RESEARCH ARTICLE

DETERMINANTS OF DEPRESSION AMONG HIGH SCHOOL STUDENT IN ANTANANARIVO

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ARTICLE INFO	ABSTRACT
	As depression is a state of pathological sadness which causes disability especially in adolescents, our objective is to determine the factors involved in depression among high school students in Antananarivo in aim to improve their care. This descriptive study was conducted in four high schools in Antananarivo, for the second and first grade classes of the school year 2017- 2018. Depression was evaluated by the Major Depression Inventory for Children. Data was analyzed by using the software Epi info 7, with a significance threshold p at 0.05. Thus three hundred and three (N = 303) youngsters were included in the study, with 124 boys and 179 girls (sex ratio = 0.69). More than half of the depressed population (59.57%) was an adolescent girl. Among the depressed teens, 53.62 % were from a middle-income family. Sixty-four percent of non-depressed adolescents were enrolled in public high schools. Moreover, teenagers with a good relationship with their parents were not depressed. Furthermore, depression was mostly found in adolescents with a medium-quality relationship with their teachers. Last, depressed students had average school performance in 79.86% of cases. All in all, depression in high school students deserves our attention in our therapeutic interventions. These young people are not priority because they don't disturb well-being of the class. Thus, qualified staff in each educational establishment would be beneficial and should be adopted.

INTRODUCTION

Depression, a state of pathological sadness, affects nearly 350 million people worldwide and is the main cause of morbidity and disability among adolescents (http://www.who.int/topics/depression/fr/). The major risk when talking about depression is suicide, which is the second leading cause of death among youngsters between 15 and 24 years old (http://www.who.int/entity/maternal_child_adolescent/fr/). In a developing country like Madagascar, it is better to rely on a preventive strategy because in 2011, teenagers between 10 and 24 years old were about 5.7 million, and this number would be doubled by 2025 (Unicef, 2011).

Thus, our study purpose is to determine the implicated factors in depression among the high school students in Antananarivo who are by far the most vulnerable, in order to improve management of adolescent depression.

MATERIALS AND METHODS

It was a descriptive survey conducted in four high schools of Antananarivo during the school year 2017- 2018. The study population involved teenagers enrolled in these schools, in second and first grade classes. The non-consenting adolescents and those in the terminal class were not included in the study. The sociodemographic parameters analyzed was age, gender, parental status, number of siblings, rank in siblings, type of institution, relationship with parents, relationship with teachers, relationship with peers, number of friends, and group membership. The depression was assessed by the Major

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Depression Inventory for Children and the level of self-esteem by the Rosenberg scale. The statistical analysis of data was done by using the software Epi info 7, with significance level *p* < 0.05.

RESULTS

This survey covered three hundred and three (N = 303) youngsters including 124 boys and 179 girls (sex ratio = 0.69). The average age was 16.47 years old. Depression was found in 26% of adolescents (n = 79), of whom one in four had severe depression (Figure 1). The female gender represented for more than half of the depressed population (59.57%). Most of adolescents (n = 256) or 84% were grown up with both parents, and lived in a large family (number of siblings more than three in 70.62% of cases). Among the depressed teens, 53.62% came from a middle-income family. Sixty-four percent (n = 104) of the non-depressed adolescents were enrolled in public high schools. More than half of the depressed teens were in first class. Table 1 summarizes the socio-demographic characteristics of adolescents and the existence or not of depression. Regarding to the relationship of adolescents with their surroundings, Table 2 summarizes the presence or not of depression according to the quality of this relationship. Thus, adolescents with a good relationship with their parents were not depressed, with a significant correlation (*p* = 0.0009). The depression was mostly found in adolescents with a relationship qualified as average quality with their teachers. On the other hand, there was no statistically significant correlation between the presence of depression and quality of peer relationships, or having or not having friends. Most of respondent adolescents had a low to very low level of self-esteem, although there was no statistically significant correlation (*p* = 0.58). In addition, Table 3 shows that there is a significant association between academic performance and the onset of depression, so depressed adolescents had average school performance in 79.86% of cases.
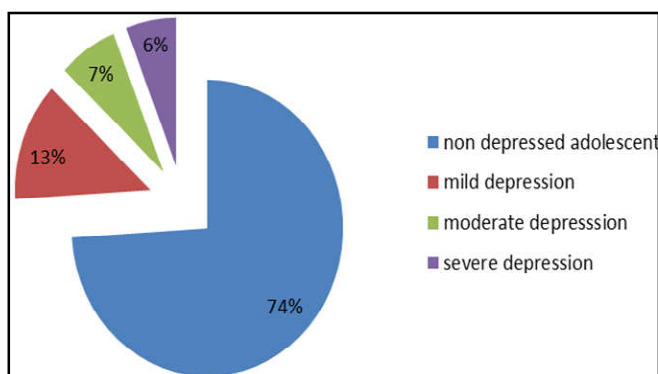

Figure 1. Distribution of the population according to the presence or not of depression

DISCUSSION

According to our study, one in four high school students suffered from depression, and depending on their intensity, depression was mild in 13% of cases, and moderate to severe in 13% (Figure 1). Consistent finding reported that in adolescence; nearly 30% of young people would have depressive symptoms and nearly 10% of them would range from moderate to severe depression (Dupras, 2012). A meta-analysis in 2006 concludes a prevalence rate for the major depressive episode of 5.6% among 13-18 year-olds (Costello *et*

al., 2006). Similar result as ours because the prevalence of severe depression was close to 6% (Figure 1). Unlike other studies of school-based depression in other developing African countries, such as Iraq, which report prevalence of depressive high school status surrounding of 65% (Shalan Al-Abbudi, 2018), Malagasy students are relatively less vulnerable. Although girls were more numerous than boys, we did not find a significant relationship between the onset of depression and gender, while according to the literature, in adolescents, the sex ratio between girls and boys is about 2 to 1 in depression (Cyranowski *et al*., 2000; Rutter *et al*., 2003). In other words, the risk of depression increases with age as well as being a girl (Poulin *et al*., 2005; Eremsoy *et al*., 2005). Moreover, family income plays a significant role in the emergence of depression (*p* = 0.0000), so adolescents from middle-income families were more likely experienced depressive symptoms than those from families with high income (Table 1). Studies in developing countries (Shalan Al-Abbudi, 2018) have shown that the deprivation or restriction of essential needs in young people such as electricity, water, sanitation, food, access to health services and the constant threat of violence would be a factor in their vulnerability to depression. In addition, some studies note that improving financial resources is obviously beneficial to both parents and children, although some problems are not absent (Durocher, 1997). Depending on the type of school attended by the teenagers, those who were educated in public institutions were less exposed to depression with a statistically significant correlation (*p* = 0.0002). According to studies by Southwick and *al*. in 2005 (Southwick *et al*., 2005), in students, a good psychological preparation for torture, as before accessing public institutions, would develop their ability to be resilient to stress and improve their cognitive flexibility, thus facilitating their adaptation. A good relationship with parents and teachers significantly protected the onset of depressive symptoms (Table 2). The home environment is recognized as an important factor in adolescent academic success (Battin-Pearson *et al*., 2000; Rumberger, 1995). It is also recognized that relationships and interactions within the family may contribute to the onset of adolescent depression, particularly among girls (Sheeber *et al*., 2001). Thus, it is still important to establish a good quality socio-family relationship to maintain mental health, because conflicting relationships, especially their repetition, are associated with adolescent depression (Thapar *et al*., 2012). In addition, we found an association between depression and the relationship with teachers (*p* = 0.0083).

This relationship is therefore predictive of the emergence of depression in adolescents. Indeed, this student-teacher relationship is important for the psychological well-being of the teenager because during this period the teachers are among those deemed significant for them. In other words, school climate predicts students' depressive symptoms (Janosz and Pascal, 2014). Consistent study published by Undheim and Sund indicates that among 12- to 15-year-olds, teacher support, school-related stress, and academic performance predict depression (Undheim and Sund, 2005). Regarding academic performance, it was shown in Table 3 that there is a significant relationship between the onset of depression and academic achievement (*p* = 0.0034). Many consistent studies indicate that depressed students have lower academic performance than non-depressed students (Birmaher *et al*., 2004; Försterling and Binser, 2002; Fröjd *et al*., 2008; Kaltiala-Heino *et al*., 1998; Roeser *et al*., 2000). According to a Canadian study conducted in 2011, the authors mentioned that the presence of a high

Table 1. Distribution of the population by socio-demographic characteristics and depression

Parameters	Non depressed n (%)	Depressed n (%)	*p value*
Gender			
-Male	69 (42,59)	57 (40,42)	*0,80*
-Female	93 (57,41)	84 (59,57)	
Parental status			
-Both parents	134 (83,75)	122 (85,31)	
-Single parent	21 (13,12)	12 (8,39)	*0,37*
-Divorced	5 (3,12)	9 (6,29)	
Family structure			
-Step-family	16 (9,81)	13 (9,28)	*0,87*
-Nuclear family	147 (90,18)	127 (90,71)	
Family income			
-High-income	17 (10,89)	34 (24,63)	*0,0000*
-Middle-income	70 (44,87)	74 (53,62)	
-Low-income	69 (44,23)	30 (21,73)	
Siblings number			
-One	8 (5,09)	9 (6,16)	*0,60*
-Two	35 (22,29)	37 (25,34)	
-Three and over	114 (72,61)	100 (68,49)	
Rank in siblings			
-Oldest	57 (35,62)	45 (31,25)	*0,12*
-Middle	63 (39,37)	43 (29,86)	
-Youngest	40 (25,00)	56 (38,88)	
Type of institution			
-Private faith school	30 (18,63)	57 (40,14)	*0,0002*
-Private non faith school	27 (16,77)	25 (17,60)	
-Public school	104 (64,59)	60 (42,25)	
School year			
-Second class	83 (51,23)	66 (46,81)	*0,91*
-First class	79 (48,76)	75 (53,19)	

Table 2. Distribution of the population according to the relation with their entourage and the presence or not of depression

Parameters	Non depressed n (%)	Depressed n (%)	*p value*
Relationship with parents			
-Good	116 (72,50)	81 (56,64)	*0,0009*
-Intermediate	42 (26,25)	49 (34,26)	
-Bad	2 (1,25)	13 (9,09)	
Relationship with teachers			
-Good	53 (33,33)	39 (27,08)	*0,0083*
-Intermediate	100 (62,89)	95 (65,97)	
-Bad	6 (3,77)	10 (6,94)	
Relationship with other student			
-Good	84 (52,17)	70 (49,29)	*0,46*
-Intermediate	74 (45,96)	66 (46,47)	
-Bad	3 (1,86)	6 (4,22)	
Friends number			
-None	4 (2,53)	5 (3,44)	*0,40*
-One	19 (12,02)	11 (7,58)	
-Two and over	135 (85,44)	129 (88,96)	

Table 3. Correlation between level of self-esteem, academic performance and depression

Parameters	Non depressed n (%)	Depressed n (%)	*p value*
Self-esteem level			
-Very low	18 (11,18)	22 (15,27)	*0,58*
-Low	106 (65,83)	85 (59,02)	
-Moderate	34 (21,11)	33 (22,91)	
-High	3 (1,86)	4 (2,77)	
-Very high	0	0	
School performance			
-Good	50 (31,44)	16 (11,11)	*0,0034*
-Average	104 (65,4)	115 (79,86)	
-Bad	5 (3,14)	13 (9,02)	

intensity of depressive symptoms at the end of secondary school is linked to school dropout (Gagné *et al*., 2011). It would therefore be necessary to detect the existence of depressive symptoms in adolescents with difficulties in their studies in order to prevent the risk of dropping out of school. Although there is no statistically significant correlation between self-esteem and depression in our results, adolescents with low and very low self-esteem were found to be the most numerous and accounted for almost 75 % of our study population (Table 3). While self-esteem is a determinant of mental health, it is therefore essential to cultivate positive self-esteem in the promotion of mental health (Melgosa, 2013). Given these different elements, we can assume that we find in the school environment a phenomenon of burn out similar as adults in a professional environment. This phenomenon of exhaustion seems to be determined mainly by elements related

to school life. Among the other school variables measured, the relationship with other students, the affiliation with peers, none was found to be significant. Thus, our results do not confirm the role of these school variables in our sample of students. "Limits": the most important limitation is certainly that our sample is not representative of Malagasy teenagers because it does not consider the out-of-school adolescents, and concerns only high school students of Antananarivo. Also, as cross sectional study, it is not possible to know the fate and the psychological evolution of these teenagers. Nevertheless, the internal consistency of the study allows us to determine the factors influencing depression in high school students, such as: family income, type of institution attended, academic performance as well as relations with parents and teachers. This will improve the management of depression and promote academic support.

Conclusion

In Madagascar, efforts should be redeployed on the mental health of adolescents. In this study we tried to sound the alarm about the emergency of adolescents care with depressive state. These factors deserve our full attention in our therapeutic interventions. In fact these young people are not priorities because they do not interfere with the proper functioning of the class. We strongly wish the involvement of a professional, who demonstrate a thorough knowledge of the subject as a psychologist or psychiatrist in each institution.

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