

## Mini Review

# Multi-factorial Depressive Disorders Need Multi-dimensional Interventions

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Depressive disorders are so frequent and disabling health conditions which have been inarguably accepted to be a public health concern [1]. Many drugs have been developed to treat depression, however the efficacy of the antidepressants are inadequate particularly for mild or moderate depression [2-4]. It is also mentioned that when considering the trials about the treatment effect of the antidepressants, you should be careful about the results because of reflecting a small proportion of the society [4]. Despite the methodological issues related to the controversial results about the antidepressant efficacy, a recent review showed that the antidepressant effects of the drugs persist in a six month period [5,6].

Based on the controversial results related to the efficacy of antidepressant drugs, alternative interventions have been developed to treat depression [7-9]. In a recent review, the antidepressant efficacy of non-pharmacological treatments and antidepressant medications are compared [9]. Non-pharmacological interventions are investigated under various kinds of psychotherapeutic approaches such as cognitive behavioral therapies, naturopathic interventions such as omega-3, vitamin D supplements, biological interventions such as electroconvulsive therapy and physical activity. The authors suggest that the non-pharmacological interventions may improve depressive symptoms in eligible patients whom described as having subclinical to moderate severity depression. However, the authors also report their concerns about reflecting the successful results of the studies to the clinical practice which is depending on health professionals' capability or patients' adherence. The effects of physical exercise on depression have been studied repeatedly and significant positive results have been found overall. On the other hand, in spite of the moderate positive improvements in depressive symptoms in pooled data, the methodologically robust trials showed smaller improvement according to the updated Cochrane Review [10]. Additionally, some latter evidence suggest that the reviews like Cochrane Review underrating the treatment effects of exercise on depression in a biased way while some latter evidence supports the Cochrane Review [11-13]. In a recent comprehensive review, after revealing the multifactorial etiology of depression, all accumulating evidence regarding the effects of omega-3 on depressive disorders is summarized [9]. Although the heterogeneity of the studied populations or treatment protocols, omega-3 seems to have significantly positive effects on depression without serious side effects. In most of the successful trials 1 gr daily eicosapentaenoic acid (EPA) dietary intake is recommended.

Depressive disorders, as a public health concern, are leading us to employ all managing strategies including preventive options besides various treatments. It is essential to take a developmental perspective and to select a multimodal program when utilizing preventive strategies [14,15]. The strategies for preventing depression are evaluated under behavior, cognition, competence, education and social support

categories [16]. Behavioral methods involve mainly changing unhealthy manners related to depression such as sedentary life style, giving up pleasant activities, irregular daily schedule to healthy life style traits like taking regular exercise, restarting hobbies, acquiring regular daily rhythm. Cognitive methods include improving one's biased depressive attributions to healthy, flexible and objective inferences regarding daily life events, self and world. Competence techniques are consisting of broad skill training, social resistance skills, and acquiring basic and pragmatic communication skills [17]. The significant results are reported as; competence method is more effective than other methods and combining them increase the effect, intervening at least eight sessions lasting 60-90 minutes for each structured session is optimal. Social skill training focuses on school aged children's communication abilities such as eye contact, expressing emotions, appropriate verbal responses and developing these skills in the therapeutic milieu by role playing, feedback exercises. After that, the therapist encourages the client to use the social skills in family, school and different environments by homework studies and evaluates client's progress in therapy sessions [17]. There are some studies supporting the improvement in children's or adolescent's academic achievement and depressive symptoms regarding the competence techniques [14]. The interventions for preventing depression are either effective on targeted or universal populations [16,18-20]. However, the most successful results have been achieved in two high-risk groups which are defined as high risk adolescents and pregnant women. Some former evidence has demonstrated the significant effect of cognitive-behavioral approaches on adolescent populations across different cultures [14]. The latter evidence mentioned the stable efficacy and feasibility of cognitive-behavioral therapy in the high-risk adolescent group [21-23]. On the other hand, the updated Cochrane review assessing the effect of cognitive behavioral therapy and interpersonal therapy indicated the methodological limitations of the trials despite the moderate significant prevention of depression in targeted children and adolescent population [24]. Physical exercise and omega-3 intake are also non-pharmacological prevention strategies for depression [8,25]. Managing depressive disorders requires using all intervention options which are mentioned above. Enhancement of the prevention strategies, habituation of healthy life style, gaining resiliency strategies are other important management strategies [26]. Epigenetic alterations are recently discovered mechanisms which explain gene-environment interaction. Adverse life events change DNA expression through methylation which yield vulnerability to depression related to critical genes such as BDNF expression. DNA methyltransferases and histone deacetylase inhibitors are modifying epigenetic alterations which lead to depression. Methyl donor homocysteine is another promising treatment option involving in epigenetic improvement. Developing new treatments such as epigenetic treatments and prevention strategies regarding depression is essential [27].

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