

Assessing Measurement Properties of the PAM 10 and 13

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Question Variation between PAM 10 & 13

	PAM 13	PAM 10
When all is said and done, I am the person who is responsible for taking care of my health	X	X
Taking an active role in my own health care is the most important thing that affects my health	X	X
I am confident I can help prevent or reduce problems associated with my health	X	
I know what each of my prescribed medications do	X	X
I am confident that I can tell whether I need to go to the doctor or whether I can take care of a health problem myself.	X	X
I am confident that I can tell a doctor concerns I have even when he or she does not ask.	X	X
I am confident that I can follow through on medical treatments I may need to do at home	X	X
I understand my health problems and what causes them.	X	
I know what treatments are available for my health problems	X	
I have been able to maintain (keep up with) lifestyle changes, like eating right or exercising	X	X
I know how to prevent problems with my health	X	X
I am confident I can figure out solutions when new problems arise with my health.	X	X
I am confident that I can maintain lifestyle changes, like eating right and exercising, even during times of stress.	X	X

The measurement power of PAM versions is assessed in these key manners

Difficulty structure: These item calibrations show how difficult it is for respondents to agree to an item

Person reliability: Person reliability measures how effectively a series of questions separates subjects on the basis of the measure. Person reliability using Rasch analysis is equivalent to Test Reliability (Spearman) or sample reliability. The low value is called “real” reliability and assumes that any variation of a person’s measured activation from what the model expected is due to measurement error and not random error. This is never fully the case. The high value is called “model” reliability and assumes that none of the variability between a person’s expected activation and their measured activation is due to measurement error; it is all just random error. Again, this is never true. We know that the actual reliability is somewhere between these two reliability values. High person reliability indicates that there is a high probability that a person who is highly activated will receive a high activation score using the PAM, and conversely, a lower score will indicate lower activation. Person reliability near .80 or better is desired.

Cronbach’s Alpha: Internal consistency reliability. People think it tells us the proportion of total variance in person scores that is true score rather than measurement error. But as explained about, it does not. Industry standards are at least .7 and at least .9 if you are tracking people over time with the measure.

Predictive power: How well does the PAM predicting behaviors and outcomes

PAM 10 Compared to PAM 13

Data From Published Studies

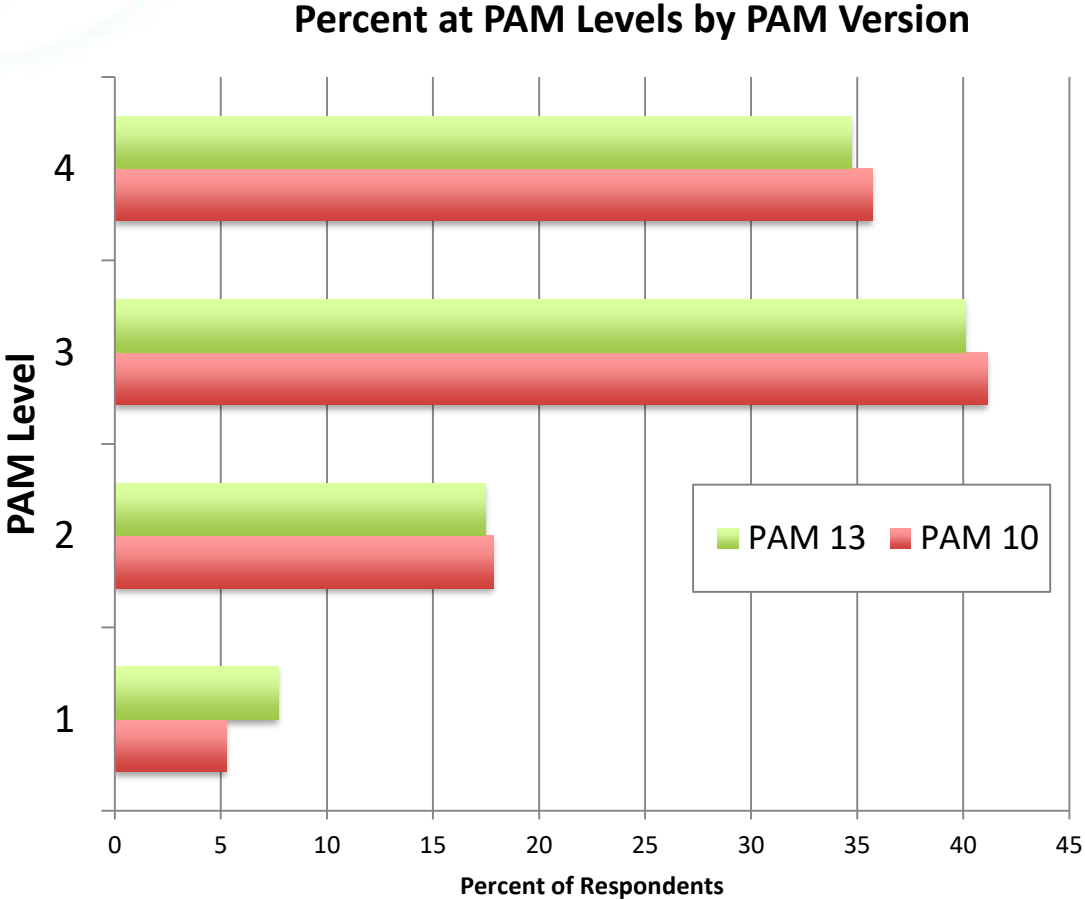
Statistic	AARP ¹ Age 50+ with chronic conditions, n=2,248	AF4Q ² 18+ with chronic conditions, 10 states, n=4,865	Kaiser ³ Kaiser members from 6 states managing chronic conditions, n=4,108	PeaceHealth Baseline ⁴ PeaceHealth patients in Lane County OR managing a condition age 50-70, n=479
PAM 13 Person Reliability	.85 - .88	.84 - .88	.82 - .86	.82 - .86
PAM 10 Person Reliability	.79 - .83	.79 - .84	.77 - .82	.77 - .82
PAM 13 Cronbach Alpha Reliability	0.93	0.91	0.96	0.92
PAM 10 Cronbach Alpha Reliability	0.90	0.88	0.96	0.87
PAM 13 % in Level 1	3.8	5.1	11.2	3.0
PAM 10 % in Level 1	4.4	4.5	10.8	2.5
PAM 13 % in Level 2	18.0	22.2	27.3	21.8
PAM 10 % in Level 2	14.4	20.4	24.9	22.6
PAM 13 % in lower two levels	21.8	27.3	38.5	24.8
PAM 10 % in lower two levels	18.9	24.9	35.7	25.1
PAM 13 % in Level 3	50.8	48.2	48.1	60.0
PAM 10 % in Level 3	52.0	48.7	46.4	53.9
PAM 13 % in Level 4	27.4	24.5	13.4	15.2
PAM 10 % in Level 4	29.1	20.4	17.9	21.0
Mean 0-100 PAM 13 Score	64.7	63.0	59.3	62.7
Mean 0-100 PAM 10 Score	64.9	63.7	59.7	62.7
Standard Deviation of PAM 13 0-100 Scores	11.5	12.4	11.5	10.4
Standard Deviation of PAM 10 0-100 Scores	11.3	12.4	11.9	10.4
Lowest PAM 13 0-100 Score	14.1	26.9	9.3	36.6
Lowest PAM 10 0-100 Score	14.8	20.9	9.5	36.6
Highest PAM 13 0-100 Score	91.1	91.2	90.5	90.7
Highest PAM 10 0-100 Score	90.8	90.8	90.2	90.7

The difficulty structure of the PAM 10 (difficult to agree with a question) is consistent with the PAM 13

Believes Active Role Important		PAM13	PAM 10
1	When all is said and done, I am the person who is responsible for managing my health condition	39	38
2	Taking an active role in my own health care is the most important factor in determining my health and ability to function	41	41
Confidence and Knowledge to Take Action			
3	I know what each of my prescribed medications do	43	42
4	I am confident I can tell my health care provider concerns I have even when he or she does not ask	44	44
5	I am confident that I can tell when I need to go get medical care and when I can handle a health problem myself	44	44
6	I am confident that I can follow through on medical treatments I need to do at home	45	51
7	I am confident that I can take actions that will help prevent or minimize some symptoms or problems associated with my health condition	42	
8	I understand the nature and causes of my health condition(s)	47	
9	I know the different medical treatment options available for my health condition	50	
Taking Action			
10	I have been able to maintain the lifestyle changes for my health that I have made	51	51
11	I know how to prevent further problems with my health condition	51	51
12	I am confident I can figure out solutions when new situations or problems arise with my health condition	52	53
Staying the Course Under Stress			
13	I am confident that I can maintain lifestyle changes like diet and exercise even during times of stress	53	53

Source: Hibbard National Study

PAM 10 segmentation is consistent with PAM 13 across a combined data set of 56,000 study participants



Source: Combined data set, files from 2005 - 2009

PAM 10 has shown to maintain the level segmentation and scoring of PAM 13

PAM Version Assessment Using The Same Data Set

		PAM 13 Level Segmentation				
Activation Levels		1	2	3	4	Total
PAM 10 Level Segmentation	1	456	0	0	0	456
	2	0	1322	0	0	1322
	3	0	0	1379	0	1379
	4	0	0	0	944	944
Total		456	1322	1379	944	4101

Source: Kaiser Center For Research, National Study, N=4101

Correlation between PAM 13 & 10 scores:

Baseline: .975

6 Weeks: .976

6 Months: .977

Data source: RWJ Peace Health Study 2006. Patients measured over 3 waves

PAM 10 maintains good reliability when looking at sub-segments

	N	%	PAM13 Range of reliability*		PAM 10 Range of reliability*	
Sample	1469	100%	.85	.91	.76	.81
Gender						
Male	543	37%	.84	.90	.74	.80
Female	926	63%	.85	.91	.77	.82
Age Group						
45-54	512	38%	.85	.91	.77	.82
55-64	398	28%	.85	.91	.76	.81
65-74	290	20%	.84	.91	.75	.80
75-84	185	13%	.83	.90	.73	.80
Self-Rated Health						
Poor	102	7%	.78	.87	.67	.74
Fair	236	16%	.83	.88	.73	.79
Good	411	28%	.82	.87	.71	.78
Very Good	465	31%	.83	.90	.73	.79
Excellent	255	18%	.85	.91	.78	.82
Race						
White	1287	88%	.85	.91	.77	.82
Black	111	8%	.82	.88	.68	.76
Other	64	5%	.87	.92	.78	.83
Education						
High School Graduate or less	633	43%	.80	.88	.69	.76
Some College or trade school	374	26%	.86	.91	.78	.82
College Graduate or more	454	31%	.85	.91	.77	.81
Household Income						
Less than \$15,000	213	16%	.82	.89	.70	.76
\$15,000 to \$24,999	199	16%	.84	.90	.75	.81
\$25,000 to \$34,999	157	12%	.82	.88	.72	.78
\$35,000 to \$49,999	224	17%	.85	.90	.76	.81
\$50,000 to \$74,999	225	17%	.85	.91	.77	.81
\$75,000 or more	272	21%	.84	.90	.74	.80
Chronic Condition						
NONE	311	21%	.82	.90	.72	.78
Angina/Heart problem	186	13%	.86	.90	.79	.83
Arthritis	561	38%	.85	.91	.77	.82
Chronic Pain	362	25%	.86	.91	.78	.83
Depression	212	15%	.85	.89	.75	.80
Diabetes	170	11%	.83	.91	.72	.78
Hypertension	498	34%	.84	.91	.75	.80
Lung Disease	177	12%	.86	.91	.78	.82
Cancer	79	5%	.85	.91	.76	.81

Data Source: Hibbard
National Study 2004

PAM 10 maintains the predictive power of the PAM 13

Variable answer category (n)	Mean Score Relationships	PAM 13	PAM 10
General Preventive Behaviors			
Follow a low fat diet:			
Always or almost always (775)		64.2***	64.9***
Sometimes or never (693)		59.2	59.7
Follow regular exercise schedule:			
Yes (855)		64.2***	64.9***
No (612)		58.5	59.0
Five servings of fruits or vegetables per day			
At least four days per week (730)		64.2***	64.8***
Three days per week or less (738)		59.5	60.2
Smoke tobacco			
Yes (250)		59.9***	60.6*
No (1218)		62.2	62.9
Disease Specific Behaviors			
Diabetes			
Use glucose journal:			
Always or almost always (108)		61.0	61.6
Sometimes or never (49)		57.3	57.9
Arthritis			
Arthritis exercise:			
Always or almost always(249)		64.5***	65.0***
Sometimes or never (310)		57.2	57.6
High cholesterol			
Follow a low fat diet:			
Always or almost always (249)		64.1***	63.3***
Sometimes or never (196)		56.9	57.6
Consumeristic Behaviors			
Before I go to a new health care provider, I find out as much as I can about his or her qualifications			
Disagree or strongly disagree (232)		56.6***	57.1***
Agree (880)		59.6	60.2
Strongly agree (307)		72.8	73.6
When I do not understand, I am persistent in asking my health care provider to explain something until I understand it			
Disagree or strongly disagree (79)		51.9***	52.0***
Agree (992)		58.0	58.6
Strongly agree (423)		73.6	74.5

Data source: Hibbard
National Study 2004

* p < .05, *** p < .001