

The validity and reliability of an established patient satisfaction measure: does it work for low-income, minority women with HIV?

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Background & Purpose

- Studies have shown that patient satisfaction is associated with a variety of health care encounter outcomes including: treatment compliance (Winefield, 1995; Sherbourne, et al., 1992; Hall & Dornan, 1988), recall of medical advice (Parkin, 1976) and utilization of care (Pascoe, 1983).
- A commonly used instruments to measure patient satisfaction is the Patient Satisfaction Questionnaire (PSQ)-18 (Marshall & Hays, 1994), which has been shown to tap into seven underlying dimensions of satisfaction: general, technical quality, interpersonal manner, communication, financial aspects, time spent with provider and access/convenience.
- The purpose of this analysis is to compare the PSQ-18 factor structure and results in a study of mostly low-income, minority women with HIV to the RAND general population sample for which this measure was developed.

Methods

- The Women's Interagency HIV Study (WIHS) is an on-going, multicenter study of HIV disease in women (Barkan, 1998); the WIHS administers a version of the PSQ-18 instrument annually to all participants.
- Results of the development and testing of the PSQ-18 using data from the RAND Medical Outcomes Study (MOS) are published (Marshall & Hays, 1994).
- The WIHS data from two separate study visits were compared to the published data on the PSQ-18, using independent sample t-tests, exploratory and confirmatory factor analysis (EFA and CFA), and scale reliability. The WIHS study visits yielded very similar results, so only one visit is shown here.

Statistical Methods

- Factor Analysis analyzes the interrelationships (correlations, covariance structure) among a large number of variables by defining a set of common underlying dimensions, known as factors (Schoeps, et al., 1999).
- Scale Reliability means that a scale will yield similar results in repeated administrations because it is actually measuring what it is supposed to (Norusis, 1993). A common measure of reliability and internal consistency is Cronbach's Coefficient Alpha; a coefficient greater than .8 is considered good, and .7 is a standard minimum reliability.

Characteristics of the RAND and WIHS Samples*

RAND PSQ-18

- N=2,197
- Female = 60%
- Black = 14%
- Hispanic = 3%
- White = 80%
- Average age = 56 years old (s.d. = 16.2)
- Patients visiting generalist and specialist providers
- Average income not available

WIHS

- N= 1,303
- Female = 100%
- Black = 56%
- Hispanic = 22%
- White = 21%
- Average age = 38.0 years old (s.d. = 7.8)
- HIV+ research cohort
- Average income = \$16,500/year (s.d.=\$15,676)

*Samples differ significantly ($p>.05$) on age, gender, and race/ethnicity distributions.

Comparison of Results: Item and Subscale Means

	* p<.05 ** p<.01 *** p<.001	RAND Mean (s.d.)	Independent samples t-test significance	WIHS Mean (s.d.)
General Satisfaction		3.58 (0.94)	***	3.70 (0.86)
The medical care I have been receiving is just about perfect. (R)		3.68 (1.00)		3.87 (0.94)
I am dissatisfied with some things about the medical care I receive.		3.48 (1.11)		3.52 (1.05)
Technical Quality		3.68 (0.76)	ns	3.68 (.070)
I think my doctor's office has everything needed to provide complete care. (R)		3.94 (0.91)		4.01 (0.87)
Sometimes doctors make me wonder if their diagnosis is correct.		3.19 (0.92)		3.06 (1.12)
When I go for medical care, they are careful to check everything when treating and examining me. (R)		3.74 (0.98)		3.92 (0.91)
I have some doubts about the ability of the doctors who treat me.		3.84 (0.96)		3.73 (0.95)
Interpersonal Manner		4.09 (0.69)	*	4.02 (0.64)
Doctors act too businesslike and impersonal toward me.		3.88 (0.89)		3.78 (0.89)
My doctors treat me in a very friendly and courteous manner. (R)		4.29 (0.98)		4.25 (0.69)
Communication		3.74 (0.87)	***	3.82 (0.75)
Doctors are good about explaining the reason for medical tests. (R)		3.09 (1.00)		4.02 (0.84)
Doctors sometimes ignore what I tell them.		3.58 (1.02)		3.64 (1.00)
Financial Aspects		3.78 (0.94)	***	3.92 (0.96)
I feel confident that I can get the medical care I need without being set back financially. (R)		3.74 (1.08)		3.92 (0.96)
I have to pay for more of my medical care than I can afford.		3.83 (1.05)		--
Time Spent with Doctor		3.59 (0.94)	***	3.70 (0.84)
Those who provide my medical care sometimes hurry too much when they treat me.		3.52 (1.08)		3.60 (1.00)
Doctors usually spend plenty of time with me. (R)		3.67 (1.00)		3.80 (0.96)
Accessibility and Convenience		3.76 (0.74)	**	3.68 (0.66)
I have easy access to the medical specialists I need. (R)		3.86 (0.92)		3.83 (0.98)
Where I get medical care, people have to wait too long for emergency treatment.		3.55 (0.98)		3.30 (1.17)
I find it hard to get an appointment for medical care right away.		3.65 (1.08)		3.72 (1.00)
I am able to get medical care whenever I need it. (R)		3.96 (0.90)		--

R=coding reversed
s.d. = standard deviation

Comparison of Structure: Confirmatory Factor Analysis

R=Reverse Coding	RAND factors	WIHS factors
The medical care I have been receiving is just about perfect. (R)	General	Factor 2
I am dissatisfied with some things about the medical care I receive.	General	Factor 1
I think my doctor's office has everything needed to provide complete care. (R)	Technical Quality	Factor 2
Sometimes doctors make me wonder if their diagnosis is correct.	Technical Quality	Factor 6
When I go for medical care, they are careful to check everything when treating and examining me. (R)	Technical Quality	Factor 2
I have some doubts about the ability of the doctors who treat me.	Technical Quality	Factor 1
Doctors act too businesslike and impersonal toward me.	Interpersonal Manner	Factor 5
My doctors treat me in a very friendly and courteous manner. (R)	Interpersonal Manner	Factor 5
Doctors are good about explaining the reason for medical tests. (R)	Communication	Factor 2
Doctors sometimes ignore what I tell them.	Communication	Factor 1
I feel confident that I can get the medical care I need without being set back financially. (R)	Financial Aspects	Factor 3
I have to pay for more of my medical care than I can afford.	Financial Aspects	--
Those who provide my medical care sometimes hurry too much when they treat me.	Time Spent	Factor 1
Doctors usually spend plenty of time with me. (R)	Time Spent	Factor 1
I have easy access to the medical specialists I need. (R)	Access/ Convenience	Factor 3
Where I get medical care, people have to wait too long for emergency treatment.	Access/ Convenience	Factor 7
I find it hard to get an appointment for medical care right away.	Access/ Convenience	Factor 4
I am able to get medical care whenever I need it. (R)	Access/ Convenience	--

Comparison of Reliability

PSQ-18 Subscale Alphas	RAND Subscale Alphas	WIHS Subscale Alphas (all items together = .91)
General Satisfaction	.75	.65
Technical Quality	.74	.70
Interpersonal Manner	.66	.47
Communication	.64	.45
Financial Aspects	.73	--
Time Spent with Doctor	.77	.63
Accessibility and Convenience	.75	.57

WIHS Factor Structure: Exploratory Factor Analysis

	POSITIVE ITEMS	NEGATIVE ITEMS
The medical care I have been receiving is just about perfect.	.74	.30
When I go for medical care, they are careful to check everything when treating and examining me.	.71	.28
I think my health care provider's office has everything needed to provide complete care.	.70	.24
I have easy access to the medical specialists I need.	.68	.13
Health care providers are good about explaining the reason for medical tests.	.66	.17
I feel confident that I can get the medical care I need without being set back financially.	.63	.10
Health care providers usually spend plenty of time with me.	.58	.40
My health care providers treat me in a very friendly and courteous manner.	.50	.26
Those who provide my medical care sometimes hurry too much when they treat me.	.24	.69
Health care providers sometimes ignore what I tell them.	.30	.69
I have some doubts about the ability of the health care providers who treat me.	.37	.67
Sometimes health care providers make me wonder if their diagnosis is correct.	.14	.59
I am dissatisfied with some things about the medical care I receive.	.38	.57
Health care providers act too businesslike and impersonal toward me.	.10	.54
I find it hard to get an appointment for medical care right away.	.20	.51
Where I get medical care, people have to wait too long for emergency treatment.	.75	.65

Discussion – Results

- Statistical tests comparing subscale means show that satisfaction is generally higher in the WIHS cohort, with the exception of Technical Quality. This is in keeping with prior research showing that women and lower-income patients are more likely to be satisfied with their health care (Pascoe, 1983; Carlson, et al., 2000).
- Observed item means show that positively-worded items always score higher than negatively-worded items, suggesting acquiescent response bias, which is a tendency to agree with statements of opinion, regardless of content. Studies have found that acquiescent response bias in patient satisfaction questionnaires is more common among lower-income, less healthy patients (Ross, et al., 1995; Ware, 1978).
- While some studies have found that healthier patients tend to be more satisfied with their health care (Pascoe, 1993), this analysis was not able to compare the health status of the two populations.

Discussion – Structure

- Both EFA and CFA showed that the structure of the WIHS data differed from that of the RAND general population sample. Only one of the PSQ-18 factors (Interpersonal Manner) was confirmed in the WIHS data.
- The WIHS data were dominated by two underlying factors: positively worded items and negatively worded items. A similar result was found in a study of the PSQ-18 in a rural Medicaid population in North Carolina (Schoeps, et al., 1999).
- The balanced nature of the subscales (each contains both positively and negatively worded items) is thought to mediate the overall effect of acquiescent response bias (Ware, 1978), but also reduce subscale reliability (Ross, 1995).
- The PSQ-18 subscales in the WIHS data all had very low reliability alphas except the Technical Quality subscale (.70 at both visits). However, the overall scale reliability was strong at both visits (alpha = .91), indicating that the instrument would perform consistently in this population.

Conclusion

- Advantages to using the PSQ-18 in the WIHS:
 - known psychometric properties mean that results are generalizable to other populations; and
 - good overall reliability, meaning results are predictable and items can be averaged into one multidimensional result.
- Disadvantages:
 - acquiescent response bias could result in artificially high satisfaction, especially among low-income, minority women; and
 - the seven RAND dimensions of satisfaction are overshadowed by the positive or negative wording of each item.
- Next Steps:
 - more information is needed on the structure and reliability of satisfaction measures and dimensions for a variety of populations; and
 - there is a need to explore the semantic appropriateness of items for all populations, including the potential use of neutrally termed items.

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