REVIEW

ADOLESCENT DEPRESSION: PROGRESS AND FUTURE CHALLENGES IN PREVENTION-CONTROL ACTIVITIES

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ABSTRACT

It is accepted that depression during adolescence is a highly prevalent yet mostly an under recognized mental health problem. Studies carried out in diverse cultures report prevalence rates ranging from 1% to 50% for adolescent depression. Presence of depression during adolescence, effects the development negatively and creates a tendency towards high-risk behaviors as alcohol, tobacco use and substance abuse. Current research points out that although there is a biological tendency for the development of adolescent depression, psychological and social factors also play an important role. Therefore intervention programs, focusing on particularly psychosocial factors, gain attention for the prevention and control of adolescent depression. The findings from school based studies which aim to prevent adolescent depression through utilizing cognitive behavioral techniques are promising. This paper discusses the burden and the factors influencing the development of depression during adolescence, as well as the objectives, methods, findings and the effectiveness of prevention programs which focus on psychosocial factors.

INTRODUCTION

There is a growing concern regarding adolescent depression since it is highly prevalent yet mostly an under recognized mental health problem. Nevertheless, the intervention programs that aim to prevent and control adolescent depression yield promising results. Since some of the determinants of adolescent depression are modifiable, it is important to develop and discuss policies focusing on prevention and control activities.

World Health Organization reports that depression is the fourth leading cause to the global burden of disease worldwide 1. Although today we know that depression affects all age groups, for many years it was considered to be rare before adulthood since children were considered to lack the mature psychological and cognitive structure necessary to experience these problems 2. The main belief was that mood disturbance was a normative and self-limiting aspect of child and...
adolescent development. Moreover, the diagnosis of depression for these adolescents present a less differentiated clinical picture compared to adults. And because children and adolescents do not seek help for their emotional problems, neither parents nor teachers recognize emotional problems effectively. Yet, current epidemiological research points out that depression before adulthood, although under recognized, is a common health problem and should be addressed as a priority issue.

Several studies point out that depression and even depressive symptoms during adolescence have serious consequences both at the individual and the community level. Presence of depressive symptoms during adolescence is related with high-risk behaviors as tobacco use, substance abuse or suicidal ideation. Patten et al. noted that among adolescents who had depressive symptoms at baseline, more than one third reported the persistence of symptoms within the past 12 months. The same study determined that if depressive symptoms persisted, the risk for secondary problems as drug or alcohol abuse and suicidal attempts increased. Even sub threshold depression or the presence of depressive symptoms is reported to be a risk factor for subsequent depression episodes for both genders.

And because of the continuity subsequent depression episodes for both genders, it is important to focus on prevention and control activities at younger ages.

The magnitude of the problem

Epidemiological studies evaluating the burden of depression among adolescents report different prevalence rates ranging from 1% to 50%. The discrepancies are not surprising since the data collection tool as well as the time, the setting of the surveys and the age group considered have an important impact on the prevalence detected. Nevertheless, almost all the researches carried out in diverse cultures point that adolescent depression is prevalent.

A survey carried out among a representative sample of adolescents in US determined that lifetime prevalence of major and minor depression as 15.3% and 9.9%, respectively. The 30-day period prevalence for major and minor depression was determined as 5.8% and 2.1% in the same study. A school-based survey in Sweden revealed that, among the 16-17 age group, the 1-year prevalence of major depression was 5.8% and the lifetime prevalence was 11.4%. Again a school-based survey encompassing the ages of 13-22 year olds determined a prevalence rate of 16.9% in China. The rates can be higher among the adolescents who attend to health units. A study carried out among adolescents who attended to primary care units in Brazil revealed a prevalence rate of 26.5%.

There are also three studies reporting prevalence rates from Turkey. In a school-based survey carried out in one of the provinces of Turkey, it was revealed that the prevalence of depression was 12.5% in the age group 10-20. Another school-based survey determined a higher prevalence rate because the latter study was carried out in a region, which was affected by a devastating earthquake. Three and a half years after the earthquake, the depression prevalence was determined as 30.8% among adolescents. In another research carried out among high school students in a socio economically disadvantaged region of Istanbul, the prevalence was determined as 30.3%.

Basically, studies evaluate the presence of depression through two approaches. The first one is by utilizing screening tests, which use the self-reported symptom scales as most of the above examples. And the second approach for determining prevalence is by using diagnostic interviews. Studies using diagnostic interviews reported relatively lower rates compared to studies using self-report scales. It was proposed that the gap between the prevalence rates might result from an artifact due to adolescents’ over reporting of their symptoms. But most probably a considerable high proportion of adolescents suffer from sub threshold depression.

It is important to note that an increasing trend in the rates is observed among different cohorts throughout the years. With the epidemiological transition, the burden of depression among communities had been growing. It is proposed that as the communities evolve from modernization to post modernization many changes take place within the society and many persons experience psychological distress while trying to adapt to the changing social norms. This social transition is considered to move from collectivity to individualism thus weakening the individual’s bond to life leading to helplessness and hopelessness. This fact is argued as the one of the main reasons leading to the increase in depression and thus suicidal rates. Research showed that after the 2nd World War, lifetime prevalence of depression had increased with each birth cohort. A survey carried out among
adolescents in US determined that higher prevalence as well as early onset of the disorder was observed among the younger cohort 5. And WHO estimates that depression will be the second leading cause of disability by 2020 worldwide 1.

**Determinants of adolescent depression**

Research points out to a number of risks as well as protective factors that influence the mental well being of adolescents 3. Any intervention program interventions aiming to prevent and control mental health disorders should focus on reducing the risk while promoting the preventive factors.

**Biological factors**

Gender is one of the factors, which influences the rate of depression and depressed mood during adolescence. In early adolescence there is an increase in the rate of depression among girls but not the boys 6,11,19,22 although there are some studies controversial 23. The developmental events are considered to increase the vulnerability of the female gender 22,24. Also an environment that fosters negativity and rumination is thought to be important 24.

Genetic tendency to depression is one of the known risk factors although environmental influence is sometimes hard to distinguish 4,25,26. Early puberty was also shown to increase the vulnerability to adolescent depression 11,27,28. It was argued that this is because of major hormonal changes 29 or stressful effect of deviation from normality. Nevertheless, pubertal development

<table>
<thead>
<tr>
<th>Author, publication year</th>
<th>Target population</th>
<th>Intervention</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarke, 2001 (41)</td>
<td>At-risk offspring (aged 13-18 years) of adults treated for depression in a health maintenance organization</td>
<td>CBT delivered by clinical psychologists</td>
<td>The incidence of major depression in the intervention group was a third of that in the control group (9.3% vs 28.8% over two years).</td>
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<td>Harnett, 2004 (44)</td>
<td>Students aged 12 to 16 years</td>
<td>Cognitive behavioral strategies and exercises delivered by teachers</td>
<td>No benefit</td>
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<td>Clarke, 1995 (46)</td>
<td>Adolescents with elevated but subdiagnostic levels of self-reported depressive symptomatology</td>
<td>CBT delivered trough specially trained school psychologists and counselors</td>
<td>A significant 12-month advantage for the prevention program, with affective disorder total incidence rates of 14.5% for the active intervention, versus 25.7% for the control condition.</td>
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<td>Kerfoot, 2004 (47)</td>
<td>Depressed adolescents</td>
<td>CBT delivered by social workers</td>
<td>Adolescents who had therapy from trained social workers had a similar level of depression post treatment (mean depression score 17.5) to those who did not have such therapy (mean depression score 16.7).</td>
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<td>Gillham 1995 (48)</td>
<td>5th and 6th grade adolescents</td>
<td>CBT delivered by clinical psychologists</td>
<td>On average children in the intervention group reported fewer depressive symptoms on average. Also the intervention group was only half as likely as the control group to report symptoms in the moderate to severe range</td>
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<td>Seligman 2001 (49)</td>
<td>First year university students at risk</td>
<td>CBT delivered by clinical psychologists</td>
<td>The intervention group had fewer episodes of generalized anxiety disorder, showed a trend toward fewer depressive episodes. The intervention group had also fewer moderate depressive episodes but not severe depressive episodes.</td>
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<td>Shochet 2001 (50)</td>
<td>Adolescents 12-15 years old</td>
<td>CBT delivered by clinical psychologists</td>
<td>Intervention groups showed a significantly greater decrease in depressive symptoms 10 months later compared with the control group</td>
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<tr>
<td>Puskar, 2003 (51)</td>
<td>Adolescents at least 13 years of age living in a rural region</td>
<td>CBT delivered by master’s level nurses with psychiatric mental health experience</td>
<td>Intervention group showed improvement in depressive symptoms and certain coping skills as well as the use of cognitive problem solving coping strategies</td>
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Table I: Selected researches that focus on the school-based depression prevention interventions
involves biological, psychological and social changes that all may contribute to mental health problems. And girls were more influenced than boys 30.

Obesity and depression are interrelated 31. It is not clear whether obesity or depression come first since one of the expressions for depression is weight gaining or losing. Negative childhood experiences are considered to reinforce the development of both disorders and their co-occurrence 31. Body perception among youngsters is regarded as important especially for girls, many mental health problems disorders were found more prevalent than boys and perception of overweight was shown to be an important factor 31-33. A study carried out among Chinese adolescents had indicated that perceived overweight was related to depression and anxiety for both genders. Also perceived overweight groups were exposed to a higher degree of social isolation 34.

Psychological and Social Factors

Cognitive factors were seen important for adolescent depression. Among those who have ability to learn from experiences, good self-esteem, high level of problem solving ability and social skills experienced depression less 3,15,35.

There are number of studies examining relationship between family environment and adolescent psychological background. Intact families were usually reported to be protective. Inconsistent care-giving, family conflict, poor family discipline, poor family management, death of a family member are associated with depression. Family attachment, opportunities for positive involvement in family, rewards for involvement in family are regarded as protective factors 15,24,30,35,36.

Academic failure in school, failure of schools to provide an appropriate environment to support attendance and learning, inadequate/inappropriate provision of education may also contribute to presence of depression among adolescents 3,15,30. Opportunities for involvement in school life, positive reinforcement from academic achievement may be favored factors for good mental health 3.

Perceived lack of social support, perceived discrimination and marginalization, lack of cultural identity, experience of war and exposure to violence, transitions (urbanizations) are regarded as risk factors as a reflection of negative outcomes of modernization 3,11,37,40.

Number of friends is also associated with depression. Those who have more friends are found to have less depressive symptoms 10,30.

Research on prevention and control activities

WHO puts forward main reasons for developing effective interventions targeting children and adolescents. Implementing intervention activities focusing on prevention and screening programs for adolescence will be important in reducing the long term impairment in adulthood and solve the problems at the stage that it is most likely to appear. Effective interventions will also be important in reducing the health costs at the community and the individual level 3.

Research puts forward promising results for depression prevention programs for adolescents who are at risk for depression. Intervention trials are based on cognitive behavioral therapy (CBT) since on the individual bases the efficiency of CBT is proven to be effective for adolescent depression. Studies using cognitive programs basically utilize two different approaches in delivering the interventions. The first one is through trained psychologists and the second one is by means of teachers or social workers. A considerable improvement is achieved in depression prevention when cognitive therapy is delivered by trained psychologists. An outstanding example is conducted by Clarke et al. A randomized controlled trial utilized cognitive therapy prevention program targeted the offspring of depressive parents. Participants were adolescents with depressive symptoms who did not meet the diagnostic criteria for depression. This study determined the effectiveness of cognitive therapy; it revealed a cumulative major depression incidence during a median of 15 months of follow of 9.3% and 28.8% in experiment and control groups, respectively 41.

A placebo-controlled trial in New Zealand evaluated the effectiveness of a school based depression prevention program. The intervention was based on a manual based program, which was derived from cognitive behavioral therapy. Immediately after the program a significant clinical benefit with an absolute risk reduction of 3% and with a number needed to treat for short-term benefit of 33 was achieved 42.

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The research points out that the intensive interventions utilizing CBT delivered by trained mental health professionals are shown to be efficient, but the activities delivered by teachers or social workers mostly showed no benefit. It is
clear that under real world conditions it is not possible to carry out prevention and control activities through psychologists. So the question that needs to be addressed is that the effectiveness of the interventions rather than their efficiency. The interventions are efficient in other words they are successful under ideal laboratory conditions. But will they be effective when delivered as a community based program in the real world? And will they be cost effective?

A recently published study addressed the above-mentioned question. This study evaluated the effectiveness of a depression prevention program under real-world conditions in schools. The program was implemented through the existing school personnel. Although the program did not demonstrate a beneficial effect for the students, the knowledge, the confidence as well as the quality of program implementation was acceptable. It was important that the personnel did not consider the program difficult to implement. Authors discuss that there was a high level of variability between students within classes, which made it difficult to detect differences between classes that could be attributed to facilitator variables.

Some approaches are suggested in order to overcome the availability of trained staff who is capable to deliver CBT. An internet-based CBT program and a computerized carton-based program are examples of such approaches. Internet based programs in some cultures can encompass a wide audience and they can be cost-effective. It is also possible to deliver individual messages according to the person’s particular risk profile still they could be anonymous. However, the major limitation of internet-based programs is their accessibility particularly in disadvantaged populations (Table I).

**Conclusion and future challenges**

Depression is an under-recognized yet a prevalent health problem among adolescents. It does not only cause suffering and loss of functional ability, but it also serves as a risk factor for suicide attempts and numerous negative behaviors such as smoking, alcohol and drug use. Current research points out that although there is biological tendency to the development of adolescent depression, psychological and social factors play an important role. Prevention and control activities focus on modifying and improving the psychosocial factors. Community based prevention activities taking place in schools or the family environment are shown to be efficient. Nevertheless, the effectiveness of interventions in real life situations should be further tested and evaluated. By implementing effective strategies, which focus on prevention and control, it would be possible to reduce the burden of the disease while also decreasing the associated various risk taking behavior.

**REFERENCES**

Adolescent depression: Progress and future challenges in prevention-control activities