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Adolescent Mental Health Promotion: Could it be Assisted by Considering the Func- tions of Depression in Young People?

Keywords: evolutionary psychopathology; mental health promotion; help-seeking

Introduction

Mental disorders are at their most prevalent during adolescence and early adulthood with incidence estimated at 19% (Sawyer *et al*, 2000), which accounts for 55% of the disease burden among those aged 15–24 years (Australian Department of Health and Ageing, 2004). This disease burden is higher than in any other age group (Scanlon, 2002), and has increased considerably in the last 30 years (Burns, 2001). Depression is predicted to be the second largest burden of disease and the leading cause of disability globally by 2020 (Murray & Lopez, 1996). This highlights

the importance of preventing depression and promoting the mental health of young people, which requires an understanding of the causes of depression among young people.

Given the overwhelming consensus that genes make some contribution to mental illnesses such as depression (Keller & Miller, 2006), the high rate in early adulthood is peculiar and at odds with most other major medical diseases, which peak at later ages (Nesse, 2006). The high prevalence rates in early adulthood, when selection pressures should be at their strongest, require consideration of the interplay of genetic and environmental factors related to this phenomenon (Nesse, 2006). In the last 20 years these questions have been explored through the field of evolutionary psychopathology. This literature has much to offer health promotion policy and framework development (Joyce *et al*, 2005), and

A B S T R A C T

Evolutionary psychopathology seeks causal explanations of mental illness consistent with theories derived from natural selection. Central to this approach is reasoning about and investigating why such high rates of mental illness occur in early adulthood, specifically during the reproductive years. Preventing mental ill-health is a fundamental aim of mental health promotion, so research programmes devoted to understanding the causality of mental illness should be of prime interest to mental health promotion practitioners and

policy makers. This particular understanding of mental health highlights some of the peculiar features of our current lifestyles and environments that facilitate mental ill-health. These are factors beyond the immediate control of most settings where mental health promotion is conducted for adolescents, which could explain why such programmes have not met with much success. Current programmes targeting prevention and stigma reduction around depression may benefit from considering evolutionary psychopathology.

the aim of this paper is to outline how aspects of evolutionary psychopathology may be useful for mental health promotion programmes aimed at adolescents.

Evolutionary psychopathology and the role of depression

In ascertaining causal explanations for depression, evolutionary psychopathology seeks to examine why natural selection has shaped predispositions to the emotions, cognitions and behaviours characteristic of a depressive illness. Nesse and Williams (1995) provide six explanations for why the process of natural selection has resulted in illness vulnerability. The mismatch between the environment in which genes were selected for and the current environment may be one factor in the high prevalence of many chronic diseases (Eaton *et al*, 2002b; Eaton, 2003; Cordain *et al*, 2005). The second reason for susceptibility relates to the ability of pathogens to evolve more quickly than responses to fight infections (Nesse & Williams, 1995). Trade-offs and compromises, such as the tension between larger brains, bipedalism and difficult births, and strength of bones versus speed of movement, are examples of compromise in design and incremental changes from existing limited designs (Nesse & Williams, 1995; Gilbert, 1998). The fifth reason is that natural selection cares little for health or happiness but is solely concerned with reproductive success (Nesse & Williams, 1995; Nesse, 2004). Lastly, mechanisms that may seem like disease may have some protective defence function, such as the use of coughing and vomiting to remove noxious substances (Nesse, 2004).

Depression and anxiety have been construed as defence mechanisms, evolved strategies to cope with certain situations success (Nesse & Williams, 1997). In this perspective, changes in neurotransmitter activity shape the appropriate behavioural response to the environment from a survival perspective (Gilbert, 1988). Thus in situations of loss, or anticipated loss, reduced serotonin activity, felt as depression or anxiety, may be the most suitable response, as it facilitates flight behaviour such as running away or submitting (Dixon, 1998).

Depression may also play an important role in motivating and organising social relations (Price *et al*, 1997). Humans are very sensitive to social relationships, and some of the agreed upon social problems that humans faced in the past related to choice of mates, investment in offspring, and knowing when to co-operate, challenge, or submit to other people (Gilbert, 1988). The ability to handle these social problems required a motivational system to register these things as important, strategies for solving such problems

and a feedback mechanism to register how successful or not they were with such problems (Nesse & Williams, 1997).

Mild depression may also have a functional role in eliciting help from other people (McGuire & Troisi, 1998). Studies have found that those receiving more support from others are more likely to be feeling depressed (Hays *et al*, 1998; Leathers *et al*, 1997). The increased levels of depression in those receiving help might represent other people responding to signs of depression (Leathers *et al*, 1997; Hays *et al*, 1998). In a study that restricted the sample to older people who all required assistance, it was found that bereaved older adults with high information, tangible and emotional support had less psychological distress than people scoring low on those support indices (Krause & Markides, 1990). Thus it could be that depression motivates others to help, and receiving such support has some small effect on reducing psychological distress.

Another possible explanation for depression is that it facilitates people in shifting goals and activities, and assists the process of overcoming a loss. The onset of depression may initiate a process of relinquishing goals/relationships that no longer are workable or achievable, and pursuing new activities (Nesse & Williams, 1997). Again, in this model the biochemical change is not the cause of distress, but the process that facilitates an appropriate emotional and behavioural response to the environmental stressor.

Assuming that depression has a number of important functions, the large percentage of people who experience depression at levels that are dysfunctional and impairing, even at times resulting in suicide, could be attributed to an environment that no longer suits this genotype (Wilson, 1998). Drastic changes to our social environments (Gilbert, 1998), diets (Cordain *et al*, 2005) and physical activity patterns (Eaton, 2003) are plausible reasons for high rates of depression. However, the mismatch between past and current environments cannot account for the genetic variability in susceptibility to mental illness (Keller & Miller, 2006). An individual difference model proposes that those diagnosed with clinical depression represent the extreme end of a continuum (Nettle, 2004), as the genetic contribution to depression represents a quantitative rather than qualitative difference across the population (Lesch, 2004). If there is a normal distribution of anxiety and depression, shaped by natural selection, then those at the extreme end would be more vulnerable to depressive problems (Nettle, 2004).

Keller and Miller (2006) have expanded on this argument, and contend that genetic predisposition to serious mental illness represents a polygenic mutation–selection balance where a large number of mutations, each with a small effect, combine to produce illness type traits that are

not selected out. Thus genes that contribute to a dysfunctional and fitness-reducing depressive phenotype would have produced the same fitness-reducing result in past environments. What is left unresolved by their theory is the prevalence of dysfunctional levels of depression that would have been expected in past environments, and they recommend anthropological research into prevalence rates of mental health problems in more traditional societies (Keller & Miller, 2006) – although the encroachment of the developing world has meant that such groups would be living in different environments from those of their ancestors (Gluckman & Hanson, 2006). Currently, we know that mental illness rates do vary considerably between countries, suggesting a role for environmental factors (Weissman *et al*, 1996). Resolving the minimum expected levels of mental disorder, as Keller and Miller (2006) express it, is important for mental health promotion in establishing minimum prevalence targets against which to monitor future programmes and policy initiatives.

Preventing depression and promoting mental health in adolescents: what can we expect to change?

Programmes addressing mental health promotion for young people have traditionally been conducted in schools, and focused predominantly on skill development such as thinking styles, problem solving and social skills (Spence & Shortt, 2007). Recognising that the evidence base for the effectiveness of these programmes is limited, it was recommended that future intervention research adopt more rigorous methodologies and consider social and familial environments skills (Spence & Shortt, 2007).

Few programmes have taken an ecological approach, but there was one school-based programme that used this framework, conducted in 25 intervention and 25 control secondary schools in Australia (Spence *et al*, 2005; Sawyer, 2007). As well using as a developmentally designed curriculum, the programme focused on the school environment and the changes required to support positive mental health (Spence *et al*, 2005). Despite the broader approach and the positive feedback of the schools engaged in the programme, there was no significant change over time on depressive scores and other related factors between groups (Sawyer, 2007).

It was concluded that such programmes need to be viewed as part of a larger movement that will take decades to produce meaningful change (Sawyer, 2007). The reduction in deaths from motor vehicle accidents was posited as an example of an issue where steady decline over two

decades was the result of continual improvements in the effectiveness of programmes (Sawyer, 2007). There may also be a difference in style of approach behind the success in vehicle fatalities compared with the current approach in mental health promotion for young people.

Health promotion in Australia has produced a number of successes, most noticeably in reducing smoking rates, decreasing road fatalities, decreasing rates of cardiovascular disease and reducing rates of skin cancer (Moodie, 2004). The strength lies in a multidisciplinary approach incorporating economic, organisational, policy and educational interventions (Howat *et al*, 2003). Educational interventions on their own have limited ability to produce behavioural change, but can support and augment other interventions (Howat *et al*, 2004). Thus while increasing education may not directly alter behaviour, it may improve attitudes and knowledge and lead to increased support for economic, organisational and policy interventions that would be more effective in driving change.

To achieve that change is going to require a much greater degree of public knowledge than is currently evident or delivered through school-based programmes. Focus group analyses, along with Commonwealth reports, reveal that notions of the vastly different dietary environments and physical activity patterns (Eaton *et al*, 2002a) have not entered public consciousness or mental health promotion planning (Commonwealth Department of Health and Aged Care, 2000b; Commonwealth Department of Health and Aged Care, 2000a). Again, while people are aware of the importance of social connections, the extent of the difference between past and current environments in how these social needs are met may not be realised. Changing these factors may require economic, organisational and policy interventions but, as Donovan and colleagues (2006) illustrate, the first task is to shift perceptions, and a broad understanding of changes over time may assist in this process.

The recommended approach, of considering the broader social environmental, is a positive direction for mental health promotion among young people. Evolutionary psychopathology provides a framework for considering environments in which depression can play a useful function, and for environmental targets for prevention of clinical levels of depression. Such an approach focuses attention on the vastly different social, dietary and physical environments which are placing all people at increased risk of mental health problems, and supports recent initiatives to focus public education on how to promote positive mental health (Donovan *et al*, 2006). This may have a role in shaping public opinion, which can then lead to the systematic change required for measurable shifts in depression prevalence.

Consideration of the broader changes required to decrease depression prevalence, and of the history of health promotion success requiring system-level change, suggests that even an ecological based school programme would on its own have difficulty in shifting depression rates among young people. Rather than being judged on their ability to reduce depression rates, as indicated by Sawyer (2007), process measures such as school engagement and collaborative partnerships are worthy objective targets for these programmes. The content of school mental health promotion programmes could incorporate elements on the function of depression and the broad changes that have increased the prevalence and risk of mental health problems and disorders. Given the public reach of schools, this might start to develop a more educated public that demands the systematic change required to have a positive impact on the prevalence of mental health disorders.

Using components of evolutionary psychopathology in promoting help-seeking behaviour

Depression and other mental illnesses are recognised as significant risk factors for suicide. Several international studies on adolescent suicide have identified depression as a common precursor to attempting or completing suicide (Adams *et al*, 1994; Burns & Patton, 2000). Suicidal behaviour has a considerable impact on the individual and society in terms of acute physical and mental health problems, long-term disability and death, and quality of life (Kachur *et al*, 1995), causing growing concern about the impact of increasing rates of adolescent mental health problems, specifically the rates of suicide and self-harm. Education on evolutionary psychopathology could perhaps be used not only to assist prevention efforts, but also to mitigate its most drastic effect by encouraging help-seeking behaviour. Education on the possible function of mild depression could encourage young people to respond to some of the physical cues of depressed states, and reframe the experience as a prompt to receive support from friends, family members and health professionals.

There is consensus in the prevention and intervention literature that seeking and engaging in appropriate help can protect against risk factors of suicidal behaviour (Resnick *et al*, 1997; Greenberg *et al*, 2001). Appropriate help seeking is considered an important protective factor for reducing and preventing development of suicidal ideation and behaviour (Kalafat, 1997). Help seeking is a universal protective factor that can diminish the effects of exposure to risk factors in development of adolescent mental health problems (Carlton & Deane, 2000). There is also evidence

that help seeking may reduce the level of suicidal behaviour. Greenberg *et al* (2001) established that appropriate help seeking can dissipate the early stages of suicidal risk before it progresses into ideation or suicidal behaviour.

Help seeking can assist in reduction of psychological symptoms, yet few adolescents who experience distress, particularly suicidal ideation, seek appropriate help (Carlton & Deane, 2000). Reluctance to seek professional help is a significant risk factor for suicide and self-harm (Weishaar, 1996). When young people experience suicidal thoughts, their intention to seek help diminishes along with their actual help-seeking behaviours (Carlton & Deane, 2000). These findings emphasise the need to intensify efforts to encourage young people to seek help early in the course of their mental health problems (Deane *et al*, 2001).

The research on suicide and help seeking among young people clearly accords with the recommendations of Carr-Gregg (2003), that students need to be provided with the social and emotional skills to equip them to deal with life problems rather than be provided with specific information on suicide. Given the need to encourage students to seek assistance before the problem escalates, instruction on the utility of negative emotions may have a place in help-seeking programmes. While Keller and Miller (2006) caution, on moral rather than scientific grounds, against pursuing a line of argument that considers the function of mental illness, teaching about negative emotions as helpful motivations to seek help may have some use. Such awareness may better frame an adolescent's understanding of depression and attitudes to seeking assistance.

Stigma is one of the barriers to seeking help (Jorm, 2000), and presenting an evolutionary account that seeks an understanding of why the experience of depression is so common may assist in these endeavours. It could make young people aware that early signs of depression are part of a motivational system designed to seek and elicit help from other people. Nesse (1997, p81) describes how an adaptive function of panic can assist people to understand anxiety disorder and allays fears that they are 'crazy, weak, medically ill, or a combination of both'. While this adaptation explanation might not reflect all cases, an understanding of it may promote 'strong therapeutic alliances' Nesse (1997, p81) in the clinic, which may then be worth testing in a public sphere to encourage early help-seeking behaviour. This may better align public and professional understandings of how to assist those with depression, which may relate to better treatment outcomes (Jorm, 2000).

An evolutionary explanation can be used to support current attempts to present general practitioners (GPs) as people who are accessible to adolescents. Young people

prefer informal help from friends and family to seeking medical or psychological support when experiencing psychological distress (Deane *et al*, 2001). This supports Allen and Badcock's (2003) social risk hypothesis, whereby people seek out safe and secure relationships when depressed. There is a programme that aims to improve young people's access to the help that GPs and other health services provide. The *Building Bridges* programme achieves this by having GPs visit schools and appear as friendly, non-threatening, non-judgemental, caring and understanding (Wilson *et al*, 2005). Young people seek help on the basis of relationships, so *Building Bridges* provides the opportunity for GPs to initiate relationships with young people (Wilson *et al*, 2005).

Summary and conclusions

This paper highlights aspects of evolutionary psychopathology and some key concepts that could be used to encourage prevention efforts, reduce the stigma associated with mental illnesses such as depression and increase help-seeking behaviour among young people. Central to this process is presentation of evolutionary psychopathology concepts to young people, so as to reframe their understanding of depression. Using processes common in health promotion, such as taking a population focus, re-orienting health services and strengthening skills found in the community, it is plausible that the evolutionary psychopathology perspective could reduce stigma, increase support from the general environment, improve help-seeking behaviour and reduce suicide. The next step in this process would be to develop a proof of concept intervention. At the very least, those interested in mental health promotion would be well advised to follow the debates and empirical research from evolutionary psychopathology, as it attempts to elucidate better the causal pathways to mental ill-health. This may well offer unique insights into how we can reduce the current trend of rising rates of depressive disorders.

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