

Psychological well-being and scholastic achievement among university students in a Canadian Prairie City

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Abstract This article reports the findings from a questionnaire survey of university students' scholastic achievement and psychological well-being in a Canadian prairie city. Multiple ordinary least-squares regression analyses revealed that sex, educational aspirations, hours spent on studying, father's education, physical health, financial stress, and stress due to balancing work, school, and social life were found to be significantly associated with academic performance. More specifically, female students and those who reported higher educational aspirations, indicated better physical health, experienced less financial stress or stress due to finance or to balancing work, school, and social life, spent more time on studying, and those whose father had a higher level of education were found to perform better academically. On the other hand, income, physical health, relationship with significant other, relationship with family, relationships with friends, self image, and academic stress were found to be significantly related to psychological well-being. Put succinctly, respondents who had a higher family income, reported better physical health, expressed a higher degree of satisfaction with their relationships with family, friends, and significant other, indicated a more positive self-image, and experienced less academic stress were found to exhibit a significantly higher level of psychological well-being.

Keywords University students · Psychological well-being · Scholastic achievement

1 Introduction

Education provides individuals with the tools and knowledge they need to understand and participate in today's highly competitive world. Pursuing studies at an institution of higher learning is now a major undertaking for many young Canadians. The remarkable growth in the number of Canadians with a post-secondary education in the 1990s, according to

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Statistics Canada (2003), may be attributable to three major factors: (1) the preference of the labour market for skilled workers to compete in a global and technologically advanced economy, (2) the immigration policies aimed at attracting highly skilled immigrants, and (3) the recession of the early 1990s that was especially difficult for Canadian youth. In fact, the possession of post-secondary credentials has often been conceived as one of the crucial determinants of later-life economic success and status attainment (Anisef et al. 1992; Hunter and Leiper 1993). The 2001 Canadian census provided strong evidence for the association between education and earnings. Particularly, more than 60% of Canadians in the lowest earnings category did not have more than a high school education in 2000, whereas more than 60% of those in the top category possessed a university degree (Statistics Canada 2003). In 2003–2004, Canadian universities enrolled a total of 990,400 full-time and part-time undergraduate students (Statistics Canada 2005a). Drawing on nationwide surveys of young people in Canada, Bibby (2001) points out that more than 1 in 6 of the teenagers today expect to graduate from university and another 1 in 10 anticipate at least attending university.

Without doubt, the pursuit of a university education entails not merely a strong commitment of time and effort, but also the investment of an enormous amount of financial resources.¹ University life adds more stress and requires more independent decision making by young people. Therefore, students' scholastic achievement as an important educational outcome (Bean and Bradley 1986; Kaufman and Creamer 1991; Pike 1991; Terenzini et al. 1982) and their psychological well-being as a crucial determinant of health status certainly deserve serious research attention.

A review of the literature demonstrates that some of the major determinants of psychological well-being among post-secondary students include gender (Cook et al. 2006), family cohesion (Dyson-Washington 2006; Heris and Revilla 1994; Kazarian 2005), personality traits (Chang 2006), academic workload (Monk and Mahmood 1999), physical exercise (Lee and Yuen-Loke 2005; Maltby and Day 2001; Markland and Ingledew 1997), achievement motivation (Elliot et al. 1997; Tomiki 2000), social problem solving orientation (D'Zurilla and Sheedy 1991; McCabe et al. 1999; Miller 2001), socio-economic status (Tong and Song 2004), and social support (Edwards et al. 2001; Gencoz and Ozlale 2004; Jay and D'Augelli 1991; Morris 1997; Rodriguez et al. 2004; Solberg and Villarreal 1997).

As regards outcomes, gender (Baker 2004; Bridgeman and Wendler 1991; Keller et al. 1993; Schram 1996), social support (Cutrona et al. 1994; Orpen 1996; Walker and Satterwhite 2002), high school grades (DeBerard et al. 2004; Zwick and Sklar 2005), personality traits (Musgrave-Marquart et al. 1997; Ridgell and Lounsbury 2004; Tross et al. 2000; Wolfe and Johnson 1995), health status (Mattison 2006; Trockel et al. 2000), satisfaction with academic life (Chambel and Curren 2005; Graunke and Woosley 2005), hours spent on studying (Jackson et al. 2003; Nonis and Hudson 2006), approach to learning (Wilding and Andrews 2006), achievement motivation (Morris et al. 2003; Steinberg 2006), employment status (Applegate and Daly 2006; Hunt et al. 2004), and socio-economic status (Hansen and Mastekaasa 2006; Ross et al. 2006) have been identified as significant predictors of students' academic performance. In light of the fact that post-secondary students face a myriad of stressors and challenges in the academic environment, this article attempts to disentangle the factors affecting the scholastic achievement and psychological well-being among university students in Regina.

¹ According to Statistics Canada (2005b), undergraduate university students will pay an average of \$4,214 in tuition fees for the 2005–2006 academic year, up from \$4,140 the year before. This is almost triple the average of \$1,464 in 1990–1991. In fact, average tuition fees between 1990–1991 and 2003–2004 increased at a faster pace than inflation. During this period, tuition rose at an average annual rate of 8%. This was four times the average rate of inflation of 1.9% as measured by the Consumer Price Index.

2 Methodology

The data for this analysis were collected as part of a larger study that was undertaken to explore the lifestyle and health-risk behaviour among university students in Regina (Chow 2006). Using a convenience sample,² a total of 373 undergraduate students at the University of Regina participated in a self-administered questionnaire survey. The sample comprised 109 (29.4%) male and 262 (70.67%) female students with a mean age of 21.6 years ($SD = 4.73$). Caucasian students ($n = 330, 88.9%$) and Canadian citizens ($n = 359, 96.8%$) constituted an overwhelming majority of the sample. A sizable proportion of the respondents were registered with the Faculties of Arts ($n = 190, 51.2%$), Administration ($n = 35, 9.4%$), and Science ($n = 33, 8.9%$). With respect to marital status, most were single or never married ($n = 322, 86.6%$). As well, slightly more than half of the sample ($n = 181, 52.8%$) reported an annual family income of over \$60,000.

3 Major findings

3.1 Measures of scholastic achievement and psychological well-being

3.1.1 Scholastic achievement

The scholastic achievement of the respondents was based on their reported grade point average. About half of the sample ($n = 186, 50.7%$) obtained an average of 70–79%. Nearly one-fifth received a GPA of 80% or higher ($n = 72, 19.7%$). Slightly more than a quarter ($n = 96, 26.2%$) reported a GPA of 60–69%. Only very few students had a GPA of 50–59% ($n = 13, 3.5%$).

3.1.2 Psychological well-being

Respondents reported their frequency of feeling sad, lonely, stressed, like crying, depressed, hopeless, and suicidal in the past 30 days on a 5-point scale (1 = never; 2 = very infrequently; 3 = infrequently; 4 = frequently; 5 = very frequently). Table 1 revealed that 76.4% ($n = 285$) felt stressed, 30.7% ($n = 113$) felt like crying, 26.7% ($n = 99$) felt sad, 24.5% ($n = 91$) felt lonely, 23.5% ($n = 87$) felt depressed, 12.9% ($n = 48$) felt hopeless, and 2.1% ($n = 8$) felt suicidal in the previous 30 days. This scale was found to be highly reliable, with an alpha reliability coefficient of .85.

3.2 Determinants of scholastic achievement and psychological well-being

Multiple ordinary-least squares (OLS) regression analysis was used to disentangle the major determinants of respondents' scholastic achievement and psychological well-being.

² This study was based on a sample of 373 university students attending the University of Regina during the academic year 2002–2003. With the co-operation of the faculty members in the Department of Sociology and Social Studies, questionnaires were distributed to various sociology and social studies classes. Students were informed both in writing and verbally that participation was voluntary and that return of their completed survey would serve as their participation consent. The survey took approximately 15–20 min to complete and no incentive was provided. Although the respondents were recruited from sociology and social studies classes, it should be emphasized that these 373 students were officially registered with quite a number of faculties, schools, and institute, including Administration, Arts, Education, Fine Arts, Human Justice, Journalism, Kinesiology, Science, Social Work, and Engineering.

Table 1 Psychological well-being

	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)	<i>M</i>	<i>SD</i>
(a) Sad	20 (5.4)	104 (28.1)	147 (39.7)	73 (19.7)	26 (7.0)	2.95	.99
(b) Lonely	52 (14.0)	117 (31.5)	112 (30.1)	71 (19.1)	20 (5.4)	2.70	1.09
(c) Stressed	4 (1.1)	19 (5.1)	65 (17.4)	163 (43.7)	122 (32.7)	4.02	.90
(d) Like crying	81 (22.0)	81 (22.0)	94 (25.5)	81 (22.0)	32 (8.7)	2.73	1.26
(e) Depressed	90 (24.3)	104 (28.1)	89 (24.1)	59 (15.9)	28 (7.6)	2.54	1.23
(f) Hopeless	177 (47.6)	96 (25.8)	51 (13.7)	32 (8.6)	16 (4.3)	1.96	1.16
(g) Suicidal	337 (90.6)	18 (4.8)	9 (2.4)	6 (1.6)	2 (0.5)	1.17	.59

3.2.1 Scholastic achievement

Twelve predictor variables,³ including sex, employment status, religion, socio-economic status, father's education, frequency of experiencing stress from balancing work, school, and social life, financial stress, physical health, educational aspirations, class attendance, and number of hours spent on studying, were included in the OLS regression model for scholastic achievement. The overall OLS regression model, as shown in Table 2, was found to be significant ($F = 7.949$, $p < .001$) and explained 17.0% of the variation in academic performance. Sex ($\beta = -.108$, $p < .05$), educational aspirations ($\beta = .264$, $p < .001$), hours spent on studying ($\beta = .135$, $p < .01$), father's education ($\beta = .154$, $p < .001$), physical health ($\beta = .097$, $p < .05$), financial stress ($\beta = -.101$, $p < .05$), stress due to balancing work, school, and social life ($\beta = -.108$, $p < .05$) were found to be significantly associated with academic performance. More specifically, female students and those who reported higher educational aspirations, indicated better physical health, experienced less financial stress or stress due to finance or to balancing work, school, and social life, spent more time on studying, and those whose fathers had a higher level of education were found to perform better academically.

3.2.2 Psychological well-being

Twelve predictor variables,⁴ including sex, employment status, frequency of experiencing stress due to course workload, finance, and scholarly performance, self-image, physical

³ Twelve predictor variables were included in the OLS regression model for scholastic achievement. Sex (1 = male, 0 = female), employment status (1 = employed part-time or full-time; 0 = not employed), and religion (1 = Protestant or Catholic; 0 = other) were measured as dichotomous variables. Socio-economic status ($M = 3.34$, $SD = .876$) was a continuous variable based on a 5-point scale ranging from 1 (low) to 5 (high). Father's education ($M = 3.84$, $SD = 1.30$) was measured on a 6-point scale (1=no formal education to 6 = graduate school). Respondents' frequency of experiencing stress from balancing work, school, and social life ($M = 3.80$, $SD = 1.175$) and financial stress ($M = 3.39$, $SD = 1.38$) were measured on a 5-point scale (1 = very infrequently to 5 = very frequently). Physical health ($M = 3.57$, $SD = 1.01$) was measured on a 5-point scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Educational aspirations ($M = 3.42$, $SD = .84$) was a continuous variable ranging from 1 (no degree or diploma or certificate) to 5 (doctoral degree). Class attendance ($M = 3.33$, $SD = 1.33$) and number of hours spent on studying ($M = 12.95$, $SD = 9.73$) were continuous variables.

⁴ Twelve predictor variables were included in the OLS regression model for psychological well-being. Sex (1=male, 0=female), employment status (1=employed part-time or full-time; 0=not employed) were measured as dichotomous variables. Respondents' frequency of experiencing stress due to course workload ($M = 4.23$, $SD = .91$), finance ($M = 3.39$, $SD = 1.38$), and scholarly performance ($M = 3.82$, $SD = 1.083$) were

Table 2 Unstandardized and standardized regression coefficients for effects of socio-demographic and background variables on scholastic achievement

	<i>b</i>	β
1. Sex	-.187	-.108*
2. Religion	-.058	-.035
3. Employment status	-.045	-.027
4. Physical health	.099	.097*
5. Stress from balancing work, school, and social life	-.072	-.108*
6. Financial stress	-.058	-.101*
7. Educational aspirations	.248	.264***
8. Class attendance	.048	.080
9. Hours spent on studying	.011	.135**
10. Father's education	.095	.154**
11. Income	-.087	-.055
(Constant)		2.763
<i>F</i>		7.949***
<i>R</i> ²		.195
Adjusted <i>R</i> ²		.170
<i>N</i>		373

* $p < .05$; ** $p < .01$; *** $p < .001$

health, relationship with significant other, relationship with family, relationships with friends, satisfaction with academic performance, and income were included in the OLS regression model for psychological well-being. The overall OLS regression model, as shown in Table 3, was found to be significant ($F = 11.807$, $p < .001$) and explained 25.8% of the variation in psychological well-being. Income ($\beta = .095$, $p < .05$), physical health ($\beta = .128$, $p < .005$), relationship with significant other ($\beta = .114$, $p < .05$), relationship with family ($\beta = .10$, $p < .005$), relationships with friends ($\beta = .130$, $p < .05$), self image ($\beta = .202$, $p < .001$), and academic stress ($\beta = -.111$, $p < .05$) were found to be significantly related to psychological well-being. Put succinctly, respondents who had a higher family income, reported better physical health, expressed a higher degree of satisfaction with their relationships with family, friends, and significant other, indicated a more positive self-image, and experienced less academic stress were found to exhibit a significantly higher level of psychological well-being.

4 Discussion and conclusion

This analysis reveals that various socio-demographic and background variables contributed to the explanation of scholastic achievement and psychological well-being among university students.

Footnote 4 continued

measured on a 5-point scale ranging from 1 (very infrequently) to 5 (very frequently). Self image ($M = 3.52$, $SD = 1.00$), physical health ($M = 3.57$, $SD = 1.01$), relationship with significant other ($M = 3.51$, $SD = 1.01$), relationship with family ($M = 4.02$, $SD = .98$), relationships with friends ($M = 4.01$, $SD = .89$), and satisfaction with academic performance ($M = 3.76$, $SD = .80$) were continuous variables based on a 5-point scale (1 = strongly disagree to 5 = strongly agree). Income ($M = 3.62$, $SD = 1.63$) was a continuous variable (1 = \$20,000 or under, 2 = \$20,001–40,000, 3 = \$40,001–60,000, 4 = 60,001–80,000, 5 = 80,001–100,000, 6 = \$100,001 or over).

Table 3 Unstandardized and standardized regression coefficients for effects of socio-demographic and background variables on psychological well-being

	<i>b</i>	β
1. Sex	1.993	.197
2. Employment status	.606	.062
3. Course workload stress	-.117	-.023
4. Financial stress	-.168	-.050
5. Scholarly performance stress	-.472	-.111*
6. Income	.280	.095*
7. Physical health	.585	.128*
8. Relationship with significant other	.524	.114*
9. Relationship with family	.472	.100*
10. Relationship with friends	.677	.130*
11. Academic performance	-.209	-.036
12. Self image	.930	.202***
(Constant)	6.915	
<i>F</i>	11.807***	
<i>R</i> ²	.282	
Adjusted <i>R</i> ²	.258	
<i>N</i>	373	

* $p < .05$; ** $p < .01$; *** $p < .001$

As regards scholastic achievement, the finding that female students outperformed their male counterparts is not surprising as previous studies have demonstrated that female students were generally more motivated toward academic activities and that they were more willing to seek help and support from academic resource centres (Baker 2004; Chee et al. 2005; DeBerard et al. 2004; Deckro and Woudenberg 1997; Everett and Robins 1991; McNabb et al. 2002; Win and Miller 2005). As well, this analysis provides further support for the positive association between educational aspirations and academic performance (Chow 2003; Kaufman and Creamer 1991). Congruent with previous research (McFadden and Dart 1992; Paden and Stell 1997), students who put more time into studying obtained a higher GPA. In fact, there is empirical evidence that study time significantly interacts with ability to influence academic performance (Nonis and Hudson 2006).

Father's education, as a measure of human capital that constitutes the potential for a cognitive environment conducive to learning, was found to be another variable predictive of students' academic performance. This finding may reflect the importance the fathers place on educational achievement and their specific encouragement of academic pursuits, ascertaining the enduring influence of parents' education on their offspring's educational attainment (Mullen et al. 2003).

In addition, this study lends credence to the vitality of students' physical health on academic performance. This finding is consistent with previous research which has underscored the significance of various health-related variables, such as exercise, sleep habits, and nutritional habits on students' academic performance (Trockel et al. 2000). Finally, as the adverse effects of financial difficulties (Andrews and Wilding, 2004; Hansen and Mastekaasa, 2006; Smith and Naylor, 2001; Ross et al., 2006) and perceived stress

(Haines et al. 1996; Hilary and Brent 1994) on students' academic performance have been well-documented, it is unsurprising that respondents who experienced less financial stress or stress due to balancing work, school, and social life were found to perform better academically.

With respect to psychological well-being, the present investigation has established a positive relationship between family income and this outcome variable. This is understandable in light of the high costs associated with university education. Physical health has also emerged as a significant predictor of students' psychological well-being. Notably, research has consistently shown that university students who were physically more active reported more positive mood profiles in the forms of lower levels of tension and fatigue and higher levels of vigour (Bray and Born 2004; Bray and Kwan 2006; Dusselier et al. 2005; Sugiura et al. 2005).

Furthermore, relationships, as an indirect measure of support, appear to be of particular importance to these university students. Those who reported more positive relationships with family, significant other, and friends exhibited a higher level of psychological well-being. Previous studies have demonstrated that support and well-being are positively related and that support can buffer the effects of negative events and stress (Cotton et al. 2002; Gencoz and Ozlale 2004; Jay and D'Augelli 1991; Nezlek and Allen 2006). There is also empirical evidence to support that it is often the individual's perceived satisfaction, rather than the absolute number of emotional and instrumental supports available, that play a pivotal role in determining psychological outcomes (Home 1997, 1998). As well, low quality of emotional support was found to be associated with poorer psychological functioning among female university students (Carney-Crompton and Tan 2002).

Self-image emerges as another significant determinant of psychological well-being. This finding is consistent with results from earlier research (Chow 2002; Harter 1999; Huebner and Alderman 1993; Lackovic-Grgin et al. 1996; Leung and Leung 1992; Neto 2001; Wilson and Peterson 1988) which indicate that individuals who accept themselves in a positive manner and believe that a similar viewpoint is shared by others will develop a more positive evaluation of their overall life conditions and general well-being. Finally, concerning academic stress, it is understood that university students are pre-occupied with their studies, which take up much of their time and energy. This survey corroborates findings from earlier studies the adverse effect of stress on psychological well-being (Cotton et al. 2002; Lepore et al. 1997).

In summary, it is without doubt that the university environment should be supportive and capable of nurturing optimal learning and performance in students. The present investigation has made a contribution to the literature on students' well-being and performance. Specifically, the major factors affecting the scholastic achievement and psychological well-being among university students have been disentangled. Through greater understanding of the determinants of both outcome variables, educators, counsellors, and community health professionals will be better equipped to design intervention strategies which improve students' learning outcomes and enhance their quality of life. As the present study was conducted on a limited group of undergraduate students at a mid-sized university in a Canadian prairie city, caution must be exercised in interpreting the results. Additional research is needed with university student populations in other geographical locations. As well, the issue of coping resource availability upon well-being needs to be addressed.

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