



Protective factors against depression during the transition from adolescence to adulthood: Findings from a national Canadian cohort



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ABSTRACT

Objective. This study sought to identify factors protective against the onset or recurrence of depression in early adulthood, and to describe their interactions with stressors during this transitional period.

Methods. 1137 members of Canada's National Population Health Survey were followed from ages 12 to 17 in 1994/95 and contacted every two years until 2008/09. Protective factors measured at age 16/17 included social support, physical activity, mastery, self-esteem, and education level. General linear mixed models were used to examine the relationship between the protective factors and five assessments of depression, including interactions between protective factors and four types of stress: stressful life events, and work, financial, and personal stress.

Results. High mastery in adolescence had a significant protective effect against depression in early adulthood. Participants with high social support in adolescence were significantly less likely to become depressed after experiencing work or financial stress, compared to those with low social support. Those who were physically active in adolescence were less likely to become depressed after experiencing work stress, and higher overall education level reduced depression risk following personal stress or major life events.

Conclusion. Social support and physical activity may be ideal targets for school-based depression interventions during a potentially stressful transitional period.

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Introduction

Depression is the leading cause of disability in the world (Ustun et al., 2004) and affects up to 20% of adolescents before the age of 18 (Kessler and Walters, 1998). Several protective factors have been proposed in relation to the onset of adolescent depression, including increased self-esteem (Pelkonen et al., 2003), improved academic achievement (Pelkonen et al., 2003), and a strong social support system (Cornwell, 2003; Galambos et al., 2004). Research suggests that adolescent depression is negatively correlated with self esteem (Avison and Mcalpine, 1992), social support (Avison and Mcalpine, 1992; Denny et al., 2004), active coping (Muris et al., 2001), self-efficacy (Muris et al., 2001) and mastery (defined as a feeling that life circumstances are within the individual's control) (Avison and Mcalpine, 1992; Shortt and Spence,

2006). However, it is unclear whether these factors affect risk into early adulthood.

Protective factors may influence these processes by interrupting the pathways through which risk factors operate (Coie et al., 1993); diminishing the effect of specific stressors and risk factors (Shortt and Spence, 2006); or, by direct effects on psychological adjustment (Shortt and Spence, 2006). Positive Youth Development theory has demonstrated that it is not solely a lack of risk factors that influences adolescent development, but rather suggests that in order to have long-term effects on levels of depression, individuals must be exposed to a health-promoting environment and possess a number of positive factors (Shortt and Spence, 2006). Further research is needed to clarify how protective factors work to increase the probability of healthy outcomes and decrease the probability of unhealthy outcomes (Shortt and Spence, 2006). This study aimed to determine the role of several protective factors present during adolescence in the onset or continuation of depressive symptoms into adulthood and how they are moderated by the presence of common stressors, with a particular focus on potentially modifiable factors.

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Methods

Data source and study sample

The National Population Health Survey (NPHS) is a nationwide Canadian study which started in 1994/95 and collected information on health and health-related data every two years on individuals aged 12–85 years. This study focused on all NPHS members aged 12–17 at study inception in 1994/95 (survey cycle 1), providing a sample size of 1137. The baseline for these individuals was the cycle at which they turned age 16–17 years: 1994/95 (survey cycle 1) for age 16–17, 1996/97 (survey cycle 2) for age 14–15 and 1998/99 (survey cycle 3) for age 12–13. These individuals entered early adulthood (age 18–23) by 2000/01 (survey cycle 4).

Outcome: depression status

Major depression in the NPHS is captured by the Composite International Diagnostic Interview-Short Form (CIDI-SF). The CIDI-SF is a 10-minute interview with 93% classification accuracy for a major depressive episode compared with the full CIDI (Kessler et al., 1998), which assesses DSM-IV criteria for a major depressive episode (American Psychiatric Association, 1994). The outcome variable of the study was depression status in adulthood, measured at five time points: 2000/01, 2002/03, 2004/05, 2006/07 and 2008/09.

Adolescent protective factors

Protective factors examined included social support, sense of mastery, physical activity, self-esteem, and education. All protective factors were measured when the individual was age 16–17 if available (see Table 1). Mastery was only measured in 1994/95 and social support was only measured in 1994/95 and 1996/97 (ages 12–13 or 14–15 for some study participants). Mastery was assessed using a scale of 0–28 (Pearlin and Schooler, 1978). Social support was captured in the NPHS through a variety of questions investigating the type of relationships individuals have in their life (Statistics Canada, 2009) and measured on a 0–4 scale (Statistics Canada, 2009). This was dichotomized into 'high' (score of 4) and 'low' (score of less than 4) categories. Physical activity was operationalized as a dichotomous variable comparing 'physically active' or 'moderately active' to 'physically inactive', based on an energy index (Statistics Canada, 2009). Self-esteem was captured on a scale of 0–24, with high scores indicating lower self-esteem (Rosenberg, 1965). High self-esteem was dichotomized using a median split. Because highest education level varied over time, the highest education level reported up to 2008/09 was used and grouped into 4 categories: less than secondary school graduation, secondary

school graduation, some post-secondary education, and post-secondary graduation.

Adult stressors

Personal stress

Personal stress was assessed based on five items assessing whether an individual feels: 1) that they are taking on too many things at once, 2) there is too much pressure on them to be like other people, 3) too much is expected of them by others, 4) that their work around the home is not appreciated, and 5) that people are too critical of what they do (Statistics Canada, 2009). Personal stress was dichotomized at the 75th percentile, representing 'high' and 'low' personal stress. This was captured during adulthood in 2000/2001 (survey cycle 4), 2002/2003 (survey cycle 5), 2004/2005 (survey cycle 6), 2006/2007 (survey cycle 7) and 2008/2009 (survey cycle 8).

Recent life events

The recent life events score in the NPHS evaluated whether an individual or their immediate family had experienced any of the following in the last 12 months: 1) physical violence, 2) unwanted pregnancy, 3) abortion, 4) financial crisis, 5) failing school, 6) pay cut, 7) job change, 8) receiving welfare, 9) increased arguments with partner, and 10) a child moving back home (Statistics Canada, 2009). This variable was captured in 2000/2001 (survey cycle 4) using a composite score ranging from 0 to 10 (Statistics Canada, 2009) and was dichotomized to compare those who had any recent life events to those who had not.

Work stress

Work stress was derived from 12 items, including whether the individual: 1) must learn new things, 2) requires a high level of skill, 3) has freedom to decide, 4) performs repetitive tasks, 5) has a hectic job, 6) is free from conflicting demands, 7) has good job security, 8) requires a lot of physical effort, 9) has own job input, 10) experiences hostility or conflict with others, 11) has a helpful supervisor, and 12) has helpful co-workers (Statistics Canada, 2009). Work stress was captured using a scale of 0–48 (a higher index indicates higher work stress) (Statistics Canada, 2009). This was operationalized as a dichotomous variable using the 80th percentile as the cut-off point (≥ 22 vs. < 22).

Financial stress

Financial stress was assessed by asking participants whether they had enough money to buy the things they need (Statistics Canada, 2007). An individual was considered to have financial stress if he/she answered no to this question.

Table 1

Characteristics of 1137 study participants at baseline (1994–1999) and through five outcome assessment periods from 2000 to 2009 (%).

Variable	Survey cycle					
	1–3	4	5	6	7	8
	Age 16/17 n = 1137	Age 18–23 n = 905	Age 20–25 n = 837	Age 22–27 n = 728	Age 24–29 n = 695	Age 26–31 n = 583
Female	50.4	–	–	–	–	–
SES—low income	15.9	–	–	–	–	–
High social support	92.4	–	–	–	–	–
Mastery (mean, SE)	19.14 (0.16)	–	–	–	–	–
Physical activity—active/moderate	63.3	–	–	–	–	–
High self-esteem (>19 median)	43.6	–	–	–	–	–
Education—no secondary school graduation	–	–	–	–	–	15.7
Education—secondary school graduation	–	–	–	–	–	10.6
Education—some post-secondary	–	–	–	–	–	21.3
Education—post-secondary graduation	–	–	–	–	–	52.3
Childhood traumatic events—0	51.9	–	–	–	–	–
Childhood traumatic events—1	25.9	–	–	–	–	–
Childhood traumatic events—2+	22.1	–	–	–	–	–
Number of weeks depressed in preceding year (mean)	0.81 (0.14)	–	–	–	–	–
Distress scale (mean, SE)	3.79 (0.13)	–	–	–	–	–
Depression	6.9	7.5	6.6	8.5	8.7	8.3
High personal stress	–	30.0	31.2	26.9	29.2	27.8
High work stress	–	38.7	33.3	30.1	33.0	20.2
Financial stress	–	36.8	31.8	30.3	25.5	24.1
Recent stressful life event—1+	–	38.1	–	–	–	–

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