

Subjective wellbeing of primary healthcare patients in the Western Cape, South Africa

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Abstract

Background: Patients living with a chronic illness face many challenges in their lives such as an altered body image, physical pain or discomfort, the need for frequent medical visits and the negative side effects of treatment. To this extent their sense of personal or subjective well-being may be compromised by the severity and chronicity of their illness. The aim of the present study was to explore the level of subjective well-being and its relationship with coping, quality of life and support from family and friends among a sample of Black South Africans attending semi-rural public clinics for treatment for hypertension and diabetes. This study was part of a larger project on treatment adherence to medication among patients living with these conditions.

Methods: A convenience sample of 117 patients aged between 22 and 82 years ($M=52.36$, $SD=13.24$), receiving treatment for hypertension ($n=79$) or diabetes ($n=24$) at three primary health care clinics in the Boland area of the Western Cape were asked to participate in this study. Of the total sample, 14 (12%) were diagnosed with both conditions. Participants were asked to complete a questionnaire battery consisting of the Satisfaction with Life Scale, the Coping Strategy Indicator, the Functioning Assessment of Non-Life Threatening Conditions and the Perceived Social Support Scale.

Results: The mean score of the Satisfaction with Life Scale was 28.70, which was significantly higher than those of other studies using this measure. In order to address the problem of experiment-wise error, commonly associated with the use of multiple statistical comparisons, we used the Bonferroni correction in arriving at probability levels in determining statistical significance. On average the sample as a whole appeared to be largely satisfied. The mean scores on the two of the subscales of the Coping Strategy Indicator were significantly different from those obtained from other South African samples. On the Functioning Assessment of Non-Life Threatening Conditions, the mean scores on the subscales but not the total score was significantly higher than other South African samples.

Conclusions: In general, participants scored significantly higher on all of the measuring instruments compared with other South African samples, indicating high levels of life satisfaction, coping, and support from others. We found no relationship between life satisfaction and gender. Age however correlated positively with satisfaction with Life, Support from family, social and emotional well being and Quality of Life, which concurs with the findings of previous studies. Contrary to other studies we found a significant negative correlation between education and SWLS but no relationship between employment and SWLS. Our sample also reported higher levels of support from friends and family that were significantly higher than those of other South African samples. The mean scores on all the subscales of the Coping Strategy Indicator were higher than that of other South African samples.

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Introduction

Patients living with a chronic illness face many challenges, such as an altered body image, physical pain or discomfort, the need for frequent medical visits and negative side effects of treatment. Their sense of personal or subjective wellbeing therefore may be compromised by the severity and chronic nature of their illness. Subjective wellbeing (SWB) refers to a person's global level of satisfaction with his/her life. It involves both cognitive and affective processes in making such a judgement.¹ The components of SWB include satisfaction with life (e.g. marriage, love, recreation), the presence of positive affect (emotions such as joy and pride) and the absence of negative affect (e.g. anger, anxiety and sadness).²

The data on demographic and socio-economic variables associated with SWB among medical patients are mixed. Some studies have shown modest relationships between demographics (age, gender and marital status) and socio-economic variables (income and education) and SWB.^{3,4,5,6} Others have shown negligible or no correlations.^{5,7} For example, non-significant correlations have been reported between gender and SWB^{5,8,9} and educational level and SWB among South African samples. Unemployment in particular has been shown to be associated with low SWB,^{5,10,11,12} while wealth has been shown to be associated with high SWB.¹¹ However, financial success is not necessarily a good predictor of wellbeing.¹³ For example, the mean score of a sample of black people in South Africa (a middle income country) with no chronic diseases or disabilities fell above the neutral point on the Satisfaction with Life Scale (SWLS), indicating modest levels of SWB.⁵ However, in general, poverty has been associated with low SWB, as people in poor nations have mostly reported low satisfaction with life.¹⁴

Quality of life (QOL)

Quality of life refers to "the degree to which a person enjoys the important possibilities of his/her life. Possibilities result from the opportunities and limitations each person has in his/her life and reflect the interaction of personal and environmental factors".¹⁵ The World Health Organization, however, defines QOL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns".¹⁶ Liao et al⁴ define QOL as "people's individual well-being and/or welfare". There is likely to be considerable overlap between SWB and QOL, as both involve subjective appraisals of one's life. While QOL refers to a person's wellbeing and welfare, SWB refers to satisfaction, the presence of pleasant affect and the absence of unpleasant affect.

QOL is generally thought to consist of physical wellbeing, social wellbeing, emotional wellbeing and functional wellbeing,⁴ among others. Further studies have focused on specific areas of life, such as satisfaction with relationships, marriage, personal health and education as predictors of QOL (Diener and Suh¹⁷; Lewis and Lyon; Andrews and Withney, cited in Liao et al⁴). QOL also reflects people's concern about social issues, such as the economy, crime and the environment.¹⁰ Finally, physical and mental health, volunteer work and personality have been shown to play a role in QOL.^{18,19}

Support

A marker of social support is the availability of others in one's social constellation in whom one has trust and whom one can rely on for care and assistance in times of need.²⁰ Social support has both

structural and functional aspects. The structural aspects of support refer to relationships such as family, friends, marital status and group membership, and how these are connected with each other. The functional aspects refer to the emotional component (e.g. love, and empathy), instrumental support (e.g. assistance), appraisal support (e.g. self-evaluation) and informational support (e.g. feedback).²¹

Social support has been shown to be associated with wellbeing.²¹ For example, black South Africans receiving treatment for diabetes at primary healthcare clinics and who had lower social support reported poorer health and wellbeing than those who had greater social support. Westaway et al²¹ found that social-emotional and tangible support explained 78.9% of the variance in SWB, with socio-emotional support being more important to health and wellbeing than tangible support.

Coping

Coping refers to the successful management of stressful and potentially harmful situations. Two methods of coping have been identified,²² namely problem-focused and emotion-focused coping. Problem-focused coping refers to the propensity to act on one's environment in order to reduce the stressful or harmful situation. In this regard it is active and planful.²³ Emotion-focused coping refers to the emotional or affective processes that come into play as the person engages with the stressful or harmful situation.^{15,24} Problem-focused coping has been shown to be associated with wellbeing, while avoidant coping appears to have a negative association.²⁴ However, the data in this line of research are mixed. In Putter's²⁴ study, coping strategies were not good predictors of psychological wellbeing, while in other research coping styles and health status were indeed good predictors of wellbeing.^{11,23,25}

The aim of the present study was to explore the level of subjective wellbeing and its relationship with coping, quality of life and support from family and friends among a sample of black South Africans attending semi-rural public clinics for the treatment of hypertension and diabetes. The study formed part of a larger project on treatment adherence among patients living with these conditions.

Method

Participants

A convenience sample of patients attending three primary healthcare clinics in the Boland area of the Western Cape was recruited to participate in the study. A total of 117 patients (22 men and 95 women), aged 22 to 82 years (M = 52.36, SD = 13.24), receiving treatment for hypertension (n = 79) or diabetes (n = 24) participated in the study. Of the total sample, 14 (12%) were diagnosed with both conditions. Forty per cent were employed or part-time employed, while the rest of the sample were unemployed, pensioners, housewives or disabled. In terms of education, 28% had completed primary school, 43% had completed high school, and 3% had completed tertiary education. About one-quarter (26%) of the sample stated that they had no education at all.

Procedures

During the time of the patients' clinic appointments, they were informed by clinic nurses that a study was under way in the clinic and that, if they were interested, they should approach the research assistant employed by the study and volunteer to participate. The assistant was located in a private room in the clinic. When patients approached the

research assistant, the study was explained to them and they were recruited to participate. All patients who approached the assistant agreed to participate in the study. Upon agreement to participate, the patients were asked to sign a form granting informed consent. Each participant was given a supermarket voucher valued at ZAR20 (\$3) as a gesture of appreciation for their participation in the study. The research assistant administered the questionnaire to those patients who were unable to read.

Measures

Satisfaction with Life Scale^{25,26} (SWLS)

Satisfaction with life was measured with a five-item questionnaire¹⁷ containing the following items: "In most ways my life is close to my ideal", "The conditions of my life are excellent", "I am satisfied with my life", "So far I have gotten the important things I want in life" and "If I could live my life over, I would change almost nothing". The SWLS correlates well with other measures of subjective wellbeing.^{25,26} In the present study, Cronbach's alpha for this instrument was .87.

Coping strategy indicator²⁷ (CSI)

This indicator is a 33-item three-point questionnaire assessing the extent to which three coping strategies are used. The three strategies are problem solving (PS), seeking social support (SSS) and avoidance (A). Amirkham²⁷ reported a Cronbach alpha of .89 for PS, .89 for SSS and .84 for A. Bach²⁸ reported a Cronbach alpha of .87, .92 and .79 for PS, SSS and A respectively. In the present study, the Cronbach's alpha obtained were .88 (PS), .87 (SSS) and .70 (A).

Functioning assessment of non-life-threatening conditions (FANLTC)²⁹

The FANLTC is part of the Functional Assessment of the Cancer Therapy (FACIT) measuring instruments and consists of 26 items and four subscales, namely Emotional wellbeing (EWB), Functional wellbeing (FWB), Physical wellbeing (PWB) and social/family wellbeing (SWB). In the present study, the Cronbach's alphas obtained were as follows: total score .82, PWB .67, SWB .71, EWB .70 and FWB .70.

Social support from family

The original 20-item Perceived Social Support Family (PSS-Fa) questionnaire³⁰ was used to assess family support. The internal consistency of this measure was previously determined to be .85, as measured by Cronbach's alpha. In the present study, the Cronbach's alpha was .87. The reliability estimates of the measure in other South African studies were .68.²⁰

Social support from friends

The original 20-item Perceived Social Support Friends (PSS-Fr) questionnaire³⁰ was used to assess support from friends. The internal consistency of the PPS Friends was .86.⁸ In the present study, Cronbach's alpha was .84. The reliability of PSS-FR in the South African study was .51.²⁰

Results

One hundred and seventeen patients (age \bar{X} = 52.36, SD = 13.24) receiving treatment for hypertension and/or diabetes at primary healthcare clinics in the Boland area of the Western Cape were recruited into the study and completed the battery of instruments.

Table I displays the mean and standard deviation scores of the SWLS, CSI (PS, SSS, A), PSS (friends, family) and FANLTC (EWB, FWB, PWB, SWB).

Table I: The present means, standard deviations, range of scores and reliability coefficients for all variables (n = 117)

Scale	Description	Mean	SD	Min	Max	Alpha
SWLS	Satisfaction with Life Scale	28.70	7.82	5.00	35.00	.87
CSI	Problem solving	29.58	4.42	15.00	33.00	.88
	Seeking social support	27.47	5.15	13.00	33.00	.87
	Avoidance	24.41	4.65	13.00	33.00	.70
PSS	Perceived support – family	16.05	3.55	1.00	20.00	.82
PSS	Perceived support – friends	15.38	3.80	5.00	20.00	.82
FANLTC	Total score	85.01	12.64	51.83	104.00	.82
EWB	Emotional wellbeing	15.89	4.01	4.00	28.00	.67
FWB	Functional wellbeing	23.61	4.50	10.00	28.00	.70
PWB	Physical wellbeing	22.02	5.03	4.00	28.00	.70
SWB	Social/family wellbeing	23.50	5.09	5.83	28.00	.71

All instruments indicated satisfactory alpha values, except for Avoidance (CSI), and the subscales of the FANLTC (EWB, FWB, PWB and SWB). The present SWLS mean scores were compared with those obtained in previous South African samples (see Table II).

Table II: A comparison between SWLS mean scores obtained from the present sample (n = 117) and from other South African samples

Other SA samples	Mean	SD	df	t
Westaway and Maluka ⁵ , (n = 360)	22.30	6.3	475	8.97**
Westaway et al ⁶ , (n = 54)	21.70	8.8	169	5.23**
Wissing and Van Eeden ²⁰ , (n = 550)	23.45	6.32	665	7.81**
Bach ²⁸ , (n = 198)	24.13	6.31	313	5.67**
Du Toit ³¹ , (n = 477)	23.94	5.77	592	7.41**
Putter ²⁴ , (n = 481)	23.94	6.79	496	6.59**

** Corrected p value < .01

As seen from Table I, the present mean score for the SWLS was 28.70, which was significantly higher than the results from other studies as determined by a series of t-tests.^{5,6,20,27,29} In order to address the problem of experiment-wise error, commonly associated with the use of multiple statistical comparisons, we used the Bonferroni correction in arriving at probability levels to determine statistical significance. According to Diener³², the SWLS scores may be interpreted as follows: 5 to 9 = extremely dissatisfied; 10 to 14 = dissatisfied; 15 to 18 = slightly dissatisfied; 20 = neutral; 21 to 25 = slightly satisfied; 26 to 30 = satisfied; 31 to 35 = extremely satisfied. On average, the present sample as a whole appeared to be largely satisfied with their lives and no significant gender differences were found. However, we were surprised to find a significant negative correlation between education and SWLS; participants with a higher education scored significantly lower than those with a lower education. No significant correlations were found between employment and SWLS.

The present CSI mean scores were similarly compared with those of other South African samples (see Table III).

The present mean scores on the Seeking Social Support and Avoidance subscales of the CSI were significantly different from those obtained from other South African samples.^{20,24,28} However, a non-significant difference was found between the Problem-solving subscale of the present study and that of the sample studied by Bach²⁸. Consistent with other literature, we found no differences between men and women in terms of CSI.

Table III: A comparison between the mean scores on the CSI of the present sample (n = 117) and those of other South African samples.

Other SA samples		Mean	SD	df	t
Wissing and Van Eeden ²⁰ , (n = 550)	PS	28.32	4.12	665	2.97**
	SSS	28.99	5.47	665	5.89**
	A	27.38	4.08	665	10.66**
Bach ²⁸ , (n = 198)	PS	28.99	4.09	313	1.20
	SSS	23.19	5.70	313	6.67**
	A	17.81	4.33	313	12.72**
Putter ²⁴ , (n = 481)	PS	27.38	4.37	596	4.87**
	SSS	24.88	5.58	596	4.57**
	A	20.68	4.32	596	8.25**

** Corrected p value <.01

The items on the FANTLC questionnaire are identical to those of the Functional assessment of the Cancer Therapy – General Version (FACIT-G), except for one item, “I worry about dying”, in the EWB subscale. The current mean FANTLC scores were compared to those of the FACIT-G mean scores seen in the manual (see Table IV).²⁹

Table IV: A comparison between present FANTLC mean scores and the FACIT-G mean scores

	Present study (n=117)		FACIT-G (n=466)		df	t
	Mean	SD	Mean	SD		
Physical wellbeing	22.02	5.03	20.5	5.5	581	2.72**
Social wellbeing	23.50	5.09	21.9	4.8	581	3.18**
Emotional wellbeing	15.89	4.07	14.8	3.9	581	2.67**
Functional wellbeing	23.61	4.50	18.0	6.1	581	9.33**
Total score	85.01	12.64	82.1	15.9	581	1.84

** Corrected p value <.01

In the present study, the FANTLC subscales scores and not the total mean scores were significantly higher than those of the FACIT-G.²⁹

The present mean scores for the PSS-FA and PSS-FR were compared to those of other South African samples (see Table V).

Table V: A comparison between the mean scores of the PSS-FA and PSS-FR of the present sample (n = 117) and those of other South African samples.

Other SA samples	PSS-FA				PSS-FR			
	Mean	SD	df	t	Mean	SD	df	t
Bach ²⁸ , (n = 198)	15.22	5.07	313	1.56	12.09	5.44	313	5.76**
Wissing and Van Eeden ²⁰ , (n = 550)	15.15	4.62	665	1.98	13.64	4.26	665	4.09**

** Corrected p value <.01

The PSS-FR mean scores of the present sample were significantly higher than those of Wissing and Van Eeden²⁰ and Bach²⁸, but no significant differences were found in the PSS-FA.

The Spearman correlations between SWLS and the other wellbeing variables were calculated. Significant correlations were found between SWLS, age and all the other wellbeing variables. Age also correlated significantly with EWB, SWB, FANTLC total score and PSS-FA.

Discussion

The aim of this study was to explore the relationship between satisfaction with life, coping, and social support among black South Africans attending semi-rural public clinics for the treatment of hypertension and diabetes. In general, the participants scored significantly higher on all of the measuring instruments compared with other South African samples, indicating high levels of life satisfaction, coping, and support from others.

The SWLS has been used widely in culturally diverse settings in South Africa. Similar to Pavot and Diener¹¹, we found no relationship between life satisfaction and gender. Age, however, correlated positively with SWLS, support from family, SWB, EWB and the total score of the FANTLC, which concurs with the findings of previous studies.^{5,9,20,24}

We found a significant negative correlation between education and SWLS, but no relationship between employment and SWLS. These results differ from those of Diener²⁵, Ryff and Singer¹², and Westaway and Maritz⁶, who found significant correlations between education and SWLS and employment status and SWLS.

Social support

In general, our sample reported significantly higher levels of support from friends than was reported in other South African samples,²⁰ but not higher levels of family support.^{20,21,28} Thus, despite their serious and chronic health problems, our sample reported relatively high levels of support and satisfaction with life. Social support possibly could protect or buffer the individuals living with a chronic illness from experiencing elevated levels of stress, thus enhancing their satisfaction with life.

Coping strategies

The coping strategy most frequently endorsed by the sample was Problem-solving coping, followed by Seeking social support and then Avoidance. The mean scores on all the subscales of the CSI, which was used to measure coping, were higher than those of other South African samples. Unlike Wissing and Van Eeden²⁰ and Putter²⁴, we found no relationship between coping and gender. All three subscales of the CSI were positively associated with Satisfaction with life, a result that is in contrast to the findings of Putter²⁴, who found a significant positive correlation between CSI-PS, CSI-SSS and Satisfaction with life and a significant negative correlation between CSI-A and Satisfaction with life.

We were surprised to find that the members of the sample reported high levels of life satisfaction, although it is possible that demand characteristics accounted for this phenomenon. The research assistants who administered the questionnaires in clinic waiting rooms also helped patients with low literacy levels by reading the questions to them and helping them answer the questions. It is possible that this process may have influenced the participants to respond more positively than they would have without assistance. Thus, social desirability may have influenced the results in an upward direction. It has been shown that social desirability is correlated with Satisfaction with life (Diener, Sandvik, Pavot and Gallagher, cited in Pavot and Diener¹¹). We were similarly surprised to find a negative correlation between educational level and SWL. This relationship requires further exploration. The participants in the present study were more satisfied with their lives than other South African samples, although they came from a disadvantaged community and only 28% were employed.

Diener³³ noted that communities whose needs for water, food and shelter are met have higher SWLS scores. Thus changes in the commitment of the government to delivering water, electricity and primary health care may also be an explanation for the higher scores on satisfaction of life. It should be noted that the data were collected prior to the current electricity crisis in South Africa.

Concluding comment

The present study sought to examine the relationship between SWB, coping and quality of life in a sample of patients living with chronic illnesses. Unlike several other studies, we found that our sample generally reported a high level of satisfaction with life, despite problems with accessing medical care, unemployment and living in communities characterised by poverty.

References

- Diener E, Lucas RE. Subjective emotional well-being. In: Lewis M, Haviland JM (Eds.). *Handbook of emotions* (2nd ed.). New York: Guilford; 2000. p. 325-37.
- Diener E, Suh E, Oishi S. Recent findings on subjective well-being: <http://www.psych.uiuc.edu/~ediener/hottopic/paper1.html> (Accessed 01/06/2006).
- Hutchinson G, Simeon DT, Bain BC, Wyatt GE, Tucker MB, Lefranc E. Social and health determinants of well-being and life satisfaction in Jamaica. *Internat J of Soc Psych* 2004;50(1):43-53.
- Liao P, Fu Y-C, Yi C-C. Perceived quality of life in Taiwan and Hong Kong: an intra-culture comparison. *J Hap* 2005;6:43-67.
- Westaway MS, Maluka CS. Are life satisfaction and self-esteem distinct constructs? A black South African perspective. *Psycho Rept* 2005;97(2):567-75.
- Westaway MS, Maritz C, Golele NJ. Empirical testing of the Satisfaction with Life Scale: a South African pilot study. *Psych Rept* 2003;92:551-4.
- Smith AR, Sim J, Scarf T, Phillipson C. Determinants of quality of life amongst older people in deprived neighbourhoods. *Age & Soc* 2004;24:793-814.
- Diener E, Suh EM, Lucas RE, Smith, HL. Subjective well-being: three decades of progress. *Psychol Bul* 1999;125(2):276-302.
- Roothman B, Kirsten DK, Wissing MP. Gender differences in aspects of psychological well-being. *SAJP* 2003;33(4):21-28.
- Diener E. Assessing subjective well-being: progress and opportunities. *Social Indicators Research* 1994;31:103-57.
- Pavot W, Diener E. A review of the Satisfaction of Life Scale. *Psycholo Ass* 1993;5: 164-72.
- Ryff CD, Singer B. Psychological well-being: meaning, measurement, and implications for psychotherapy research. *Psychotherapy and Psychosomatics* 1996;65:14-23.
- Ryan RM, Deci EL. On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annual Rev of Psychol* 2001;52(1):141-64.
- Diener E, Diener M. Cross-cultural correlates of life satisfaction and self-esteem. *J of Persy and Soc Psychol* 1995;68:653-63.
- Notes on quality of life: <http://www.gdrc.org/uem/qol-define.html> (Accessed 07 / 05/ 2007).
- The WHOQoL Group. The development of the World Health Organization Quality of Life Assessment Instrument (the WHOQoL). In: Orley J, Kuyken W (Eds.). *Quality of life assessment: international perspectives*. Heidelberg: Springer-Verlag; 1994.
- Diener E, Suh E. Measuring quality of life: economical, social, and subjective indicators. *Soc Indic Res* 1997;40:189-216.
- Falkenberg AW. Quality of life: efficiency, equity and freedom in the United States and Scandinavia. *J of Soc-Econo* 1998;27:1-27.
- Michalos AC, Zumbo BD, Hubble A. Health and the quality of life. *Soc Indic Res* 2000;51:245-95.
- Wissing MP, Van Eeden C. Empirical clarification of the nature of psychological well-being. *SAJP* 2002;32(1):32-44.
- Westaway MS, Seager JR, Rheeder P, Van Zyl DG. The effects of social support on health, well-being and management of diabetes mellitus: a black South African perspective. *Ethn and Health* 2005;10(1):73-89.
- Lazarus RS, Folkman S. *Stress, appraisal, and coping*. New York: Springer; 1984.
- Jones TG, Rapport LJ, Hanks RA, Lichtenberg PA, Telmet K. Cognitive and psychological predictors of subjective well-being in urban older adults. *The Clinical Neuropsychologist* 2003;17(1):3-18.
- Putter BS. Die aard van coping: 'n Konstruktclarifikasie en modelstoetsing. [The nature of coping: A construct clarification and model testing]. Unpublished Master's thesis, Potchefstroom University; 1998.
- Diener R, Emmons R, Larsen RJ, Griffin S. The satisfaction with life scale. *J of Pers Ass* 1985;49(1):71-5.
- Simons C, Aysan F, Thompson D, Hamarat E, Steele D. Coping with resources availability and level of perceived stress as predictors of life satisfaction in a cohort of Turkish college students. *Col Stud J* 2002;36(1):129-42.
- Amirkham JH. Criterion validity of a coping measure. *J of Pers Ass* 1994;62(2):242-261.
- Bach, M. Stres, copingstrategieë, sosiale ondersteuning en die psigiese en fisiese welsyn van 'n groep akademici. [Stress, coping strategies, social support and the psychological and physical well-being of a group of academics]. Unpublished Master's thesis. Potchefstroom University, 2000.
- Cella D. Functional assessment of the Chronic Illness Therapy (FACIT) Measurement System (Version 4). Evanston Northwestern Healthcare, Evanston, IL; 1997.
- Procidano ME, Heller K. Measures of perceived social support from family and from friends: three validation studies. *Am J of Com Psychol* 1983;11(1):1-24.
- Du Toit M. Die dinamiek van lewenskonteks, persoonlike faktore, copingprosesse en psigologiese welsyn by jeugdige, met die oog op programontwikkeling vir kapasiteitsbou [The dynamics of life context, personal factors, coping processes and psychological welfare of youngsters, with the view on developing programmes for capacity building]. Unpublished doctoral dissertation, Potchefstroom University; 2000.
- Diener E. Satisfaction with life. <http://www.psych.uiuc.edu/~ediener/hottopic/hottopic.html> (Accessed 14/11/2005).
- Diener E. Subjective well-being: the science of happiness and a proposal for a national index. *Am Psychol* 2000;55(1):34-43.