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Screening of Depression Among the Elderly in Selected Barangays in Ormoc City, Leyte, Philippines

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Mental health is rapidly becoming a significant public health concern. Depression and other mental illnesses can substantially impact one's physical health and disease prognosis. It is growing more widespread among the elderly worldwide, particularly in the Philippines. This study aimed to determine the prevalence of depression, the systemic morbidities, and the predictors of depression among elderly people. A descriptive cross-sectional study was conducted from June 2020 to January 2021 among older people (age ≥ 60) recruited from five barangays (Airport, Bagong Buhay, Libertad, Liloan, and Linao) in Ormoc City, Philippines. The Mini-Mental State Examination (MMSE) and the Geriatric Depression scale (GDS-H) together with some demographic characteristics of the participants were used with face-to-face interviews. Frequency counts and percentages were employed for descriptive and chi-square and multinomial logistic regression for inferential statistics. SPSS version 23 was used for the data analysis. The results found that depression was present in 22.1 % of the study participants, with symptoms ranging from mild (4.1%) to severe depression (95.9%). Results also found that 96.3% of participants had one or more morbidities with eye-related morbidity (67.2%), hypertension (52.5%), and ear-related morbidity (43.0%) being the most common ailments. Financial dependency was found to be primary predictor of depression. By screening and identifying predictors for depression can lessen the severity and impact of the condition to a larger extent.

Keywords: screening; depression; elders; prevalence

1. Introduction

The world's population is rapidly aging, and between 2015 and 2050, 900 million to 2 billion people are expected to be over the age of 60 by 2050 (Dey, 2017). In this age range, 6.6 percent of total disability is caused by mental and neurological disorders, and about 15% of persons over the age of 60 suffer from a mental illness, the majority of which is depression (Haseltine, 2018; Yasamy et al., 2013). According to the World Health Organization (2017) depressive disorders impacted between 10 and 20% of older persons worldwide in 2015, affecting about

300 million people.

Depression is a form of a psychiatric condition characterized by a depressed mood, a lack of interest in or enjoyment in activities, and a loss of energy that lasted at least 2 weeks or more. Symptoms could include changes in appetite, weight, sleep, and motor functions; emotions of insignificance or sorrow; difficulty concentrating, thinking, or making the decisions; or continuous suicidal behaviors or suicidal plans or attempts; or persistent thoughts of death (American Psychiatric Association, 2013).

Even though the full scope of the pandemic's consequences is still unknown, it has been well-documented that it harms one's psychological well-being. Anxiety and depression have already been found to be on the rise in the general population, especially those who are bound for long durations of lockdowns. (Ahmed et al, 2020; Meda et al, 2020). This is because of the stringent lockdowns, a higher danger of illness, and lack of social support, these effects are increased in the older population (Yang et al, 2020). Prior research has also shown that depression symptoms are more common in the elderly population, even when they are not in a crisis (Djernes, 2006; Li et al, 2014), which is addressed in light of proof that those people with pre-existing mental health conditions have a higher rate of depressive symptoms. Even though those who have a history of mental illness have been the most afflicted by the detrimental psychological effects of lockdowns and this is alarming (Hao et al, 2020). These concerns transcend beyond the elderly's psychological well-being, and although growing mental well-being issues in the broader population perhaps already be a cause for concern. Depression in older people has been connected to the risk of Alzheimer's disease and cognitive impairment. (Geerlings et al, 2020; Sachs-Ericsson et al, 2005) As a result, although many cultures are experiencing a rise in mental health issues, the long-term effects may be severe, as well as depression and stress that leads to Alzheimer's disease rates rise, as well as the rate of cognitive deterioration in the elderly. The physical restrictions placed on people's ability to travel outside their houses would most likely exacerbate this situation, resulting in fewer possibilities for many people to exercise. According to previous studies, the senior population may suffer from a lack of sociability, increased emotional stress, and general mental health issues, as well as a lack of physical activity. Even though the lockdowns perhaps be temporary, there are chances to represent substantial threats to their well-being.

In Ormoc City, the Local Government Unit religiously complies with the health standards set by IATF due to the aim of continuously maintaining the stability of living and preventing the risks of the common people. However, the elderly the most vulnerable group affected by the pandemic (those over the age of 60) are nevertheless obligated to limit their exposure outside of their homes. According to initial data, it is shown that ~80% of the deaths due to COVID-19 occur in those over the age of 65 (NCHS-CDC, 2020).

To provide information on the status of mental health of the elderly in Ormoc City, researchers determine the prevalence of depression, diagnose systemic morbidities and identify predictors of depression among elderly people. However, the age group of 60 or over, the most vulnerable group affected by the pandemic, is still required to minimize their exposure outside their homes.

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2. RESEARCH METHODOLOGY

A descriptive cross-sectional study was conducted from June 2020 to January 2021 among 335 elderly people (age ≥ 60) who were recruited using multistage stratified random sampling technique from five barangays (Airport, Bagong Buhay, Libertad, Liloan, and Linao) in Ormoc City, Philippines.

The instruments used in the study were the following: Mini-Mental State Examination (MMSE) and the Geriatric Depression scale (GDS-H) with some demographic characteristics of the respondents. The MMSE was employed to assess cognitive impairment, consisting of 30 yes or no self-evaluation questions. It has a maximum score of 30 points and a cut-off score of < 20, indicating a higher risk of dementia (Folstein et al., 1975; Crum et al., 1993; Kurlowicz,2007). The GDS-H has been used to screen for depression (Kurlowicz,2007; Montorio,1996; Prakash et al., 2004; Ganguli et al., 1999) in people over 60 (Kurlowicz,2007), which comprises 30-closed-ended questions, each with a point value assigned to it. It is a reliable screening tool for depressive symptoms in elders with mild cognitive impairment (Debruyne et al., 2009). GDS-H has a cut-off score of ≥ 22 for depression. A score of 0-9 is considered normal; 10-19 is an indicator of mild depression; and 20-30 is an indicator of severe depression. The study utilized the MMSE to prove that the Geriatric Depression Scale (GDS) was not valid for people with cognitive impairment (MMSE <20) (Montorio, 1996).

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After obtaining the consent of the participants, the researchers used the MMSE to interview them. Those who obtained a score of 20 or higher on the MMSE were qualified to participate in the study. Participants with severe illnesses such as mental disorders, cancer, advanced cardiovascular disease, or kidney diseases were not allowed to participate. As a result, the study included 335 older people. The GDS-H was then used to interview the participants.

The researchers coded, tabulated, and analyzed the data using SPSS version 23. The analysis used frequency count, percentages for descriptive statistics, chi-square, and multiple logistic regression for inferential statistics with a significance level of $p < 0.05$.

3. RESULTS

Table 1. Elderly Depression Score for Geriatric Depression Scale and Its Associated Factors

4. Characteristics	Depression (by GDS-H)			χ^2	Sig(2-sided)
	Present N= 74(22.1%)	Absent N=261(77.9%)	Total N =335(100%)		
	F(%)	F(%)	F(%)		
Age					
60-65	24(19.2)	101(80.8)	125(100.0)		
66-70	22(25.9)	63(74.1)	85(100.0)	1.32	.723
71-75	13(22.4)	45(77.6)	58(100.0)		
76 and older	15(22.4)	52(77.6)	67(100.0)		
Gender					
Male	32(19.9)	129(80.1)	161(100.0)	.883	.360
Female	42(24.1)	132(75.9)	174(100.0)		
Marital Status					
Single	3(9.7)	28(90.3)	31(100.0)	4.65	.200
Married	43(25.3)	127(74.7)	170(100.0)		
Widowed	27(21.8)	97(78.2)	124(100.0)		

Separated	1(10.0)	9(90.0)	10(100.0)		
Living Status					
Living alone	2(22.2)	7(77.8)	9(100.0)	.000	1.00
Living with someone	72(20.0)	254 (77.9)	326(100.0)		
Children					
At least one male child	69(22.1)	242(77.8)	311(100.0)		
No child or Only female child	5(29.4)	19(70.6)	24(100.0)	.024	.878
Education					
Illiterate	1(16.7)	5(83.3)	6(100.0)		
Elementary/High School	58(21.7)	209(78.3)	267(100.0)	.283	.868
College/Post graduate	15(24.2)	47(75.8)	62(100.0)		
Residential Status					
Residing at home	74(22.1)	261(77.9)	335(100.0)		
Residing with a male child	0(0.0)	0(0.0)	0(0.0)	-	-
Financial Dependency					
Independent	21(20.0)	84(80.0)	105(100.0)		
Partially dependent	29(30.9)	65(69.1)	94(100.0)	6.02	.049
Totally dependent	24(17.6)	112 (82.4)	136(100.0)		
Feeling of Loneliness					
Present	63 (22.5)	217 (77.5)	280(100.0)	.167	.859
Absent	11 (20.0)	44 (80.0)	55(100.0)		
Feeling of Neglect					
Present	40 (23.3)	132(76.7)	172(100.0)	.279	.693
Absent	34 (20.9)	129 (79.1)	163(100.0)		
Morbidity Status					
With Morbidity	70 (21.7)	253 (78.3)	323(100.0)	.914	.308
Without Morbidity	4 (33.3)	8 (66.7)	12(100.0)		

Table 2: Self-reported morbidity status of elders

Type of Morbidity	Frequency	Percentage
Diabetes Mellitus	62	18.5
Hypertension	176	52.5
Musculoskeletal disorders	92	27.5
Cerebrovascular disorders	10	3.0
Respiratory disorders	82	24.5
Cardiovascular disorders	24	7.2
Gastrointestinal disorders	31	9.3
Renal disorders	25	7.5
Psychiatric disorders	0	0.0
Ear Related Disorders	144	43.0
Eye Related Disorders	225	67.2
Malignancy	1	0.3
Others	7	2.1

Figure 1: Elderly level of depression

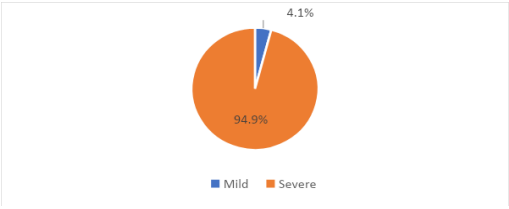

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Table 3. Multinomial logistic regression analysis for depression

Characteristics		β	(SE)	Wald	Exp (B)	95% CI	Sig.
Age	60-65	.236	.394	.358	1.226	.585- 2.74	.549
	66-70	-.116	.407	.082	.890	.401 – 1.98	.775
	71-75	.188	.452	.174	1.207	.498 – 2.93	.677
	76 and older					Reference	
Gender	Male	.224	.276	.660	1.252	.728 – 2.15	.417
	Female					Reference	
Marital Status	Single	-.134	1.247	.011	.875	.076 – 10.08	.915
	Married	-1.323	1.089	1.475	.266	.032 – 2.25	.225
	Widowed	-1.130	1.101	1.054	.323	.037 – 2.79	.305
	Separated					Reference	
Living Status	Living alone	.184	.864	.045	1.202	.221 – 6.54	.831
	Living with someone					Reference	
Number of Children	At least one male child	.358	.581	.381	1.431	.459 – 4.46	.537
	No child or Only female child					Reference	
Education	Illiterate	.479	1.185	.164	1.615	.158 – 16.48	.686
	Elementary/ High School	.096	.374	.066	1.101	.529 – 2.29	.798
	College/Postgraduate					Reference	
Residential Status	Residing at home					Reference	
Financial Dependency	Independent	-.135	.369	.133	.874	.424 – 1.80	.715
	Partially dependent	-.771	.342	5.091	.463	.237 - .904	.024
	Totally dependent					Reference	
Feeling of Loneliness	Present	-.019	.390	.002	.981	.457 – 2.11	.960
	Absent					Reference	
Feeling of Neglect	Present	-.199	.278	.512	.820	.475 – 1.41	.474
	Absent					Reference	
Morbidity Status	Present	-.817	.650	1.580	.442	.124 – 1.58	.209
	Absent					Reference	

4. DISCUSSIONS

Among the variables correlated in this study, financial dependency, specifically those who were partially dependent on the support from their family members, was significantly associated with depression. Maulik and Dasgupta (2012) also supported the earlier results, stating that elders who needed financial assistance were a notable risk factor for depression. This is also validated by Guan et al. (2022) confirming that the relationship between depression and finances was statistically significant. The elderly frequently experiences a loss of self-respect and dignity with the loss of a job or retirement. These could lead to psychological unease or feelings of loneliness. Also, those who rely heavily on their resources or are only partially supported by their families frequently suffer from depression compared to those who are fully supported, have health insurance or have saved money. The expenses that elderly individuals should pay for either treatment or daily living would worsen their families' financial and mental conditions. Older people felt the need to avoid being harassed by their children. On the other hand, the elders occasionally felt as though they couldn't help their relatives, especially in a challenging financial condition that can lead to anxiety and depression. Zelekha & Zelekha (2020) confirmed that those who got financial support from the families of their relatives were more likely to report feeling less depressed than those who did not. Funding sources are crucial for the elderly in both financial and psychological terms.

It is quite surprising in this study that most of the participants reported to be severely depressed

(Figure1, 94.9%), yet their morbidity status was found to be of no significant correlation (p = 0.209) Most of the participants claimed to be suffering from eye-related (67.2%), hypertension-related (52.5%), and ear-related (43.0%). These findings were similar to those of previous studies of Silva et al., 2019; Gupta et al., 2015 but different from those of Mullick et al., 2018, who claimed that the most prevalent related morbidity was cardiovascular system (CVS) (31.7%). It could be because most participants in our study were largely daily wage workers who belonged to the lowest socio-economic group. According to aging theory, older people go through a transitional period in which their lives change physically, psychologically, and socially (Tiwari, 2012). Some physical signs of aging include sensory, hearing, and vision problems; psychological changes include affective and cognitive function; and social status changes result in older people feeling as though they have lost their social power, roles, and abandonment (Tiwari, 2012).

In the COVID-19 scenario, the majority of nations work to resume regular operations. To improve health care and make the senior population happier, close families, home nursing services, and the government must work together to provide social and emotional support for the elderly. There are some limitations on this research, though. First, the participants were interviewed by the researchers during the pandemic, which could have altered the findings, especially owing to shyness and humiliation. Second, a lot of people feared being interviewed and contracting the illness. Therefore, it is highly recommended that further studies be done. This might involve doing surveys conducted after the pandemic and including additional variables like general health status (physical), emotional expression, and stimuli.

5. Conclusion

This study focused on depression in older people. It showed that depression was prevalent in 22.1% of the elderly in Ormoc City. Additionally, it was also more prevalent among those who were financially dependent. Morbidities connected to the eyes, hypertension, and ears were the most prevalent among older adults. The main indicator of depression was found to be financial dependence. By screening and identifying predictors for depression can lessen the severity and impact of the condition to a larger extent.

6. Recommendation

Based on the findings, financial dependency is a primary predictor of depression among all important factors reported in this study. As a result, the following suggestions should be emphasized: Old age pensions should be adjusted for inflation, and government-sponsored or public-private partnership day care centers and recreational centers should be established at a district level, especially for socially and economically disadvantaged groups, with facilities like physical and mental health screenings, diagnosis and management of various morbidities. Recreation/games to boast reading, brain exercises, and social connections to overcome their loneliness

Declaration of Competing Interest

None.

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Conflicts of Interest

The authors declare no conflict of interest.

References

1. Ahmed, S. F., Quadeer, A. A., & McKay, M. R. (2020). Preliminary identification of potential vaccine targets for the COVID-19 Coronavirus (SARS-CoV-2) based on SARS-CoV immunological studies. Viruses, 12(3), 254. doi:10.3390/v12030254
2. American Psychiatric Association, DSM-5 Task Force. (2013). Diagnostic and statistical manual of mental disorders: DSM-5™ (5th ed.). American Psychiatric Publishing, Inc.. https://doi.org/10.1176/appi.books.9780890425596
3. Crum, R. M., Anthony, J. C., Bassett, S. S., & Folstein, M. F. (1993). Population-based norms for the Mini-Mental State Examination by age and educational level. JAMA, 269(18), 2386–2391.
4. Debruyne, H., Van Buggenhout, M., Le Bastard, N., Aries, M., Audenaert, K., De Deyn, P. P., & Engelborghs, S. (2009). Is the geriatric depression scale a reliable screening tool for depressive symptoms in elderly patients with cognitive impairment? International Journal of Geriatric Psychiatry, 24(6), 556–562. doi:10.1002/gps.2154
5. Dey, A. B. (2017). World report on ageing and health. The Indian Journal of Medical Research, 145(1), 150. doi:10.4103/0971-5916.207249
6. Djernes, J. K. (2006). Prevalence and predictors of depression in populations of elderly: a review. Acta Psychiatrica Scandinavica, 113(5), 372–387. doi:10.1111/j.1600-0447.2006.00770.x
7. Folstein, M. F., Folstein, S. E., & Mchugh, P. R. (1975). Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res, 12(3), 189–198.
8. Ganguli, M., Dube, S., Johnston, J. M., Pandav, R., Chandra, V., & Dodge, H. H. (1999). Depressive symptoms, cognitive impairment and functional impairment in a rural elderly population in India: a Hindi version of the geriatric depression scale (GDS-H). International Journal of Geriatric Psychiatry, 14(10), 807–820. doi:10.1002/(sici)1099-1166(199910)14:10<807::aid-gps31>3.0.co;2-#
9. Geerlings, M. I., Jonker, C., Bouter, L. M., Adèr, H. J., & Schmand, B. (1999). Association between memory complaints and incident Alzheimer's disease in elderly people with normal baseline cognition. Am J Psychiatry, 156(4), 531–537. doi:10.1176/ajp.156.4.53
10. Guan N, Guariglia A, Moore P, Xu F, Al-Janabi H. Financial stress and depression in adults: A systematic review. PLoS One. 2022 Feb 22;17(2):e0264041. doi: 10.1371/journal.pone.0264041. PMID: 35192652; PMCID: PMC8863240.
11. Gupta, A., Mohan, U., Singh, S. K., Manar, M. K., Tiwari, S. C., & Singh, V. K. (2015). Screening depression among elderly in a city of southeast Asia. Journal of Clinical and Diagnostic Research: JCDR, 9(9), LC01-5. doi:10.7860/JCDR/2015/14100.6426
12. Hao, F., Tan, W., Jiang, L., Zhang, L., Zhao, X., Zou, Y., … Tam, W. (2020). Do psychiatric patients experience more psychiatric symptoms during COVID-19 pandemic and lockdown? A case-control study with service and research implications for immunopsychiatry. Brain, Behavior, and Immunity, 87, 100–106. doi:10.1016/j.bbi.2020.04.069
13. Haseltine, W. (2018). Aging Populations Will Challenge Healthcare Systems All Over the

World Forbes Pharma Healthcare.
14. Kurlowicz, L. (2007). The Geriatric Depression Scale: Best practice in nursing care to older adults. Revised. In Best Practices in Nursing Care to Older Adult (M. Boltz & S. A. Greenberg, Eds.).
15. Li, D., Zhang, D.-J., Shao, J.-J., Qi, X.-D., & Tian, L. (2014). A meta-analysis of the prevalence of depressive symptoms in Chinese older adults. Archives of Gerontology and Geriatrics, 58(1), 1–9. doi:10.1016/j.archger.2013.07.016
16. Maulik, S. and Dasgupta, A. (2012) Depression and its determinants in the rural elderly of West Bengal- A cross sectional study. International Journal of Biological and Medical Research, 3, 1299-1302.
17. Meda, N., Pardini, S., Slongo, I., Bodini, L., Rigobello, P., Visioli, F., & Novara, C. (2020). COVID-19 and depressive symptoms in students before and during lockdown (p. 2020.04.27.20081695). doi:10.1101/2020.04.27.20081695
18. Montorio, I., & Izal, M. (1996). The Geriatric Depression Scale: a review of its development and utility. IntPsychogeriatr, 8(1), 103–112.
19. Mullick, T. H., Samanta, S., Maji, B., & Sarangi, L. (2018). Pattern of morbidity and depression among the urban geriatric population: a community-based survey in Bhubaneswar, Orissa, India. Int J Health Allied Sci, 7, 233–239.
20. National Center for Health Statistics. Centers for Disease Control and Prevention. 2020. https://www.cdc.gov/nchs/pressroom/podcasts/2022/20220107/20220107.htm
21. Prakash, R., Choudhary, S. K., & Singh, U. S. (2004). A study of morbidity pattern among geriatric population in an urban area of Udaipur, Rajasthan. Indian J Community Med, 29, 35–40.
22. Sachs-Ericsson, N. (2005). Racial differences in cognitive decline in a sample of community-dwelling older adults: The mediating role of education and literacy. The American Journal of Geriatric Psychiatry: Official Journal of the American Association for Geriatric Psychiatry, 13(11), 968–975. doi:10.1176/appi.ajgp.13.11.968
23. Silva, P. O. (2019). Prevalência de sintomas depressivos e seus fatores associados em idosos atendidos por um centro de referência. Revista Brasileira de Geriatria e Gerontologia, 22(5).
24. Tiwari, S. C., & Pandey, N. (2012). Status and requirements of geriatric mental health services in India: An evidence-based commentary. Indian Journal of Psychiatry, 54(1), 8. doi:10.4103/0019-5545.94639
25. Yang, J., Zheng, Y., Gou, X., Pu, K., Chen, Z., Guo, Q., … Zhou, Y. (2020). Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: a systematic review and meta-analysis. International Journal of Infectious Diseases: IJID: Official Publication of the International Society for Infectious Diseases, 94, 91–95. doi:10.1016/j.ijid.2020.03.017
26. Yasamy, M., Dua, T., & Harper, M. (2013). Saxena Mental Health of Older Adults, Addressing a Growing Concern, 10, World Health Organization. Department of Mental Health and Substance Abuse, 4–9.
27. Zelekha, Y., & Zelekha, O. (2020). Income and clinical depression versus non-clinical mental health: Same associations or different structures? A dissociation strategy using a national representative random survey based on EUROHIS (INHIS-2). PloS One, 15(6), e0234234. https://doi.org/10.1371/journal.pone.0234234