Depressive Disorder in Adolescents in Terms of Gender and Grade: A Case Study in Thua Thien Hue Province, Vietnam

Be Thi Ngoc Nguyen[1*], Loi The Nguyen[2] and Long Minh Dau[1]

*[1]Department of Education and Psychology, University of Education,
Hue University, Thua Thien Hue Province, Vietnam
[2]School of Physical Education, Hue University,
Thua Thien Hue Province, Vietnam*

ABSTRACT Adolescents, with rapid but uneven developments in biology as well as psychology, are highly at risk of onset in depression. Depression brings about severe consequences, including social and academic difficulties. However, no previous research has considered using The Beck Depression Inventory to examine major depressive disorder among Vietnamese adolescents, especially the gender and grade aspects. The goal of this research was to evaluate adolescents' depression in Hue province and consider the differences among grades as well as genders. A cross-sectional study utilising The Beck Depression Inventory was conducted with 1,336 adolescents in Thua Thien Hue province, Vietnam. There was a gender gap in depression among the adolescents in Thua Thien Hue province, Vietnam, and depression in the 9th grade and 12th grade adolescents were more evident than in the others. Therefore, gender disparities vary among age groups in the incidence of depressive disorder.

INTRODUCTION

For several decades, research on adolescents' major depressive disorder has a long tradition. All around the world, one of the most common mental health problems in adolescents has been known as major depressive disorder (Lopez et al. 2006). Adolescents, with rapid but uneven biological and psychological developments, are highly at risk of onset in depression (Hankin 2006; Lewinsohn et al. 1998). Depression in adolescents has simultaneously and potentially been related to both poor physical health and adverse psychosocial functioning (Thapar et al. 2012). Depression leads to inevitable consequences such as severe social and academic difficulties including school attendance, performance at school, alcohol use, drug use, smoking and bingeing (Fletcher 2010; Thapar et al. 2012). Depression and these outcomes might mutually influence each other. Particularly, depression could lead to these outcomes, whereas, phenomenon such as bad performances at school and alcohol dependence could also trigger off depression (Glied and

Pine 2002). The Beck Depression Inventory is one of the most popular scales, and one of the most frequently used self-reporting methods for simultaneously assessing depression level, and screening for depression in clinical practice and the general population (Whisman et al. 2000). The Beck Depression Inventory has been translated into more than ten languages with high standards of reliability and validity across cultures since the original English version of The Beck Depression's publication in 1961 (Beck et al. 1988; Wang and Gorenstein 2013). Teri (1982) stated that The Beck Depression Inventory could be considered a reliable and useful questionnaire to evaluate adolescents' depression.

One of the very first main contributions proposed in using The Beck Depression Inventory to examine adolescents' depression in the United States is Teri's research. Female adolescents reported a higher prevalence of depression than male. Besides, Teri (1982) found no significant differences among adolescents in ages. Therefore, he also noted that within the population of his study, adolescents' depression status did not depend on their ages. Lewinsohn et al. (1998) supported the finding by arguing no differences in symptoms between two age groups. However, the study of Lewinsohn et al. (1998) statistically recorded no significant differences in depression symptoms between genders. Other studies con-

Address for correspondence:
Be Thi Ngoc Nguyen
Department of Education and Psychology,
University of Education, Hue University,
Thua Thien Hue Province, Vietnam
E-mail: ntngocbe@hueuni.edu.vn

tinued to prove that the scores of The Beck Depression Inventory were not significantly correlated with adolescents' ages. Besides, females obtained 10 points higher than males on The Beck Depression Inventory mean scores (Kumar et al. 2002). Research on the adolescents' depression using The Beck Depression Inventory has been conducted not only in the United States but also all over the world. In Nigeria, Adewuya et al. (2007) concluded that major depressive disorder in female adolescents was more prevalent than males' and depression did not change among different ages. Remarkably, this study did examine the interaction between age and gender. However, there was no significant interaction. Wu and Huang (2014) conducted a study on Taiwanese adolescents and found that all of them shared the same structure of depression regardless of their genders.

Approximately ten percent of adolescents in Vietnam have mental health issues (Amstadter et al. 2011). In Can Tho city, Vietnam, adolescents reported 41.1 percent of the prevalence of depression's significant symptoms, which means they were highly at risk for depression (Nguyen et al. 2013). Bui et al. (2018) utilised the Centre for Epidemiological Studies' Depression Scale to evaluate Vietnamese adolescents and found that female adolescents had higher scores on depression than male adolescents. School counsellors must, for many reasons, have the requisite expertise to evaluate, support, and refer adolescent students with depression (Huynh and Tran-Chi 2019).

Objectives of the Study

To the best of the researchers' knowledge, no previous research has considered using The Beck Depression Inventory scale to examine major depressive disorder among Vietnamese adolescents, especially for gender and grade aspects. To illuminate this unexplored area, the researchers investigated whether adolescents' depression in the Hue province differs concerning gender and grade. After presenting the general background, the researchers explain the goals of the study. For the goal, the researchers focus on two problems, that is, to evaluate adolescents' depression in Hue province, and consider the differences among grades as well as genders.

METHODOLOGY

Participants

The participants were selected randomly from five schools in Thua Thien Hue province, Vietnam. All participants provided informed consent after receiving an explanation of the purpose of the research. The survey instrument was distributed to 1,351 Vietnamese participants, of which 1,336 questionnaires were returned (Table 1), for a 98.89 percent return rate, which exceeds the 30.0 percent response rate most researchers require for analysis (Dillman 2000). The sample of this study was drawn from 1,336 students who completed the survey instrument. There were more female students (53.7%) than male students (45.9%) and LGBT students (0.4%) among the 1,336 Vietnamese students who were surveyed.

Table 1: An overview of survey participants

		n	%
Gender	Male	613	45.9
	Female	718	53.7
	LGBT	5	0.4
School	Nguyen Tri Phuong Secondary School	342	25.6
	Thong Nhat Secondary School	370	27.7
	Gia Hoi High School	233	17.4
	Quoc Hoc High School For The Gifted	177	13.2
	Dang Tran Con High School	214	16.0
Grade	Seventh grade	244	18.3
	Eighth grade	201	15.0
	Ninth grade	267	20.0
	Tenth grade	201	15.0
	Eleventh grade	210	15.7
	Twelfth grade	213	15.9

Note: n: Number of participants; %: Percentage

Measure

This study used The Beck Depression Inventory-II (BDI-II) to survey students from secondary and high schools in Hue province, Vietnam. This research started in January 2019 and finished in December 2020. First, social-demographic items were introduced in the questionnaire. Then, Vietnamese secondary and high school students' perception of depression differs concerning gender and grade measured by The Beck Depression Inventory (BDI). BDI-II was validated

using college students, adult psychiatric outpatients, and adolescent psychiatric outpatients (Beck et al. 1961). The responses of the participants are provided at five different levels based on a 4-point scale indicating a degree of severity, and the items are rated from 0 (not at all) to 3 (an extreme form of each symptom).

Analyses

All participants provided informed consent before participation and receiving an explanation of the purpose of the research. The ethics committee approved the research of Hue University, Vietnam. The Statistical Package for the Social Sciences (SPSS) version 20 was used for data analyses. The coding procedure was performed as follows: 0 = Not at all, 1 = *Mildly* or *It did not bother me much*, 2 = Moderately or It was very unpleasant, but I could stand it, and 3 = Severely or I could barely stand it (Beck et al. 1961; Smarr 2003). According to Beck et al. (1961) and Smarr (2003), the following guidelines have been suggested to interpret the BDI-II (4), that is, Minimal range 0-13, Mild depression 14-19, Moderate depression 20-28, and Severe depression 29-63.

RESULTS

This section summarises the findings and contributions made. The results of this study are based on The Beck Depression Inventory (Beck et al. 1961). Table 2 shows the percentage of depressive disorders among Hue's adolescents. The result from Table 2 indicates that half of the adolescents, who accounted for 50.7 percent, had minimal symptoms of depression. Simultaneously, 22.8 percent of the others reported mild depression, 16.7 percent of the adolescents were in

a state of moderate depression, and only 9.7 percent had severe depression.

Table 2: Percentage of the adolescents' depressive disorders in Hue City

Depression disorder	n	%
Minimal range 0-13	678	50.7
Mild depression 14-19	305	22.8
Moderate depression 20-28	223	16.7
Severe depression 29-63	130	9.7

Note: n: Number of participants; %: Percentage

From the Table 2, the researchers find a Chi-square test of independence was calculated comparing the frequency of depression in male, females and LGBTs. A significant interaction was found ($\chi^2(6) = 16,646$, p < .05). Females were more likely to have depression than males and LGBTs.

Table 3 illustrates the percentage of depression among adolescents in terms of gender. From the Table, females reported more prevalence of depression than males, except for moderate depression. However, it was not an immense gender gap between males and females. One of the most significant features is that remarkable difference in gender is recorded in the percentage of severe depression. Particularly, the number of females (64.6%) who had severe depression was 1.87 times more than males (34.6%). Significantly, there was a dramatically low proportion of LGBT to males and females in the prevalence of depression (within 1%). Above all, the gender gap among male, female and LGBT was most prominent in the severe depression group.

Table 4 describes the percentage of depression among adolescents in terms of gender. From this table, the researchers find a Chi-square test of independence that was calculated comparing the frequency of depression between grades 7, 8,

Table 3: Percentage of depressive disorder in terms of gender

Level	Total	Gender						Contingency coefficient	χ^2	df	p
		Male		Female		LGBT					
		n	%	n	%	n	%				
Minimal range 0-13	678	333	49.1	344	50.7	1	0.1	0.111	16.646	6	0.011
Mild depression 14-19	305	123	40.3	180	59.0	2	0.7				
Moderate depression 20-28	223	112	50.2	110	49.3	1	0.4				
Severe depression 29-63	130	45	34.6	84	64.6	1	0.8				

Table 4: percentage of depressive disorder in terms of grade

Level	Total	7th		8th		9th		10th		11th		12th		Contingency coefficient	χ^2	df	p
	n	n	%	n	%	n	%	n	%	n	%	n	%				
Minimal range 0-13	678	133	19.6	111	16.4	125	18.4	121	17.8	111	16.4	77	11.4	0.190	49.764	15	0.001
Mild depression 14-19	305	59	19.3	41	13.4	59	19.3	37	12.1	51	16.7	58	19.0				
Moderate depression 20-28	223	22	9.9	38	17.0	53	23.8	28	12.6	28	12.6	54	24.2				
Severe depression 29-63	130	30	23.1	11	8.5	30	23.1	15	11.5	20	15.4	24	18.5				

9, 10, 11 and 12. A significant interaction was found (χ^2 (15) = 49.764, p < .05). Grade 9 and grade 12 students were more likely to have depression than the others. The result reveals that seventh grade, comprising 19.6 percent out of the total, had the highest percentage of adolescents and minimal symptoms of depression, followed by ninth grade (18.4%). Remarkably, only 11.4 percent of the adolescents in the normal state were students in grade twelve. In mild depression level, grade seven and nine shared the same percentage (19.3%) and simultaneously were the highest ones. In comparison to the other grades, the tenth grade had the lowest percentage of mild depression (12.1%). Considering moderate depression, grade twelve and nine respectively reported highest percentages (23.8% and 24.2%). Furthermore, they were higher than those of minimal or mild depression. Severe depression was found mostly in the adolescents in seventh and ninth grade with respectively 23.1 percent and 23.1 percent. Besides, the number of students in tenth grade suffering severe depression was less than the others.

DISCUSSION

The aim of this research was to study depressive disorders in the adolescents from seventh to twelfth grade students in Thua Thien Hue province, Vietnam, and to examine the gender-related and grade-related measurement invariance of the Beck Depression Inventory among adolescents in Thua Thien Hue province, Vietnam. Results found that depressive disorder in adolescents is more prevalent in females than males and LGBT. This finding is directly in line with previous findings (Adewuya et al. 2007; Teri 1982). Especially, researches in Vietnam also represented similar results. Bui et al. (2018) conducted a study on adolescents utilising the 16-item modified version of the Centre for Epidemiological Studies' Depression Scale (Radloff 1991) and found that females had higher mean scores on depression than males. Besides, in comparison with males, female adolescents also reported higher levels of depression (Nguyen et al. 2013). The researchers stated that what builds up the adolescents' depression were changes in their relationships with surrounding people, their freedom and independence, a better understanding of their own shortcomings

and stress states when acquiring new skills (Nguyen et al. 2013). As reported by Jolly et al. (1994), the difference in depression scores between females and males was based on the fact that females may have a higher self-consciousness during adolescence, hence, leading to more social-demographic variables than males. According to Silberg et al. (1999), puberty-related biological developments, sociocultural influences and the risk of traumatic events in girls were the causes of their high level of depression.

The study figured out that students in grade nine and grade twelve were more likely to have depression than the others. However, on the ground the population's grade groups were uneven, and this result was limited in the research's population. It needs further research to verify whether the researchers could conclude for a wider population. On the contrary, other researchers mentioned differences in depression in terms of age and found no unmistakable shreds of evidence for any gap among ages, which proved that depressive disorder did not increase or decrease with ages (Adewuya et al. 2007; Lewinsohn et al. 1998).

There are some limitations to this approach. One concern about the findings of gender differences was that the number of each gender group was uneven. In other words, the proportion of LGBT to males or females was too small. Future research should further develop and confirm these initial findings by examining in more even groups of participants. Another limitation in this study involves the issue of a cross-sectional approach in which the data collection happened only once. A longitudinal study would be much more expedient for better observation of the adolescents' depression in different contexts.

CONCLUSION

The analysis leads to the following conclusions, that is, there was a gender gap in depression among the adolescents in Thua Thien Hue province, Vietnam, and depression in the 9th grade and 12th grade adolescents was more obvious than in the others. To the best of the researchers' knowledge, it is the very pioneer in considering the differences in depression among grades as well as genders in Vietnamese adolescents. Future investigations are necessary to validate the

kinds of conclusions that can be drawn from this study.

RECOMMENDATIONS

Several recommendations can be drawn from these research results. First, the study results have helped provide essential recommendations and foundations in developing solutions to prevent the onset of depressive disorder in adolescents in Thua Thien Hue province, Vietnam and improve students' mental health at schools, in a particular case. Furthermore, in Vietnamese secondary education schools' broader contexts, this research's results will provide critical considerations and implications for different levels of leaders to find measures to the prevention of adolescent depression. For a better generalisation and the views of participants from a more detailed interview, further research should focus more on a broad sample of participants.

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