

Name of Measure: The Medical Outcomes Study short form (SF-36) (Ware & Sherbourne, 1992)

Purpose of Measure: To assess health-related quality of life

Author(s) of Abstract:

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Reference: Chang, D. F., Chun, C, Takeuchi, D. T., Shen, H. (2000). SF-36 Health Survey: Tests of data quality, scaling assumptions, and reliability in a community sample of Chinese Americans. *Medical Care*, 38(5), 542-548.

Description of measure: The SF-36 is composed of 36 items that assess 8 health concepts: Physical functioning (PF, 10 items), role limitations caused by physical problems (RP, 4 items), bodily pain (BP, 2 items), general health perceptions (GH, 5 items), vitality (VT, 4 items), social functioning (SF, 2 items), role limitations caused by emotional problems (RE, 3 items), and mental health (MH, 5 items). The last item measures health transition but does not contribute to any of the scale scores. The scales were scored and linearly transformed according to the original algorithms, in which higher scores represent better health status. The SF-36 Health Survey is a widely used measure of health-related quality of life found to have excellent validity and reliability when applied to community and clinic populations.

Language availability: Cantonese and Mandarin

Translation comments: Forward and back translation. When problems were identified, probes and comments were included in the interview to establish the essential meaning of a word or phrase. Few differences were found between the Cantonese and Mandarin versions.

Description of Asian population: The study was conducted with 1,501 Chinese Americans living in Los Angeles. These adults were participants in a Chinese American Psychiatric Epidemiologic study. The mean age of the respondents was 40.4 years and 52.4% were female. The majority of respondents were married (68.5%), had an annual household income of \$25,000 or more (57.8%), and were educated beyond high school (62.2%). Two thirds of the sample were interviewed in Mandarin (68.3%). Almost 93% grew up in a country other than the United States. Approximately 20% had a history of psychiatric disorder, and 12.9% reported a chronic medical condition.

Norms: To assess the fit between the Chinese responses and the scaling assumptions of the SF-36, item variability and item-internal consistency were assessed. The correlation between an item and its hypothesized scale exceeded 0.40 for all except “feel worn out” (Vitality item 3;  $r = .27$ ) and “nervous” (Mental Health item1;  $r = .34$ ).

Item-scale correlations within the same scale were similar in value with a few exceptions. Specifically, there were 6 items (PF1, MH4, MH5, VT3, VT4, SF2) that were more highly correlated with other scales than their own. For example, in the vitality scale, the first and second items (VT1 and VT2) assessed positive energy and had similar item-scale correlations (0.60 and 0.67, respectively). In contrast, the third and fourth items (VT3 and VT4) evaluated the lack of energy and were more highly correlated with the mental health scale than with the vitality scale (0.27 and 0.46, respectively). In addition, the first item of the mental health scale (MH1) had a substantially lower item-scale correlation than the other items in the same scale. In summarizing the range of item-scale correlations and the results of the item scaling and reliability analyses, perfect scaling success rates (100%) were achieved in 4 of the 8 scales. For the vitality and social functioning scales, rates were much lower (68% and 79%, respectively).

These findings suggest that VT3 and VT4 (i.e., ‘worn out’ and ‘tired’) formed a separate “fatigue” cluster more highly correlated with the mental health scale. MH3 and MH5 (i.e., ‘downhearted and blue’ and ‘been a happy person’) were more highly correlated with the vitality scale. It may be more meaningful to reorganize the vitality and mental health items along the dimensions of well being and distress.

	PF	RP	BP	GH	VT	SF	RE	MH
# of items	10	4	2	5	4	2	3	5
Mean	95.21	94.24	90.90	70.38	68.26	95.05	95.67	78.59
Median	100.0	100.0	100.1	71.8	70.0	100.0	100.0	80.0
Range	0-100	0-100	0-100	0-100	0-100	12.5-100	0-100	12.0-100
SD	12.25	20.72	17.31	18.96	17.15	13.15	17.84	14.76
Norms US <sup>1</sup>	84.15	80.96	75.15	71.95	60.86	83.28	81.26	74.74

PF physical functioning; RP limits in role performance due to health problems; BP bodily pain; GH perception of general health; VT vitality; SF social functioning; RE limits in role performance due to emotional problems; MH mental health

<sup>1</sup>Based on 2, 474 adults. Ware JE, Snow KK, Kosinski, M., Gandek, B. (1993). SF-36 Health Survey manual and interpretation guide. Boston, Mass: Health Institute, New England Medical Center.

Reliability: Internal consistency reliability coefficients were reported as:

Scale	Alpha
PF	.90
RP	.91
BP	.92
GH	.84
VT	.70
SF	.72
RE	.85
MH	.73

Validity: Established by Ware & Sherbourne (1992)

Original reference to instrument: Ware, J.E., & Sherbourne, C.D. (1992). The MOS 36-item short-form health survey (SF-36). *Medical Care*, 30(6), 473-483.

Other references: Ware, J.E., Keller, S. D., Gandek, B., Brazier, J. E., & Sullivan, M. (1995). The IQOLA Project Group: Evaluating translations of health status questionnaires: Methods from the IQOLA Project. *International Assess Health Care*, 11, 525-551.

How to obtain copy of instrument: Copyright permission to use the SF-36 must be obtained from the Medical Outcomes Trust 617-426-4046 or [www.sf-36.com](http://www.sf-36.com). For Chinese translation, please contact author.