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Environmental correlates of wellbeing among final-year high school students

Abstract

In Australia, there is widespread community concern about the wellbeing of adolescents, particularly at the important time of approaching the transition from school to post-school life. However, few studies have focused on the wellbeing of Australian Year 12 students. This paper reports on a study investigating wellbeing among 377 Year 12 students in three public high schools in eastern Australia. The study explored wellbeing in terms of environmental and personality variables and investigated whether the school setting provided environmental elements that enhance adolescent wellbeing in ways similar to those provided by employment for adult wellbeing. The results indicated that school contributed significantly to adolescent wellbeing by providing time structure, access to the wider society, and social contact. Personality variables were found to be significant predictors of life satisfaction and affective wellbeing. The findings have implications for the enhancement of environmental features that may optimise the wellbeing of adolescents at school.

The construct of subjective or psychological wellbeing has received increasing attention in recent years. Going beyond the mere absence of psychopathology, the concept of wellbeing incorporates positive factors and involves optimal psychological functioning and experience. In the psychological literature, subjective wellbeing (SWB) is regarded as a measurement of happiness and satisfaction that may be applied to certain domains or life concerns, such as one's environment or family, or may involve a focus on satisfaction with life in general, namely, global wellbeing (Diener, 1984). SWB refers to an individual's evaluation of his or her own life and is considered to be comprised of long-term affective elements, particularly the presence of positive affect and the absence of negative affect, and a cognitive component, life satisfaction (Diener, Suh, Lucas, & Smith, 1999). Distinct domains such as feelings of mastery, autonomy, personal growth, self-acceptance, life purpose, and positive relations, proposed by Ryff and colleagues in their multidimensional model of psychological wellbeing (Ryff, 1995; Ryff & Keyes, 1995; Schmutte & Ryff, 1997), are considered to be important aspects of SWB .

Wellbeing and personality

There is a growing body of research that strongly implicates personality variables in influencing SWB. In particular, extraversion, which is related to positive affect, and neuroticism, which is related to negative affect, have been most strongly and consistently linked with SWB (Diener & Lucas, 1999; Diener, Oishi, & Lucas, 2003; Diener et al., 1999). For example, in a longitudinal study of young adults, Magnus, Diener, Fujita, and Pavot (1993) found that extraversion predisposed participants to experience more positive objective life events and neuroticism predisposed them to experience more negative objective events. Similarly, Schmutte and Ryff (1997) reported distinctive personality correlates for all six psychological wellbeing measures on their scale measured against the NEO Five Factor Inventory (Costa & McCrae, 1991). In their sample of midlife adults, they found that self-acceptance, environmental mastery, and purpose in life were linked negatively to neuroticism and positively to extraversion, and autonomy was linked negatively to neuroticism.

Contribution of employment to wellbeing

Unemployment has been shown consistently to be negatively associated with SWB in adults (Fryer, 1986; Jahoda, 1982; Marks & Fleming, 1999; Warr, 1987). However, it appears that the quality of a job and how it satisfies an individual's needs on certain key attributes is as important to wellbeing as being employed (Warr, 1987, 1999; Winefield, Tiggemann, Winefield, & Goldney, 1993), not only among adults but also among recent school-leavers (Dockery, 2005) and adolescents (Mortimer, Harley, & Staff, 2002). Employment makes a significant contribution to wellbeing not only because of its financial rewards but also because of its social and structured nature (Fryer, 1986; Jahoda, 1984; Warr, 1987). Jahoda and Rush (1980) described five basic categories of psychological experience for which people have an inherent need in order to enjoy wellbeing, all of which are found in work-life: time structure; social contact; collective participation in ventures that make one feel useful and provide a feeling of belonging; social identity and status; and enforced activity. These authors maintained that it is the deprivation of these features that causes unemployment's negative effect on wellbeing. Jahoda (1982) suggested that the experience of time is shaped by public institutions and that a major impact of unemployment on the individual is the sudden absence of an enforced time structure on one's day. While people may complain about the often rigid structuring of their time in their working life, its absence can constitute a major psychological burden and contribute to a sense of purposelessness. Long before they enter the world of employment, children and adolescents are subject to the school system structuring their days into a fixed time schedule.

While acknowledging the importance of these five categories of experience, Fryer (1986; 1995) disagreed with Jahoda's emphasis on employment as a social institution necessary for their existence, and argued for a greater emphasis on the role of personal agency in the wellbeing of unemployed people. Fryer and Payne's (1984) study of a small group of unemployed people who were not experiencing psychological deprivation found the participants to be adopting proactive behaviours, including active structuring of their time. Fryer (1986, 1995) stressed the importance of personal agency and the ways in which it can be restricted by adverse social

conditions, including those which exist, for many workers, in the labour market. Nevertheless, researchers and theorists have considered Jahoda's model of categories of experience to be valuable in examining the contribution of employment to wellbeing (Haworth, 1997, 2004; Warr, 1987).

As well as providing time structure, employment provides people with contacts and shared experiences with others outside their nuclear family environments. Despite the emphasis placed on individualism in current Western society, the social needs and purposes of life are such that individualism can only be valued when it is embedded in a social context. Employment provides individuals with opportunities to work towards goals and purposes that are beyond the scope of the individual and which demand collectivity (Jahoda, 1982; Jahoda & Rush, 1980). In the same way, situations in the school setting call upon individual students to work together with other students to complete tasks and attain goals that would not be attainable by the individual's efforts alone.

The opportunity for interpersonal contacts, friendships, and social support provided by the work environment has been found to be significantly associated with job satisfaction and overall wellbeing (Hackman & Lawler, 1971; Haworth, 1997; Warr, 1987). As with employment, attending school provides individuals with interpersonal contacts that enlarge their social horizon, allow social comparison, and provide social support. School provides adolescents with a peer group that becomes increasingly important as they spend greater amounts of time with their peers and correspondingly less time with their parents (Steinberg, 2002). An adolescent's peer group is an important reference point that supports independence by accommodating the need for identity and recognition and providing opportunities for the development of social skills and strategies needed in adulthood (Coleman & Hendry, 1990). Further, good peer relationships provide a buffer against stress and protect adolescents from isolation and loneliness (Erwin, 1998). The role of social connectedness in adolescents' emotional wellbeing and the importance of enhancing this aspect of the school environment has been a focus of a recent Australian research project, the Centre for Adolescent Health's Gatehouse Project (Glover, Burns, Butler, & Patton, 1998; Glover & Butler, 2004).

Warr's model of wellbeing

Warr (1987) proposed a model of wellbeing derived from an integration of Jahoda's (1982) five categories of psychological experience and Fryer's (1986, 1995) principle of personal agency. Warr identified nine environmental features, which he called Principal Environmental Influences (PEIs), considered to act in conjunction with personal factors to influence wellbeing and mental health. These PEIs are opportunity for control, opportunity for skill use, variety, environmental clarity, externally generated goals, availability of money, physical security, opportunity for interpersonal contact, and valued social position. Strong associations have been found between each of the PEIs and established measures of mental health (Haworth, 1997). Warr's model includes affective wellbeing, considered along three principal axes: a pleasure dimension, covering a range of feelings from contented to discontented; an anxiety dimension, ranging from anxious to comfortable; and a depression-enthusiasm dimension.

Warr's model has proven useful in the study of the impact of different environments on wellbeing and mental health. In particular, it is applicable to, and has empirical support in, the environments of employment and unemployment (Haworth, 1997, 2004; Warr, 1987, 1999). It also provides a systematic framework for examining other environments such as family life and retirement (Warr, 1987). As in most wellbeing research, the model has been applied to adult samples. It is not known whether the model is useful for explaining wellbeing among adolescents at school. While young people have different financial and support arrangements from adults, it is possible that the school environment of adolescents is analogous in many ways to the work environment of adults. Thus, Warr's model was considered appropriate for use in the current study, where participants were still in the school system and not yet in the full-time job market.

Adolescent wellbeing

Adolescence marks the transition from childhood into adulthood and is a period of significant biological, psychological, and cognitive development. It has been described as a period of both opportunity and risk (Leffert & Petersen, 1995). Adolescents face important transitions, such as moving from school to higher education or work, that may be accompanied by changes in peer groups and in

relationships with friends and family (Salmela-Aro & Nurmi, 1997). These transitions involve not only the academic pressures of school-leaving but also myriad decisions and choices about life after the end of formal schooling. The strong focus on pathology evident in much of the scientific inquiry into adolescent wellbeing reflects a concern about young people's abilities to deal with this period of vulnerability and uncertainty (Horwitz & White, 1987; Jessor, Donovan, & Costa, 1990; Nolen-Hoeksema, 1990; Owens, 1994).

Researchers have found SWB, particularly its cognitive component, life satisfaction, to play an important role in the positive development of adolescents and to provide a buffer against the negative effects of stressful life events. (For reviews of the literature on well-being and adolescents, see Gilman, Easterbrooks, & Frey, 2004; Park, 2004). In Australia, a longitudinal study found that young people with higher levels of psychological wellbeing while at school were more likely to be in full-time study or full-time employment nine months after leaving school, whereas students who had lower levels of wellbeing were less likely to make a successful transition (Patton, Creed, & Muller, 2002). Clearly, optimal levels of subjective wellbeing are important for school students going through the difficult transitions associated with adolescence.

In Australia and other developed nations, depression and suicide among youth are pressing problems generating widespread community concern. Rates of depression increase during adolescence for both sexes, although more girls than boys experience depressive symptoms and episodes of clinical depression (Galambos, Barker, & Krahn, 2006; Galambos, Leadbeater, & Barker, 2004; Nolen-Hoeksema, 1990). Depression in adolescence has been linked to adult depression, early marriage, and marital dissatisfaction in young adulthood (Gotlib, Lewinson, & Seeley, 1998). Depression has a negative effect on self-esteem during adolescence (Owens, 1994) and influences suicidal thoughts and behaviours (Mazza & Reynolds, 1998). The incidence of suicide is low in childhood and early adolescence but increases markedly in middle adolescence and continues to rise until the early twenties. In Australia, suicide accounted for 20% of total male deaths and 13% of total female deaths in the 15 to 19 years age group in 2003 (Australian Bureau of Statistics, 2004). Wellbeing has been shown to act as a mitigating factor and protect against suicide among adults (Cutright & Fernquist, 2005; Kuivumaa-Honkanen et al., 2001) and adolescents

(Borowsky, Ireland, & Resnick, 2001) and to be negatively associated with depression in undergraduates (Gable & Nezlek, 1998).

Thus, it is apparent that subjective wellbeing is important for positive adolescent development and optimal post-school outcomes. In addition, the literature indicates that, in adults, subjective wellbeing is intricately related to employment and, in particular, to environmental aspects such as time structure, social contact, and collective participation in worthwhile ventures, all of which can be provided by employment. In Australia, there is widespread community concern about the wellbeing of adolescents (Glover et al., 1998), particularly at the important time of approaching the transition from school to post-school life. However, little research has investigated the environmental and personality correlates of wellbeing of secondary school students prior to the commencement of their working lives. Given the emphasis currently placed on completing Year 12 and a successful transition from school to higher education, vocational training, or work, research into the wellbeing of Year 12 students is timely and important. The goals of the present study were to determine if the school setting provided environmental elements that enhance adolescent wellbeing in ways similar to those provided by employment for adult wellbeing, and to expand understanding of the environmental and personality correlates of adolescent wellbeing. The significance of the study lies in the potential for an increased understanding of the role of environmental and personality variables in the wellbeing of Year 12 students to assist in the development of interventions specifically designed to enhance wellbeing among secondary school students.

Methods

Participants

Participants were 377 Year 12 high school students from three co-educational public high schools in eastern Australia. There were 156 males (41.4%) and 221 females (58.6%), whose ages ranged from 16.08-19 years ($M = 17.29$, $SD = .70$).

Measures

Wellbeing. Wellbeing was operationalised using measures of (a) global life satisfaction and (b) affective wellbeing, which included measures of pleasure, anxiety, and depression.

The 12-item Life Satisfaction Scale (Warr, Cook, & Wall, 1979) measures cognitive appraisal of subjective wellbeing. The first 11 questions ask about satisfaction with specific life situations (e.g., “How satisfied do you feel about the way you spend your leisure time?”), whereas the last question asks about life satisfaction generally (“Taking everything together, how satisfied do you feel about your life as a whole?”). Participants indicated their satisfaction on a 7-point Likert-like rating scale, with endpoints of *extremely dissatisfied* and *extremely satisfied*. Higher scores indicate greater life satisfaction. The Life Satisfaction Scale has been widely used with adolescents and adults in occupational settings and has adequate psychometric properties (Haworth, 1997). The internal reliability coefficient for this student sample was .83.

A modified version of the 15-item Affective Wellbeing Questionnaire (Warr, 1990) was used to measure three components of wellbeing. This included a 3-item Pleasure subscale (e.g., “I am *extremely/very/quite/just about/not at all* happy with my school life”), a 6-item Anxiety subscale (e.g., “During the last few weeks, how often have you felt calm?”, with endpoints of *never* and *all of the time*), and a 6-item Depression subscale (e.g., “During the last few weeks, how often have you felt gloomy?”, with endpoints of *never* and *all of the time*). The Affective Wellbeing Questionnaire has been used extensively with adults and adolescents in occupational settings and has adequate psychometric properties (Haworth, 1997; Warr, 1990). Some items were modified to make them suitable for participants in a school rather than a work setting; for example, “work life” was changed to “school life.” Higher scores on the subscales indicate more pleasure, anxiety, and depression, respectively. The internal reliability coefficients for the student sample were .89 (pleasure), .75 (anxiety) and .81 (depression).

Environmental influences. A modified version of the Principal Environmental Influences Questionnaire (Haworth, 1997) was used to measure the environmental domains proposed by Warr (1987) to be important to wellbeing. The questionnaire includes three subscales that are considered by Haworth to be context-free and three that are considered to be context-specific. The context-free subscales comprise a 3-item financial resources subscale (sample item: “How easy or difficult is it to manage on the money you receive?” with a 6-point scale with endpoints of *very easy* and *very*

difficult); a 3-item environmental discomfort subscale (sample item: “Do you ever experience discomfort because of temperature?”), which has a 7-point scale with endpoints of *never* and *all the time*; and a single physical security question (“Do you ever feel threatened in some way?”), which has a 7-point scale with endpoints of *never* and *very often*. The context-specific subscales comprise a 23-item use of time subscale (sample item: “My time is filled with things to do”); a 9-item social contact subscale (sample item: “I see a lot of my schoolmates”); and a subscale concerned with relations with the wider society containing 9 items (sample item: “At this time in my life I feel that I am making a positive contribution to society at large”). All of the responses on these three subscales are measured on a 7-point scale with endpoints of *completely agree* and *completely disagree*. Some items were modified to make them more relevant to a high school environment, for example, “school work” was substituted for “work in general.” Higher scores indicated, respectively, more financial resources, physical security, and social contact, greater use of time, better relations with the wider society, and more environmental discomfort. The internal reliability coefficients for the subscales were .70 (financial resources), .66 (environmental discomfort), .71 (use of time; four items [4, 7, 8 and 16] were removed following a reliability analysis as they had negative corrected item-total correlations), .55 (social contact; four items [1, 2, 4 and 6] were removed) and .66 (wider society).

Personality. The neuroticism and extraversion subscales of the Eysenck Personality Questionnaire (Revised - Short Form, Eysenck & Eysenck, 1991) were used to measure these aspects of personality. Each dimension was measured using 12 questions that required the participant to tick either a *yes* box or a *no* box. Sample items included “Can you easily get some life into a rather dull party?” and “Do you ever feel ‘just miserable’ for no reason?”. Higher scores represent higher levels of neuroticism and extraversion, respectively. The scale authors provide sound psychometric data for both subscales. In the present study, the internal reliability coefficients were .71 for neuroticism and .79 for extraversion.

Procedure

Classroom teachers administered the survey forms to students under the supervision of the researchers. The students were offered a small reward for participating. The study used informed consent procedures, and university ethical clearance was obtained.

Results

Predicting wellbeing

Four hierarchical multiple regression analyses were conducted to test for predictors of the four domains of wellbeing. The dependent variables (DV) in these analyses were life satisfaction, pleasure, anxiety and depression. When significantly associated with the DV, the demographic variables (age and gender) were entered at Step 1 to control for their effect, the personality variables (neuroticism and extraversion) were entered at Step 2, and the environmental influences (use of time, social contact, wider society, financial resources, environmental discomfort, and threat) were entered at Step 3. Summary data for all variables are reported in Table 1; bivariate correlations are reported in Table 2.

Insert Tables 1 and 2 about here

For life satisfaction, no demographic variables were entered, as none was significantly associated with the DV. Neuroticism and extraversion were entered at Step 1, and use of time, social contact, wider society, financial resources, environmental discomfort, and threat were entered at Step 2. At Step 1, neuroticism and extraversion significantly predicted life satisfaction, $F(2, 374) = 33.41, p < .001$, accounting for 15.2% of the variance. Neuroticism made a significant individual contribution ($\beta = -.37, sr^2 = 13.18\%$), with students reporting lower levels of neuroticism also reporting more life satisfaction. At Step 2, the environmental influences accounted for a further, significant 23.5% of the variance, $F_{Change}(6, 368) = 23.49, p < .001$. At this step, a total of 39% of the variance was accounted for in life satisfaction, with the most important predictors being financial resources ($\beta = .26, sr^2 = 5.76\%$), wider society ($\beta = .18, sr^2 = 2.25\%$), neuroticism ($\beta = -.14, sr^2 = 1.44\%$),

use of time ($\beta = .16$, $sr^2 = 1.96\%$), threat ($\beta = -.12$, $sr^2 = 1.008\%$), and social contact ($\beta = .12$, $sr^2 = 1.00\%$). Students who reported more financial resources, felt more a part of the wider society, had better use of time, lower neuroticism and less threat also reported higher life satisfaction.

Insert Table 3 about here

For pleasure, no demographic variables were included. Neuroticism and extraversion were entered at Step 1. Use of time, social contact, wider society, financial resources, and threat were entered at Step 2. At Step 1, neuroticism and extraversion significantly predicted pleasure, $F(2, 374) = 11.36$, $p < .001$, accounting for 5.7% of the variance. Both neuroticism ($\beta = -.20$, $sr^2 = 4.00\%$) and extraversion ($\beta = .11$, $sr^2 = 1.21\%$) made significant individual contributions, with students who reported lower levels of neuroticism and higher levels of extraversion reporting more pleasure. At Step 2, the environmental influences accounted for a further significant 19.2% of the variance, $F_{Change}(5, 369) = 18.92$, $p < .001$. At this step, a total of 25% of variance was accounted for in pleasure, with the most important predictors being use of time ($\beta = .27$, $sr^2 = 5.29\%$), wider society ($\beta = .17$, $sr^2 = 1.69\%$), threat ($\beta = -.13$, $sr^2 = 1.21\%$), and social contact ($\beta = .12$, $sr^2 = 1.00\%$). Students who reported better use of time, felt a part of the wider community, had more social contact and less threat also reported more pleasure. Summary data are reported in Table 4.

Insert Table 4 about here

For anxiety, gender was significantly associated with the DV and was included at Step 1. Neuroticism and extraversion were entered at Step 2. Use of time, social contact, wider society, financial resources, environmental discomfort and threat were entered at Step 3. At Step 1, gender significantly predicted anxiety, $F(1, 375) = 21.51$, $p < .001$, accounting for 5.4% of the variance. Being female was associated with more anxiety. The addition of neuroticism and extraversion at Step 2 added significantly to the prediction of anxiety, $F_{Change}(2, 373) = 68.23$, $p < .001$, accounting for an additional 25.3% of the variance. Neuroticism ($\beta = .45$, $sr^2 = 18.49\%$), extraversion ($\beta = -.17$, $sr^2 = 2.89\%$) and gender ($\beta = -.17$, $sr^2 = 2.25\%$) made significant individual

contributions, with being female and reporting higher neuroticism and lower extraversion being associated with more anxiety. At Step 3, the environmental influences significantly predicted anxiety, $F_{Change}(6, 367) = 5.87, p < .001$, accounting for an additional 6.1% of the variance. Neuroticism ($\beta = .30, sr^2 = 6.25\%$), threat ($\beta = .23, sr^2 = 3.61\%$), extraversion ($\beta = -.15, sr^2 = 1.96\%$), and gender ($\beta = -.15, sr^2 = 1.96\%$) made significant individual contributions. Being female and reporting higher levels of neuroticism, more threat and lower extraversion was associated with more anxiety. Summary data are reported in Table 5.

Insert Table 5 about here

For depression, gender was significantly associated with the DV and was included at Step 1. Neuroticism and extraversion were entered at Step 2. Use of time, social contact, wider society, financial resources, environmental discomfort and threat were entered at Step 3. At Step 1, gender significantly predicted depression, $F(1, 375) = 12.20, p < .01$, accounting for 3.2% of the variance, with being female being associated with more depression. The addition of neuroticism and extraversion added significantly to the prediction of depression, $F_{Change}(2, 373) = 77.66, p < .001$, accounting for an additional 28.5% of the variance. Neuroticism ($\beta = .47, sr^2 = 23.25\%$), extraversion ($\beta = -.19, sr^2 = 3.61\%$) and gender ($\beta = -.11, sr^2 = 1.21\%$) made significant individual contributions, with higher levels of neuroticism, lower levels of extraversion and being female being associated with depression. At Step 3, the environmental influences accounted for a further significant 10.5% of the variance, $F_{Change}(6, 367) = 11.08, p < .001$. At this step, a total of 42.1% of the variance was accounted for in depression, with the most important predictors being neuroticism ($\beta = .30, sr^2 = 6.25\%$), threat ($\beta = .25, sr^2 = 4.41\%$), extraversion ($\beta = -.15, sr^2 = 1.96\%$), use of time ($\beta = -.14, sr^2 = 1.44\%$), and wider society ($\beta = -.12, sr^2 = 0.81\%$). Students who reported higher neuroticism, more threat, lower extraversion, less use of time and felt less a part of the wider community were more likely to be depressed. Summary data are reported in Table 6.

Insert Table 6 about here

Gender differences

We tested for differences between males and females by conducting a series of independent sample t-tests. To avoid Type 1 error, a Bonferroni correction of $p < .0042$ ($.05/12$) was applied. Compared to males, females reported higher levels of anxiety ($p < .001$), depression ($p = .001$), neuroticism ($p = .001$), environmental discomfort ($p < .001$) and threat ($p < .001$). Summary data are reported in Table 1.

Discussion

Studies of adult wellbeing have emphasized the contribution of employment to wellbeing, not merely in terms of the financial rewards, but also in terms of environmental elements such as social contact and time structure (Fryer, 1986; Johoda, 1984; Warr, 1987). The current study examined environmental and personality correlates of adolescent wellbeing in the context of the school setting. It was proposed that the school setting would provide environmental elements similar to those found in employment settings and that these elements would contribute to adolescent wellbeing. In summary, the study examined four domains of wellbeing for this adolescent sample: global life satisfaction and three aspects of affective wellbeing (pleasure, anxiety, and depression).

Consistent with previous studies (e.g., Magnus et al., 1993; Schmutte & Ryff, 1997), the present study found that personality was associated with wellbeing. Neuroticism was associated with wellbeing across the two domains of global life satisfaction and the affective wellbeing variables of anxiety and depression, and extraversion was associated with anxiety and depression. There were gender differences between the male and female participants on the personality measures, with females scoring significantly higher on the measures of both extraversion and neuroticism than males. As neuroticism was negatively associated with wellbeing and extraversion was positively associated with it, when schools are considering interventions to enhance students' wellbeing they need to consider these characteristics and introduce training in strategies that will, for example, ameliorate the worry and rumination associated with neuroticism and improve the social competence of those low on extraversion. Such strategies have been successfully applied with unemployed adolescents (Creed, Machin, & Hicks, 1996).

The environmental elements were found to account for some of the variance in wellbeing over and above what was accounted for by the personality variables. The study found associations between wellbeing, as measured by global life satisfaction and affective wellbeing, and several of the principal environmental influences. Students' global life satisfaction was associated with being connected to the wider society, time structure, perceptions of safety, and social contact. Affective wellbeing across the three domains (pleasure, anxiety, and depression) was associated with perceptions of safety, whereas pleasure was further associated with time structure, being connected to the wider society, and social contact, and depression was further associated with time structure and connection with the wider community.

Thus, the findings indicated that in terms of the students' use of time, social contact, and connection to the wider society, school appeared to provide opportunity and context in similar ways to employment. These findings with adolescents in a school environment are consistent with findings from studies involving adults in employment settings (e.g., Johoda, 1984; Warr, 1987; Fryer, 1986), emphasising the importance of these environmental influences for enhancing global life satisfaction and wellbeing. The current study found no gender differences in levels of global life satisfaction; in this regard, the school setting was shown to be associated with life satisfaction for all students.

Similarly, there were no gender differences in levels of the positive affective aspect of wellbeing, pleasure, as reported by the students. The findings showed that use of time, social contact, and interaction with the wider society were associated with pleasure. However, it was time structure that emerged as a significant predictor of adolescents' pleasure. This finding supports Johoda's (1982) emphasis on the psychological benefits of structured time in giving meaning and purpose to an individual's day, alleviating time-wasting and boredom, and protecting against depression. Given the prevalence of adolescent depression and suicide in first world countries, time structure provided by the school setting is clearly an important benefit to adolescent students.

Students who reported lower levels of interaction with the wider society also reported higher levels of both anxiety and depression. This finding suggests the importance for adolescent wellbeing of opportunities to participate in the wider society and provides additional support for Warr's (1987) model of wellbeing.

Consistent with many reports in the literature (Galambos et al., 2006; Galambos et al., 2004; Nolen-Hoeksema, 1990), the female students scored significantly higher on measures of depression and anxiety than the male students.

Reflecting the important role played by peer friendships in adolescent wellbeing reported in the literature (Coleman & Hendry, 1990; Steinberg, 2002) and the importance of social contact in the work environment to adult wellbeing (Haworth, 1997; Warr, 1987), social contact was significantly associated with both pleasure and life satisfaction in the current study. However, social contact appeared to play a relatively minor role in predicting wellbeing for this sample. In addition, although female students reported greater social contact than did male students, social contact did not seem to provide the buffer against negative affect found in earlier studies (Erwin, 1998).

The measures of financial resources, environmental discomfort, and physical security are considered by Haworth (1997) to be context-free measures, and in this case are less specific to the school environment than the other measures of principal environmental influences. The findings showed that a lack of financial resources predicted lower levels of life satisfaction. While it is not unexpected that life satisfaction would be affected by a lack of financial resources, the school environment, unlike employment, does not provide a means of augmenting financial resources. Therefore, no parallels can be drawn with the work environment. Perception of threat was found to be a significant predictor of both anxiety and depression, while lower levels of threat were associated with pleasure and life satisfaction. As the question asking about threat was not specific to the school setting, it is not possible to draw inferences about the school environment from these findings. Nevertheless, it is certainly incumbent upon schools to ensure that students feel safe and secure while at school, and other research (e.g., Glover et al., 1998) has revealed a strong association between perceptions of safety and emotional wellbeing for adolescents at school. In the current study, the male students reported significantly less environmental discomfort and perceptions of threat than did the females. Similarly, some previous research (Horwitz & White, 1987) reports higher perceptions of personal safety among young men than among young women.

Opportunity to participate in the wider society was found to be an important predictor of wellbeing with respect to greater global life satisfaction, more pleasure,

and less anxiety. This finding supports Jahoda's (1982) stance that, despite the emphasis on individualism in current Western society, the psychological process of working towards goals and purposes that are beyond the scope of the individual and that demand collectivity is an important contributor to subjective wellbeing. It also points to the value of teamwork for students in school settings, not only because teamwork is a reality in the work environment, but also for the psychological benefits teamwork brings to the adolescent team members. The school environment appears to have the capacity to enhance wellbeing and ameliorate negative affect through the provision of increased opportunity to participate in the wider society.

Suggestions for further research

The study represents the first step in an important line of enquiry into the factors that influence wellbeing in adolescents as they prepare for the transition to adulthood, and its findings suggest several directions for further research. The study examined correlates of adolescent wellbeing in the context of the school day. Ryff and Heidrich (1997) suggested that for adolescents, life outside of school and family contributed to large individual differences and may therefore also explain more of the variation in wellbeing. It is important for future research to examine adolescent wellbeing in a broader context in order to understand more of the variance in levels of life satisfaction, pleasure, anxiety, and depression.

Further research in this area could include a wider range of methods and measures that explore not only how adolescents spend their time but the feelings associated with the ways in which their time is structured. The measures used to understand the role that stable (largely personality) variables play in the levels of wellbeing could be extended to include all of the "big five" personality measures; incorporation of the variables of openness to experience, conscientiousness, and agreeableness may shed further light on aspects of adolescent wellbeing that are not measured by neuroticism and extraversion.

Conclusion

This study tested the usefulness of current adult theories of wellbeing on adolescents and attempted to expand the understanding of the environmental and personality correlates of wellbeing among this age group. It is the first time that these theories and

their measures of wellbeing have been tested on Australian Year 12 students. Overall, the measures were able to account significantly for the variance in the wellbeing variables of life satisfaction, pleasure, anxiety, and depression. The study's findings supported Jahoda's (1982) theory and Warr's (1987) model which stress the importance of time structure, social support, and interaction with the wider society as basic categories of psychological experience necessary for subjective wellbeing. The findings suggest that Warr's model of wellbeing, previously found applicable to adults in the context of employment, is useful also for explaining wellbeing among adolescents at school.

Because the context of the investigation was the school environment, the findings support the idea that public institutions such as schools play an important role in providing time structure and opportunities for social contact and collective activity for adolescents. The findings, in tandem with a growing body of evidence indicating that job quality, rather than the mere fact of being employed, is important in contributing to people's psychological wellbeing (Dockery, 2005; Fryer, 1986; Winefield, 1993; Winefield et al., 1993), suggest that the environmental features of the school setting can play an important role in contributing to adolescent wellbeing. While wellbeing, measured here by life satisfaction, anxiety, depression, and pleasure, was associated with the personality variables of extraversion and neuroticism, the environmental influences accounted for some of the variance in wellbeing over and above what was accounted for by the personality variables. This suggests that, rather than focusing interventions largely on the deficits of certain students, interventions focused on influences within the school can provide an environment beneficial to the wellbeing of all students.

Thus, it may be necessary for schools to take steps to monitor and enhance these environmental features in order to optimise the wellbeing and engagement of adolescent students. Schools do have considerable influence over these features, and can ensure that students perceive their school days as safe, meaningfully structured, connected to the wider society, and socially supportive. The study also found an effect for gender, with girls reporting more negative affect (anxiety and depression), higher levels of neuroticism, and greater environmental discomfort and threat, suggesting that schools need to consider issues specific to adolescent girls when implementing strategies to improve wellbeing.

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