Title: Saudi Women's Health Beliefs about Cardiovascular Diseases: A Cross-Sectional Study

Category: Prevention

ABSTRACT

Background: Cardiovascular disease (CVD), a major worldwide public health issue, is of significant concern as several studies confirm the high prevalence of CVD risk in Saudi women. However, none has focused on how these risks are affected by health beliefs and socioeconomic variables. The Health Belief Model was used to compare Saudi women's perceived health beliefs with their calculated Framingham Risk Score (FRS) to determine their risk for a future CVD event and the influence of socio-economic variables on the prevalence of CVD risk.

Methods: A cross-sectional study was conducted on women attending the primary care clinics in a university hospital in Riyadh, Saudi Arabia. A non-random convenience sample was selected of adult women without pre-existing CVD. Health belief and sociodemographic data were collected and FRS calculated.

Results: A total of 503 Saudi females participated, the majority of whom significantly underestimated their actual risk of CVD as measured by their individual FRS. 43.4% had a high CVD risk but a low perception of susceptibility. 63.5% understood the severity of CVD, while 75.2% had a low to moderate perception of the benefits of healthy behaviours. 86.7% did not know how to perform CVD risk-reducing exercises, and 65.9 % stated that they did not have access to exercise facilities. Pearson correlations suggest a weak linear relationship between the FRS and the subscales of each health belief. However, there was a significant relationship between the Framingham scores across income, marital status, education and occupational status categories ($p <= 0.001$) in Chi-Square tests (Table 1). Significant differences were found when comparing perceived benefits of healthy behaviours with marital status; perceived severity and benefits with the level of education; perceived severity and benefits with occupation; and perceived severity and benefits with financial income (Table 2).

Conclusions: This study is the first in Saudi Arabia to examine the correlation between health beliefs, calculated CVD risk, and socioeconomic variables among Saudi women. Education and income were vital elements affecting their CVD risk and health beliefs, and these have implications for public health policy-making.

Table 1: Chi-Square test: The association between Health Belief Subscales and Framingham RiskScores

Variables	Framingham Risk Scores						d.f.	χ^2	*p*-value
	Low (N = 217)		Intermediate (N = 153)		High (N = 113)				
	N	%	N	%	N	%			
Perceived Susceptibility									
Low	77	35.5	52	34.0	49	43.4	4	11.78	.019*
Intermediate	108	49.8	63	41.2	38	33.6			
High	32	14.7	38	24.8	26	23.0			
Perceived Severity									
Low	67	30.9	58	37.9	51	45.1	4	7.13	0.12
Intermediate	92	42.4	57	37.3	35	31.0			
High	58	26.7	38	24.8	27	23.9			
Perceived Benefits									
Low	21	9.7	24	15.7	15	13.3	4	11.20	0.02*
Intermediate	107	49.3	73	47.7	70	61.9			
High	89	41.0	56	36.6	28	24.8			
Perceived Barrier									
Low	83	38.2	50	32.7	33	29.2	4	5.3	0.25
Intermediate	70	32.3	54	35.5	34	30.1			
High	63	29.5	49	32.0	46	40.7			

d.f.- degrees of freedom

Table 2: ANOVA Test: The difference in the mean of each health belief construct and

sociodemographic variables

Variables		Perceived susceptibility	Perceived Severity	Perceived Benefits	Perceived Barriers
		Mean score (±SD)	Mean score (±SD)	Mean score (±SD)	Mean score (±SD)
Marital status	Married (N=371)	8.49 (±4.70)	12.58 (±6.84)	19.63 (±4.92)	30.18 (±6.72)
	Never married (N=32)	8.17 (±4.32)	13.17 (±6.95)	18.70 (±5.07)	29.18 (±6.62)
	Widow/divorced/separated (N=100)	7.94 (± 4.71)	11.06 (±7.99)	16.63 (±7.38)	31.41 (±5.09)
	p value	0.63	0.182	0.0001*	0.146
Level of education	Elementary or less (N=251)	8.30 (±4.97)	11.32 (±7.60)	17.93 (±6.36)	30.18 (±6.82)
	Intermediate /High School (N=129)	8.45 (±4.15)	13.06 (±6.7)	20.01 (±4.34)	31.88 (±5.54)
	Diploma, Degree, Post Graduate (N=118)	8.42 (±4.52)	14.03 (±5.76)	20.47 (±3.77)	30.1(±6.78
	p value	0.951	0.001*	0.0001*	0.173
Occupation	Gov., Semi Gov., Private (N=84)	8.29 (±4.22)	14.35 (±5.46)	20.3 (±3.94)	24.21 (±7.92)
	Student, Retired, Not Working (N=58)	9.55 (±4.64)	14.31 (±5.31)	19.16 (±5.06)	30.70 (±7.11)
	Housewife (N=346)	8.19 (±4.74)	11.66 (±7.49)	18.78 (±5.79)	30.43 (±6.92)
	p value	0.117	0.001*	0.073	0.30
Monthly income	<2,000-4,999 SR (N=174)	8.44 (±4.75)	11.42 (±7.74)	17.79 (±6.72)	±6.33)
	5,000-9,999 (N=161)	8.72 (±4.65)	13.62 (±6.58)	19.95 (±3.91)	±7.04)
	10,000-17,999 above (N=168)	7.79 (±4.77)	12.36 (±6.73)	19.62 (±4.99)	±6.57)
	p value	0.442	0.02*	0.01*	0.69

*p ≤ 0.05, % are within the Framingham risk group Gov. = Government