Association of Depression and Sociodemographic Factors Among Patients Consulting at the Region 2 Trauma and Medical Center Mental Health Outpatient Department

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Background/Introduction: Depression affects millions worldwide and is a major public health concern. Its prevalence is influenced by multiple factors, including sociodemographic elements such as age, gender, and income. In the Philippines, depression affects a significant portion of the population, particularly in rural areas. The Region 2 Trauma Medical Center (R2TMC) in Nueva Vizcaya plays a critical role in addressing mental health issues in the Cagayan Valley Region, with a notable rise in depression cases during the COVID-19 pandemic. This study aimed to explore the correlation between sociodemographic factors and depression in patients at R2TMC.

Objective: This study aimed to assess the relationship between depression and various sociodemographic factors (age, sex, marital status, income, education, etc.) among patients seeking mental health services at R2TMC. The goal is to identify the prevalence of depression within these subgroups and evaluate how sociodemographic characteristics correlate with depression.

Methods: A retrospective correlational study was conducted from June 2022 to June 2024, analyzing patient records from R2TMC's Mental Health Outpatient Department. The sample included patients diagnosed with depression based on DSM-V criteria. Descriptive statistics and multiple logistic regression were employed to analyze the data, with ethical approval obtained from the Institutional Review Board. There were 432 participants and data were analyzed using IBM SPSS.

Results: Findings showed varying depression prevalence across sociodemographic categories. The 19-59 age group exhibited the highest depression rates, particularly among females, single individuals, and those in lower-income classes. Unemployed respondents and those with lower educational attainment had higher depression prevalence. These patterns highlight the need for targeted mental health interventions.

Conclusion/Recommendation: The study suggests that depression interventions should be tailored to address the unique vulnerabilities of different sociodemographic groups. Policymakers and healthcare providers should consider these factors to improve mental health care accessibility and effectiveness.

Key words: Depression, sociodemographic factors, mental health

Background

Millions of people worldwide are affected by depression, a pervasive mental health condition that imposes substantial personal, social, and economic burdens. Understanding the factors that contribute to depression is critical for developing effective prevention and intervention strategies[1]. This mental health disorder is influenced by a multifaceted interplay of genetic predispositions, neurologic mechanisms, and environmental factors[2].

Numerous studies have highlighted the significant role of sociodemographic factors, such as age, gender, education, income, and marital status, in determining the onset, severity, and management of depression. These factors not only influence the frequency and intensity of depressive symptoms but also impact help-seeking behavior and access to mental health services[3]. Mental health disorders are a global public health challenge, causing substantial hardships. Reports indicate that an average of one in thirteen older adults in low- and middle-income countries suffers from depression[4]. In the Philippines, depression

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affects an estimated 3.3% of the population, with significant disparities observed in rural areas and among socioeconomically disadvantaged groups[5].

The Region 2 Trauma Medical Center (R2TMC) in Nueva Vizcaya, Northern Philippines, plays a pivotal role in addressing mental health concerns in the Cagayan Valley Region. Since the establishment of its mental health clinic in 2002, the facility has seen a marked increase in patients, particularly during the COVID-19 pandemic, with cases rising from 1,238 pre-pandemic to 2,676. This highlights the urgent need to understand and address the mental health challenges faced by its diverse patient population.

This research aimed to explore the complex interplay between sociodemographic factors and depression within the patient population served by R2TMC. By providing insights into these relationships, the study seeks to inform the development of targeted mental health interventions and strategies. The findings are expected to guide clinicians, policymakers, and healthcare providers in improving mental health outcomes and enhancing the overall well-being of the community.

This study aimed to evaluate the correlation between depression and sociodemographic factors among patients consulting at the Region 2 Trauma and Medical Center Outpatient Mental Health Services. Specifically, it seeks to determine the patients' sociodemographic factors, including age, sex, residence, marital status, educational attainment, religion, occupation, and household income; identify the prevalence of depression based on these factors; and assess the correlation between depression and the identified sociodemographic variables.

Methods

This retrospective correlational study evaluated the relationship between depression and sociodemographic factors among patients consulting at the Mental Health Outpatient Department of the Region II Trauma and Medical Center (R2TMC). The study, conducted from June 2022 to June 2024, utilized document review as the primary method to extract data from patient charts. R2TMC, a 500-bed tertiary government hospital in Nueva Vizcaya, Philippines, serves a diverse population, including indigenous groups from Ifugao, Quirino, and Southern Isabela.

Patients eligible for inclusion were registered at the R2TMC Mental Health Outpatient Department during the study period. Inclusion criteria required a formal diagnosis of depression based on DSM-V criteria, complete sociodemographic information, and documented visits within the specified timeframe. Exclusion criteria included patients with no formal diagnosis of depression, those consulting for unrelated conditions, incomplete data records, or comorbid psychiatric disorders. Ethical approval was obtained prior to data collection to ensure compliance with institutional and national research guidelines.

Data collection involved a guided checklist to gather demographic and clinical information, including age, gender, marital status, educational attainment, household income, and other sociodemographic factors. Patient records were anonymized to protect confidentiality, and information was extracted using the hospital's iHOMIS and Malasakit Center systems. Standardized protocols were applied to maintain data quality and accuracy. This study was facilitated based on the structural flow in gathering data as herein presented as:

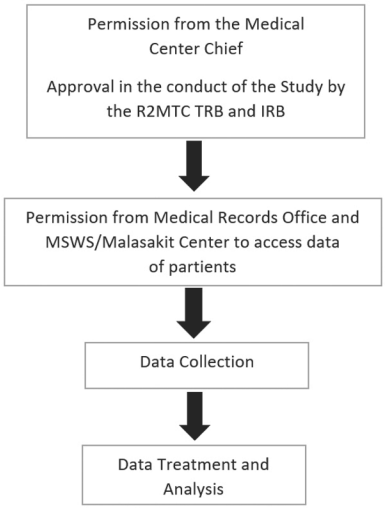

Figure 1.: Data gathering flow

The primary outcome was the prevalence of depression correlated with various sociodemographic factors. Diagnoses were confirmed through documented assessments by qualified mental health professionals, and sociodemographic data were classified using established parameters, such as the 2021 per capita poverty threshold for income classification.

The sample size was computed using the Raosoft calculator, targeting a 95% confidence level, 5% margin of error, and 50% distribution rate, resulting in a required sample size of 432 from a total population of 941. Data were analyzed using descriptive statistics for frequency and percentage distributions and inferential statistics, including multiple logistic regression, to examine the correlation between depression and sociodemographic factors. IBM SPSS Version 20 was used for statistical analysis and presentation.

Ethical approval was secured from the R2TMC Institutional Review Board and Ethics Review Committee. The study adhered to the principles of the Declaration of Helsinki and the Data Privacy Act of 2012. Confidentiality of patient information was strictly maintained, and data collection was conducted with transparency and integrity to mitigate risks to participants.

Results

Table 1 presents the sociodemographic profile of the respondents (n=432) which reveals that the majority (57.4%) are aged between 19 and 59 years, while 26.6% are under 18 years, and 16% are above 60 years. A significant majority of respondents are female, accounting for 85.56%, whereas only 14.44% are male. Regarding civil status, a large proportion (91.67%) of the respondents are single, with only 8.33% being married. In terms of religious affiliation, Roman Catholicism is predominant, with 75.5% identifying as Roman Catholic, followed by Iglesia Ni Cristo at 11.3%, Baptist at 6.3%, Born Again at 3.2%, and other religions comprising 3.7%. Occupationally, most respondents

(96.06%) were unemployed, while 3.94% were employed. In terms of income classification, 26.6% fall under Class C1, followed by 21.1% in Class C3, 19.4% in Class C2, 32.9% in Class D. In terms of the educational attainment, more than half of the respondents (56.73%) have reached high school, 25.89% have completed college, 13.06% have elementary education, and only 1.58% hold a post-graduate degree.

Table 1 provides a comprehensive view of the respondents' sociodemographic characteristics, indicating a predominantly young, single, female student population with a moderate-income level and varying religious affiliations.

Table 2 highlights the depression prevalence across various sociodemographic factors in this study, which reveals shifting patterns across various categories. Age appears to influence depression prevalence significantly, with the highest rates consistently observed in the 19-59 age group, where prevalence increased from 32% in 2022 to 72% in 2024, suggesting this working-age group faces escalating mental health challenges. While those under 18 and above 60 years experienced declining rates over the years, possibly indicating targeted mental health support or varying stress exposures. Female patients consistently displayed higher depression prevalence rates than males, rising from 70% in 2022 to 87.3% in 2024, which may reflect gender-specific stressors or healthcare-seeking behaviors. Marital status also plays a crucial role, with single patients showing a sharp rise from 63.5% to 98.7%, suggesting a potential correlation between loneliness or lack of spousal support and depression. Religious affiliation presents a mixed pattern; Roman Catholics exhibited a high prevalence, although slightly decreasing from 76.8% in 2023 to 72.6% in 2024, while other religious groups, such as Iglesia Ni Cristo and Born Again, experienced variable but lower prevalence rates, indicating the possible buffering effect of religious community support. Occupation-wise, the unemployed reported a high depression prevalence; it increased from 16.9% to 33.7%, potentially due to adaptive coping mechanisms over time. The respondent's income levels influenced depression risk, with Class C1 and Class C2 showing decreasing rates, whereas Class D individuals saw a marked increase from 5.6% in 2022 to 54.9% in 2023 and declined into 39,5% in 2024, underscoring the link between economic hardship and mental health. Educational attainment also impacted depression, particularly among high school graduates, who showed a rising prevalence from 45.8% in 2022 to 65.56% in 2024, while rates among college and post-graduate individuals were relatively stable or lower, suggesting that higher education may provide resilience or access to resources that mitigate depression risk.

These findings highlight the importance of tailored mental health interventions that consider demographic-specific vulnerabilities to effectively address and mitigate depression within diverse patient populations.

Table 1. Respondents' socio-demographic profile (n=432)

Variable	Categories	Frequency	Percentage (%)
Age	Less than 18 years old	115	26.6
	19-59 years old	248	57.4
	Above 60 years old	69	16.0
Sex	Male	62	14.44
	Female	370	85.56
Civil Status	Single	396	91.67
	Married	36	8.33
Religion	Roman Catholic (RC)	326	75.5
	Iglesia Ni Cristo (INC)	49	11.3
	Baptist	27	6.3
	Born Again	14	3.2
	Others (Methodist, Jehovah's Witness, Islam, etc.)	16	3.7
Occupation	Employed	17	3.94
	Unemployed	415	96.06
Income	Class C1(PhP 4,243.80 – 5, 186.85)	115	26.6
	Class C2 (PhP 3,300.74 – 4,243.73_	84	19.4
	Class C3 (PhP 2,357.67 – 3,300.73)	91	21.1
	Class D (PhP < 2, 357.66)	142	32.9
Educational Attainment	Elementary	58	13.06
	High School	252	56.73
	College	115	25.89
	Post-Graduate	7	1.58

The odds ratio tells you how much the odds of depression change with each unit change in the independent variable. Table 3 reveals the correlational relationship between depression (Dependent variable) and sociodemographic indicators (Independent variable) among participants using the inferential statistics multiple logistic regression. The results indicate that age, sex, civil status, and occupation are critical indicators influencing the prevalence of depression.

Specifically, age (less than 18 years old) shows a significant negative association with depression (OR = 0.75, p = 0.01), indicating that younger individuals are less likely to experience depression

Table 2. Prevalence of depression based on sociodemographic indicators.

Variable	Category	Total Frequency	2022 Prevalence Frequency & Percentile	2023 Prevalence Frequency & Percentile	2024 Prevalence Frequency & Percentile
Age Group	Less than 18 years old	115	34 (54%)	52 (24.5%)	29 (18.5%)
	19-59 years old	248	20 (32%)	115 (54.2%)	113 (72%)
	60 years old & Above	69	9 (14%)	45 (21.3%)	15 (9.5%)
Sex	Male	62	19 (30%)	23 (10.8%)	20 (12.7%)
	Female	370	44 (70%)	189 (89.2%)	137 (87.3%)
Civil Status	Single	396	40 (63.5%)	201 (94.8%)	155 (98.7%)
	Married	36	23 (36.5%)	11 (5.2%)	2 (1.3%)
Religion	Roman Catholic (RC)	326	34 (54%)	163 (76.8%)	114 (72.6%)
	Iglesia Ni Cristo (INC)	49	20 (32%)	29 (13.7%)	15 (9.6%)
	Baptist	27	9 (14%)	10 (4.7%)	8 (5.1%)
	Born Again	14	0 (0%)	5 (2.4%)	9 (5.7%)
	Others	16	0 (0%)	5 (2.4%)	11 (7%)
Occupation	Employed	17	1 (5.9%)	10 (58.8%)	6 (35.3%)
	Unemployed	415	70 (16.9%)	205 (49.4%)	140 (33.7%)
Income	Class C1	115	41 (65%)	43 (20.3%)	24 (15.4%)
	Class C2	84	9 (14%)	27 (12.7%)	32 (20.3%)
	Class C3	91	4 (6%)	53 (25%)	34 (21.7%)
	Class D	142	8 (5.6 %)	78 (54.9%)	56 (39.5%)
Educational Attainment	Elementary	58	9 (14%)	33 (15.6%)	16 (10.2%)
	High School	252	29 (45.8%)	120 (56.61%)	103 (65.56%)
	College	115	23 (37.03%)	55 (25.9%)	37 (23.6%)
	Post-Graduate	7	2 (3.17%)	4 (1.89%)	1 (0.64%)

Table 3. Correlation relationship between the Sociodemographic profile (Independent variables) the prevalence of depression (Dependent variable) using
Multiple Logistic Regression

Variable	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Age (Less than 18 years old)	0.75	0.60 - 0.94	0.01
Age (19-59 years old)	1.20	0.95 - 1.50	0.12
Sex (Female)	1.85	1.25 - 2.75	0.03
Civil Status (Married)	0.60	0.45 - 0.80	0.01
Religion (RC)	1.15	0.90 - 1.50	0.26
Occupation (Unemployed)	0.55	0.42 - 0.72	0.01
Income (Class D)	0.85	0.62 - 1.17	0.31
Educational Attainment (College)	1.10	0.80 - 1.45	0.15

Note: p-value for a variable is less than the significance level (typically 0.05), this variable is significantly associated with the prevalence of depression.

compared to older age groups. Female sex (OR = 1.85, p = 0.03) is positively associated with depression, suggesting that females have higher odds of experiencing depression than males. Married individuals (OR = 0.60, p = 0.01) are less likely to experience depression, whereas the unemployed (OR = 0.55, p = 0.01) are at a higher risk. No significant associations were found with religion, income, and educational attainment, as their p-values were greater than 0.05.

These findings suggest that certain sociodemographic indicators, particularly age, sex, civil status, and occupation, play a significant role in the prevalence of depression among the studied population, which underscores the importance of considering these sociodemographic indicators in mental health assessments and interventions to better address the needs of diverse patient populations.

Discussion

The sociodemographic analysis of 432 respondents reveals significant insights into depression prevalence among young, single, female students from moderate-income families, primarily affiliated with the Roman Catholic faith. Key findings indicate that middle-aged individuals (19–59 years) and females are disproportionately affected by depression, with a notable increase in cases from 2022 to 2024. Single respondents reported higher depression rates, likely linked to loneliness or limited social support. Additionally, financial struggles and student status emerged as risk factors, although student cases decreased over time, potentially due to improved coping mechanisms. Logistic regression analysis underscored the importance of age, sex, civil status, and occupation as predictors, emphasizing the need for targeted mental health interventions for these vulnerable groups.

The findings align with existing literature that highlights sociodemographic factors as critical determinants of mental health. Age and gender have been consistently identified as significant predictors, with middle-aged individuals and females demonstrating heightened susceptibility to depression. This supports studies by Nolen-Hoeksema (2001)[6] and Akhtar-Danesh, et al (2007)[1], which emphasize gendered differences in emotional processing and stress response. Similarly, the elevated depression rates among single individuals align with research indicating the protective role of social support networks, which are often limited in unmarried populations.

The study also contributes to the understanding of economic and occupational factors in mental health, corroborating previous findings that economic hardship exacerbates depression risk. Martinez, et al (2020)[7] and Flores, et al (2018)[8] highlighted similar trends in the Philippines, where low-income populations face higher depression rates. This study's observation of decreasing depression among students over time may reflect the positive impact of institutional mental health programs or adaptive coping strategies, suggesting a pathway for mitigating depression in other high-risk groups.

Interestingly, the role of religious affiliation in this study contrasts with some prior findings. While not a significant predictor here, past studies (Miller, et al, 2012; Braam, et al, 2019)[9,10] suggest that religious involvement can provide psychological resilience through community and spiritual support. The absence of a strong correlation in this study may indicate cultural or contextual differences in the protective effects of religiosity, warranting further investigation.

These findings emphasize the importance of designing demographic-specific interventions. For instance, middle-aged adults, females, and economically disadvantaged groups require tailored mental health programs that address their unique challenges. Policies promoting social support for single individuals and accessible mental health care for financially struggling populations could significantly alleviate depression rates. Furthermore, integrating coping skill development into educational curricula for students may sustain the observed decline in their depression prevalence.

Despite its contributions, this study has limitations that should be acknowledged. The reliance on self-reported data may introduce response biases, while the cross-sectional design restricts causal inference. Furthermore, the focus on a predominantly Roman Catholic population limits the generalizability of findings to other religious or cultural contexts. Future research should explore longitudinal designs and diverse populations to provide a more comprehensive understanding of depression and its sociodemographic determinants.

Conclusion and Recommendations

This study underscores the significant influence of sociodemographic factors on depression prevalence, particularly among young, single, female respondents, middle-aged individuals, and those facing financial struggles. Key predictors such as age, gender, civil status, and occupation were validated as critical determinants of mental health vulnerability through multiple logistic regression analysis. The rising depression rates from 2022 to 2024 within these groups highlight an urgent need for targeted mental health interventions, aligning with global trends and emphasizing the necessity of addressing the distinct challenges faced by vulnerable populations in the Philippine context.

To address these findings, mental health programs should prioritize targeted interventions for middle-aged adults, women, single individuals, and economically disadvantaged groups. Strategies such as community-based mental health networks can provide essential social and psychological support, especially for those with limited financial resources. Educational institutions should integrate mental health awareness and resilience-building programs to equip students with effective coping skills. Additionally, policies should incorporate cultural considerations, leveraging religious and community affiliations to foster supportive environments and enhance the protective effects of spirituality for at-risk populations.

References

1. World Health Organization. Depressive disorder (depression). Published March 31, 2023. Available from: https://www.who.int/news-room/fact-sheets/detail/ depression/? gad_ source= 1&gclid=jwKCAjw57exBhAsEiwAaIxaZpvzuhwHWW7X4qyPSH0ACr0OgjZ5OwMn ZJAxGVnRciQTe76lQNPuZhoCS3AQAvD_BwE
2. Franić S, Middeldorp CM, Dolan CV, Ligthart L & Boomsma DI. Childhood and adolescent anxiety and depression: beyond heritability. J Am Acad Child Adolesc Psychiatr 2010; 49(8): 820–9. https://doi.org/10.1016/j.jaac.2010.05.013

3. Akhtar-Danesh N & Landeen J. Relation between depression and sociodemographic factors. Int J Mental Health Systems 2007; 1. 4. 10.1186/1752-4458-1-4.
4. Lotfaliany M, Hoare E, Jacka FN, Kowal P, Berk M & Mohebbi M. Variation in the prevalence of depression and patterns of association, sociodemographic and lifestyle factors in community-dwelling older adults in six low- and middle-income countries. J Affective Dis 2019; 251: 218–26. https://doi.org/10.1016/j.jad.2019.01.054
5. Puyat J, Conaco C, Natividad J & Banal M. Depressive symptoms among young adults in the Philippines: Results from a nationwide cross-sectional survey. J Affective Dis Rep 2021; 3. 100073. 10.1016/j.jadr.2020.100073.
6. Nolen-Hoeksema S. Gender differences in depression. Current directions in psychological science 2001; 10(5): 173-6. https://doi.org/10.1111/1467-8721.00142 (Original work published 2001)
7. Martinez AB, Co M, Lau J & Brown JSL. Filipino help-seeking for mental health problems and associated barriers and facilitators: a systematic review. Social Psychiatr Psychiatr Epidemiol 2020; 55(11): 1397–413. https://doi.org/10.1007/s00127-020-01937-2
8. Flores JL, Hernandez MA, Leyva EW, Cacciata M, Tuazon J & Evangelista L. Prevalence and correlates of depression, anxiety, and distress among Filipinos from low-income communities in the Philippines. Phil J Nurs 2018; 88(2): 8–13.
9. Miller L, Wickramaratne P, Gameroff MJ, Sage M, Tenke CE & Weissman MM. Religiosity and major depression in adults at high risk: a ten-year prospective study. Am J Psychiatr 2012; 169(1): 89–94. https://doi.org/10.1176/appi.ajp.2011.10121823
10. Braam AW & Koenig HG. Religion, spirituality and depression in prospective studies: A systematic review. J Affective Dis 2019; 257: 428–38. https://doi.org/10.1016/j.jad.2019.06.063