VIEWPOINT

Depression in Adolescence

New Developments

GA Lowe, RC Gibson

ABSTRACT

Depression in adolescence is under-recognized although its associated burden of illness is very high. Some frequent associations with depression in this age group are under-achievement, poor lifestyle choices including substance abuse, and a high risk of the persistence of the illness into adulthood. There is also an increased risk of mortality related to suicide and harmful lifestyles. For depression in adolescents to be reduced, there needs to be strong collaboration among health professions, adolescents and their caregivers. Non-mental health clinicians must expand their role and become better prepared to recognize, prevent and treat depression in this age-group. Greater public awareness must also be achieved so that adolescents and their caregivers can seek help early.

La Depresión en la Adolescencia

Nuevos Desarrollos

GA Lowe, RC Gibson

RESUMEN

La depresión en la adolescencia es subreconocida, a pesar de que la carga de padecimientos asociada con ella es muy alta. Algunas de las asociaciones frecuentes de la depresión en este grupo de edad son el bajo rendimiento académico, opciones de vida pobre – incluyendo el abuso de sustancias –, y un alto riesgo de que la enfermedad persista y continúe en la adultez. Existe también un riesgo elevado de mortalidad relacionado con el suicidio y los estilos de vida nocivos. A fin de reducir la depresión en los adolescentes, es necesaria una sólida cooperación entre los profesionales de la salud, los adolescentes y sus cuidadores. Inclusive los clínicos que no se ocupan directamente de la salud mental deben ampliar su función y prepararse mejor para reconocer, prevenir y tratar la depresión en este grupo de edad. También es necesaria una mayor concientización del público con el propósito de que los adolescentes y sus cuidadores puedan buscar ayuda temprano.

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INTRODUCTION

Until recently, the concept of depression as a mental disorder was unknown in children and adolescents. Depression in adolescence was seen as a normal part of development, the so called "adolescent turmoil". It is now widely recognized that inadequate attention has been given to this area (1). This observation holds true for the Caribbean where research on this subject has not developed much beyond surveys on the prevalence of the condition. Two such studies were part of larger research projects on adolescent health in general undertaken by the Pan American Health Organization (PAHO) and the World Health Organization (WHO). In the PAHO document, *A Portrait of Adolescent Health in the Caribbean* (2), 16.6% of adolescent respondents from nine Caribbean territories reported feeling generally sad, angry or irritable. The *Global School-based Student Health Survey* is an ongoing project by the WHO, and related statistics from Guyana indicate that 16% of adolescent respondents felt lonely most of the time for the preceding twelve months and 18.8% had seriously considered suicide over that period (3). A third survey conducted in Jamaica by Lowe and Lipps (4) found a prevalence rate for depression among high school students of 9.0%.

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A very high burden of disease is associated with adolescent depression. This is manifested in under-achievement, impaired productivity, potentially harmful lifestyle choices (5), increased risk of suicide (6), and poor long-term outcome (7) especially in untreated cases. It is imperative not only for more probing research on the condition to be undertaken in the Caribbean, but also for all health professionals who interface with adolescents to be able to recognize the features of depression in this age-group as well as offer treatment when appropriate. There is also a need for greater public awareness about the condition.

Overview of adolescence

Adolescence is a period of rapid physical (pubertal), emotional, cognitive and social development. Pubertal changes are under hormonal control and begin with the release from inhibitory control of hypothalamic neurons which secrete gonadotropin releasing hormone (GnRH). GnRH, acting through the hypothalamo-pituitary-gonadal axis, causes the release of the gonadotropins luteinizing hormone (LH) and follicle stimulating hormone (FSH) from the pituitary gland. The gonadotropins bring about the maturation of the gonads and their release of oestradiol in females and testosterone in males. These gonadal hormones, as well as adrenal androgens, bring about a number of changes such as budding of the breasts, the growth of pubic and axillary hair, changes in fat distribution and enlargement of the genitalia (8).

Depression in adolescence: pathophysiology

Young and Altemus (9) report that the high level of ovarian hormones which are present in females at puberty may impair the ability of another hormonal axis, the hypothalamo-pituitary-adrenal (HPA) axis, to regulate itself through feedback mechanisms. The result is an overactive HPA and ostensibly high levels of adrenal cortisol in adolescent females. Cortisol mediated hippocampal damage is now widely acknowledged as central to the pathogenesis of depression (10). There is therefore a biological explanation for the two to three times increased risk (4, 11, 12) of depression observed in adolescent females when compared to their male counterparts. A less direct role for hormones in female adolescent depression has also been postulated. Wickstrom (13) suggests that because pubertal changes in females are more dramatic than in males, they are more likely to have difficulty coping with their new self image. As a consequence of this, female adolescents may be more likely to suffer from low self-esteem and depression than their male counterparts. Clinicians must always be aware of the importance of self-image to the adolescent, especially in females, and should be sensitive to any dissatisfaction which he/ she may express.

Besides self image, a number of other psychosocial factors may be important in the pathogenesis of adolescent depression. As adolescents make the transition from childhood to adulthood, they experience cognitive, emotional, social and role changes, all of which, though normal, are stressful. This may contribute to the increased risk (14) for the development of a depressive disorder which is observed in adolescents when compared with children. Other stressful events which are not necessarily peculiar to adolescents may also be associated with depression in this age group, *eg* Perks and Jameson (15) demonstrated domestic violence as a predisposing factor to depressive symptoms in St Lucian children.

Cognitive theorists argue that central to the development of a depressive disorder is the manner in which the individual deals with the stressors which are being experienced. Beck (16) posited that certain individuals possess "depressogenic" beliefs and dysfunctional attitudes which make them vulnerable to depression. One such dysfunctional attitude is a negative attributional style which is characterized by the individual ascribing adverse-uncontrollable events to themselves. This pattern is apparent to the keen observer and, in the affected individual, it produces cognitive symptoms of depression, *eg* feelings of failure, guilt, hopelessness and worthlessness (17).

Familial vulnerability to depression is commonly encountered and encompasses both psychological and biological aetiological factors. Some biological theorists have linked depressive illnesses to specific genes (18). However, others argue that much of the depression that would appear to run in families results from the basis of family dysfunction rather than a genetic cause. In reality, it is a combination of factors, rather than a single cause, which is likely to be found in most cases of depression in adolescents.

Depression in adolescence: clinical features

The features which depressed adolescents experience are very similar to those observed in adults. These include having a depressed mood almost every day, irritability, crying spells, markedly diminished interest or pleasure in most activities, significant weight loss or weight gain, insomnia or hypersomnia, fatigue or loss of energy and diminished ability to think or concentrate. An irritable, rather than depressed, mood is a common feature of depression in adolescents (19). It is also very common for adolescents with depression to exhibit psychosomatic symptoms or behavioural problems (20). Depressed Jamaican adolescents appear to have predominantly cognitive symptoms with negative thought processes, *eg* feelings of self-blame, self-hate, punishment, dissatisfaction and failure (21).

Associations with adolescent depression

Depressed adolescents should be investigated for thyroid dysfunction and collagen vascular disease which may be the underlying causes of depressive symptoms (22). Depression is also frequently encountered in adolescents who suffer from chronic illnesses such as sickle cell disease and diabetes mellitus. In these cases, the depressive symptoms are part of the individual's psychosocial response to being ill. This is especially relevant in the adolescent years in which "fitting

in" and "being normal" are important objectives. Secondary depressive syndromes are also frequently found in individuals with primary psychiatric diagnoses, *eg* attention deficit hyperactivity disorder (ADHD) and conduct disorder (23). The interface between depression and medical illness may also occur at another level in which the depression causes or worsens the medical problem, *eg* it has been shown that being depressed is associated with altered levels of immunity (24).

Depressed individuals are at high risk of underachieving in school (5). Multiple episodes of depression in adolescence also increase the likelihood of depression occurring in adulthood (25). If the depression persists into adulthood, they are also likely to become underproductive members of society. These outcomes are related to the lack of interest, drive and motivation which frequently accompany depressive disorders. Additionally, depressed adolescents are more likely to abuse substances, attempt suicide and have early, unplanned pregnancies (5, 6). Early detection and treatment are the key to preventing some of these negative outcomes.

Public health implications

Unipolar depression is projected to become the second leading cause of disease burden worldwide in 2020 (1). In the adolescent population, depression related morbidity has far-reaching effects, impairing physical and social functioning as well as self-actualization and personal achievement. As adolescent depression may be a precursor to chronic impairment in adulthood (*eg* adult depression, substance abuse), the degree of morbidity is many times greater than may be initially apparent. Both the potential for chronic impairment and the mortality risk (*eg* suicide and self-harm from poor lifestyle choices) are associated with high financial and human costs to society. The emotional costs of depression to the individual and his/her loved ones cannot ever be appropriately measured. However, the measurable financial and productivity-related costs are especially detrimental to low income countries in which resources are scarce and yet vital for their survival. Practices and policies which limit the prevalence of depression are essential in these settings. Comprehensive and accessible prevention and treatment services must be present in order to achieve this objective.

The existing services in the Caribbean are inadequate. Child Guidance Clinics, where present, tend to receive only the most seriously disturbed adolescents so that mild and moderate cases of depression are frequently unrecognized and untreated. There is also a dearth of child and adolescent psychiatrists and an absence of appropriate inpatient units for treating adolescents with severe mental health problems. The alternative to the public services is private treatment but this is costly and therefore inaccessible to lower socio-economic groups. Despite these difficulties, the problem of adolescent depression is not insurmountable. Its solution depends on its recognition as a serious threat to public health requiring the collaboration of various members of the health team as well as adolescents, their parents and other caregivers. Health professionals who interface with adolescents at all levels of care must equip themselves with the necessary skills to prevent, diagnose and treat adolescent depression as well as to consult with and refer to specialists as appropriate. Adolescents and their caregivers must be made more aware of adolescent depression so that they can recognize warning signs and features of the illness and seek help in its prevention and treatment when necessary.

The role of the clinician

The clinical and associated features of adolescent depression have already been described. Knowledge of these characteristics will assist the clinician in making the diagnosis. As mentioned previously, differential diagnoses of medical conditions which mimic the symptoms of depression must be ruled out. Bipolar disorder is another differential diagnosis which should be considered. It is characterized by episodes of depression on some occasions and episodes of mania at other times. Some examples of manic symptoms are elated mood, pressured speech and an increase in goal directed activity (19). Bipolar disorder is more likely to be present if there is a positive family history. The clinician should also remember that, in cases of bipolar disorder, anti-depressant medications may initiate manic episodes especially when used in the absence of mood stabilizers such as valproate and carbamazepine.

If adolescent depression is uncomplicated by a coexisting condition such as substance abuse, bipolar disorder, suicide attempts, psychosis, multiple episodes of depression, or treatment resistance, then it is appropriate for the non-specialist physician to undertake treatment (26). Failing this, appropriate consultation with and/ or referral to a specialist should be made. Generally speaking, the available treatment options are antidepressant medications, psychotherapy or both, although psychotherapy would be inappropriate for persons not trained in its use. Numerous studies have reported definite therapeutic benefits with selective serotonin reuptake inhibitors (SSRIs) in depressed adolescents (27, 28). The therapeutic benefits of these drugs may be partially explained by their neurogenic properties which facilitate the repair of neuronal pathways, eg in the hippocampus (10), damaged as part of the pathogenesis of the illness. Because of an increased risk of suicidal ideation and behaviour (29) in adolescents taking all other SSRIs, only fluoxetine has been approved for use in this age-group by the US Food and Drug Administration (FDA). Tricyclic antidepressants are inappropriate for adolescents as the magnitude of their therapeutic effect is small (30). Benzodiazepines are also to be avoided since they have no antidepressant activity. Following remission of the depressive symptoms, continuing treatment with medication and/or psychotherapy for at least six months is recommended, given

the high risk of relapse and recurrence of depression. Discontinuation of the antidepressant medication should be done gradually over six weeks or longer.

Available studies show similar rates of clinical response to either psychotherapy or medication (27, 31). Either approach would therefore be empirically justified, with the choice based on the patient's and clinician's inclination. Of the psychotherapies, cognitive behaviour therapy and interpersonal psychotherapy have the greatest evidence of therapeutic efficacy (32, 33). Educating the patient and family about the illness is vital to the recovery process as this may empower them to take charge of the management, avoid placing blame, and set reasonable expectations regarding a treatment response. The confidentiality afforded the adolescent patient and the frank communication of its limits (eg compulsory disclosure of a suicide plan) facilitate a trusting relationship among the adolescent, the family, and the clinician. A no-suicide contract establishing an agreement among the patient, his or her family, and the clinician is essential to the issue of the patient's safety (34).

Prevention of adolescent depression falls within the collective purview of clinicians, adolescents and their caregivers. Routine adolescent medical examinations should include screening for depression. Clinicians, adolescents and care-givers may also enhance the prevention of depression by recognizing stressors with the potential of producing depression and taking the appropriate action against them.

CONCLUSION

Adolescent depression is a serious threat to the health of the individual and the well-being of society. In order to win the battle against this condition, major collaborative efforts among all health practitioners, adolescents and their caregivers are required.

REFERENCES

1. World Health Organization. World Health Report 2001- mental health: new understanding, new hope. Geneva: WHO; 2001.
2. Halcón L, Beuhring T, Blum RW. A portrait of adolescent health in the Caribbean. Minneapolis: PAHO/ University of Minneapolis; 2000.
3. World Health Organization. Global School-based Health Survey. Geneva: WHO; 2004. [Online] Available from *http://www.who.int/school_youth_ health/media/en/gshs _fs_guyana_2004.pdf*
4. Lowe G, Lipps G, Abel W, Hickling F. Depression in a Jamaican Adolescent Cohort [Abstract]. West Indian Med J 2004; **53 (suppl 5):** 23.
5. Fergusson DM, Woodward LJ. Mental health, educational, and social role outcomes of adolescents with depression. Arch Gen Psychiatry. 2002; **59:** 225–31.
6. Dryfoos J. Adolescents at risk: Risk taking in adolescence- a decision making perspective. Developmental Review 1992; **12:** 1–44.
7. Lewinsohn PM, Rhode P, Klein DN, Seely JR. Natural course of adolescent major depressive disorder, I: continuity into young adulthood. J Am Acad Child Adolesc Psychiatry. 1999; **38:** 56–63.
8. Kriepe RE, McAnarney ER. Adolescent depression. In: Behrman RE, Kliegman RM, eds. Nelsons Essentials of Paediatrics, 2nd ed. Philadelphia: WB Saunders Company; 1994.
9. Young E, Altemus M. Puberty, Ovarian Steroids, and Stress. Ann NY Acad Sci 2004; **1021:** 124–33.
10. Duman R, Malberg J, Nakagawa S. Regulation of adult neurogenesis by psychotropic drugs and stress. J Pharmacol Exp Ther 2001; **299:** 401–7.
11. Fleming J, Offord D, Boyle M. Prevalence of childhood and adolescent depression in the community; Ontario Child Health Study. Br J Psychiatry. 1989; **155:** 647–54.
12. McCracken J. The epidemiology of child and adolescent mood disorders. Child Adolesc Psychiatr Clin N Am 1992; **1:** 53–72.
13. Wickstrom L. The emergence of gender differences in depressed mood during adolescence: the role of intensified gender socialization. Dev Psychol 1999; **35:** 232–45.
14. Perks S, Jameson M. The effects of witnessing domestic violence on behavioural problems and depressive symptomatology. A community sample of pupils from St Lucia. West Indian Med J 1999; **48:** 208–11.
15. Beck AT. Depression: Clinical, experimental, and theoretical aspects. New York: Harper and Row; 1967
16. Heath C, Camarena P. Patterns of Depressed Affect during Early Adolescence. Journal of Early Adolescence. 2002; **22:** 252–76.
17. Wagner K, Berenson A, Harding O, Joiner T. Attributional Style and Depression in pregnant teenagers. Am J Psychiatry 1998; **155:** 1227–33.
18. Kendler K, Kessler R, Walters E. Stressful life events, genetic liability, and the onset of an episode of major depression in women. Am J Psychiatry. 1995; **152:** 833–42.
19. Desk Reference to the Diagnostic Criteria from DSM-IV TR. Washington, DC: American Psychiatric Association Press; 2000.
20. Cole DA, Carpentieri S. Social status and the comorbidity of child depression and conduct disorder. J Consult Clin Psychol. 1990; **58:** 748–57.
21. Lipps G, Lowe G. Validation of the Beck Depression Inventory in a Jamaican University cohort. Unpublished; 2003.
22. Practice Parameters for the Assessment and Treatment of Children and Adolescents with Depressive Disorders. Journal of the Academy of Child and Adolescent Psychiatry, Supplement October 1998; **37:** 63S–83S.
23. Biederman J, Newcorn J, Sprich S. Comorbidity of attention deficit hyperactivity disorder with conduct, depressive, anxiety, and other disorders. Am J Psychiatry 1991; **148:** 564–77.
24. Musselman D, Miller A, Porter M, Manatunga A, Gao F, Penna S et al. Higher than normal plasma Interleukin-6 concentrations in cancer patients with depression: preliminary findings. Am J Psychiatry. 2001; **158:** 1252–7.
15. Lewinsohn PM, Rohde P, Seeley JR, Klein DN, Gotlib IH. Natural course of adolescent major depressive disorder in a community sample: predictors of recurrence in young adults. Am J Psychiatry. 2000; **157:** 1584–91.
26. Brent D, Birmaher B. Adolescent depression. N Engl J Med. 2002; **347:** 667–71.
27. Keller M, Ryan N, Strober M, Klein R, Kutcher S. Efficacy of Paroxetine in the treatment of adolescent major depression: a randomized, controlled trial. J Am Acad Child Adolesc Psychiatry 2001; **40:** 762–72.
28. Emslie G, Rush A, Weinberg, Kowatch R, Hughes C, Carmody T et al. A double-blind, randomized, placebo-controlled trial of fluoxetine in children and adolescents with depression. Arch Gen Psychiatry. 1997; **54:** 1031–7.
29. Vorstman J, Lahuis B, Buitelaar J. SSRI associated with behavioral activation and suicidal ideation. J Am Acad Child Adolesc Psychiatry. 2001; **40:** 1364–5.
30. Hazell, P, O'Connell D, Heathcote D, Henry D. Tricyclic drugs for depression in children and adolescents (Cochrane Review). In: The Cochrane Library, Issue 2. Oxford: Update Software; 2005.
31. Harrington R, Clark C. Prevention and early intervention for depression in adolescence and early adult life. Eur Arch Psychiatry Clin Neurosci. 1998; **248:** 32–45.
32. Clarke G, Rohde P, Lewinsohn P, Hops H, Seeley J.Cognitive-behavioral treatment of adolescent depression: efficacy of acute group treatment and booster sessions. J Am Acad Child Adolesc Psychiatry. 1999; **38:** 272–9.

33. Mufson L, Weissman M, Moreau D, Garfinkel R. Efficacy of interpersonal psychotherapy for depressed adolescents. Arch Gen Psychiatry. 1999; **56:** 573–9.

34. Rotheram MJ. Evaluation of imminent danger for suicide among youth. Am J Orthopsychiatry. 1987; **57:** 102–10.