



Preliminary findings from an international study of subjective wellbeing in tertiary students

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Experiencing high levels of subjective wellbeing is a central criterion of positive mental health in all groups of individuals. Wellbeing is not only the result of favourable life circumstances such as academic success and satisfying relationships, but also a predictor and part cause of these outcomes. More specifically, in relation to university students, wellbeing is important for influencing not only their academic outcomes, their attitudinal and career outcomes, but also outcomes that benefit communities and society at large. Religiosity has been implicated in wellbeing. For example a 14-year follow-up study found that attending religious services predicted a 22 % reduced risk of developing major depression in adults while another longitudinal study showed that higher self-reported religiosity/spirituality predicted a 90 % decreased risk of major depression in adults. This study reports the correlates of subjective wellbeing in an international sample of 1031 tertiary students from Australia, Great Britain, Israel, Germany and Greece using three proxy measures: reported distress symptoms using the Brief Symptom Inventory (BSI), quality of life evaluation using the Kimhi and Eshel 'Recovery from War' Scale, and individual resilience using the Connor-Davidson Resilience Scale. Results show a number of significant differences based on ethnicity, religiosity, religious affiliation, gender and discipline area of tertiary study. Findings are discussed in relation to prior research and possible interventions that could be instigated in higher education institutions to help increase student wellbeing.

Key Words: Resilience, tertiary students, religion, distress symptoms, wellbeing.



Introduction

The wellbeing of university students is important because it is linked to increased success and retention at university which is critical for the higher education sector and the benefit of society at large. University students' wellbeing can be impacted by a range of factors including financial stresses and the stress of meeting academic expectations and assessments, leading them to be at higher risk of mental health problems (Ansari et al., 2011; Stallman 2010). Using a sample of over 6,000 Australian students Stallman (2010) reported the prevalence for mental health problems of university students at 19.2%, with 67.4% reporting sub-syndromal symptoms, rates significantly higher than those found in the general population. This is problematic because experiencing high levels of subjective wellbeing has been found to not only be an outcome of favourable life circumstances such as academic success and satisfying relationships, but also a predictor and part cause of these outcomes (Lyubomirsky, King, & Diener, 2005).

Subjective wellbeing can be defined as a normally positive state of mind that involves the whole life experience (Cummins, 2010). Subjective wellbeing is considered to be made up of two distinct components: an affective component that consists of the relative frequency of positive and negative affect, and a cognitive component that is concerned with judgements of life and global satisfaction (Diener 1984; Diener, Suh, Lucas, & Smith, 1999). People with high levels of wellbeing report frequent positive affect, infrequent negative affect and high levels of life satisfaction (Diener 1994; Diener et al., 1991). Ryan and Deci (2001) describe psychological wellbeing in terms of subjective wellbeing, happiness, pain avoidance, and life satisfaction (Diener et al., 1999; Fredrickson, 2002), or based on meaning and self-realization and a set of wellness variables such as self-actualization and vitality (Ryan & Deci, 2001). A robust measure of subjective wellbeing has been given by the seven-item Personal Wellbeing Index (PWI; International Wellbeing Group, 2013). The PWI generates a composite variable, calculated by averaging life satisfaction scores on seven important life domains as: Standard of Living, Health, Achieving in Life, Relationships, Safety, Community Connection and Future Security, a measure corresponding to Kimhi and Eshel's (2009) quality of life evaluation survey.

A person's perception about their ability to maintain their wellbeing under sustained stress is understood or conceptualised as their resilience. Emotional resilience skills help one cope with stress (Mguni, Bacon & Brown 2012). Using a large data set of US and UK households Mguni et al. (2012) found that the correlation between wellbeing and resilience was 40%. Earlier, Rutter



defined resilience as being comprised of the protective factors which influence a person's response to environmental stressors which predispose them to a maladaptive outcome (Rutter, 1987; 2006). Similarly, other researchers have described resilience as "the capacity for successful adaptation, positive functioning or competence despite high-risk status, chronic stress, or following prolonged or severe trauma" (Egeland, Carlson, & Stroufe, 1993, p. 517). The dimensions of academic resilience validated through a cohort of high school students include self-efficacy, self-control, ability to engage support and help, learning from difficulties, and perseverance with required tasks (Martin & Marsh 2006). In the context of tertiary education this means that resilient students believe that what they do can have a positive impact on a situation, that the perceived stressors can be controlled or influenced by one's actions, that persistent effort is worthwhile, and that setbacks or potentially threatening events are inevitable but surmountable, and do not need to cause excessive anxiety or withdrawal.

Besides studies on resilience to understand the factors which underpin a person's wellbeing, religious and spiritual dimensions of mental health have also been examined in recent years. This focus goes against the trend established by Jean Charcot and Sigmund Freud who linked religion with hysteria and neurosis and influenced the separation of religion from mental health care (Bonelli, & Koenig, 2013). This relatively recent focus on religion and spirituality led Bonelli and Koenig (2013) to conduct a systematic literature review of psychiatric studies which examined the links of spirituality and religious beliefs to mental health. They found that 72 % of studies examined reported a positive relationship between religious involvement and better mental health, 2 % showed a trend toward a positive association, 2 % no association, 19 % mixed positive and negative results and 5 % found mainly a negative association. In all, 93 % of the studies found at least one positive association (significant, trend, or mixed), while 23 % reported at least one negative relationship. For example, longitudinal data showed that higher self-reported religiosity/spirituality predicted a 90 % decreased risk of major depression in adults at high risk of depression (Miller et al., 2012). More recently, Miller and colleagues reported that those at high risk of depression, who indicated high importance of religion/spirituality, when examined by structural Magnetic Resonance Imaging (MRI) revealed thicker cortical brain regions in areas that tended to be atrophied in others at high risk who ascribed lower importance to religion (Miller et al., 2014). Also, Burris, Brechting, Salsman and Carlson, (2009) reported that "...health, and religiousness were positively associated with wellbeing and less distress among college students"



(p. 536). Nonetheless, research findings on religious involvement and mental health, have been inconsistent (Greenberg 2013; O'Connor, Cobb, & O'Connor, 2003).

Previous studies on wellbeing have also identified that culture plays a role (Oishi & Schimmack 2010; Triandis & Suh 2002). Likewise, gender has been found to be significantly linked with differences in wellbeing. Research based on a large sample of a range of European undergraduate students showed that females were more likely to suffer depression which in turn affected their subjective wellbeing as measured by quality of life indicators (Stock et al., 2008). In Australia gender was found to be related to wellbeing in Year 12 high-school students (Horstmanshof, Punch, & Creed, 2008) although (Mazzucchelli, & Purcell, 2015) found no significant differences in self-reported wellbeing between male and female Australian undergraduates. Overall, Australian women aged 18-35, the age group most likely to be in tertiary education, have been found to have the greatest levels of anxiety (Hailes, 2017).

Aims

The research reported here is part of a large international study. It examines tertiary students' wellbeing through three proxy measures, individual resilience, distress symptoms and quality of life evaluations. The cognitive and affective components of wellbeing are measured by quality of life evaluations, resilience, and distress symptoms respectively. Students from five different countries were requested to complete the same questionnaire (translated into the native language of each country) after ethics approval was obtained from their respective universities, including James Cook University.

The research questions addressed in this paper are:

- Are quality of life, resilience and distress symptoms correlated in this sample of students?
- Does religiosity predict perceptions of quality of life?
- Are there differences between females and males in subjective wellbeing measured by quality of life?
- Are differences in quality of life correlated with ethnicity/culture?
- Are different study disciplines linked to differences in quality of life?



Methods

Sample An online survey was offered to tertiary students in 5 selected tertiary institutions from five different countries: Australia ($N=171$), Germany ($N=93$), Great Britain ($N=134$), Israel ($N=480$) and Greece ($N=144$). All participants were informed that participation in the anonymous survey implied informed consent as per ethical guidelines when they were invited by email to complete the online survey.

Demographic characteristics. Demographic characteristics included the following: (a) gender, study discipline and religious affiliation; (b) religiosity was assessed by one item and coded: 1, secular, 2, traditional, 3, religious, 4, very religious.

Individual resilience. Individual resilience was measured in this study by the Connor-Davidson Resilience Scale short version (Green et al., 2014). The short version includes 14 statements about which the subject is required to indicate on a 1-7 scale the extent to which they agree/disagree with each, regarding the previous month. For example, "I like being challenged". The scale's reliability across the five countries was $\alpha = .832$ to $.882$.

Quality of life. Measuring quality of life (Kimhi & Eshel, 2009) using a 9-item self-report scale which describes present individual strengths in the domains of work, health, recreation, wider social contacts, achievements, family relations, daily functioning, relations with friends, and general assessment of one's quality of life. For example "My daily life functioning..." on a 6-point response scale ranges from 1=not good at all to 6=very good. The scale's reliability across all five countries was $\alpha = .738$ to $.871$.

Distress symptoms. The Brief Symptom Inventory (BSI, Derogatis & Savitz, 2000), relating to anxiety, depression, and somatization symptoms was used. This 18-item inventory is scored on a Likert scale ranging from "not suffering at all" (1), to "suffering very much" (5). For example: to what extent you have *recently suffered* from "Feelings of sudden fear with no reason" or "Hopelessness about the future." The scale's reliability across the five countries was $\alpha = .753$ to $.917$.

Appendix A contains the three instruments employed in the study.

Results

Table 1 shows the sample characteristics from the five participating countries. It is evident that religious affiliations tend to reflect national cultural characteristics.

Table 1 Sample characteristics by ethnicity, gender, age, religious affiliation, discipline of study and religiosity (N = 1031)

		Country				
		Israel N =480	Australia N = 171	Great Britain N = 134	Greece N =153	Germany N = 93
		N %	N %	N %	N %	N %
Gender	female	37.3	64.4	85.7	62.6	67.5
	male	62.7	35.6	14.3	37.4	32.5
Mean Age (years)		26	30	23	28	27
Religion	No religion	6.3	57.1	51.9	18.7	43.8
	Christianity	1.7	31.3	24.4	78.4	46.3
	Muslim	5.6	1.2	19.1	0.0	1.3
	Jewish	84.4	0.6	0.0	0.0	2.5
	Other	2.1	9.8	4.6	2.9	6.3
	Secular	68.8	69.9	58.0	53.2	72.5
How would you define yourself regarding religiosity	Traditional	20.8	14.7	16.8	29.5	16.3
	Religious	9.6	12.9	24.4	11.5	10.0
	Very religious	0.8	2.5	0.8	5.8	1.3
	Arts	3.5	10.2	2.3	0.7	1.3
Discipline of Study	Sciences	9.2	22.9	4.5	34.3	24.7
	Engineering	17.5	11.5	0.8	7.3	10.4
	Medical sciences	4.0	14.0	0.8	1.5	6.5
	Social sciences	30.6	11.5	84.8	38.0	20.8
	Humanities	8.3	6.4	6.1	13.1	11.7
	Other	26.9	23.6	0.8	5.1	24.7

Analyses of Variance (ANOVA) showed that there were significant differences between study disciplines and wellbeing measures across all countries (Table 2). Science students were significantly more distressed than the other groups ($F(6,976) = 14.50, p < 0.001$). While resilience was not significantly different between discipline areas across countries, quality of life reports were, with Medical Science students and those who responded as “Other” reporting the highest quality of life; Arts students reported the lowest quality of life ($F(6, 982) = 4.03, p < 0.001$).

Table 2 Means of Quality of life, Resilience and Distress symptoms by Discipline of Study (N = 1031)

	Discipline of study						
	Arts	Sciences	Engineering	Medical sciences	Social sciences	Humanities	Other
	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Distress symptoms	3.24	3.96	2.74	3.60	2.62	3.23	2.76
Quality of life	4.31	4.57	4.68	4.88	4.70	4.67	4.83
Resilience	3.58	3.81	3.77	3.85	3.70	3.75	3.80

Cultural differences which impacted on measures of wellbeing (Table 3) were also evident across the five countries. ANOVAs showed large significant differences in quality of life, distress symptoms and resilience between the 5 countries. Australian, Greek and German students reported significantly higher levels of distress than British and Israeli students ($F(4,1004) = 942.00, p < 0.001$); Australian students were most resilient ($F(4, 1017) = 6.10, p < 0.001$), although Israeli students reported the highest quality of life ($F(4, 1017) = 16.80, p < 0.001$).

Table 3 Means of Quality of life, Resilience and Distress Symptoms by Country (N = 1031)

	Country				
	Israel	Australia	Great Britain	Greece	Germany
	Mean	Mean	Mean	Mean	Mean
Quality of life	4.88	4.50	4.48	4.58	4.49
Resilience	3.72	3.94	3.70	3.78	3.66
Distress symptoms	1.76	4.95	2.07	4.86	4.89

To ascertain if gender was significantly linked to quality of life reports an ANOVA was conducted across the whole sample (N = 1031). The means of the three factors analysed (Table 4) show that females have significantly more distress symptoms than males ($F(1,994) = 12.66, p < 0.001$), their quality of life is significantly less positive than that of males ($F(1,994) = 10.50, p < 0.001$) despite, paradoxically, their resilience being perceived to be significantly higher than that of males ($F(1,994) = 5.00, p < 0.05$).

Table 4 Means of Quality of life, Resilience and Distress Symptoms by Gender (N = 1031)

	Gender	
	Female Mean	Male Mean
Resilience	3.79	3.71
Quality of life	4.62	4.77
Distress symptoms	3.19	2.81



To examine the links between the three variables quality of life, resilience and distress symptoms a correlation analysis was conducted. Table 5 shows significant positive correlation between quality of life and resilience ($\rho = 0.416, p < 0.001$) and a significant negative correlation between distress symptoms and quality of life ($\rho = -0.261, p < 0.001$). It is of note that no significant correlation between distress symptoms and resilience was observed in this large sample of students.

Table 5 Spearman Rho (ρ) correlations between Quality of life, Resilience and Distress Symptoms (N = 1031)

	Resilience	Quality of life	Distress symptoms
Resilience	1	.416**	-.047
Quality of life	.416**	1	-.261**
Distress symptoms	-.047	-.261**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Religious affiliation *per se* was significantly linked to religiosity but the differences were mainly due to those identifying as Muslim or Christian ($F(4,992) = 81.6, p < 0.001$) since those who identified as Jewish tended to describe themselves as either secular or traditional (Table 6). Therefore religious affiliation and quality of life links were not examined further.

Table 6 Frequencies of religiosity within religious groups (N = 1031).

Religiosity		Religion				
		No religion	Christianity	Muslim	Jewish	Other
		N %	N %	N %	N %	N %
How would you define yourself regarding religiosity	Secular	94.8	39.7	9.1	71.1	58.5
	Traditional	4.8	35.0	30.9	19.1	24.4
	Religious	0.4	19.8	60.0	8.6	17.1
	Very religious	0.0	5.5	0.0	1.2	0.0

To ascertain whether there were any significant associations between study disciplines and religiosity across the whole sample, Chi square tests of association were conducted. These yielded a non-significant result, as did Chi square tests between gender and religiosity. In order to investigate the role of religiosity in predicting quality of life stepwise hierarchical multiple linear regressions were conducted (Table 7).



Table 7 Hierarchical multiple linear regressions predicting Quality of Life as a function of Distress Symptoms, Resilience, and Religiosity (N = 1031)

Variables	Step 1			Step 2			Step 3		
	B	SE B	β	B	SE B	β	B	SE B	β
Resilience	0.58	0.04	0.44***	0.59	0.04	0.44***	0.59	0.04	0.45***
Distress Symptoms				-0.09	0.01	-0.19***	-0.09	0.012	-0.20***
Religiosity							0.06	0.03	0.06**

$R^2 = 0.19$ for Step 1 ($p < 0.001$); $\Delta R^2 = 0.04$ for Step 2 ($p < 0.001$); $\Delta R^2 = 0.004$ for Step 3 ($p < 0.001$);

** $p < 0.05$, *** $p < 0.001$.

Regression results suggest that quality of life is predicted most strongly by resilience ($\beta = 0.44$), negatively predicted by distress symptoms ($\beta = -0.20$), and religiosity confers a small positive effect ($\beta = 0.06$). The total variance in quality of life measures accounted by this model is 23%, which given that factors like personal income, family circumstances, social support and so on are not part of the model, is a relatively high percentage.

Discussion

Some results from this study support prior findings with tertiary students. For example, reported distress symptoms are higher in female students, similar to Stallman's (2010) results with Australian students, and a later study which found young females were twice as likely as males to report higher levels of psychological distress (Australian Institute of Health and Welfare, 2011). Females also reported lower quality of life, the measure reflecting subjective wellbeing, replicating findings from an earlier study with European tertiary students (Stock et al., 2008). Culture or ethnicity, as well as study discipline, also appear to be linked with subjective wellbeing as measured by quality of life. Israeli students reported the highest quality of life while Arts students across all countries tended to have the lowest scores. By contrast, students in Medical Sciences had the highest scores echoing American medical students who have reported higher wellbeing/quality of life than college graduates from other disciplines, even after adjusting for a number of other factors such as age, gender, relationship status, race/ethnicity, and parental status (Brazeau et al., 2014). Spiritual dimensions measured by religiosity had a small positive, significant effect upon quality of life perceptions corroborating prior research (Burriss et al., 2009).



An important new finding was the significant link between resilience and quality of life and thence subjective wellbeing, a finding not previously identified in tertiary students, but certainly reported in a recent Australian study investigating resilience in young adults aged 16-25 years (Tomyn, & Weinberg, 2016), and in a UK report based on the general population (Galante et al., 2017). The connection between resilience and wellbeing is likely exerted through its moderation of perceived distress symptoms. An unexpected result was the significantly higher level of reported resilience amongst females despite their higher distress and lower quality of life scores. Galante et al. (2017) argued that resilience is dynamic, taking into account the past and the future, and therefore despite current distress symptoms and low quality of life, a person can have a level of resilience that has been developed before they meet difficulties, enabling them to better cope with problems.

Results in this study also suggest that males are less likely to report the sorts of distress symptoms which our scale identified, symptoms indicating nervousness and anxiety; or they are simply less likely to acknowledge these feelings because it is not considered manly to admit to them. Academic pressures encountered by students have been thought to precipitate their higher distress levels (Galante et al., 2017). In this study those studying Science were most distressed, presumably due to the high levels of cognitive pressures upon them who, unlike those studying Medical Sciences or Engineering, tend to enter university with lower initial academic qualifications.

Implications of these findings are that university strategies aimed at enhancing student wellbeing may usefully include interventions to help students develop skills to manage the anxiety, moodiness and worry that precipitate negative affective states and a reduced sense of wellbeing. Students might also benefit from interventions that equip them with coping skills to detach from negative thoughts and feelings and to increase their tolerance for them while engaging in actions aligned with completing their academic obligations. Encouraging students to look for examples of resilience in others, and to analyse how they recognise this quality in themselves and others, may also be a helpful learning strategy.

Resilience is said to be a robust predictor of how good adults are at using positive emotions to prevent adverse impacts of stressful events and environments (Ong, Bergeman, & Boker, 2009). The provision of a chapel or other centre for those who are more religious or spiritual might alleviate some of the more negative feelings experienced due to academic pressures. Universities have a vested interest to ensure that student wellbeing is high so that they remain focused on their studies and are less likely to drop out. So apart from academic interventions, like tutoring support,



universities should invest in more counsellors to provide guidance to students to manage extracurricular concerns.

Limitations

One limitation of our study is its cross-sectional design. A longitudinal study showing a change in wellbeing over time would be more compelling. In addition, results need to be interpreted with caution in relation to cultural effects since self-reported wellbeing is systematically associated with self-reported conditions of life at the national level. So, for instance, some nations score higher than others in self-reported wellbeing (Oishi, & Schimmack, 2010). Another limitation is that we did not investigate the source of the distress symptoms experienced by students. Future studies need to examine why students are feeling distressed, to disentangle social from academic pressures upon students.



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Appendix 1

Individual resilience (CD-Risc, Connor & Davidson, 2003)

Based on how you felt over the past month, to what extent do you agree with the following statements.	0 Not true at all time	1 Rarely true	2 Sometime true	3 Often true	4 True nearly all of the time
1. Able to adapt to change					
2. Can deal with whatever comes					
3. Past success gives confidence for new challenge					
4. See the humorous side of things					
5. Coping with stress strengthens					
6. Tend to bounce back after illness or hardship					
7. Best effort no matter what					
8. You can achieve your goals					
9. When things look hopeless, I don't give up					
10. Make unpopular or difficult decisions					
11. Can handle unpleasant feelings					
12. I like challenges					
13. You work to attain your goals					
14. Pride in your achievements					

My life today (Kimhi & Eshel, 2009)

What is your life like at present?	Not good at all 1	Not good 2	Somewhat not good 3	Somewhat good 4	Good 5	Very good 6
1. My work	1	2	3	4	5	6
2. My health	1	2	3	4	5	6
3. My leisure time activity	1	2	3	4	5	6
4. My wide social relationships	1	2	3	4	5	6
5. My involvement in things that are happening in my country	1	2	3	4	5	6
6. My family relations	1	2	3	4	5	6
7. My daily life functioning	1	2	3	4	5	6
8. My relationships with my friends	1	2	3	4	5	6
9. My life in general	1	2	3	4	5	6



Distress symptoms (BSI) (BSI, Derogatis & Savitz, 2000)

The following is a list of problems and complaints people sometimes have. Read each item carefully and mark the number that best describes to what extent you have recently suffered from this problem.	Not at all	A bit	Moderately	To a great extent	To a very great extent
1. Nervousness	1	2	3	4	5
2. Feeling faint or dizziness	1	2	3	4	5
3. Hot or cold flashes					
4. Suicidal thoughts	1	2	3	4	5
5. Feelings of sudden fear with no reason	1	2	3	4	5
6. Feelings of loneliness	1	2	3	4	5
7. In a bad mood	1	2	3	4	5
8. Lack of interest in anything	1	2	3	4	5
9. Feelings of fear	1	2	3	4	5
10. Nausea or stomach disorders	1	2	3	4	5
11. Breathing difficulties	1	2	3	4	5
12. Limbs feel frozen or needles in different parts of the body	1	2	3	4	5
13. Hopelessness about the future	1	2	3	4	5
14. Weakness in different parts of the body	1	2	3	4	5
15. A feeling of tension	1	2	3	4	5
16. Fear or panic attacks	1	2	3	4	5
17. Lack of calm so that it is impossible to sit in one place	1	2	3	4	5
18. A feeling of worthlessness	1	2	3	4	5

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