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THE “EXPECTATIONS REGARDING AGING (ERA-12)” INSTRUMENT CAN BE USED AMONG MIDDLE-AGED SINGAPOREANS

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BACKGROUND

- Middle-aged Singaporeans, aged 41 to 62, currently make up 17.6 % of the population. (Census of Population, Singapore, 2000) Over the next two decades, this group will constitute a large proportion of the elderly in Singapore.
- Researchers have advocated for improvements to be made in expectations regarding aging among older adults as a potential way to improve their health².
- Expectation Regarding Aging (ERA-12)¹ addresses expectations of achievements and maintenance of high levels of physical and mental functioning with age, i.e. ‘healthy aging’ for self and others. (Sarkisian et al. 2002)
- Understanding middle-aged peoples' expectations regarding ageing would inform policy makers to come up with strategies that will help plan social and health services for the future.

OBJECTIVE

To assess the reliability and validity of ERA-12 for middle-aged Singaporeans, 41 to 62 years old.

METHODS

The ERA-12

- Consists of a series of statements (See Table 2), followed by a 4-point **definitely true/somewhat true/ somewhat false/ definitely false** response set.
- Total score is based on 12 items with 3 sub-scale scores—expectations regarding Physical Health (PH), Mental Health (MH) and Cognitive Function (CF), ranging from 0-100.
- Lower scores indicate the patient expects a decline in health and functional status while higher scores indicate aspects of successful aging.
- **Target sample:** 1,000 middle-aged Singaporeans, stratified according to racial groups (Chinese: Malay: Indian :: 700:200:100) and age between 41 to 62 years.
- **Study Site:** Two SingHealth Polyclinics.
- **Period:** Data was collected over 4 weeks (August 2008).
- **Response Rate:** 2110 patients were approached; 1020 (48.3%) agreed to participate; 981 completed the ERA-12.

Statistical Methods

- The internal consistency reliability was assessed using Cronbach’s alpha.
- Exploratory factor analysis used to construct validity.
- Correlation coefficients were calculated to assess the relationship strength between items.

Table 1 Demographic Characteristics of the sample (N = 981)

Variables	41 – 51 years		52 – 62 years		Total	P-value
	n	%	n	%		
Gender (Missing = 7)						n.s.
Male	162	38.3%	193	35%	355	
Female	261	61.7%	358	65%	619	
Race						<.0001
Chinese	262	61.5%	435	78.4%	697	
Malay	116	27.2%	80	14.4%	196	
Indian	48	11.3%	40	7.2%	88	
Education (Missing = 3)						<.0001
Up to primary	85	20.1%	190	34.2%	275	
Up to secondary	210	49.6%	263	47.4%	473	
Polytechnic /A levels	59	13.9%	51	9.2%	110	
Tertiary	69	16.3%	51	9.2%	120	
Mean ± Standard Deviation of			ERA-12 scores			
Physical Health	24.39 ± 18.6		22.32 ± 16.56		23.33 ± 17.5	25.00
Mental Health	44.5 ± 22.23		44.19 ± 21.22		44.4 ± 21.9	41.70
Cognitive Function	32.43 ± 20.79		28.53 ± 19.65		30.22 ± 20.2	33.30
Global ERA score	33.7 ± 16.76		31.7 ± 15.23		32.6 ± 15.9	32.33

Table 1 presents the gender and race distribution and mean ERA-12 scores according to age group. Among the 981 participants, less than 2/3 of the participants were female, 43.4% were aged between 41 to 51 years, 71% were Chinese, and 2/3 of the participants had up to secondary level of education. The mean ERA-12 scores were higher for MH (44.4 ± 12.9) and CF (30.22 ± 20.2) compared to PH (22.2 ± 17.5), indicating MH and CF was better than PH for the middle-aged group.

REFERENCES

1. Sarkisian CA, Hays RD, Steers WN, Mangione CM. Development of the 12-item Expectations Regarding Aging (ERA-12) Survey. *Gerontologist* 2005;45:240-248.
2. Sarkisian CA, Prohaska TR, Wong MD, Hirsch S, Mangione CM. The relationship between expectations for aging and physical activity among older adults. *J Gen Intern Med.* 2005 Oct;20(10):911-5.

Members of the SingHealth Group



Table 2 Factor loadings for PH, MH and CF

ERA-12	41 to 51 years			52 to 62 years			41 to 62 years		
	PH	MH	CF	PH	MH	CF	PH	MH	CF
When people get older, they need to lower their expectations of how healthy they can be.	.716			.714			.710		
The human body is like a car: when it gets old, it gets worn out.	.783			.810			.798		
Having more aches and pains is an accepted part of aging.	.767			.768			.768		
Every year that people live, their energy levels go down a little more.	.717			.701			.714		
I expect that as I get older I will spend less time with friends and family.		.777			.660			.723	
Being lonely is just something that happens when people gets old.		.811			.831			.821	
As people get older, they worry more.		.699			.723			.715	
It is normal to be depressed when people get old.		.667			.701			.690	
I expect that as I get older I will become more forgetful.			.790		.789			.789	
It's an expected part of aging to have trouble remembering names.			.844		.760			.802	
Forgetfulness is just a natural occurrence just from growing old.			.731		.804			.773	
It is impossible to escape the mental slowness that happens with aging.			.677		.730			.704	

Table 2 showed a rotated factor loading matrix indicating simple three-factor structure. It also shows that the factor loadings were high (> 0.7) for the two age groups as well as the total sample indicating a strong relationship between the items within the scale.

Table 3. Reliability scores for Expectations Regarding Aging (ERA-12)

Scale (Combination of Scales):	Expectations in	No. of items	Internal consistency reliability (Cronbach's alpha ⁹)		
			41 to 51 years	52 to 62 years	41 to 62 years
Physical Health Scales (PH)		4	0.80	0.78	0.79
Mental Health Scales (MH)		4	0.80	0.76	0.78
Cognitive Function Scales (CF)		4	0.84	0.84	0.84
Global Health (PH, MH, and CF)		12	0.88	0.86	0.88

Table 3 presents the internal consistency reliability of the scales assessing the expectations regarding ageing in terms of physical health, mental health and cognitive function domains, and for the overall expectations regarding aging, in the total sample and the two age groups. All the internal consistency reliability estimates exceeded 0.75. (A score of ≥ 0.7 is the recommended score for a good standard of reliability)

Table 4. Correlations Among ERA-12 Survey Scales

SCALE	PH	MH	CF
Physical Health	1		
Mental Health	.395**	1	
Cognitive Function	.490**	.521**	1

** P < .01

Table 4 presents the inter-correlations among the 3 scales. All correlations were significant at p < .01. The strongest correlation was between Mental Health and Cognitive Function.

Figure 1. Three factors with eigen values > 1

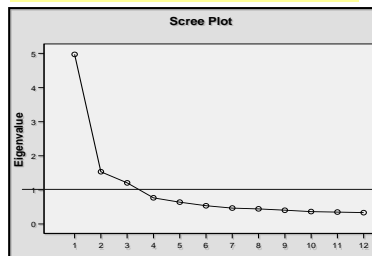


Figure 1 shows 3 factors with eigen values > 1

SUMMARY AND CONCLUSION

This is the first time the shorter and more practical ERA-12 has been used in Singapore. The results have demonstrated acceptable reliability and construct validity among the middle-aged group. Investigators should feel confident using the ERA-12 to examine expectations regarding aging among middle-aged Singaporeans (41 to 62 years).

PATIENTS. AT THE HEART OF ALL WE DO.