Clinical Schizophrenia & Related Psychoses

A Cross-Sectional Study on Depression and its Associated Factors among Adults in Urban Can Tho, Vietnam

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Abstract

Background: This study set out to determine the prevalence of depression and its associated factors in Can Tho City, Vietnam's urban community.

Methods: A cross-sectional descriptive study with a sample of 449 people aged 18 to 60 years old was conducted in Ninh Kieu district, Can Tho city, from September 2015 to June 2016. Depression was measured using the PQH-9 Patient Health Scale. The total PHQ-9 scores ranged from 0 to 27. Scores of 5, 10, 15, and 20 represent cut-off scores for mild, moderate, and major depression, respectively. and analyze related factors by multivariable logistic regression.

Results: Sixteen percent of participants met the cutoff point for depression, a score of 5 or over. There were 12.2% with mild depression, 2.9% with moderate depression, 0.7% with moderately severe depression, and 0.2% with severe depression. Chronic diseases (OR=2.79; p=0.005), introversion/affectivity (OR=3.12; p=0.002), failure in work or study (OR=4.40; p<0.001), family history of mental illness (OR=8.93; p=0.029), family unhappiness (OR=5.61; p=0.002), and relatives dying or suffering from severe illness (OR=2.75; p=0.004).

Conclusion: This study provides an alarming signal for health professionals and health policymakers in Can Tho City about the need for better recognition of depression and its associated factors in adult people.

Keywords: Depression • Related factors • Ninh Kieu • Can Tho

Abbreviations: DSM-IV: Diagnostic and Statistical Manual of Mental Disorders; 4th edition; OR: Odd Ratio; PHQ-9: The Patient Health Questionnaire; ICD-10: International Classification of Diseases; WHO: World Health Organization; WFMH: World Federation for Mental Health.

Introduction

Depression is a common mental disorder that presents with a depressed mood, a loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide [1].

Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. The proportion of the global population with depression in 2015 is estimated to be 4.4%. The total number of people living with depression in the world is 322 million. Nearly half of these people live in the Southeast Asia Region (85.67 million, or 27%) and the Western Pacific Region (66.21 million, or 21%). The total estimated number of people living with depression increased by 18.4% between 2005 and 2015 [2,3]. This reflects the overall growth of the global population as well as a proportionate increase in the age groups in which depression is more prevalent. Depressive disorders led to a global total of over 50 million Years Lived with Disability (YLD) in 2015. More than 80% of this non-fatal disease burden occurred in low middle-income countries. Globally, depressive disorders are ranked as the single largest contributor to non-fatal health loss (7.5% of all YLD) [3]. The World Mental Health Survey, conducted in 17 countries, found that, on average, about 1 in 20 people reported having an episode of depression in the previous year. A cross-sectional study was carried out on 1,200 people aged 18-60 in Ha Noi, Thua Thien Hue, and Can Tho, Viet Nam (2012); the prevalence of depression was 4.8%, with no difference between the three provinces [4]. The epidemiological survey of depressive disorders was carried out in a Red River Delta commune of 4,156 inhabitants aged 15 years and older. The prevalence of depression was 8.35%. Female/Male ratio=5/1. The majority of cases (58.21%) are between the ages of 30 and 59; 60 years of age and older account for 36.89% of cases [5]. According to a study of the prevalence of depression in adults in Hue, Vietnam, 39 of the 346 cases surveyed had depression, accounting for 10.98% of the total, with 48.7% mild and 51.3% moderate [6].

Depressive disorders often start at a young age, reduce people's functioning, and are recurring. For these reasons, depression is the leading cause of disability worldwide in terms of total years lost due to disability. Although depression is a common disorder, very few studies have looked into its prevalence and associated risk factors. Therefore, the aim of this study was to estimate the prevalence of depression and its associated factors among community adults in urban Can Tho City, Vietnam.

Materials and Methods

We searched the medical literature comprehensively, looking for published Medical Subject Heading (MeSH) terms. Term one was "CIDP" OR "chronic inflammatory demyelinating polyneuropathy"; term two was "central and peripheral demyelinating disorders" OR "CPDD"; term three: "anti-GD1a antibodies" OR "AGD1a"; term four was "nodal neuropathies" OR "NN", term five was "paranodal neuropathy" OR "PNN"; term five was "juxtaparanodal neuropathy" OR "JPNN" OR "ataxic peripheral neuropathy (APN)" OR "Autoimmune Mediate Neuropathy (AMN)" We also searched at https://www.clinicaltrials.gov/, a website facility from the US National Library of Medicine for unpublished clinical trials, using the same MeSH terms as above, but applying the filters "full publication" AND "summary", published

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in English, Spanish, or Portuguese.

Inclusion and Exclusion Criteria and Screening process.

Publications eligible to be included in this study had to meet the following inclusion criteria,

•   Human beings involved.

•   The full article was written in English, Spanish or Portuguese.

•   The central aspect related to CIDP, CPDP, AGD1a, NN, PNN, JPNN, AMN.

•   Published in the medical journal after approval by the peer-review process.

The exclusion criteria were: (1) publication did not refer to CIDP, AGD1a, NN, PNN, JPNN, or AMN; (2) review articles, letters, medical hypotheses, newspaper publications or manuscripts that did not meet the criteria of an original study (3) Medical conference proceedings; (4) clinical trials with less than ten cases per treatment arm; (5) duplicate articles or manuscript written by the same author using the same data; (6) publication without corresponding authors. All abstracts were screened twice in a blinded fashion. Those found to meet any exclusion criteria were not included in the analysis, and any discrepancy among authors was solved by scientific discussion.

Literature search strategy

We included case reports, case series, observational cohort studies, systematic reviews and meta- analyses, cross-sectional studies, and clinical trials. During the initial search, we looked for all articles published between January 01, 2012, and January 01, 2022, both inclusive. We searched the following databases: Medline, Scopus online databases, Google Scholar, Science Direct, Scielo, Search of Sciences, BioRxiv, medRxiv and Cochrane library. All studies were retrieved by utilizing MeSH, as before cited. We did not include other aspects beyond the current work scope.

Study and cohort selection

We select prospectively and retrospective cohort studies, case reports, case series, case-control studies, controlled clinical trials, reviews, and meta-analysis reporting data on listed topics.

Data collection process: The relevant information was extracted from each publication using Microsoft Excel in a structured coding scheme. The data collected included the type of PN, clinical features, population size, gender and age distribution, the means used to diagnose PNP, treatment strategies, patient response to treatment, the manner used to assess the effectiveness of the treatment, the side effects associated with the treatment and the follow-up period of the patients, where applicable. In any case, when there was uncertainty regarding the interpretation of the data obtained or how it could be used, the authors discussed the situation in question until they reached a unanimous consensus.

Data synthesis: Our investigation used aggregate data where possible, following the PRISMA guidelines.

Quality assessment of included studies: All studies were initially screened for bias using the Jadad scoring system [28]. Trials with a Jadad score <4 were removed, while investigations with a Jadad score ≥ 4 were selected for further assessment.

Results

Study selection

This study aims to update the scientific information released about these issues. A total of 2427 manuscripts were retrieved from electronic databases up to August 01, 2022. After removing irrelevancy and duplicates, 168 manuscripts were taken for full-text screening, and, finally, 56 publications delivering outcomes of interest were included for review. Of these included studies, 45 were peer-reviewed, and only four included

CCPD cases [14-17]. A PRISMA flow chart for the literature searched is shown below. A total of 88 patients have been reported within this period, and 59% were females. Only 21 cases presented clinical manifestations of CNS and PNS simultaneously at the onset, with an overall mean age of 33.3 ± 12.4 (SD) years. The sensory disturbance was the most common sign reported (92%), followed by motor signs (89.4%) and abnormal gait (81%). Raised albumin level in the CSF was seen quite often. (79.9%).

Study design and population

A cross-sectional study design was applied. Can Tho is the fourth-largest city in Vietnam and the largest city in the Mekong Delta. Ninh Kieu, an urban district, is located at the center of Can Tho city. From September 2015 to June 2016, a representative sample aged 18-60 years was selected to determine the prevalence and risk factors of depression. The study adopted multi-stage sampling. In the first stage, five wards were chosen at random from a pool of thirteen. In the second stage, three-quarters of the five selected wards were randomly selected by lottery, for a total of 15 quarters. In the third stage, in each of the selected quarters, we went to the quarter center, chose randomly, sorted, and approached the households side by side until we had about 30 households. Finally, in each of these households, a member whose age was 18-60 years old was randomly selected. Altogether, there were 449 participants selected and invited to the study.

Data collection

Data were collected during a household visit by local medical staff and a medical student in her 6th year using a standard questionnaire administered *via* face-to-face interview. Before the survey was administered, all eligible investigators attended a training that included the purpose of this study, how to administer the questionnaire, the standard method of measurement, the importance of standardization, and the study procedures. During data collection, the investigators received further instructions and support. The questionnaires consisted of three components: Individual factors (chronic disease, lifestyle risk factors, habits, failure in work/study/love; medical history of mental health diseases); family factors (family history of mental illness, family unhappiness, relatives died or suffered severe illness, family income, family conflicts); community and societal factors (job, word pressure, contradiction in work, neighbors); and (3) psychological status evaluation (Patient Health Questionnaire-9 - PHQ-9).

Measuring depression symptoms

Depression symptoms were assessed with the PHQ-9, which is widely used in primary health centers for the screening of depression [7]. The Patient Health Questionnaire-9 (PHQ-9) is a measure of depression consisting of nine items matching the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria of major depression. A face-to-face interview method was used to administer the PHQ-9. Respondents are asked to rate each of the items on a scale of 0 to 3 on how much a symptom has bothered them over the last 2 weeks (0=not at all, 1=several days, 2=more than half the days, 3=nearly every day). The PHQ-9 total score for the nine items ranges from 0 to 27. Scores of 5,10,15 and 20 represent cutoff points for mild, moderate, moderately severe, and severe depression, respectively. The commonly used cut-off value for the PHQ-9 is 10 [8,9]. In the general Chinese population, the Chinese version of the PHQ-9 is a valid and efficient tool for screening depression, with a recommended cutoff score of 7 or more and a sensitivity of 0.86 and a specificity of 0.86 [10]. However, the optimal cut-off score may differ depending on the setting [11]. Concerning the internal consistency coefficient of the PHQ-9 scale Vietnamese version, the Cronbach's alpha ranges from 0.823 to 0.867, roughly corresponding to the coefficient range of 0.86 to 0.89 in the study of Kroenke [8]. At 0.7 or higher, the Cronbach's alpha coefficient is acceptable. As a result, the Cronbach's alpha coefficients of the Vietnamese version of the PHQ-9 scale for assessing depression are highly similar [12].

Statistical analysis

The data is presented as means with Standard Deviation (SD) and descriptively analyzed to determine the demographic and basic

characteristics of the study population. The chi-squared test (2) was used to assess the significance of differences in the distribution of selected sociodemographic characteristics, risk factors, and outcome variables among the participants. In addition to the descriptive analyses, a logistic regression analysis was performed to identify associations between depression and associated factors. Univariate independent predictors of depression with p=0.10 were entered into a multivariate logistic regression model, and their influence on the presence of depression was studied using the Backward Wald method. All tests were two-tailed, and a p-value of <0.05 was considered statistically significant. The 95% confidence intervals and/or Odds Ratios (OR) were also calculated. All analyses were performed with SPSS version 18.0.

Ethics

Ethical approval for the study was obtained from the Scientific and Technical Committee of the Can Tho University of Medicine and Pharmacy, which has authority to approve both the technical content and ethical aspects of studies. All research subjects will be explained in detail about the purposes and contents of the study in order to voluntarily participate and cooperate in the research process. Participants have the right to refuse to participate in the study or terminate the interview at any time. All participant information is kept private and is only used for research purposes. For both the FES and control participants, we used Pearson's correlation coefficients to analyze the relationships between total and subtotal scores in MSET, M-WCST, FAB and total and subtotal scores in DEX and BDSI.

Results

Participants' characteristic

The research population consisted of 449 participants, including 193

(43%) males and 256 (57%) females, ranging in age from 18 to 60 years old (overall mean age of 41.97 years, SD=11.87). The majority of participants (95.1%) were ethnically Kinh (the ethnic majority in Vietnam); other ethnic groups included Chinese and Khmer.

The prevalence of depression

Sixteen percent of participants met the cut-off point for depression, a PHQ-9 score of 5 or over. The results also showed that females had depression at a rate of 19.1% higher than males (11.9%); the difference is statistically significant (p=0.039) (Table 1).

Based on their score, 12.2% endorse mild depressive symptoms, 2.9% endorse moderate depressive symptoms, 0.7% endorse moderately severe depressive symptoms, and 0.2% endorse severe depressive symptoms. In comparison with other studies, the other cut-off point with a score of 10 or over was also used; there were 17/449 participants with depression (3.8%) (Table 2).

Factors associated with depression

Logistic regression was also used to explore the relationship between depression and risk factors. The cut-off score of 5 in the PHQ-9 was used to identify possible cases of depression. 19 independent variables associated with depression were entered into a multivariate logistic regression model, and their influence on the presence of depression was studied using the Backward Wald method. In multivariable logistic regression analysis, six variables still remained associated with possible depression. Chronic diseases (OR=2.79; p= 0.005), introversion/affectivity (OR=3.12; p=0.002), failure in work or study (OR=4.40; p=0.001), family history of mental illness (OR=8.93; p=0.029), family unhappiness (OR=5.61; p=0.002), and relatives dying or suffering from severe illness (OR=2.75; p=0.004) shown in Table 3.

Table 1. Prevalence of depression among adults (n=449).

Depression	Total n (%)	Female n (%)	Male n (%)	OR (95%CI)	p
Yes (PHQ-9 score ≥ 5)	72 (16.0)	49 (19.1)	23 (11.9)	1.75 (1.02-2.99)	0.039
No (PHQ-9 score <5)	377 (84.0)	207 (80.9)	170 (88.1)	-	-

Table 2. The level of depression on PHQ-9 scale (n=449).

Level of depression	n (%)
Minimal depression (score 0-4)	377 (84.0)
Mild (score 5-9)	55 (12.2)
Moderate (score 10-14)	13 (2.9)
Moderately severe (score 15-19)	3 (0.7)
Severe (score 20-27)	1 (0.2)

Table 3. Multivariate logistic regression analysis identifies factors associated to depression (n=449).

	Depression		Univariate logistic regression		Multivariate logistic regression	
	Yes n (%)	No n (%)	OR (95%CI)	p	OR (95%CI)	p
			Individual factors			
Gender						
Female	49 (19.1)	207 (80.9)	1.75 (1.02-2.99)	0.039		
Male	23 (11.9)	170 (88.1)	-	-		
Education level						
≤ Primary school	25 (22.7)	85 (77.3)	1.83 (1.06-3.14)	0.028		
≥ Middle school	47 (13.9)	292 (86.1)	-	-		
Chronic diseases						
Yes	37 (26.1)	105 (73.9)	2.74 (1.64-4.59)	<0.001	2.79 (1.38-5.67)	0.005
No	35 (11.4)	272 (88.6)	-	-	-	-

Personality						
Introvert/affective	51 (33.6)	101(66.4)	6.62 (3.8-11.63)	<0.001	3.12 (1.54-6.31)	0.002
Optimistic	21(7.1)	276(92.9)	-	-	-	-
Failure in work/study						
Yes	32 (49.2)	33 (50.8)	8.34 (4.64-14.99)	<0.001	4.40 (2.05-9.44)	<0.001
No	40 (10.4)	344 (89.6)	-	-	-	-
Failure in love/marriage						
Yes	6 (37.5)	10 (62.5)	3.34 (1.17-9.49)	0.029		
No	66 (15.2)	367 (84.8)	-	-		
Marital status						
Divorce/ separation	27 (23.7)	87 (76.3)	2.00 (1.17-3.41)	0.01		
Marriage	45 (13.4)	290 (86.6)	-	-		
		Family factors				
Family economic						
Poverty/ near poor	10 (52.6)	9 (47.4)	6.60 (2.58-16.88)	<0.001		
Not poor	62 (14.4)	368 (85.6)	-	-		
Family history of people with mental illness						
Yes	6 (66.7)	3 (33.3)	11.36 (2.76-45.5)	0.001	8.93 (1.25-63.7)	0.029
No	66 (15)	373 (85)	-	-	-	-
Family unhappiness						
Yes	26 (76.5)	8 (23.5)	26.32 (11.1-62.5)	<0.001	5.61 (1.85-17.0)	0.002
No	46 (11.1)	369 (88.9)	-	-	-	-
Family sharing each other's						
Rarely/Never	60 (20.9)	227 (79.1)	3.30 (1.72-6.33)	<0.001		
≥ Often	12 (7.4)	150 (92.6)	-	-		
Relatives died/severe illness						
Yes	36 (27.1)	97 (72.9)	2.89 (1.72-4.84)	<0.001	2.75 (1.37-5.53)	0.004
No	36 (11.4)	280 (88.6)	-	-	-	-
Family members had failure in work/study						
Yes	16 (40)	24 (60)	4.20 (2.10-8.40)	<0.001		
No	56 (13.7)	353 (86.3)	-	-		
Family members separated/divorced						
Yes	8 (61.5)	5 (38.5)	9.30 (2.95-29.32)	<0.001		
No	64 (14.7)	372 (85.3)	-	-		
Conflict with family members						
Yes	26 (33.3)	52 (66.7)	3.53 (2.01-6.20)	<0.001		
No	46 (12.4)	325 (87.6)	-	-		
Community-social factors						
Stress at work						
Yes	34 (24.6)	104 (75.4)	2.35 (1.40-3.93)	0.001		
No	38 (12.2)	273 (87.8)	-	-		
Conflict with neighbors /colleagues						
Yes	9 (37.5)	15 (62.5)	3.45 (1.45-8.20)	0.007		
No	63 (14.8)	362 (85.2)	-	-		
Regularly participate in social work activities						
Yes	62 (17.7)	289 (82.3)	1.89 (0.93-3.84)	0.075		
No	10 (10.2)	88 (89.8)	-	-		
Pressure on money for life						
Yes	13 (56.5)	10 (43.5)	8.09 (3.39-19.28)	<0.001		
No	59 (13.8)	367 (86.2)	-	-		
Total N (%)	72 (16)	377 (84)				

Discussion

The prevalence of depression was 16.0% based on PHQ-9 scores with the cut-off point of 5, 12.2% with mild depressive symptoms, 2.9% with moderate depressive symptoms, 0.7% with moderately severe depressive symptoms, and 0.2% with severe depressive symptoms. In the United States, data from the National Health and Nutrition Examination Survey were analysed from 2005 to 2008; 10,283 adults completed the PHQ-9, with 2,399 participants having depressive symptoms (21.6%; 95% CI: 20.1-23.3; PHQ-9 score 5), with 14.8% endorsing mild depressive symptoms, 4.5% endorsing moderate depressive symptoms, 1.8% endorsing moderately severe depressive symptoms, and 0.6% endorsing severe depressive symptoms [13]. In comparison with other studies where a cut-off point of 10 was used, the prevalence of depression is 3.8%. In nationally representative face-to-face household surveys conducted in Germany between 2003 and 2008 (n=5.018), the prevalence rate of moderate-to-high severity of depressive symptoms was identified at 5.6% (the German version of the PHQ-9 score, 10) [14].

In 2015, data derived from the mental health module of the nationwide cross-sectional German Health Interview and Examination Survey for Adults (n=4,483; age 18-79 years) showed that the prevalence of current major depressive syndrome was 2.7% (95%CI: 2.0-3.6) [15]. In Asian countries, the PHQ-9 was also used to determine the prevalence of depressive symptoms in the general population. From June 11 to December 30, 2012, a cross-sectional study of adults aged 18 and up was conducted in three districts of Selangor, Malaysia. A total of 1,556 participants took part in this study, and the prevalence of depression was 10.3%, based on the PHQ-9 cut-off point of 10 or above [16]. A population-representative sample of 1,068 Macau Chinese citizens aged 18 or above responded to a household telephone survey in January, 2015. Overall, 8.0% (95% CI 6.3%-9.7%) of people reported being depressed right now [17]. The analysis of the general Korean population study included 4,949 participants aged 19 years. The point prevalence of depression (a PHQ score of 10 or higher) was 6.7% (95% CI (5.7%-7.6%)). Approximately 4.2% (95% CI) (3.1%-5.3%) of men and 9.1% (95% CI) (7.7%-10.5%) of women had depression. Based on age, adults aged 70 years had the highest prevalence of 11.2%, followed by 8.2% in adults aged 19-29 years [18]. Our study of the prevalence of depression is quite consistent with the general trend of the countries in the world.

Adults with chronic diseases were found to have a higher prevalence of depression (26.1%) than those without chronic diseases (11.4%); OR=2.79, 95% CI: 1.38-5.67, p.05. Other studies also found that a higher prevalence of depression was observed in respondents with a history of one or more diagnoses of chronic disease than in those without (9.0% and 5.8%) [14]. The WHO World Health Survey (WHS) studied adults aged 18 and older to obtain data on health and health-related outcomes. The prevalence of depression in respondents based on ICD-10 criteria was estimated. Observations were available for 245,404 participants from 60 countries in all regions of the world. Overall, 1-year prevalence for an ICD-10 depressive episode alone was 3.2% (95% CI: 3.0-3.5); for angina 4.5% (4.3-4.8); for arthritis 4.1% (3.8-4.3); for asthma 3.3% (2.9-3.6); and for diabetes 2.0% (1.8-2.2). An average of between 9.3% and 23.0% of participants with one or more chronic physical diseases had comorbid depression. This result was significantly higher than the likelihood of having depression in the absence of a chronic physical disease (p<0.001) [19]. The study by Chong et al. among adults in Singapore found that almost 50% of the adults with major depressive disorder presented with at least one type of chronic disease [20]. In general, chronic diseases are consistently found in epidemiological studies that are associated with depression. Depression can occur in association with virtually all the other psychiatric and physical diagnoses. Physical illness increases the risk of developing a severe depressive illness. There are two broadly different mechanisms. The most obvious has a psychological or cognitive mechanism. Thus, the illness may provide the life event or chronic difficulty that triggers a depressive episode in a vulnerable individual. Secondly, more specific associations appear to exist between depression and particular physical disorders. Personality affects the behavioral trend by influencing a person's reaction to the surrounding environment, and changes occur in the surrounding environment. The study's findings revealed a significantly stronger link between introverted or affective personalities and depression (OR=3.12, 1.54-6.31) than people with an optimistic personality. A prospective daily diary study in which young adults (n=209) completed baseline measures of personality, dysfunctional attitudes, negative cognitive style, and depressive symptoms. The participants then recorded their levels of depressive symptoms and the occurrence of stressors daily for 35 days. Stress generation was a potential mechanism to explain the association between personality traits, especially negative emotionality, and depressive symptoms. A negative emotion-stress reaction predicted initial levels and trajectories of depressive symptoms and stressors over time. Both dysfunctional attitudes and a negative cognitive style interacted with these additional stressors to predict the prospective fluctuations of daily depressive symptoms [21].

Some significantly associated factors with depression in this study were unhappy families (OR=5.61, 1.85-17.0), failure at work (OR=4.40, 2.05-9.44), the death of relatives, or severe illness (OR=2.75, 1.37-5.53). Stressful life events were found to be significantly associated with depression, including serious problems at work (OR=1.68, 95% CI: 0.84-3.34), unhappy relationships with children (OR=6.18, 3.90-6.67), a spouse (OR=4.62, 3.20-6.67), and family (OR=5.20, 3.91-6.92), and serious financial constraint (OR=2.34, 1.67-3.28) [16]. Other studies also found that depression was significantly associated with problems at work, such as low social support (OR=1.5, 1.1-2.0), serious conflict (OR=1.4, 1.1-1.9), exclusion by superiors (OR=1.6, 1.2-2.1), and exclusion by co-workers (OR=1.7, 1.2-2.3) [22].

Sidik, based on multiple logistic regression analysis, found certain stressful life events were associated with depression (p<0.05): unhappiness in the parent-child relationship (OR=3.0, 1.2-7.5), unhappiness in family relationships (OR=2.3, 1.1-4.7), and unhappiness at work (OR=2.2, 1.1-4.3) (p<0.05) [23]. The association between depression and stressful life events has been extensively demonstrated. Another factor significantly associated with depression was found to be a family history of mental illness (OR=8.93, 1.25-63.7). Another study discovered that the risk of major depressive disorder was highest in grandchildren with depressed parents or grandparents. To gain access to the familial aggregation of psychiatric disorder and functioning in grandchildren by their biological parents' and grandparents' depression status, researchers interviewed a longitudinal retrospective cohort family sample of 251 grandchildren a mean of two times, their biological parents a mean of 4.6 times, and grandparents up to 30 years. Biological children of parents with depression had a significantly higher risk for major depressive disorder (HR=2.02; 95% CI=1.08-3.79), any disruptive disorder (HR=1.7; 95% CI=1.05-2.75), substance dependence (HR=2.96; 95% CI=1.24-7.08), any suicidal ideation or gesture (HR=2.44; 95% CI=1.28-4.66), and poor functioning (p<0.001), compared with children of parents without depression. In this study, biological offspring with 2 previous generations affected by major depression were at the highest risk for major depression, suggesting the potential value of determining family history of depression in children and adolescents beyond 2 generations [24].

Conclusion

This study provides an alarming signal for health professionals and health policymakers in Can Tho City about the need for better recognition of depression and its associated factors in adult people. These results indicate the urgency of addressing depression as a public-health priority to reduce disease burden and disability and improve the overall health of populations.

Limitations

Several limitations of the study need to be considered. The PHQ-9 scale, like other screening instruments, cannot be viewed as a diagnostic tool but only as a screening instrument to identify members of groups at risk

of depression. It is a cross-sectional study design, which limits the ability to determine the temporal relationship between the studied independent variables and depression in order to establish a cause-effect relationship. The CARS scale and the translation of the diagnosis of autism spectrum disorder according to the DSM-4, although they have been adjusted by psychiatry to apply in Vietnam, are still difficult to understand. Diagnostic criteria for autism spectrum disorder according to DSM-4: currently, very few topics have been implemented. Therefore, the results of this study have difficulty being compared and discussed.

Ethics Approval and Consent to Participate

All procedures performed in studies involving human participants were in accordance with the ethical standards of the Ethics Committee of the Can Tho University of Medicine and Pharmacy and with the consent of the Ninh Kieu District Medical Center. The procedures performed in this study adhered to the tenets of the Declaration of Helsinki. (From pre-study protocol approval to implementation monitoring and post-study reporting). All study participants were selected when they agreed and checked the consent section of the research questionnaire. All participants gave informed consent and have the option to withdraw at any time during the study.

Consent for Publication

Please confirm that all authors (DPL and HTN) read and reviewed the entire content of the topic and agreed to submit the manuscript to the Clinical Schizophrenia and Related Psychoses journal for publication. Does not include identifying images or other personal or clinical details of participants; all information must be encrypted and kept confidential for participants.

Competing Interests

The authors declare that they have no competing interests.

Funding

There is no funding at all.

Authors' Contributions

DPL and HTN jointly produced the ideas and the study design, developed the survey tools. HTN Write a draft outline, Collect data and put it into SPSS software. Write a draft of the entire research topic. DPL Check and revise the research outline; process research data. Discussions and recommendations should be in writing. Both authors (DPL and HTN) read and reviewed the entire content of the topic and agreed to submit the manuscript to the Clinical Schizophrenia and Related Psychoses journal for publication.

Acknowledgements

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