Depressive Symptoms in Adolescents in Jamaica

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ABSTRACT

Background: *Depression in adolescents is often overlooked and misdiagnosed; however, it is an important mental health problem which is associated with major functional impairments across daily domains of living, and considerable morbidity. The aim of this research is to examine the prevalence of self-reported depressive symptoms among Jamaican adolescents, and the associated sociodemographic factors.*

Subjects and Method: *This cross-sectional study included 3003 students between 10 and 15 years old in Jamaica. Survey methodology was used in the collection of the data.*

Results: *Of the sample of students, 47% were males. One hundred and thirty-four (4.5%) reported having depressive symptoms. The factors significantly associated with depressive symptoms were negative community attributes (B = 1.1; p = 0.001), protective factors within the home (B = 0.72; p = 0.000), gender (B = 1.92; p = 0.000), and learning problems (B = 3.1; p = 0.000).*

Conclusion: *Results indicate rates of depressive symptomatology reported among adolescents in Jamaica are consistent with rates reported in the literature.*

Keywords: Adolescents, depression, Jamaica, risk and protective factors

Síntomas Depresivos en Adolescentes de Jamaica

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RESUMEN

Antecedentes: *La depresión en los adolescentes es a menudo pasada por alto y mal diagnosticada, a pesar de que constituye un problema de salud mental importante. El mismo se halla asociado con deterioros funcionales mayores en todos los dominios de la vida diaria, y conlleva una morbosidad considerable. El objetivo de esta investigación es examinar la prevalencia de síntomas depresivos autoreportados entre adolescentes jamaicanos, así como pasar revista a los factores sociodemográficos asociados.*

Método: *Este estudio transversal incluyó 3003 estudiantes jamaicanos entre 10 y 15 años de edad. La metodología de encuestas fue usada en la recogida de datos.*

Resultados: *De la muestra de estudiantes, 47% eran varones. Ciento treinta y cuatro (4.5%) reportaron tener síntomas depresivos. Los factores significativamente asociados con los síntomas de depresión fueron atributos comunitarios negativos (B = 1.1; p = 0.001), factores de protección en el hogar (B = 0.72; p = 0.000), género (B = 1.92; p = 0.000), y problemas de aprendizaje (B = 3.1; p = 0.000).*

Conclusión: *Los resultados indican que las tasas de sintomatología depresiva reportadas entre los adolescentes en Jamaica concuerdan con las tasas reportadas en la literatura.*

Palabras claves: Adolescentes, depresión, Jamaica, factores de riesgo y factores de protección

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INTRODUCTION

Depression among adolescents is associated with considerable morbidity and has major socio-economic impact (1). The prevalence of depression among children and adolescents varies from 2–6%. Previous studies done in Jamaica reported 38% of students with scores consistent with depression (2). Age and gender are major determinants of depression as adolescents aged 16 to 17 years old were twice as likely to report a past year major depressive episode than those aged 12 or 13 years (12.3% *vs* 5.4%). Additionally, females were more likely than males to have had a past year major depressive episode, 13.1% *vs* 5.0% (2).

The rates of depression among adolescents were, however, similar across racial and ethnic groups (1). Adolescents from low to medium socio-economic status have shown elevated depressive symptoms (3). Among Jamaican students, household type and the employment status of mothers have been associated with high scores on the Beck Depression Inventory (2). Adolescent girls who experienced consistent poverty at either infancy or in the first five years of life were found to have higher levels of depression than those who had never experienced poverty (4).

Developmental disorders such as learning and conduct disorders as well as substance use are associated with an increase risk of depressive symptoms (3, 5–10). Correspondingly, children diagnosed with depression have also been shown to be at increased risk for developing learning and behavioural problems (5).

Some studies have found that aggressive behaviour and self-reported sexual experience have also been linked to depressive symptoms in adolescents (10).

Associations between attachment, perception of parental affection and support and depressive symptoms have also been demonstrated in the literature (10, 11). Other factors include family structure, protective factors in the home, harming ideation, involvement in aggressive behaviours, and learning problems (2, 3, 5, 6, 12, 13).

Notwithstanding the predictors of depression in adolescents, intact family structure, prayer with family members, decent educational opportunities and good physical health have been demonstrated to be protective factors in adolescent mental health (11, 14).

In spite of the daunting implications, depression among adolescents is often overlooked and misdiagnosed (15). Factors attributing to this include the difficulties associated with distinguishing symptoms associated with depression in adolescents (16). Additionally, the diagnosis of depression in adolescents is challenging as symptom expression varies with the developmental stage of the adolescence; children and adolescents with depression may have difficulty in properly identifying and describing their internal emotional or mood states (17). Furthermore, parents are even less likely to identify major depressive symptoms in their adolescents than are the adolescents themselves (18). Studies show that depression in adolescents is twice as likely to recur with 3–4% of this age group ultimately committing suicide (19).

In this study, we determined the prevalence of self-reported depressive symptoms among adolescents, we explored sociodemographic factors associated with self-reported depressive symptoms and we discussed these findings in the context of the emerging body of literature.

SUBJECTS AND METHOD

The study was conducted utilizing data obtained from the Jamaican Youth Risk and Resiliency Behaviour Survey 2005: a school-based survey on risk and resiliency behaviours of 10–15 year olds (20).

Sample

The Jamaican Youth Risk and Resiliency Behaviour study was a cross-sectional, interviewer-administered school-based survey conducted in schools in Jamaica. Children aged 10–15 years who were enrolled in a primary or secondary school were eligible to participate. The study utilized a multistage random sampling procedure to select students. A listing of primary and secondary schools and their enrolment records provided the sample frames. Schools were randomly selected with probability proportional to size. At each school, children within the grades with the required age groups were randomly selected from the school register. The sample size was determined using Jamaican population statistics and statistics from the Global Tobacco Youth Survey, Jamaica, 2000. According to the 2003 study of the Statistical Institute of Jamaica, there were 279 986 children in the 10–14-year age group, and 250 352 children in the 15–19-year age group which represents approximately 20% of the Jamaican population (20). Using the rate of tobacco use among youths aged 10–14-years as 19%, a confidence level of 95% and a standard error of $\pm 2\%$ yielded a sample size of 2 500 children. Based on an expected drop-out rate of 10%, the sample size was adjusted to 2800.

Survey instrument

The questionnaire was compiled using validated questions from previous surveys on the same age group of Jamaican children (5, 6, 21). The questionnaires include: the Global Youth Tobacco Survey 13–15 years (WHO/CDC), the Caribbean Adolescent Health Survey 10–18 years (PAHO), Global School Health Survey (WHO), Healthy Lifestyles Survey, 2000 (MOH), the Jamaican Cohort Study, 2002 (MOH, UWI) and Patterns of drug abuse in secondary schools. Validation of the final questionnaire for this study was done during the pre-testing phase of the project.

Several scales were developed to measure variables of interest. The Aggression Scale included items from the questionnaire which covered physical abuse received, involvement in fighting as the victim or initiator, being teased or bullied, being threatened with a weapon, and carrying a weapon to school or elsewhere.

Ethics statement

Approval was granted by the University Hospital of the West Indies/University of the West Indies/Faculty of Medical Sciences Ethics Committee. Informed consent was sought from the parent/guardian prior to the interview and informed assent from the student at the time of the interview.

Dependent variable

Depressive symptoms were operationalized based upon the dimensions of depression outlined in the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition-Text Revision (DSM-IV-TR). The construct was measured by obtaining the regularity of the individual's feelings of loneliness, sadness, wanting to cry, suicidal ideation and behaviours. The occurrence of feelings of hopelessness and sadness for two or more consecutive weeks inhibiting usual activities were also used in the measurement of depression.

Independent variables

The findings from various studies have indicated several correlates of depression among adolescents (2, 3). The variables which were the focus in this study included suicidal ideation, harming ideation, negative community attributes, family structure, gender, self-esteem, church attendance, learning problems, involvement in aggressive behaviours, family history of suicide, anticipated life expectancy, and the availability of protective factors within the home.

Data analysis

Data were analysed using SPSS version 12.0. Frequencies, cross-tabulations and multivariate analyses were conducted to explore associations between variables of interest. Odd ratios for each of the logistic regressions on each variable were calculated. Students' t-tests were reported at the 0.05 level and all tests were two tailed.

RESULTS

A total of 3003 students were surveyed nationwide. The students were between ages 10 and 15 years old and the mean age of the sample was 12.45 ± 1.68 years. Of these students, 134 (4.5%) reported depressive symptoms with the remaining 2869 (95.5%) reporting no depressive symptoms (Table 1). It was determined that 5.9% of females reported depressive symptoms compared to 2.9% of the males (X^2, $p < 0.001$). Of those students in the age group 10 to 12 years, 4.2% reported depressive symptoms while 4.7% of students in age group 13 to 15 years reported depressive symptoms (X^2, $p < 0.001$).

The schools were categorized as urban, rural and remote rural and the percentage of students in each group found to be depressed were 4.7, 4.1 and 4.4, respectively.

Students were asked whether or not they had ever seriously considered attempting suicide in the past year. Of the total students surveyed, 9.5% (n = 285) of them admitted to having suicidal ideation (Table 2). Results further demon-

Table 1: Presence of depressive symptoms

Characteristic		Depressive symptoms absent, n (%)	Depressive symptoms present, n (%)
Sex of respondent	Male	1381 (97.1)	41 (2.9)
	Female	1488 (94.1)	93 (5.9)
Family structure	Mother and father	884 (96.7)	30 (3.3)
	Single parent	1063 (96.5)	39 (3.5)
	Parent and step-parent	418 (94.1)	26 (5.9)
	Other relative	485 (93.3)	35 (6.7)
	Other non-relative	14 (77.8)	4 (22.2)
Location of school	Urban	1518 (95.3)	75 (4.7)
	Rural	1071 (95.9)	46 (4.1)
	Remote rural	280 (95.6)	13 (4.4)
Total		**2869 (95.5)**	**134 (4.5)**

Table 2: Depressive symptoms and suicidal ideation

	Depressive symptoms present, n (%)	Depressive symptoms absent, n (%)	X^2, p
Has suicidal ideation	134 (36.6)	2863 (8.2)	$X^2 = 119.34$; $p < 0.001$
Has thoughts of harming others	130 (34.6)	2849 (17.1)	$X^2 = 33.25$; $p < 0.001$
Has poor self-esteem	134 (29.9)	2869 (35.6)	NS
Does not expect to live to be at least 25 years old	110 (13.6)	2543 (4.8)	$X^2 = 16.82$; $p < 0.001$
Attends classes for behavioural/ learning problems	133 (41.4)	2869 (22.6)	$X^2 = 24.85$; $p < 0.001$

strate that significantly more adolescents reporting depressive symptoms also reported suicidal ideation (36.6% (n = 49)) than those not reporting suicidal ideation, (8.2% (n = 236), $p < 0.008$).

Having thoughts of harming others was more prevalent in those adolescents who were found to have depressive symptoms (34.6%) compared to those without depressive symptoms (17.1%, (X^2, $p < 0.001$)). There was no significant relationship found between having a poor self-esteem and the presence or absence of depressive symptoms. Those adolescents reporting depressive symptoms were more likely to believe that they would have a decreased life expectancy (13.6%) versus those with no report of depressive symptoms (4.8%, (X^2, $p < 0.001$)). There was also a significant difference between those reporting (41.4%) and not reporting

depressive symptoms (22.6%), in terms of their attending classes for the management of learning difficulties (X^2, $p < 0.001$).

Analysis of the family structure of the students and those who reported depressive symptoms revealed: 22.2% of the students who had been living with a non-relative (X^2, $p < 0.001$) reported depressive symptoms, compared to 6.7% of those students living with some other relative, 5.9% of those students living with a parent and step-parent, 3.5% of those with single parents and 3.3% of students living with both parents.

Predictors of Depression
Several variables were selected as independent variables in a regression analysis. The results are presented in Table 3.

Table 3:   Predictors of self-reported depressive symptoms among adolescents

Variables	B	p	95% CI
Negative community attributes	1.130	0.001	1.048 – 1.218
Protective factors within the home	0.732	0.000	0.667 – 0.804
Family structure	0.167	1.442	0.858 – 2.422
Gender (Female)	1.923	0.000	1.34 – 2.762
Likes self (Yes)	1.2	0.369	0.806 – 1.784
Frequently attends church (Yes)	0.697	0.047	0.480 – 0.996
Learning problem (Yes)	3.1	0.000	2.144 – 4.483
Behavioural problem (Yes)	1.075	0.778	0.649 – 1.781
Involvement in aggressive behaviour	0.193	0.437	0.126 – 1.518
Family history of suicide	0.008	3.319	1.373 – 8.024
Thoughts of harming others	0.022	2.161	1.116 – 4.185
Anticipated life expectancy	0.001	3.751	1.750 – 8.036

As demonstrated in Table 3, there were significant relationships between multiple variables and depressive symptoms, in particular, community attributes, protective factors within the home, family structure, gender, church attendance, learning problems, involvement in aggressive behaviours, harming ideation and anticipated life expectancy.

DISCUSSION
In this study, we found that 4.9% of the 3003 adolescents in the study reported depressive symptoms, this is in accord with findings reported in other populations (22) but less than this has been previously reported in studies conducted in Jamaica (2) and in Trinidad and Tobago (14). A possible explanation for the difference between this study and the one previously reported in Jamaica is that the cohort of students in this study is younger, with a mean age of 12.45 ± 1.68 years in comparison to 15.40 ± 0.83 years in the other study (15). Depressive symptoms are likely to be more prevalent among an older adolescent population (23). Another possible explanation is that self-reporting may result in under-reporting.

The findings of higher rates of self-reported depressive symptoms among females in the present study are similar to what is reported in the literature (24). The results also showed higher rates of self-reported depressive symptoms among older adolescents; these findings are consistent with what is expected, this is particularly so for female adolescents, who have been found to be at greater risk of developing depressive symptoms (24).

The impact of family structure on the student's report of depressive symptoms was also demonstrated. Among adolescents being raised by persons who were not their parents, there was a higher rate of self-reported depressive symptoms. The frequency of depressive symptoms increased significantly with the increasing presence of persons other than a parent in the household. Adolescents raised by both parents had the lowest prevalence of depressive symptoms. These findings are not surprising given the fact that parenting and related childhood experiences are important contributors to the development of depressive symptoms (25, 26). Furthermore, the presence of step-parents or other relatives in the household may indicate parental loss which is associated with negative experience (27).

Our study did not show a difference in self-reported depressive symptoms among students in urban and rural schools in contrast to other studies showing higher levels of depression in adolescents residing in urban communities (27, 28).

Methodological considerations
Several methodological limitations are noted in this study. Firstly, although the study involved a fairly large and relatively representative group of students, its ecological validity is limited. Secondly, the data were based on self-reports from the students. There is the possibility of under-reporting associated with the use of self-reports (29). Various reasons may underlie this phenomenon, but generally prevalence rates are likely to be higher with the use of a clinical interview. Ideally, a study of this nature would be strengthened by the use of multiple sources of information, including teachers, parents and medical records. Also, a clinical evaluation using structured instruments may result in an increased number of students presenting symptoms.

Despite these limitations, the results indicate that depressive symptoms in Jamaican adolescents occur at a rate that is similar to that found in other areas of the world. In addition, it is important to develop and implement programmes for early detection and treatment of depression in adolescents.

CONCLUSION
Results indicate rates of depressive symptomatology reported among adolescents in Jamaica are consistent with rates reported in the literature.

Abbreviations
WHO: World Health Organization; CDC: Centres for Disease Control; PAHO: Pan American Health Organization;

MOH: Ministry of Health; UWI: University of the West Indies; SPSS version 12: Statistical Package for the Social Sciences version 12.

Competing interests

The authors declare that they have no financial or non financial competing interests.

Authors' contribution

The study was conceived and designed by WA and KF. This paper was written with contributions from all the authors. SJ is the Research Assistant. WA, Head of the Section of Psychiatry reviewed and modified all sections of the manuscript. JM drafted the literature review and Background; KF drafted the methodology and the interpretation of the results. KF also analysed the data with contributions from RG who was primarily responsible for supervising the data analysis. CS drafted the discussion section. YBD contributed to the literature review. The manuscript was reviewed and approved by all the authors.

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