## ADOLESCENTS' HEALTH: ARE WE DOING ENOUGH IN MENTAL HEALTH?

Dear Sir.

I have read with interest the recently published editorial by Professor Low in your prestigious journal<sup>(1)</sup>. The article tackled important aspects that warrant attention in adolescents' health, namely: sexual and reproductive health, obesity, physical activity, and eating disorders. However, adolescents' mental health was overlooked, despite its importance. Hence, I would like to add here that adolescents' depression is highly associated with risky lifestyle, risky sexual behaviour, obesity, eating disorders, and physical inactivity. Although depression is increasing in its rate among adolescents, it is still relatively neglected in the Asian-Arab countries. Diagnosable clinical depression exists on a continuum with sub-threshold depressive symptoms and in fact, sub-threshold depressive symptoms in adolescence predicted future major depressive disorders in adult life.

Adolescents' depression and low self-esteem were proven to be associated with poor health practices and risky health behaviour in some studies<sup>(2,3)</sup>. Moreover, adolescents inclined towards risk-taking are more likely than others to be sexually active<sup>(4)</sup>. Therefore, the association between depression, risk behaviour and sexual behaviour has not only been investigated in descriptive research but also in prospective studies. DiClemente et al<sup>(5)</sup> found that psychological distress predicted a spectrum of sexual transmitted disease (STD)/human immunodeficiency virus (HIV)-associated sexual behaviour and high-risk attitudes. Accordingly, brief screening to detect depressive symptoms among adolescents can alert the clinician to the need to conduct a sexual health history, initiate STD/HIV-preventive counselling, and refer for comprehensive psychological assessment and appropriate treatment. Among adolescents receiving STD treatment, those with even moderate emotional distress may be at heightened risk for further unhealthy outcomes<sup>(5)</sup>.

Comorbidity of adolescents' depression with eating disorders is not uncommon. Body dissatisfaction, eating concerns, and loneliness were greater in the depressed groups in Franko et al's study among girls<sup>(6)</sup>. Adolescents' depression is also inversely associated with physical activity. The mechanism proposed by which physical activity might reduce the rate of depression is the increased levels of two types of brain neurotransmitters following exercise, namely: monoamines and endorphins<sup>(7)</sup> Other plausible mechanisms include improved fitness and increased self-esteem as a result of greater activity<sup>(8)</sup>. On the other hand, obesity as a proxy of physical inactivity has proven to be associated with depression in adolescence<sup>(9,10)</sup>.

To conclude, in our attempts to provide a comprehensive adolescents' healthcare delivery, we should not neglect adolescents' mental health. As Professor Low mentioned in her article, a multi-sectorial approach to promote a healthy population of adolescents is needed.

Yours sincerely,

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