiaka A, et al. Stress sensitivity, aberrant salience, and threat anticipation in early psychosis: An experience sampling study. Schizophr Bull 2016;42:712-22.
36. Ayesa-Arriola R, Miguel-Corredera M, de La Foz VO G, Neergaard KD, Correa-Ghisays P, Setién-Suero E, et al. Education and long-term outcomes in first episode psychosis: 10-year follow-up study of the PAFIP cohort. Psychol Med 2023;53:66-77.
37. Chan SKW, Chan HYV, Pang HH, Hui CLM, Suen YN, Chang WC, et al. Ten-year trajectory and outcomes of negative symptoms of patients with first-episode schizophrenia spectrum disorders. Schizophr Res 2020;220:85-91.
38. Neill E, Tan EJ, Toh WL, Selvendra A, Morgan VA, Rossell SL, et al. Examining which factors influence age of onset in males and females with schizophrenia. Schizophr Res 2020;223:265-70.
39. Arayeshgari M, Roshanaei G, Ghaleiha A, Poorolajal J, Tapak L. Investigating factors associated with the number of rehospitalisations among patients with schizophrenia disorder using penalised count regression models. BMC Med Res Methodol 2022;22:170.
40. Lin D, Kim H, Wada K, Aboumrad M, Powell E, Zwain G, et al. Unemployment, homelessness, and other societal outcomes in patients with schizophrenia: a real-world retrospective cohort study of the United States Veterans Health Administration database. BMC Psychiatry 2022;22:458.
41. Butter S, Shevlin M, McBride O, Bentall RP, Hyland P, Leavey G, et al. Functioning, symptom expression and risk along the psychosis continuum. Psychol Med 2023;53:7407-17.
42. Rognli EB, Bramness JG, Skurtveit S, Bukten A. Substance use and sociodemographic background as risk factors for lifetime psychotic experiences in a non-clinical sample. J Subst Abuse Treat 2017;74:42-7.
43. Hielscher E, DeVylder J, Hasking P, Connell M, Martin G, Scott JG. Mediators of the association between psychotic experiences and future non-suicidal self-injury and suicide attempts: results from a three-wave, prospective adolescent cohort study. Eur Child Adolesc Psychiatry 2020;30:1351-65.
44. Matheson SL, Laurie M, Laurens KR. Substance use and psychotic-like experiences in young people: a systematic review and meta-analysis. Psychol Med 2023;53:305-19.
45. Paquin V, Malla AK, Iyer SN, Lepage M, Joober R, Shah JL. Combinations and temporal associations among precursor symptoms before a first episode of psychosis. Schizophr Bull 2024;50:860-70.
46. Barlati S, Nibbio G, Vita A. Evidence-based psychosocial interventions in schizophrenia: a critical review. Curr Opin Psychiatry 2024;37:131-9.