

The prevalence of depressive symptoms among adolescents in Nairobi public secondary schools: association with perceived maladaptive parental behaviour

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Abstract

Objective: Depression in adolescents is a matter of concern because of its high prevalence, potential recurrence and impairment of functioning in the affected individual. The study sought to determine the prevalence of depressive symptoms among adolescents in Nairobi (Kenya) public secondary schools; make a comparison between day and boarding students; and identify associated factors in this population. **Method:** A random sample of school going adolescents was taken from a stratified sample of 17 secondary schools out of the 49 public secondary schools in Nairobi province. The sample was stratified to take into account geographical distribution, day and boarding schools, boys only, girls only and mixed (co-education) schools in the capital city of Kenya. Self administered instruments (EMBU and CDI) were used to measure perceived parental behaviour and levels of depression in a total of 1,276 students excluding those who had no living parent. **Results:** The prevalence of clinically significant depressive symptoms was 26.4%. The occurrence was higher in girls than it was in boys $p < 0.001$. Students in boarding schools had more clinically significant depressive symptoms compared to day students ($p = 0.01$). More girls exhibited suicidal behaviour than boys ($p < 0.001$). There was a significant correlation between depressive symptoms and suicidal behaviour ($p < 0.001$). CDI scores correlated positively with age ($p < 0.001$) with an increase in CDI score with unit increase in age among students 14-17 years old, perceived rejecting maternal parenting behaviour ($p < 0.001$), perceived no emotional attachment paternal behaviour ($p < 0.001$), perceived no emotional attachment maternal behaviour ($p < 0.001$), and perceived under protective paternal behaviour ($p = 0.005$). **Conclusion:** Perceived maladaptive parental behaviours are substantially associated with the development of depressive symptoms and suicidal behaviour in children.

Key words: Depression; Adolescent; Parent; Kenya

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Introduction

Depression in adolescents is a matter of concern because of its high prevalence, potential recurrence and impairment of functioning in the affected child.¹ The prevalence of major depression among children aged 9 to 17 years has been estimated at 5 percent worldwide.² In the United States the

prevalence has been shown to be as high as 8.3 percent. This is similar to findings in European countries.³⁻⁵ In Kenya, depressive symptoms (not depressive diagnoses) have been found to be as high as 43.7%⁶ with similar figures found in other studies across the globe.⁷⁻⁸ Depressive disorders have been shown to occur in approximately 2% of primary school going children, and between 4% to 8% of adolescents.^{10,11} Depressive episodes in childhood and adolescence are recurrent and may persist into adulthood if the contributing factors remain unchanged. Early depressive vulnerability is a predictive factor for depression in adulthood.⁹

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Children and adolescents with depressive disorders are also at increased risk of suicide, substance use disorders, early pregnancy, poor academic performance, and impaired psychosocial functioning.^{12,13} Psychosocial problems associated with being depressed are relatively well known in adults. However, the extent to which these characteristics are associated with depression in adolescents has received less attention.¹⁴ Although previous studies worldwide vary greatly in their methodology and with a focus on adults⁵⁻¹³, sufficient convergence has emerged to implicate the following variables as potential risk factors for depression: female gender; living in a dysfunctional family; low parental education; stressful life events and low social support; cigarette smoking; low self-esteem and body image; high self-consciousness; depression-related cognitions; school problems and reduced intellectual competence and coping skills; physical disability and poor physical health; excessive interpersonal dependence; problematic interpersonal behaviours; conflict with parents; and early death of a parent.^{15,16,17,18,19} The prevalence of depression among female adolescents has been reported to be from two to five times more than males.²⁰⁻²¹

Parents play an important and influential role in a child's development through providing emotional support as they interact with their offspring. This interaction and related emotional relationship shapes the child's personality; thereby influencing mental development. However, growing children may perceive parental behaviour as maladaptive. Such perception of parenting behaviour as dysfunctional has long been viewed as an important determinant of offspring psychopathology such as mood, anxiety, substance abuse disorder and suicidal behaviour.²⁴⁻²⁶ This has also been found to be associated with lower self esteem, under-achievement and high psychological stress in children raised in such a relationship.¹³ Suicidal behaviour as a psychosocial risk factor has been found to be closely linked to dysfunctional or maladaptive parental behaviour in affected children.²⁷⁻³² Furthermore, suicidal behaviour has been linked to deficits in behavioural and emotional functioning (low self-esteem, depressive symptoms) which extend into young adulthood.³³⁻³⁴

The main objective of this study was to determine the prevalence of clinically significant depressive symptoms among school going adolescents in an urban setting and compare between the boarding students and those who commute daily from their homes. The study also aimed at determining factors associated with depression in these adolescents, including parental behaviour as perceived by the children.

Method

Sample/location

A stratified sample of 17 out of the 49 public secondary schools in Nairobi was selected. This sample was stratified to take into account different types of schools in terms of being either all boys, all girls or mixed; whether students reside at school, or not, during school terms (boarding or day school), location of the school within Nairobi city (east/west/north/south), and the neighbourhood economic

status depending on rent costs (high/middle/low). The national schools enroll the best performing students in the national examinations from schools all over the country through a quota system that ensures all the eight administrative provinces (including Nairobi) are equitably represented. Nairobi provincial schools only enroll students from schools within Nairobi city.

Instruments

1. Socio-demographic questionnaire

This consisted of items which focused on the participants' age, gender, type of school, whether boarder or day scholar, whether mother/father are alive/in formal employment, and number of siblings in their family.

2. Egna Minnen Beträfande Uppfostran (EMBU)

This is an 81 item self-administered instrument grouped into 8 constructs following factor analysis: Parental emotional abuse/neglect, parental physical abuse/neglect, authoritarian parent, under-involved parent, permissive parent and authoritative parent.³⁵ The constructs were further factually derived into 4 perceived parental behaviour dimensions.³⁶⁻³⁸ Emotionally attached parent (emotionally/physically abusing and authoritarian parental behaviour); Rejecting parent (emotionally and physically neglecting parenting behaviour), under protective parent (permissive or under-involved parental behaviour) and adaptive parenting behaviour (authoritative parenting behaviour) which are distributed across the four scales. The EMBU was developed as a valid and reliable measure for assessing perceived parental rearing practice. All items are scored on a 4-point likert (1-4) scale for mother and father separately.³⁹

3. The Child Depression Inventory (CDI)⁴⁰

This is a 27 item self-rated symptom oriented scale instrument which was developed based on Beck's Depression Inventory (BDI)⁴¹ to distinguish youth with psychiatric diagnoses of major depressive disorders (MDD) or dysthymic disorders from those with other psychiatric disorders or non-selected normal school going children and adolescents.⁴² It has been repeatedly shown to be a valid screen for depressive symptoms in children and adolescents in different cultural backgrounds as also seen in China.^{40,43} A total CDI score is calculated by summing all items that vary between 0 (no depression) and 54 (all depression symptoms clearly present). A cut-off point of 20 as calculated by Rivera, Bernal and Rossello was used in this study to identify adolescents with clinically significant depressive symptoms.⁴⁴ The results by Rivera, Bernal and Rossello showed that CDI scores differed significantly ($P < 0.001$) between children with MDD and children without clinically significant depressive symptoms and their results were similar to those by Kovac.⁴⁴

Procedure

The instruments were administered to every 8th student seated at their usual desks from each class from Form 1 to Form 4 in each participating school. The time used to fill out the CDI and EMBU instrument including administration of socio-demographic questionnaires was approximately

one hour. Class teachers were requested to spare an entire lesson time for this activity on one specific day of the week where data was collected in a class room setting. A total number of 1276 students excluding those who had no living parent were recruited to participate in this particular study.

Data analysis

The socio-demographic data, perceived parental behaviour, the clinically significant depressive symptoms and other factors associated with depression were analysed using the chi square test and correlation procedures (SPSS version 16 for Windows).

Results

Socio-demographic variables and depressive symptoms (Table I)

Clinically significant depressive symptoms were present in 26.4% of the students aged between 13 and 22 years, but with no statistical significant differences in age. A higher proportion of females had more clinically significant depressive symptoms than the males ($p < 0.001$); boarding students were found to have significantly more depressive symptoms than the day students ($p = 0.014$) and a higher proportion of students in Form 4 had more clinically significant depressive symptoms than those in the lower classes ($p = 0.007$). There were no significant relationships between depression and having lost one parent (single

Table I: Association between Socio-demographic factors and CDI scores (N=1276)

Factor	Clinically significant depressive symptoms according to CDI scores					Chi square test		
	No	Yes	Total	Mean CDI score	Standard Error	χ^2	df	p-value
Age								
13-15 years	217 (77.50%)	63 (27.5%)	280(21.9%)	19.48	0.341	2.934	2	0.231
16-18 years	643 (72.7%)	242 (27.3%)	885(69.4%)	19.91	0.197			
19-22 years	79 (71.2%)	32 (28.8%)	111(8.7%)	20.23	0.526			
Total	939 (75.6%)	337(26.4%)	1276 (100%)					
Gender								
Male	577(77.4%)	170(22.6%)	747(58.5%)	20.83	0.222	12.371	1	<0.001
Female	362(69%)	167(31%)	539(42.2%)	23.28	0.219			
Residence of student								
Boarding	751(72.1%)	290(27.9%)	1041(81.6%)	20.12	0.177	6.091	1	0.014
Day student	188(80%)	47(20%)	235(18.4%)	18.63	0.391			
Current class								
Form 1	256(80.0%)	60(20.0%)	316(24.5%)	18.87	0.329	11.997	3	0.007
Form 2	280(71.6%)	111(28.4%)	391(30.6%)	19.98	0.299			
Form 3	209(70.6%)	87(29.4%)	296(23.3%)	19.87	0.357			
Form 4	194(65.5%)	79(34.5%)	273(21.4%)	20.74	0.302			
Father alive								
yes	855	306	1161	19.4	0.198	0.019	1	0.889
No	84	32	115	19.8	0.215			
Mother alive								
yes	892	325	1217	19.9	0.218	1.162	1	0.281
No	37	9	46	19.7	0.213			
Father formally employed								
yes	698	248	946(74.1%)	19.92	0.175	p=0.667		
No	130	50	180(14.1%)	19.41	0.437			
Mother formally employed								
yes	638	229	867(68.0%)	20.12	0.191	p=0.578		
No	301	108	409(32.1%)	19.26	0.302			
Number of brothers and sisters								
1-2	221	88	309(24.2%)	19.91	0.333	p=0.357		
>2	591	205	796(62.4%)	20.09	0.196			
Living arrangement								
Both parents	729	254	982(77.0%)	19.89	0.333	p=0.545		
Single parent	162	67	229(18.0%)	20.3	0.375			
others	49	16	65(5.0%)	19.40	0.725			

orphan-hood), parental employment, family size and whether living with both parents, one parent or living with others, CDI scores correlated positively with age ($p < 0.001$) among students between ages 14-17 years.

Socio-demographic variables and suicidal behaviour (Table II)

According to age spectrum (classes), more students had suicidal behaviour (31.8-34.2 %) than clinically significant depressive symptoms (27.3-28.8%). The occurrence of suicidal behaviour in females as compared to males was higher ($p = 0.001$). Although students in Form 4 had more clinically significant depressive symptoms (Table I), a higher proportion of Form 2's had suicidal behaviour ($p = 0.001$). Similarly a higher proportion of boarding students - compared to day students - had suicidal behaviour ($p = 0.047$). There was no association between suicidal behaviour with single orphan-hood (either mother or father), employment status of either parent, family size or with whom the child lived with at home.

Perceived parental behaviour and depressive disorder (Table III)

Clinically significant depressive symptoms in adolescence were associated with perceived maternal rejecting behaviour ($p < 0.001$); perceived no emotional attachment paternal behaviour ($p < 0.001$); perceived no emotional attachment maternal behaviour ($p < 0.001$), and perceived under-protective parental behaviour ($p = 0.005$). Perceived adaptive behaviour by either the father or mother appeared to be protective against features of depression.

Perceived parental behaviour and depressive symptoms correlations (Table IV)

Depressive symptoms were significantly associated with perceived rejection by the mother ($p < 0.001$); no emotional attachment with the father ($p = 0.023$); and even more, no emotional attachment with the mother ($p = 0.001$), and an unprotective mother ($p = 0.009$).

Table II: Association between Socio-demographic variables and Suicidal behaviour (N=1276)

Factor	No suicidal behaviour	suicidal behaviour	Total	Chi square tests
Age				
13-15 years	191(68.2%)	89(31.8%)	280(21.9%)	$X^2=3.480$ df=2 $p=0.518$
16-18 years	584(66.0%)	301(34.0%)	885(69.4%)	
19-22 years	73(65.8%)	38(34.2%)	111(8.7%)	
Gender				
Male	515(68.9%)	232(31.1%)	747(58.5%)	$X^2=18.100$ df=1 $p < 0.001$
Female	333(63.0%)	196(37.1%)	529(41.5%)	
Current class				
Form 1	223(70.6%)	93(29.4%)	316(24.8%)	$X^2=22.436$ df=6 $p=0.001$
Form 2	235(60.1%)	156(39.9%)	391(30.6%)	
Form 3	198(66.9%)	98(33.1%)	296(23.2%)	
Form 4	192(70.3%)	81(29.7%)	273(21.4%)	
Father formally employed				
yes	775(66.8%)	386(33.2%)	1161(91%)	$X^2=854$ df=1 $p=0.652$
No	73(63.5%)	42(36.5%)	115(9.0%)	
Mother formally employed				
yes	812(66.7%)	405(33.3%)	1217(95.4%)	$X^2=0.682$ df=1 $p=0.711$
No	28(60.9%)	18(39.1%)	46(3.6%)	
Living arrangement				
Both parents	657(66.9%)	325(33.1%)	982(77%)	$X^2=1.930$ df=2 $p=0.749$
Single parent	148(64.6%)	81(35.4%)	229(18%)	
others	43(66.2%)	22(33.8%)	65(5.1%)	
Residence				
Boarding	679(65.2%)	362(34.8%)	1041(81.6%)	$X^2=6.760$ df=1 $p=0.047$
Day	169(71.9%)	66(28.1%)	235(18.4%)	
Number of brothers and sisters				
1-2	201(65.1%)	108(34.9%)	309(24.2%)	$X^2=1.779$ df=1 $p=0.411$
>2	529(66.5%)	338(42.5%)	796(62.4%)	

Table III: Association between perceived parental behaviour with CDI scores (N=1274*)

Perceived parental behaviour	Perceived parental behaviour			CDI		p-value
	n	Mean score	SE	Mean score	SE	
Adaptive						
Father	383(30.1%)	28.89	0.041	20.23	0.288	p=0.799
Mother	476(37.1%)	29.11	0.040	20.54	0.246	p=0.693
Rejecting						
Father	341(26.8%)	29.59	0.061	21.12	0.225	p=0.93
Mother	296(23.2%)	29.96	0.057	20.99	0.291	p<0.001
No emotional attachment						
Father	368(28.9%)	17.31	0.111	21.52	0.322	p=0.023
Mother	297(23.3%)	17.22	0.111	21.40	0.303	p=0.001
Under protective						
Father	182(14.3%)	13.18	0.057	21.78	0.424	p=0.009
Mother	205(16.1%)	13.61	0.054	20.96	0.354	p=0.304

* Two students did not fill out the EMBU questionnaire

Discussion

In this study, the rate of clinically significant depressive symptoms in nearly one third (27-29%) is similar to findings reported in other similar situations in Kenya and other countries in Africa.^{6-8,45} However, of concern is that the apparent high rates of depressive symptoms does not necessarily correlate with cases being referred for intervention to medical facilities. This suggests under recognition of these disorders in school settings in Kenya. The finding that the rate of such symptoms was higher in females is in agreement with the universal findings that depression is associated more with the female than with the male gender.^{7-8, 34-35,46} That the boarding students were more depressed than the day scholars in the Kenyan setting could be explained thus: Kenyan parents value the education of their children as the embodiment of their future and believe that enrolling them in boarding schools affords their children the best opportunity to concentrate on their studies. Nevertheless, that does not necessarily mean the children will not feel the stress or pain of separation from their parents and other siblings. Secondly, parents who perceive their children as problematic, regardless of the root cause for their problematic behaviour, tend to send those children to boarding schools in the hope that the confined environment will "control" their behaviour. Similar findings have been found elsewhere.⁴⁷⁻⁵¹ In Kenya, the fourth form is the last year in high school, at the end of which the students undertake a very competitive examination that determines admission to the limited places in tertiary institutions. It is therefore not surprising that Form 4 is associated with high levels of depressive symptoms. An unexpected finding with no immediate explanation however was that depression was not associated with orphan-hood (especially the loss of a mother), parental income or family size. Speculatively, it is the emotional support that matters most, regardless of who provides it.

The finding that suicidal behaviour presented more than depressive symptoms, although only marginally, would suggest that not everybody who is suicidal is necessarily depressed clinically and that the suicidal behaviour may be an expression of temporal stress rather than depression. Nevertheless, a 31.1%

rate of suicidal behaviour is a cause for concern on its own, more so given that it was not being managed. However if noted by the teachers or the parents, the students might receive help from their school or home environment rather than be referred for professional intervention. As indicated by the American Academy of Pediatrics, the affected adolescents often feel relieved when someone has heard their cry for help- particularly a parent.⁵¹ Suicidal behaviour as documented by the American Academy of Pediatrics represents an attempt to resolve conflict. As was the case in this study, the majority of the youth were from adaptive, intact family settings, with good social support, and therefore had hope for the future. Thus, a desire to resolve conflicts as indicated by Rivera-Medina et al may require only brief crisis-oriented interventions e.g. making someone understand their desperate feelings.⁵³ The higher occurrence of suicidal behaviour in female students and students who were in boarding schools can be explained in the same way as was earlier explained in the case of depression. Both the high rates of clinically significant depressive symptoms and suicidal behaviour observed in this study call for urgent education of teachers and in particular class teachers and school counsellors in the recognition and appropriate management of mental health disorders in schools. It is not clear why suicidal behaviour was common among Form 2 students.

It is gratifying to note that perceived adaptive rather than conservative parental behaviour seemed a protective factor against depression. The assumption here is that adaptive behaviour implies positive and constructive communication between the parents and their children and that this allows for conflict resolution. Expectedly, perceived rejection by the mother was highly associated with depressive symptoms as children spend more time with their mothers who might not be able to meet all their emotional and physical needs. The fact that fathers are often perceived as bread winners and overall providers of protection for the family may explain the finding in this study that perceived under-protective fathers was associated with depressive symptoms in the children. The correlation tests confirm the different significant associations between depressive symptoms in children and perceived parental behaviour.

Table IV: Correlations between perceived parental behaviour and depression

		1	2	3	4	5	6	7	8	9
	Factor	Class	Ages	CDI score	RPPB	RMPB	NEAPPB	NEAMPB	UPPPB	UPMPB
1	Class Pearson Correlation Sig. (2-tailed) N	1 489								
2	Ages Pearson Correlation Sig. (2-tailed) N	.640** .000 489	489							
3	CDI score Pearson Correlation Sig. (2-tailed) N	.018 .688 489	.045 .319 489	489						
4	Rejecting paternal parental behaviour Pearson Correlation Sig. (2-tailed) N	.020 .661 489	-.009 .840 489	-.030 .512 489	489					
5	Rejecting maternal parental behaviour Pearson Correlation Sig. (2-tailed) N	-.051 .260 489	-.118** .009 489	.449** .000 489	.571** .000 489	489				
6	No emotional attachment paternal Parental Behaviour Pearson Correlation Sig. (2-tailed) N	.065 .148 489	.020 .660 489	.663** .000 489	.421** .000 489	.356** .000 489	489			
7	No Emotional Attachment Maternal parental behaviour Pearson Correlation Sig. (2-tailed) N	.018 .691 489	-.038 .406 489	.338** .000 489	.305** .000 489	.438** .000 489	.655** .000 489	489		
8	Under protective paternal parental behaviour Pearson Correlation Sig. (2-tailed) N	-.064 .155 489	-.085 .060 489	.118** .006 489	.236** .000 489	.217** .000 489	.379** .000 489	.312** .000 489	489	
9	Under protective maternal parental behaviour Pearson Correlation Sig. (2-tailed) N	-.024 .600 489	-.016 .717 489	.330** .005 489	.275** .000 489	.342** .000 489	.331** .000 489	.410** .000 489	.570** .000 489	489

**Correlation is significant at the 0.01 level (2-tailed).

Key: CDI - Child Depressive Inventory Score; NEAPPB - No Emotional Attachment Paternal Parental Behaviour; RPPB - Rejecting Paternal Parental Behaviour; NEAMPB - No Emotional Attachment Maternal parental behaviour; RMPB - Rejecting Maternal Parental Behaviour; UPPPB - Under-Protective Paternal Parental Behaviour; UPMPB - Under Protective Maternal Parental Behaviour

Conclusion

Parental behaviour, and in particular a rejecting mother and an unprotective father should be explored in the management of children with depression while at the same time, promotion of adaptive behaviour in both parents should be encouraged and supported. This is important in particular in traditional Africa and to a large extent in contemporary Africa as a

parent is the identified authority figure in a family setting.⁵⁴ Thus, a parent is expected to filter the beliefs, attitudes and practices of the society in general in order to instruct children as to how to become acceptable members of the family and hence society, therefore protecting a child from developing emotional or behavioural problems. As children grow, they learn partly through observation and through modeling and

therefore the way the parent interacts with them determines how they will respond to their authority as well as how they react emotionally and behaviourally. The fact that there was a significant association between depressive symptoms/suicidal behaviour and perceived maladaptive parental behaviour means that parental interactive behaviour influences emotional and behavioural outcomes in children.

In this study, maternal rejecting parental behaviour, paternal under-protective behaviour and no emotional attachment parental behaviour in both parents were shown to be associated with depressive symptoms and suicidal behaviour in children. This result is comparable to many other studies which have shown that maladaptive parental behaviours are mediating factors for children to develop depressive disorders and suicidal behaviour.⁵⁵⁻⁶⁷ These maladaptive parental behaviours as documented in these previous studies were shown to form dysfunctional family settings that are associated with high rates of parent-child conflict. Comparable with results of previous studies, children raised in these environments are highly vulnerable to develop psychiatric disorders.⁵⁵⁻⁶⁷

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