

# Supplementary information for: A systematic review and meta-analysis of longitudinal studies of the antecedents and consequences of wellbeing among university students

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*Supplementary Table 1. Search Terms for Proquest Psychology*

Concept	Search terms
Wellbeing	(((((TI,AB,DISKW(wellbeing OR "well being" OR wellness OR "quality of life" OR QoL OR "positive mental health")
PERMA terms and synonyms	AND TI,AB,DISKW(hedoni* OR happy OR happi* OR "positive emotion" OR "positive affect" OR "life satisfaction" OR "satisfaction with life" OR eudaimoni* OR eudaemoni* OR flourish* OR languish* OR "psychological well-being" OR "PWB" OR engagement OR enthusiasm OR passion OR meaning* OR "life purpose" OR "sense of purpose" OR achievement OR accomplishment OR attainment OR "social relationships" OR "peer relationships" OR relatedness OR lonel* OR friend* OR ("social contact" OR "social contacts") OR "social support" OR "social ties" OR ("social network" OR "social networking" OR "social networks") OR "social satisfaction" OR "social participation" OR "social isolation" OR "socially isolated" OR "social capital" OR "received support" OR "perceived support" OR "satisfaction with support")
Tertiary students	AND TI,AB,DISKW((university NEAR/15 student*) OR (college NEAR/15 student*) OR (tertiary NEAR/15 student*) OR (undergraduate NEAR/15 student*) OR (postgraduate NEAR/15 student*) OR undergraduates OR postgraduates)
Validation studies	NOT TI,AB,DISKW("face validity" OR "content validity" OR "concurrent validity" OR "construct validity" OR "convergent validity" OR "discriminant validity" OR "Cronbach's Alpha"))
Additional terms	AND la.exact("English")) AND (bdl(10000245 1007161 1007399) AND stype.exact("Scholarly Journals")) AND pd(19000101-20201231) AND PEER(yes))

**Supplementary Table 2. Search Terms for ERIC**

Concept	Search terms
Wellbeing	((((TI,AB,DISKW(wellbeing OR "well being" OR wellness OR "quality of life" OR QoL OR "positive mental health"))
PERMA terms and synonyms	AND TI,AB,DISKW(hedoni* OR happy OR happi* OR "positive emotion" OR "positive affect" OR "life satisfaction" OR "satisfaction with life" OR eudaimoni* OR eudaemoni* OR flourish* OR languish* OR "psychological well-being" OR "PWB" OR engagement OR enthusiasm OR passion OR meaning* OR "life purpose" OR "sense of purpose" OR achievement OR accomplishment OR attainment OR "social relationships" OR "peer relationships" OR relatedness OR lonel* OR friend* OR ("social contact" OR "social contacts") OR "social support" OR "social ties" OR ("social network" OR "social networking" OR "social networks") OR "social satisfaction" OR "social participation" OR "social isolation" OR "socially isolated" OR "social capital" OR "received support" OR "perceived support" OR "satisfaction with support")
Tertiary students	AND TI,AB,DISKW((university NEAR/15 student*) OR (college NEAR/15 student*) OR (tertiary NEAR/15 student*) OR (undergraduate NEAR/15 student*) OR (postgraduate NEAR/15 student*) OR undergraduates OR postgraduates)
Validation studies	NOT TI,AB,DISKW("face validity" OR "content validity" OR "concurrent validity" OR "construct validity" OR "convergent validity" OR "discriminant validity" OR "Cronbach's Alpha"))
Additional terms	AND la.exact("English") AND (bdl(10000245 1007161 1007399) AND stype.exact("Scholarly Journals") AND pd(19000101-20201231) AND PEER(yes))

**Supplementary Table 3. Search Terms for APA PsycINFO**

Concept	Search terms
Wellbeing	( wellbeing OR "well being" OR wellness OR "quality of life" OR qol OR "positive mental health" )
PERMA terms and synonyms	AND ( hedoni* OR happy OR happi* OR "positive emotion" OR "positive affect" OR "life satisfaction" OR "satisfaction with life" OR eudaimoni* OR eudaemoni* OR flourish* OR languish* OR "psychological well-being" OR "PWB" OR engagement OR enthusiasm OR passion OR meaning* OR "life purpose" OR "sense of purpose" OR achievement OR accomplishment OR attainment OR "social relationships" OR "peer relationships" OR relatedness OR lonel* OR friend* OR "social contact*" OR "social support" OR "social ties" OR "social network*" OR "social satisfaction" OR "social participation" OR "social isolation" OR "socially isolated" OR "social capital" OR "received support" OR "perceived support" OR "satisfaction with support" )
Tertiary students	AND ( ( university N15 student* ) OR ( college N15 student* ) OR ( tertiary N15 student* ) OR ( undergraduate N15 student* ) OR ( postgraduate N15 student* ) OR undergraduates OR postgraduates )
Validation studies	NOT ( "face validity" OR "content validity" OR "concurrent validity" OR "construct validity" OR "convergent validity" OR "discriminant validity" OR "Cronbach's Alpha" )
Additional terms	<p>Limiters - Peer Reviewed;</p> <p>Publication Type: Peer Reviewed Journal, Dissertation Abstract;</p> <p>English;</p> <p>Age Groups: Young Adulthood (18-29 yrs), Thirties (30-39 yrs), Middle Age (40-64 yrs);</p> <p>Population Group: Human;</p> <p>Classification Codes: 2100 General Psychology, 2227 Educational Measurement, 2340 Cognitive Processes, 2360 Motivation &amp; Emotion, 2380 Consciousness States, 2700 Communication Systems, 2820 Cognitive &amp; Perceptual Development, 2840 Psychosocial &amp; Personality Development, 2910 Social Structure &amp; Organization, 2920 Religion, 2930 Culture &amp; Ethnology, 2950 Marriage &amp; Family, 2970 Sex Roles &amp; Women's Issues, 2980 Sexual Behavior &amp; Sexual Orientation, 2990 Drug &amp; Alcohol Usage (Legal), 3020 Group &amp; Interpersonal Processes, 3040 Social Perception &amp; Cognition, 3120 Personality Traits &amp; Processes, 3140 Personality Theory, 3211 Affective Disorders, 3215 Neuroses &amp; Anxiety Disorders, 3233 Substance Abuse &amp; Addiction, 3253 Learning Disorders, 3310 Psychotherapy &amp; Psychotherapeutic Counseling, 3311 Cognitive Therapy, 3312 Behavior Therapy &amp; Behavior Modification, 3313 Group &amp; Family Therapy, 3314 Interpersonal &amp; Client Centered &amp; Humanistic Therapy, 3350 Specialized Interventions, 3353 Self Help Groups, 3355 Lay &amp; Paraprofessional &amp; Pastoral Counseling, 3357 Art &amp; Music &amp; Movement Therapy, 3360 Health Psychology &amp; Medicine, 3365 Promotion &amp; Maintenance of Health &amp; Wellness, 3370 Health &amp; Mental Health Services, 3371 Outpatient Services, 3373 Community &amp; Social Services, 3410 Professional Education &amp; Training, 3430 Professional Personnel Attitudes &amp; Characteristics, 3550 Academic Learning &amp; Achievement, 3560 Classroom Dynamics &amp; Student Adjustment &amp; Attitudes, 3580 Educational/Vocational Counseling &amp; Student Services, 3700 Sport Psychology &amp; Leisure</p>

**Supplementary Table 4. Search Terms for MEDLINE (Ovid)**

Concept	Search terms
Wellbeing	1. (wellbeing or well-being or wellness or "quality of life" or QOL or "positive mental health").mp. or quality of life.sh.
PERMA terms and synonyms	3. (hedoni* or happy or happi* or "positive emotion" or "positive affect" or "life satisfaction" or "satisfaction with life" or (eudaimoni* or eudaemoni* or flourish* or languish* or "psychological well-being" or "PWB" or engagement or enthusiasm or passion or meaning* or "life purpose" or "sense of purpose" or achievement or accomplishment or attainment) or ("social relationships" or "peer relationships" or relatedness or lonel* or friend* or "social contact*" or "social support" or "social ties" or "social network*" or "social satisfaction" or "social participation" or "social isolation") or ("socially isolated" or "social capital" or "received support" or "perceived support" or "satisfaction with support")).mp. or (hope or happiness or personal satisfaction or interpersonal relations or academic success or achievement).sh.
Tertiary students	4. ((university adj15 student*) or (college adj15 student*) or (tertiary adj15 student*) or (undergraduate adj15 student*) or (postgraduate adj15 student*) or undergraduates or postgraduates).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
Validation studies	5. ("face validity" or "content validity" or "concurrent validity" or "construct validity" or "convergent validity" or "discriminant validity" or "Cronbach's Alpha").mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
Additional terms	2. limit 1 to (english language and humans and (classical article or clinical study or clinical trial, all or comparative study or controlled clinical trial or english abstract or evaluation studies or government publications or introductory journal article or journal article or meta analysis or multicenter study or observational study or randomized controlled trial or "review" or systematic reviews or twin study))
Aggregate search components	6. (2 and 3 and 4) not 5

**Supplementary Table 5.** Wellbeing instruments in Cooke et al. (2016) review, with additions

<u>Hedonic</u>	<u>Hedonic (cont'd)</u>	<u>Quality of Life</u>	<u>Composite</u>	<u>Composite</u>
Australian Unity Index of Subjective Well-Being	<b>Subjective Happiness Scale</b>	Assessment of Quality of Life-8d	12-Item Well-Being Questionnaire	<b>Mental Health Continuum Long Form (MHC-LF)</b>
<b>Delighted-Terrible Scale</b>	<b>Temporal Satisfaction With Life Scale</b>	Comprehensive Quality of Life Scale	Authentic Happiness Inventory	Oxford Happiness Questionnaire
European Social Survey Happiness Item	World Values Survey	Quality of Life Inventory	COMPAS-W	Oxford Happiness Inventory
<b>Happiness Measures</b>		WHO Quality of Life Scale	Gallup-Healthways Well-Being Index	Pemperton Happiness Index
Ladder of Life Scale	<u>Eudaimonic</u>		<b>General Well-Being Schedule</b>	<b>Positive Mental Health Scale (PMHS)</b>
Life Satisfaction Research Questionnaire	Basic Needs Satisfaction		Life Satisfaction Index	<b>Psychological General Well-Being Index-Revised</b>
MIDUS II-Satisfied With life Item	<b>Flourishing Scale</b>	<u>Wellness</u>	Medical Outcome Studies Short Form-36	<b>Warwick-Edinburgh Mental Well-Being Scale</b>
National Survey, University of Michigan – Happiness Item	<b>Psychological Well-Being Scale</b>	Five Factor Wellness Evaluation of Lifestyle	<b>Mental Health Continuum Short Form (MHC-SF)</b>	WHO-Ten Well-Being Index
<b>Satisfaction with Life Scale (SWLS)</b>	<b>Questionnaire for Eudaimonic Well-Being (QEWB)</b>	Wellness Evaluation of Lifestyle	<i>PERMA-Profiler</i>	
Short Depression-Happiness Scale	Social Well-Being [Scale]	Wellness Inventory		

Note: Instruments which were used in a study in this review are bolded; additions are italicised.

**Supplementary Table 6.** Studies using individual subscales to measure wellbeing

Author, Year	RQ domain	Country (no. sites)	Pop. n (% fem)	Age - mean (SD)	Independent variable(s)	Dependent variable(s)	Wellbeing instrument	Findings	Duration (waves)
Hill, 2010 [92]	Self (Motivation)	US (1)	S 416 (43%)	~18 (NA)	Purpose orientation	Growth and purpose	PWBS Purpose + Growth scales	T3 growth correlated with T2 prosocial orientation ( $r = 0.26, p < 0.01$ ). In multiple regressions, T3 growth was associated with T2 prosocial orientation ( $\beta = 0.23, p < 0.01$ ) and sex ( $\beta = -0.15, p < 0.01$ ), and T3 purpose by sex ( $\beta = -0.13, p < 0.05$ ).	13 yr (3)
Bowman, 2011 [94]	Institutional Context (Diversity)	US (1)	S 416 (43%)	~18 (NA)	Racial / cultural diversity	Eudaimonic wellbeing, LS, prosocial orientation, volunteer work, recog. of discrimination	SWLS; PWBS Mastery, Growth subscales	In a structured equation model T3 personal growth was associated with directly by T2 prosocial orientation ( $0.18, p < 0.01$ ), T2 (college-specific) personal growth ( $0.17, p < 0.01$ ), and maleness ( $-0.14, p < 0.05$ ); and indirectly by participating in a racial/cultural awareness workshop ( $0.03, p < 0.05$ ).	13 yr (3)

**Supplementary Table 7.** Number of studies by population of interest and type of measure

Type of measure	Population of interest		Subtotal
	General pop.	Tertiary student	
Life satisfaction (only)	23	20	43
Other or multiple types	9	10	19
Subtotal	32	30	62

**Conflict of interest statement**

The authors report no conflicts of interest.

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