PHYSICAL WELL-BEING OF PERSON WITH CHRONIC PHYSICAL ILLNESS

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Abstract

People with chronic physical illness live in a society that over a period of time becomes desensitized towards their problems. To make the situation worse, only few people understand that disease is a condition that cannot be simply controlled by medications and that the presence of chronic conditions markedly alters the lives of individuals and their families. The present research makes an attempt to review the perception of life quality on patients with chronic physical illness. We will be enlightening the importance of physical well-being and self-empowerment on this aspect of management, which is crucial for the improvement in the physical being of every patient suffering from this disease.

Keywords: Chronic Physical Illness, Physical Well-being,

INTRODUCTION

Chronic illnesses are a burden for global health in terms of understanding and managing the symptoms and represent one of the main expenditures for healthcare organizations all over the world (WHO, 2010; European Observatory on Health Systems and Policies, 2010; ISTAT, 2008; CDC, 2005; Department of Health, 2005). Chronic health conditions are often associated with decreased affective well-being (Mehnert, Krauss, Nadler and Boyd, 1990). Several studies observed that chronically ill patients show low levels of self-care ability in recognizing and managing their symptoms, in taking drug therapies and performing recommended behaviors including diet or exercise. (Gallagher, 2010; Schnell and Hoehn, 2009; Lerman, 2005; Department of Health, 2005; Artinian, 2002; Carlson, 2001).

With reference to the management of chronic illness, Choice responsibility, empowerment and participation are considered key principles in chronic illness management and available reports suggest that future health systems and sustainability will mainly depend on people's ability to self-manage their chronic conditions(Regione and Lombardia, 2014; Newman and Tonkens, 2011; Ministero and Salute, 2011; Department of Health, 2005; Wanless, 2002). Chronically ill patients need to implement a range of specific behaviors in order to adhere to complex therapeutic regimes, to maintain well-being and quality of life over time, to control risks, to manage disease symptoms and to reduce the incidence of complications (World Health Organization, 2008 and 2005).

People with chronic physical illness experience unpleasant and unpredictable symptoms, difficult treatment regimes, and drug side effects, and increasing levels of physical disability. Most Chronic diseases are common and often occur as comorbidities. Risk factors for chronic diseases are highly prevalent among the Indian population (Patel and Chatterji 2011). They also face psychosocial consequences including disruptions to life goals, employment, income, relationships, leisure activities, and daily living activities. Psychological difficulties are extremely common in chronic physical illness (Rheumatoid Arthritis, Type II Diabetes Mellitus, Hypothyroidism) compared to both healthy populations and other chronic diseases. With the disease conscious mindset, the effective intervention of chronic diseases likes arthritis, diabetes and thyroid (taken in the present research paper). Subjects to the perceptions of the changes in health due to the disease by the patients. This became the base of the study.

LITERATURE REVIEW

With reference to mental health of arthritis patients reported pointed to the high levels of depression and anxiety in Rheumatoid arthritis patients. Therefore, it is clear that high level of anxiety and depression provide an important indicator of the psychological distress that Rheumatoid arthritis patients experience(Anderson ,1985). Cross-sectional research into arthritis and psychiatric disorders has documented significantly higher prevalence of psychiatric disorders among people diagnosed with arthritis compared with people diagnosed with other chronic conditions such as chronic obstructive pulmonary disease (Audrey, 1988).

Pain remains the major concern for most patients with Rheumatoid arthritis .Its persistence is an important negative consequence of disease. (Pollard, Choy, and Scott, 2005;Parker, Smarr, Walker, Hagglund and Anderson, 1991;Polsky, Doshi, Marcus, Oslin,Rothbard and 2005). On similar note found that people with rheumatoid arthritis (RA) frequently suffer from compromised physical and psychological health, however, little is known about positive indicators of health, due to a lack of validated outcome measures (Duda, 2015). Helmick, (2008) found in research, Arthritis is a significant cause of disability, chronic pain and reduced quality of life, particularly for older adults. Prevalence rates are close to 50 % in the middle aged and older population.

With reference to mental health of diabetes, Beeney, Bakry and Dunn (1996), found patients were distressed at the time of diagnosis with emotions ranging from anxiety, shock, anger, or even went into denial of suffering diabetes. When social relationship with peer group among diabetic patients were examined, the results revealed that diabetes group reported fewer friendships overall and they experienced less trust and sense of intimate friendship in love relationships (Jacobson, Hauser, Cole, C., Willett, Wolfsdorf and Dvorak, (2004);Fitzgerald and Kivimaki ,2015). In another study it was found that Emotional and psychological needs of the patients with diabetes are compromised, when personal efforts to meet these challenges fail to succeed as anticipated, or when the complications of diabetes take their toll on physical and psychological health (NHS Diabetes, Diabetes Uk,2014). Negative psychological syndromes such as depression and anxiety have been consistently associated with poor outcomes in patients with diabetes. (Anderson, Funnell, Butler, and Arnold,1995; Anderson, Brackett, Ho, and Laffe, 1999; Freedland, Clouse and Lustman 2001;)

Most of theresearches focus on exploring mental health of thyroid patients. The studies found that hypothyroidism when untreated poorer well-being of thyroid patients in comparisonto the general population .There also appears association between thyroid function and depression (Engum , Bjoro , Mykletun and Dahl ,2002);Jorde , Waterloo , Storhaug , Nyrnes , Sundsfjord andJenssen ,2006).on the same line Wu (2013) Investigated the prevalence of hypothyroidism in patients with major depression disorder. The results revealed that higher for the population. The annual incidence and prevalence of hypothyroidism was higher in patients with major depression. In another study Yu (2015) ; Almeida , Alfonso , Flicker , Hankey , Chubb and Yeap ,2011 ,Observed results of hypothyroidism/hyperthyroidism were highly compatible with behaviors of anxiety and depression. A number of studies observed that Hypothyroidism,observed that thyroid disorders have a long standing association with psychiatric disorders, especially mood disorders (Rao 2012; Roberts , Pattison , Roalfe , Franklyn, Wilson , Hobbs ,and Parle,2007; Escobar-Morreale , Rey , Obregon and Escobar,2002). Another study found that hypothyroidism when untreated diagnosed presented symptoms similar to anxiety and depression (Ittermann ,2015).

PURPOSE

✓ To Explore the Health Perception of Person.

RESEARCH DESIGN

Ex-post facto research with exploratory orientation was used.

ASSUMPTIONS

Perception of health would be poor in patients with Chronic Physical Illness.

The female patients with Chronic Physical Illness Perception of health would have poor in comparison to male patients with Chronic Physical Illness

VARIABLES:

Health Perception is major variables taken up across type of chronic physical illness (Rheumatoid Arthritis, Type II Diabetes, and Hypothyroidism) and Gender.

Sample: Individuals who have been treated for Chronic Physical Illness (Rheumatoid Arthritis, Type II Diabetes Mellitus, and Hypothyroidism) from Uttar Pradesh. Thereafter on the basis of the inclusion criterion three District Hospitals, Faizabad District Hospital, Ambedkar Nagar and Sultanpur District Hospital were administered the tools to check the comprehensibility. The sample comprised of 120 outdoor patients diagnosed with Chronic Physical Illness the criterion of undergoing treatment for at least a minimum period of five year, between the ages 35-55.

Inclusion Criteria:

- Age 35-55 years
- Medically diagnosed and undergoing treatment for minimum 5 years
- > Having the ability to comprehend
- > Single Diagnosis of Rheumatoid Arthritis (Stage II), Type II Diabetes and Hypothyroidism

Exclusion Criteria:

- ➤ Below 35 year and above 55 years
- > Asymptomatic
- Unable to comprehend
- ➤ Co-morbidity of Arthritis, Diabetes and Thyroid
- > Stage I,III and IV excluded of Rheumatoid Arthritis

TOOLS USED:

Perceived Health Schedule- This tool is developed by the researcher. After establishing rapport with the Chronic Physical Illness patients, each patient was individually contacted after seeking their consent. Perceived Health Schedule was individually administrated on each patient and the responses given were recorded verbatim.

RESULTS AND CONCLUSION

I-Perceived Change in Health-In the present schedule health beliefs explore the sub dimensions of

- 1. Perceived change in life due to sickness 2. Perceived Effect on Work Efficiency 3. Perceived Effect on Energy
- I--i -Perceived change in life due to sickness- This sub-dimension tries to analyze the perception of changes in life due to sickness. The question was asked D;k vkidks yxrk gS bl chekjh ds otg ls vki ds thou esa ifjoZru vk;k gS? gk;@ ugha,;fn gk; rks dSlk\"

TABLE 1.1 PERCEIVED CHANGES IN LIFE DUE TO SICKNESS ACCORDING TO TYPE OF ILLNESS AND GENDER

Response Categories	A1 (Rheumatoid)			A2 (Type II Diabetes)			A3 (Hypothyroidism)			B1 (Mal	B2 (Femal	Total
	B1 (%)	B2 (%)	Total (%)			Total (%)	B1 (%)	B2 (%)	Total (%)	e)	e)	
Neither Good nor Bad	40	25	32.5	30	15	22.5	35	30	32.5	35	23.4	29.1

Negative	60	75	67.5	70	85	77.5	65	70	67.5	65	76.6	70.9
Emotions												

When the details of the change were analyzed it brought forth two categories viz. Neither Good nor Bad and Negative Emotions (Table 1.1). Data taken as whole reflects that almost 29.1 % of the patients with chronic physical illness (A1-32.5%,A2-22.5% andA3-32.5%) were not able to describes the change in their life and hence speak for the dominance of response category Neither Good nor Bad. 70.9 % patients perceived Negative Emotions due to disease viz."ijs'kkuh c< xbZ gS cgqr ruko gSAß as is evident in table 1.2 Female Rheumatoid patients (A1B2) and Female diabetic patients (A2B2) show most dominant response on Negative Emotions (75% and 85 % respectively)". Gender differences were not marked.

I-ii Perceived Effect on Work Efficiency— Harreveled (2007), in their study found that psychological wellbeing (depression and psychological wellbeing) is related to physical wellbeing, a finding that is very much in accordance with the clinical literature on general emotional **states** (**viz. depression ,anxiety**) **and health**. This sub section deals with the effect of Illness. The question was asked bl chekjh ds dkj.k dkSu &dkSu ls dk;Z ugha dj ik jgs gS\"

A1 (Rheumatoid) A3 (Hypothyroidism) Response A2 (Type II **B**1 **B2** Total Categories Diabetes) (Male (Female **B**1 **B2** Total **B1** B2 Total B1 **B2 Total**)) (%)(%)(% (%)(% (%)(%)(%)(%)40 60 50 50 25 40 50 45 43.3 45 44.1 Not able to 37.5 Heavy Work Load and routine work Early onset 40 30 35 15 40 27.5 20 35 27.5 25 35 **30** of old age 40 20 10 15 35 35 15 31.7 Poor 35 27.5 20 25.9 Quality of work

TABLE 1.2 PERCEIVED EFFECT ON WORK ACCORDING TO TYPE OF ILLNESS AND GENDER

The content analysis of the obtained responses brought forth three responses categories. Table 1.2 highlights the most dominant response categories viz.: 1.Not able to do Heavy Work Load and routine work, 2.Early onset of old age and 3.Poor Quality of work. It is onset of old age (30%), Pbl chekjh dh otg cw<+sa gksrs tk jgs gS] detksjh jgrh gSAß followed by Poor Quality of work (25.9%), Pigys ftruh QqrhZ ls dke ugha dj ikrs Aßwhich emerged predominantly, whereas more of A3 (Thyroid Patients) respondents reported inability to do routine work, PjkstejkZ dk dke djus esa rdyhQ gksrh gSAß, early onset of old age and poor quality of work. A2 predominantly report poor quality of work, "?kj ds dke igys dh rjg ugha dj ikrs gSAß and early onset of old age. On the other hand A1 report early onset of old age an inability to do heavy work load.

As is evident table 1.2 male arthritis patients (A1,B1) and female diabetic patients (A2, B2) show most dominant response on Early onset to old age (40% for both). When the overall data is seen according to gender no major gender difference are seen across three types of chronic physical illness.

Miguel & Cachia (2007) found in their research, that diabetes can affect physical health in various ways. The most notorious is the development of long-term complications and their consequences. The patients are less able to participate in pleasurable activities and his ability to function independently may be impaired as well.

Gregg (2000) evidenced that diabetes is a major burden of physical disability in adults and that the disabilities may substantially impair their quality of life.

Pollard, Choy, and Scot (2005) found that Rheumatoid arthritis patients face, combination of pain and disability which results in poor quality of work and life.

I-iii Perceived Effect on Energy -This sub-dimension tries to analyze the effect of energy for two points of time, that is ,before and after the Illness. The question was asked chekjh ls igys o vkt dh rkjh[k esa dke djus dh rkdr ,ao ÅtkZ 0&100 ds chp esa crk;s \"

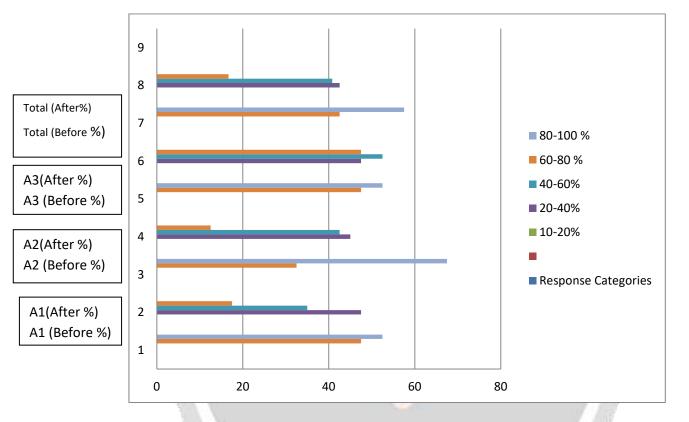


Figure 1.1 Perceived Effect on Energy (prior to Illness and after Illness) according to type of Illness

The responses of here and now can be better understood with the yardstick of the past (prior to the onset of Illness). The content analysis of the obtained responses brought five responses categories viz. (1)10-20% (2) 20-40% (3) 40-60% (4) 60-80% (5) 80-100%. As evident from the Figure 1.1 57.5% of all patients (A1-52.5%, A2-67.5% and A3-52.5%) reported 80-100% energy level prior to Illness. On the other hand 16.7% (A1,A2 and A3 reported 17.5%, 12.5 and 47.5%, repectively).

When the data is analyzed in terms of Perceived Effect of Energy on Health (Present) according to type of illness and Gender(Table 3.6) ,clearly shows that the 20-40 % is most dominant category for all three type of illness (A1-47.5, 45 a5 and 35 %, respectively). The next major response category is 40-60% in which 35 %, 42.5 % and 45 % for A1 ,A2 and A3, respectively, Pvc rks tYnh Fkdku gks tkrh gSA

Figure 1.1 reflects all chronic patients (both B1 and B2) reported **50% and 60% in 80-100%** category in terms of energy level of prior to illness, with response like Pchekjh ls igys cgqr LQwfrZ jgrh FkhAß.

Physical Well-being primary addresal changes in well-being as a result of the chronic sickness, which taps Perceived Changes in Life due to Sickness, Perceived Effect on Work Efficiency and Perceived Effect on Energy (Prior to Illness and After Illness). Figure (3.3) clearly shows that Perceived Changes in Life due to Sickness increased tension and stress by A1(27.5%) and A2 (30%). Besides all three categories of patients (A1-35%, A2 and A3-27.5%) perceived yearly onset of old age due to illness and feel weak. However it is the diabetic patients (35%) and hypothyroidism patients (31.7%) who have reported fall in quality of work.

Lastly change from prior to illness and after illness in terms of energy, there is definite decrease in the case of A1 and A2 whereas the patients of hypothyroidism maintain the same levels of energy. Thus whole physical well-being has been negatively influenced sickness low by the perceived heath schedule.

SUGGESTIONS: Need of the hour is also to spread awareness about the relation of hygiene, lifestyle and health workout. At a primary prevention level, people also need to be educated about the illness effect of unhealthy lifestyle. More so when the most prevalent form of chronic physical patients in India are lifestyle related. Cross cultural research in the same direction can also bring out meaning full findings. Although the researcher made sincere efforts to make the present study a comprehensive piece of research, yet a humble admission of the limitations of the present study is made here. Due to paucity of time ethical constraints and exhaustive nature of the data a full fledged action programme could not be implemented. Another study could focus exclusively on intervention for the benefit of the patient.

REFRENCES:

- 1. Diener E. Assessing well-being: the collected works of Ed Diener. New York: Springer; 2009.
- 2. Diener E, Scollon CN, Lucas RE. The evolving concept of subjective well-being: the multifaceted nature of happiness. In: E Diener (ed.) *Assessing well-being: the collected works of Ed Diener*. New York: Springer; 2009:67–100.
- 3. Frey BS, Stutzer A. Happiness and economics. Princeton, N.J.: Princeton University Press; 2002.
- 4. Diener E, Lucas R, Schimmack U, and Helliwell J. Well-Being for public policy. New York: Oxford University Press: 2009.
- 5. Dunn HL. High level wellness. R.W. Beatty, Ltd: Arlington; 1973.
- 6. Kahneman D. Objective happiness. In: D Kahneman, E Diener, and N Schwartz (eds.) *Well-being: the foundations of hedonic psychology*. New York: Russell Sage Foundation; 1999:3–25.
- 7. Lyubomirsky S, King L, Diener E. The benefits of frequent positive affect: does happiness lead to success? *Psychol Bull* 2005;131(6):803–855.
- 8. Pressman SD, Cohen S. Does positive affect influence health? *Psychol Bull* 2005;131:925–971.
- 9. Ostir GV, Markides KS, Black SA. et al. Emotional well-being predicts subsequent functional independence and survival. *J Am Geriatr Soc* 2000;48:473–478.
- 10. Ostir GV, Markides KS, Peek MK, et al. The association between emotional well-being and incidence of stroke in older adults. *Psychosom Med* 2001;63:210–215.
- 11. Diener E, Biswas-Diener R. Happiness: Unlocking the mysteries of psychological wealth. Malden, MA: Blackwell Publishing; 2008.
- 12. Frederickson BL, Levenson RW. Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition and Emotion* 1998;12:191–220.
- 13. Tov W, Diener E. The well-being of nations: Linking together trust, cooperation, and democracy. In: BA Sullivan, M Snyder, JL Sullivan (Eds.) *Cooperation: The psychology of effective human interaction*. Malden, M.A.: Blackwell Publishing; 2008:323–342.
- 14. Diener E, Lucas RE. Personality and subjective well-being. In: D. Kahneman, E. Diener, and N. Schwartz (eds.). Well-being: the foundations of hedonic psychology. New York: Russell Sage Foundation; 2003:213–229.
- 15. Steel P, Schmidt J, Schultz, J. Refining the relationship between personality and subjective well-being. *Psychological Bulletin* 2008; *134*(1):138–161.
- 16. Bradburn NM. The structure of psychologal well-being. Chicago: Aldine; 1969.
- 17. Diener E, Emmons RA. The independence of positive and negative affect. *Journal of Personality and Social Psychology* 1984;47:1105–1117.
- 18. Ryff CD, Love GD, Urry LH, et al. Psychological well-being and ill-being: do they have distinct or mirrored biological correlates? *Psychother Psychosom* 2006;75:85–95.
- 19. Costa PT, McCrae RR. Influence of extraversion and neuroticism on subjective well-being: happy and unhappy people. *Journal of Personality and Social Psychology* 1980;38:668–678.
- 20. Schimmack U. The structure of subjective well-being. In: M Eid, RJ Larsen (eds). *The science of subjective well-being*. New York: Guilford Press; 2008.
- 21. Seligman ME. Authentic happiness. New York, NY: Free Press; 2002.
- 22. Frederickson, B.L. Positivity. New York: Crown Publishing; 2009.
- 23. Tellegen A, Lykken DT, Bouchard TJ, Wilcox KJ, Segal NL, Stephen R. Personality similarity in twins reared apart and together. *J Pers Soc Psychol* 1988;54(6):1031–1039.
- 24. Herrman HS, Saxena S, Moodie R. *Promoting Mental Health: Concepts, Emerging Evidence, Practice.* A WHO Report in collaboration with the Victoria health Promotion Foundation and the University of Melbourne. Geneva:

 World Health Organization;

- $2005. \ \underline{http://www.who.int/mental_health/evidence/MH_Promotion_Book.pdf\ Cdc-pdf[PDF-1.98MB]\underline{External}. \\ Accessed\ Oct.\ 1,2010$
- 25. Barry MM, Jenkins R. Implementing Mental Health Promotion. Oxford: Churchill Livingstone, Elsevier. 2007
- 26. Lykken D, Tellegen A. Happiness is a stochastic phenomenon. *Psychol Sci* 1996;7:186–189.
- 27. Diener E, Lucas RE, Scollon CN. Beyond the hedonic treadmill: revising the adaptation theory of well-being. *American Psychologist* 2006;61(4):305–314.
- 28. World Health Organization. 1949. WHO Constitution. Retrieved February 12, 2008 from http://www.who.int/about/en/External.
- 29. Ottawa Charter for Health Promotion, First International Conference on Health Promotion, Ottawa, 21 November 1986 WHO/HPR/HEP/95.1. Available at: http://www.who.int/healthpromotion/conferences/previous/ottawa/en/External
- 30. Breslow, L. Health measurement in the third era of public health. *American Journal of Public Health* 2006;96:17–19.
- 31. Green L., Kreuter M. "Health Promotion as a Public Health Strategy for 1990s". *Annual Review of Public Health* 1990;11:313–334).
- 32. Andrews FM, Withey SB. Social indicators of well-being. NewYork: Plenum Press; 1976:63-106.
- 33. Diener E. Subjective well being: the science of happiness and a proposal for a national index. *American Psychologist* 2000;55(1):34–43.
- 34. Ryff CD, Keyes CLM. The structure of psychological well-being revisited. *Journal of Personality and Social Psychology* 1995;69(4):719–727.
- 35. Diener E, Suh E, Oishi S. Recent findings on subjective well-being. *Indian Journal of Clinical Psychology* 1997;24:25–41.
- 36. Veenhoven R. Sociological theories of subjective well-being. In: M Eid , RJ Larsen (eds). *The science of subjective well-being*. New York: Guilford Press; 2008:44–61.
- 37. Csikszentmihalyi M. Flow: The Psychology of Optimal Experience. New York, NY: Harper Perennial; 1991.
- 38. Diener E, Suh EM, Lucas R, Smith H. Subjective well-being: Three decades of progress. *Psychological Bulletin* 1999;125:276–302.
- 39. Larsen RJ, Eid M. Ed Diener and The Science of Subjective Well-Being. In: RJ Larsen and M Eid, (Eds.) *The Science of Subjective Well-Being*. New York: Guildford Press, 2008:1–12.
- 40. Kahneman D, Krueger AB, Schkade DA, Schwarz N, Stone AA. A survey method for characterizing daily life: the day reconstruction method. *Science* 2004;306:1776–1780.
- 41. Eid M. Measuring the Immeasurable: Psychometric modeling of subjective well-being data. In: Eid M, Larsen RJ (eds.) *The science of subjective well-being*. New York: Guilford Press; 2008:141–167.
- 42. Dupuy HJ (1978). Self-representations of general psychological well-being of American adults. Paper presented at the American Public Health Association Meeting, Los Angeles, October, 1978.
- 43. Fazio, A.F. (1977). A concurrent validational study of the NCHS General Well-Being Schedule. Hyattsville, MD: U.S. Department of Health, Education and Welfare, national Center for Health Statistics, 1977. Vital and Health Statistics Series 2, No. 73. DHEW Publication No. (HRA) 78-1347.
- 44. Kaplan RM, Anderson JP. The quality of well-being scale: Rationale for a single quality of life index. In: SR Walker, R Rosser (Eds.) *Quality of Life: Assessment and Application*. London: MTP Press; 1988:51–77.
- 45. Keyes CLM. The mental health continuum: from languishing to flourishing in life. J Health Soc Res 2002;43(6):207-222.
- 46. Strine TW, Chapman DP, Balluz LS, Mokdad AH. Health-related quality of life and health behaviors by social and emotional support: Their relevance to psychiatry and medicine. *Social Psychiatry and Psychiatric Epidemiology* 2008;43(2):151–159.
- 47. Strine TW, Chapman DP, Balluz LS, Moriarty DG, Mokdad AH. The associations between life satisfaction and health-related quality of life, chronic illness, and health behaviors among U.S. community-dwelling adults. *Journal of Community Health* 2008;33(1):40–50.
- 48. Diener E, Emmons R, Larsen J, Griffin S. The Satisfaction with Life Scale. *J Personality Assessment* 1985;49:71–75.
- 49. Steger MF, Frazier P, Oishi S, Kaler M. The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *J of Counseling Psychology* 2006;53(1):80–93.
- 50. Deci EL, Ryan RM. The "what" and "why" of goal pursuit: Human needs and self-determination of behavior. *Psychological Inquiry* 2000;11:227–268.
- 51. Watson D, Clark LA, Tellegen A. Development and validation of brief measure of positive and negative affect: the PANAS scales. *J of Personality and Social Psychology* 1988;54(6):1063–70.
- 52. Wheeler et al, Employment, sense of well-being and use of professional services among women. *Am J Public Health* 1983;73:908–911.
- 53. Hanmer, et al. Report of nationally representative values for the noninstitutionalized US adult population for 7 health-related quality of life scores. *Med Decisi Making* 2006;26:391–400.

- 54. Kobau R, Sniezek J, Zack MM, Lucas RE, Burns A. Well-being assessment: an evaluation of well-being scales for public health and population estimates of well-being among U.S. adults. *Applied Psychology: Health and Well-Being* 2010;
- 55. Kahneman D, Deaton A. High income improves evaluation of life but not emotional well-being. Proceedings of the National Academy of Sciences, doi/10.1073/pnas.1011492107.
- 56. King LA. Interventions for enhancing subjective well-being: can we make people happier and should we? In: M Eid, RJ Larsen, (eds.) *The Science of Subjective Well-Being*. New York, NY: Guilford Press; 2008:431–448.
- 57. Nes RB, Roysamb E, Tambs K, Harris JR, Reichborn-Kjennerud T. Subjective well-being: genetic and environmental contributions to stability and change. *Psychol Med* 2006;36:1033–1042.
- 58. Schnittker J. Happiness and success: genes, families, and the psychological effects of socioeconomic position and social support. *Am J Sociol* 2008;114:S233–S259.
- 59. Lucas RE, Clark AE, Georgellis Y, Diener E. Unemployment alters the set point for life satisfaction. *Psychological Science* 2004;15:8–13.
- 60. Lucas RE, Clark AE, Georgellis Y, Diener E. Reexamining adaptation and the set-point model of happiness: Reactions to changes in marital status. *Journal of Personality and Social Psychology* 2003;84:527–539.
- 61. Diener E, Oishi S, and Lucas RE. Personality, culture, and subjective well-being: emotional and cognitive evaluations of life. *Annual Review of Psychology* 2003;54:403–425.
- 62. Inglehart R. Gender, aging, and subjective well-being. Intl J Comp Sociol 2002;43(3-5):391–408.
- 63. Stevenson B, and Wolfers J. The paradox of declining female happiness. National Bureau of Economic Research. Working paper 14969; 2009. (http://www.nber.org/papers/w14969External
- 64. Argyle, M. Causes and correlates of happiness. In: D Kahneman, E Diener, N Schwarz (Eds.) *Well-being: the foundations of hedonic psychology*. New York: Russell Sage Foundation; 1999:307–322:353–373.
- 65. Biswas-Diener RM. Material wealth and subjective well-being. In: M Eid, RJ Larsen (eds). *The science of subjective well-being*. New York: Guilford Press; 2008:307–322.
- 66. Warr P. Well-being in the workplace. In: D Kahneman, E Diener, N Schwarz (eds.) *Well-Being: The foundations of hedonic psychology*. New York: Russell Sage Foundation Publications; 2003:392–412.
- 67. Myers DG. Close relationships and quality of life. In: D Kahneman, E Diener, N Schwarz. (eds.) *Well-Being: The foundations of hedonic psychology*. New York: Russell Sage Foundation Publications; 2003:374–391.
- 68. Diener E, Suh EM. National differences in subjective well-being. In: D Kahneman, E Diener, N Schwarz. (eds.) *Well-Being: The foundations of hedonic psychology*. New York: Russell Sage Foundation Publications; 2003:434–450.
- 69. Helliwell JF, Huang H. How's your government? International evidence linking good government and well-being. *British Journal of Political Science* 2008;38:595–619.
- 70. Hird S. What is well-being? A brief review of current literature and concepts. NHS Scotland; 2003.
- 71. Bann, C.M., Kobau, R., Lewis, M.A., Zack, M.M., Luncheon, C., and Thompson, W.W. Development and psychometric evaluation of the public health surveillance well-being scale. *Qual Life Res.* 2012; 21(6), 1031-1043.
- 72. Barile JP, Reeve B, Smith AW, Zack MM, Mitchell SA, Kobau R, Cella D, Luncheon C, & Thompson WW. Monitoring population health for Healthy People 2020: Evaluation of the NIH PROMIS® Global Health, CDC Healthy Days, and Satisfaction with Life instruments. *Qual Life Res.* 2013;22:1201-1211.
- 73. Kobau R, Bann C, Lewis M, Zack MM, Boardman AM, Boyd R, Lim KC, Holder T, Hoff AKL, Luncheon C, Thompson W, Horner-Johnson W, Lucas RE. Mental, social, and physical well-being in New Hampshire, Oregon, and Washington: Implications for public health research and practice, 2010 Behavioral Risk Factor Surveillance System. *Popul Health Metr* 2013; 11(1):19.