



Research Article

“Con-Men” Syndrome, A Numerological Age-Related Superstitious Orientation, With Emphasis on Using A Bio-Psycho-Social Model in Its Effect on Percutaneous Coronary Intervention in Geriatric Cardiology

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Abstract

Background “Con-Men’s syndrome /73-84” superstition; an age-related, oriental numerological “superstitious” belief, characterized by an excessive preoccupation with the fear of death or heightened fear of sickness exhibited by subjects aged 73 through 84 years. Varied modes of presentation when seeking medical attention and/or poor compliance to medical treatment among individuals with this superstitious orientation make them an interesting group to investigate especially in this advent of increasing cases of in-stent restenosis among geriatric patients.

Objective To determine the clinical facts of the existence of Con-Men’s syndrome/73-84 superstition among geriatric patients with coronary heart disease.

Methodology A cross-sectional survey of Chinese seniors undergoing repeat percutaneous coronary interventions was undertaken using Con-Men’s Syndrome Assessment Questionnaires (CSAQ) which comprised of social-demographic information, clinical history, and 16 Likert-like scaled items. Several hypothesized categories of the 73-84 superstitious belief, specifically knowledge/cognitive, perception, behavior, and emotion were tested. Statistical analyses were carried out using SPSS software (IBM SPSS) version 21 and interpreted on Con-Men’s syndrome perception scale (CSPs).

Results Out of the total 558 participants (mean age, 68.75±7.10 years), 299(53.6%) were men and 527 (94.4%) were of the Han ethnic group. Also, 463(83.0%) believe the factuality of 73-84, 393(70.4%) had undergone percutaneous coronary intervention; 407(72.9%) had a history of coronary heart disease, and 340(60.9) had hypertension. Based on the CSPS, the mean score for QB, QC, QE, and QT were 8.63±1.31, 16.78±1.78, 8.43±1.44, and 33.84±2.92, respectively. Only 5(0.9%) participants had ever been referred for psychological or psychiatric consultation.

Conclusion Con-Men’s syndrome/73-84 superstition is not uncommon among Chinese septuagenarians and octogenarians undergoing repeat coronary interventions. Psychiatric/psychological referrals and consultation remain low for geriatric cardiology encounters.



Introduction

As living conditions improve, chronic diseases including atherosclerotic cardiovascular diseases (ASCVD) and coronary heart disease (CHD) (1,3) have replaced infectious diseases (4) in most countries where golden-agers are a generous portion of the population (5). Percutaneous coronary intervention (PCI); the mainstay of management in symptomatic ASCVD, where stents (6) are used, meticulous adherence to a “case-specific” dual anti-platelet regimen for a specified duration of time (7,8), is crucial in achieving optimal treatment outcomes. Despite research breakthroughs and dedicated clinical effort, the number of patients reporting with in-stent restenosis (9) and inexplicable unfavorable therapeutic results requiring repeat percutaneous interventions has continued to rise among geriatric patients. Aging or old age appears to be the convenient explanation for most clinical symptoms presented by geriatric patients.

However, finding answers to the seemingly perpetual state of poor health; reduction in overall financial burden, hospital visitations, and unnecessary interventional procedures among old folks is a worthwhile undertaking non-clinical exploratory study. Considering religiosity, spirituality and superstitious beliefs affect the perception of people and in some ways dictate how they cope with stress, ailments, and suffering in life it may be an essential area to explore. While some beliefs and practices may contribute positively (10) to mental health, others may impact negatively (11), lead to psychopathological disorders such as anxiety and depression (12), worsen clinical conditions, and cause poor treatment outcomes. Against these backgrounds, it is prudent to probe and find other determinants of poor health and treatment results among geriatric patients with coronary heart disease. Confucius (551-479 BC) and Mencius (372-289 BC) were distinguished and known in most parts of the world as nothing more than influential Oriental philosophers, but there may be more to the story among some old folks in China.

According to oral tradition, the death of these two epic historical figures is associated with the ages seventy-three (73) and eighty-four (84), respectively; thus the 73-84 superstition. Due to the ideological influence and prominence of Confucius and Mencius, transcended from the historical past, some people today, particularly seniors, believe without a shadow of a doubt their lives may end either in the order of Confucius or Mencius. Thus, far from the deep philosophical teachings, it is not uncommon to find some devotees to this superstition generally referred to as “73-84” or “Kong-Men-Kan-er”, who believe that these two ages represent a gap or threshold in life, during which time one is destined to either die or be taken terminally ill. We proposed and defined “Con-Men’s syndrome,” named after Confucius and Mencius /73-84 superstition as; an age-related, Oriental numerological “superstitious” belief, characterized by an excessive preoccupation with the fear of death or heightened fear of sickness exhibited by subjects aged 73 through 84 years.



Routine application of biopsychosocial principles (13) in the management of patients undergoing repeat percutaneous coronary intervention in geriatric cardiology is the norm. Individuals with this superstitious orientation when seeking medical attention demonstrate poor compliance to medical treatment as they seem to have already accepted their condition as their fate and give up psychologically. What are the facts about the existence of this superstitious orientation? Could belief in this superstition in part explain the continuous rise in unfavorable treatment results, high rates of in-stent restenosis, and subsequent repeat percutaneous coronary interventions among geriatric patients? In this ((cross-sectional)) survey, we attempted to determine the factuality of the existence of 73-84 superstitions.

Methods

A cross-sectional survey of 558 patients who were admitted to the Anzhen cardiac hospital in Beijing was conducted from May 2018 to July 2018. The study was conducted to determine the factuality of the existence of the 73-84 belief (Con-Men's syndrome) among elderly patients (the majority of whom were undergoing redo percutaneous coronary interventions). An inventory was devised to assess this superstitious orientation about the time of terminally sick/death at the ages of 73 and 84 years following a detailed questionnaire.

We developed the Con-Men Syndrome Assessment Questionnaires (CSAQ), Supplementary materials 1, which includes 16 items to assess several hypothesized categories of the belief about the (lack of) knowledge, orientation, behavior, and emotion. After a pilot study, primarily involving community dwellers, the inventory was used to assess erroneous beliefs about Con-Men's syndrome. This study considered the extent to which the total belief scores were associated with the social-demographic and clinical variables in subjects with coronary heart diseases (CHD). Any patient above the age of 50 years, who had a history of PCI was eligible for this study. The study was approved by the Research Ethical Committee of Beijing Anzhen Hospital. Written informed consent was collected from all participants before the survey.

The Con-Men's syndrome assessment questionnaire (CSAQ-5-7-4) The Con-Men's syndrome assessment questionnaire employs a 16-item scale and was used to measure the existence of the 73-84 belief. The scale is composed of three sub-scales; behavioral, cognitive (perception or knowledge), and emotional subscales. The questionnaire was formulated in Chinese, proofread by 4 practicing consultant cardiologists, reviewed by two independent practicing clinical psychologists (X and Y), and administered by trained clinicians and resident doctors. The questionnaire follows the Likert-type scale (14), scored on a range of 1 to 3-points. Dimension scores were calculated based on 5 behavior questions, 7 cognitive questions, and 4 emotion questions hence abbreviated as CSAQ-5-7-4.



Behavior had a possible score range of 5-15, cognitive, 7-21, whereas emotional score had a possible score range of 4-12. A Total Beliefs score about Con-Men's syndrome (CMS) was computed by summing up the behavior, cognitive and emotional scores, and possible score range of 16–48. This regimen proved high internal reliability, good construct validity and excellent sensitivity (behaviour: $\alpha = .82$; cognitive: $\alpha = .81$; emotion: $\alpha = .87$). Higher scores indicate the degree of acceptance of the factuality and possibility of belief in the 73-84 superstition and not for the diagnosis of the Con-Men's Syndrome. (Supplementary material 1).

Data Collection Participants were interviewed using the CSAQ-5-7-4 to obtain data about respondents' socio-demographic information on age, sex, ethnicity, level of education, occupation (retired or active service), current smoking status, marital status, residence, 73-84 beliefs, family monthly income, number of children, frequency of family meeting or reunion, frequency of meeting family and friends. Also detailed clinical information on the history of cerebrovascular disease (CVD), including coronary heart disease (CHD), stroke, history of PCI (HOPCI), and hypertension, Diabetes mellitus, impaired vision, (IV), renal disease(RD), chronic obstructive pulmonary disease (COPD), any surgical history(SH), Knee surgery (KS), arthritic diseases of lower limb (ADLL), road traffic accident (RTA), the purpose of current admission (undergoing PCI), History of psychological/psychiatric consultation, and preferred treatment option (PT) of Western medicine or traditional Chinese medicine (TCM) regardless of condition were collected. Diabetes mellitus (DM) was defined as FPG ≥ 7.0 mmol/L or random plasma glucose ≥ 11.1 mmol/L or a self-reported diabetes history with current use of anti-glycaemic medication. Hypertension was defined as systolic BP (SBP) > 140 mmHg and/or diastolic BP (DBP) ≥ 90 mmHg or a self-reported history of hypertension and current use of antihypertensive medication. Smokers were defined as participants who smoked > 100 cigarettes per week). Impaired vision in some cases refers to illiteracy or inability to read or recognize Chinese characters, therefore, these subjects needed help with the feeling of the questionnaire.

Data Analyses Descriptive statistics were employed to describe the sociodemographic and clinical characteristics of participants and to assess the mean score of the sub-scales, and the total scores on the Con-Men's syndrome perception scale (CSPs). All continuous variables were expressed as mean \pm SD, and categorical variables were expressed as counts and percentiles. The differences in mean scores of subscales of CSPS and total scores among the nominal variables of demographic and clinical characteristics were tested using independent t-tests and one-way analysis of variance (ANOVA). Multiple regression analysis was run to assess the predictors of CMS perception. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity.



Independence of residuals (case-wise diagnostics) was assessed as part of the regression analysis. All participants were found to fall inside the range of the standardized residual. Binary logistic regression models were estimated, and the odds ratio at 95% CIs was used to approximate the associated risk for each predictor of the CMS perception. Model 1 adjusted for age and sex. Model 2 adjusted for age, sex, ethnicity, level of education, occupation, residence, monthly income, number of children, family meeting, living alone, meeting friends (MF), and frequency of MF. Whereas, model 3 adjusted for age, sex, ethnicity, level of education, occupation, residence, monthly family income, number of children, family meeting, living alone, meeting friends, frequency of MF, believe 73-84, CHD, CVD, Stroke history, hypertension, Psychology/psychiatric consultation, DM, IV, RD, current smoking status, COPD, SH, Knee surgery, ADLL, RTA, under treatment, treatment option. A p-value of 0.05 was considered statistically significant. We performed all statistical analyses using SPSS software (IBM SPSS) version 21.

Results

Socio-demographic and clinical characteristics of the participants

The socio-demographic and clinical characteristics of the participants are given in **Table 1**. Out of the total 558 participants, 299(53.6%) were men and 527 (94.4%) were of the Han ethnic group. The mean age of the participants was 68.75±7.10 years. In this study, 463(83.0) of the participants believe the factuality of 73-84, 393(70.4) had had HOPCI, 407(72.9) had a history of CHD, and 340(60.9) had HTN. Based on the CSS, the mean score for QB, QC, QE, and QT were 8.63±1.31, 16.78±1.78, 8.43±1.44, and 33.84±2.92, respectively.

Con-Men Syndrome

Table 1. Baseline sociodemographic and clinical characteristics (N=558)

Socio-demographic Characteristic		Clinical Characteristic	
Variables	N (%)/ Mean ±SD	Variables	N (%)/ Mean ±SD
Age, years	68.75±7.10	HOPCI	393(70.4)
Male	299(53.6)	CHD	407(72.9)
Ethnicity (Han)	527 (94.4)	History of CVD	76 (13.6)
Current Marital Status		Stroke History	11 (2.0)
Married	292(52.3)	Hypertension	340(60.9)
Single	102(18.3)	Psychological consultation	5 (0.9)
Divorced	99(17.7)	Diabetes Mellitus	163(29.2)
Widowed	65(11.6)	Impaired Vision	146(26.2)
Occupation	490(87.8)	Renal disease	65(11.6)



(Retired)			
Residence (Urban)	469(84.1)	Current Smoking status	249(44.6)
Lives alone	124(22.2)	COPD	22 (3.9)
Believe 73-84	463(83.0)	Surgical history	200(35.8)
Level of education		Knee Surgery	5 (0.9)
Basic and middle	181(32.4)	ADLL	84 (15.1)
High school	216(38.7)	RTA	8 (1.4)
Tertiary	161(28.9)	Undergoing PCI	423(75.8)
Income/month		PT TCM	103(18.5)
<4000	166(29.7)		
4000-8000	257(46.1)	Scores on CSPS	
>8000	135(24.2)	QB	8.63±1.31
Number of Children		QC	16.78±1.78
one	193(34.6)	QE	8.43±1.44
two	262(47.0)	QT	33.84±2.92
Three or more	103(18.5)		
Family meeting			
Daily	181(32.4)		
Weekly	198(35.5)		
Monthly	66 (11.8)		
Yearly	67 (12.0)		
Meeting Friends	331(59.3)		
Frequency of MF			
Daily	141(25.3)		
Weekly	154(27.6)		
Monthly	141(25.3)		
Half yearly	98 (17.6)		
Yearly	24 (4.1)		

MF-meeting friends, MS-marital status, HOPCI-history of percutaneous coronary intervention, CHD-Coronary Heart Disease COPD-chronic obstructive pulmonary disease, ADLL- an arthritic disease of the lower limbs, RTA-road traffic accident, PT- preferred treatment of option, TCM- Traditional Chinese Medicine, CSPS- Con-Men syndrome perception Scale, QC- cognition or knowledge score, QE- emotional score, QB-behaviour score, QT denotes total score (QC+QE+QB),

The comparison of Con-Men's syndrome scale

The results of the analysis when the various subscales were compared, **Table 2**, male gender (Male=34.06±3.03, Female=33.59±2.77, p=0.027) minority ethnic group (Han=33.76±2.85, Minority=35.32±3.67, p=0.024) scored higher mean QT and QE compared with their counterparts.



Participants with lower levels of education, divorced or widowed, those with two or more children scored higher mean QT compared with their counterparts. Also, there was a significant difference in the mean QT scores of the categories of monthly income ($P<0.001$) and family meeting ($P<0.028$).

Table 2. Comparison of QT, QC, QE and QB scores with factors associated with Con-Men syndrome

Variables	QT		QC		QE		QB	
	Mean±SD	P	Mean±SD	P	Mean±SD	P	Mean±SD	P
Believe 73-84								
Yes	34.15±2.8 9	0.00	16.99±1.7 0	0.00	8.47±1.4 7	0.07	8.69±1.3 7	0.04
No	32.34±2.5 5	0	15.80±1.8 3	0	8.21±1.2 5	8	8.33±0.9 5	0
Gender								
Male	34.06±3.0 3	0.02	16.81±1.8 4	0.43	8.57±1.4 4	0.02	8.68±1.3 4	0.45
Female	33.59±2.7 7	7	16.76±1.7 1	0	8.26±1.4 3	1	8.57±1.2 8	3
Ethnicity								
Han	33.76±2.8 5	0.02	16.74±1.7 6	0.03	8.41±1.4 5	0.16	8.61±1.2 8	0.23
Minority	35.32±3.6 7	4	17.48±1.9 5	3	8.77±1.1 8	3	9.06±1.7 7	7
Occupation								
Retired	34.01±2.9 4	0.00	16.93±1.7 4	0.00	8.41±1.4 8	0.59	8.67±8.3 4	0.13
Active	32.60±2.4 5	0	15.74±1.7 1	0	8.53±1.1 0	3	1.34±1.0 7	8
Residence								
Urban	33.52±2.7 8	0.00	16.66±1.7 5	0.00	8.38±1.4 7	0.08	8.49±1.1 9	0.00
Rural	35.53±3.0 8	0	17.46±1.7 6	1	8.69±1.2 2	3	9.38±1.6 4	0
Lives alone								
Yes	35.02±3.3 4	0.00	17.29±1.7 8	0.00	8.48±1.2 1	0.73	9.26±1.6 5	0.00
No	33.50±2.7 0	0	16.64±1.7 5	0	8.41±1.5 0	7	8.45±1.1 4	0

QT(QC+QE+QB)-summation of all the 16 items scores, QC-cognition/knowledge score, QE- emotional score, QB- behavioural score

**Correlates of 73-84 superstition/Con-Men's syndrome**

Age, level of education, monthly family income, and the number of children were significantly correlated with CSPS domains and total scores of the subscales of the CSPS scores. Also, the frequency of meeting friends correlated with subscales of CSS, particularly QC and QE. Income, living alone, knowledge of 73-84, stroke history, and history of hypertension were negatively correlated with total scores on the CSPS whereas, ethnicity, residence, number of Children, CHD, vision, RD, and hospitalization/undergoing treatment were positively correlated with QT.

Predictors of 73-84 superstition/conmen's syndrome

Tables 3 and 4, present the factors associated with 73-84 superstition/Con-Men's syndrome. Marital status ($\beta=.237$; $p=0.00$), number of children ($\beta=.146$; $P=0.001$); having experience (thus loss of relation) 73-84 ($\beta=-.191$; $p<0.001$), living alone ($\beta=-.157$; $p<0.01$), level of education ($\beta=-.134$; $p=0.001$), and Renal diseases ($\beta=.116$; $p=0.02$) emerged as significant predictors of CMS perception. Also, our study demonstrates (in **Table S1**) a significant relationship between QC scores and belief in 73-84 ($\beta= -.199$; $P=0.00$), place of residence (urban or rural) ($\beta=.112$; $.006$), Visual function ($\beta=.121$; $P=.003$), occupation ($\beta= -.120$; $P=.005$), marital status ($\beta=.108$; $P=.007$), and living alone ($\beta= -.087$; $P=.033$). The QE scores were found to be associated with current smoking status, number of children, marital status, and undergoing treatment. It was also observed that QB scores were significantly associated with marital status ($\beta= .231$; $P=0.00$), lives alone ($\beta= -.190$; $P=0.00$), residence ($\beta= .170$; $P=0.00$), renal disease ($\beta= .103$; $P=0.009$), knowledge of 73-84 ($\beta= -.094$; $P=0.006$).

Table 3. The relationship between socio-demographic and clinical variables and of Con-Men syndrome

Demographi c Variables	Measures of CM syndrome				Clinical Variables	Measures of CM syndrome			
	QC	QE	QB	QT		QC	QE	QB	QT
Age	0.164**	0.104*	0.022	.161**	HOPCI	0.121**	-0.062	0.057	0.069
Sex	-0.015	-0.106*	-0.042	-0.08	CHD	0.140**	-0.038	0.068	0.097*
Ethnicity	0.095*	0.059	0.08	0.123*	History of CVD	-0.037	0.082	0.028	0.03
Education	-0.190**	-0.160**	-0.193**	-0.282*	Stroke History	-0.041	0.012	0.01	-0.014
Marital	0.142*	0.162**	0.264**	0.286*	Hypertensio	-	0.038	-0.094*	-



status	*			*	n	0.035			0.045
Occupation	-	0.220**	0.027	-	Psych. Consult	0.022	0.064	0.056	0.07
				0.158*					
residence		0.166**	0.078	0.249**	DM	0.091*	-0.01	-	0.042
				0.252*			0.021		
Income	-	0.135**	0.121**	0.133**	Impaired Vision	0.148**	-	.130**	0.144**
				0.201*			0.009		
Children		0.179**	.190**	0.171**	Renal DIS	0.088*	0.083	0.158**	0.165**
				0.280*					
Family meeting		-0.036	-0.048	-0.012	Smoking	-	.198**	0.014	0.066
				-0.051		0.062			
Lives alone	-	0.152**	-0.019	-	COPD	0.056	0.01	0.029	0.052
				0.256**					
Meeting Friends		0.006	.098*	-0.074	Surgery HIS	0.084*	-	-0.04	0.01
				0.019			0.048		
Frequency of MF	-	0.140**	.125**	0.024	Knee Surg	0.012	-	0.041	0.025
				-0.012			0.002		
Believe 73-84	-	0.251**	-0.068	-	ADLL	0.028	0.053	0.076	0.078
				0.105*					
				0.234*	RTA	0.057	-	-	0.007
							0.004	0.058	
					Under Treatment	0.078	.141**	0.026	0.129**
					PT TCM	-	-	-0.07	-
						0.018	0.061		0.073

QT denotes total score (QC+QE+QB), QC- cognition or knowledge score, QE- score emotional score, QB-behaviour score, MS-marital status, LBH- lost better half, HOPCI-history of percutaneous coronary intervention, COPD-chronic obstructive pulmonary disease, RTA-road traffic accident, QT denotes total score (QC+QE+QB).



Table 4. Factors associated with 73-84 superstition/Con-Men syndrome

Measures of CM syndrome	Unstand Coeffi		Stand. Coeffi	t	Sig.	95.0% Confidence Interval for B		
	B	Std. Error	Beta			Lower Bound	Upper Bound	
(Constant)	36.084	0.795	-	45.369	0	34.522	37.646	
Marital Status	0.642	0.102	0.237	6.304	0	0.442	0.843	
QT	Number of Children	0.598	0.172	0.146	3.471	0.001	0.26	0.937
	Believe 73-84	-1.491	0.293	-0.191	-5.094	0	-2.066	-0.916
	Lives alone	-1.098	0.263	-0.157	-4.177	0	-1.615	-0.582
	Education	-0.501	0.156	-0.134	-3.203	0.001	-0.808	-0.194
Renal DIS	1.052	0.343	0.116	3.067	0.002	0.378	1.726	
(Constant)	18.185	0.515	-	35.282	0	17.173	19.198	
QC	Believe 73-84	-0.946	0.201	-0.199	-4.711	0	-1.34	-0.551
	residence	0.545	0.197	0.112	2.77	0.006	0.158	0.931
	Impaired Vision	0.489	0.161	0.121	3.032	0.003	0.172	0.806
	Occupation	-0.65	0.232	-0.12	-2.804	0.005	-1.106	-0.195
	Marital Status	0.179	0.066	0.108	2.715	0.007	0.049	0.308
	Lives alone	-0.372	0.174	-0.087	-2.143	0.033	-0.713	-0.031
(Constant)	7.111	0.215	-	33.097	0	6.689	7.533	
QE	Currently Smoking	0.487	0.119	0.168	4.082	0	0.252	0.721
	Number of Children	0.349	0.082	0.172	4.245	0	0.187	0.51
	Marital Status	0.209	0.054	0.156	3.852	0	0.102	0.316
	Under Treat	0.402	0.141	0.119	2.852	0.005	0.125	0.679
	CHD	-0.333	0.134	-0.103	-2.485	0.013	-0.596	-0.07
(Constant)	8.792	0.352	-	24.988	0	8.101	9.483	
QB	Marital Status	0.282	0.047	0.231	5.949	0	0.189	0.376
	Lives alone	-0.6	0.125	-0.19	-4.809	0	-0.845	-0.355
	Residence	0.608	0.144	0.17	4.218	0	0.325	0.891



Renal DIS	0.423	0.162	0.103	2.616	0.009	0.105	0.74
Believe 73-84	-0.328	0.136	-0.094	-2.423	0.016	-0.595	-0.062

QT denotes total score (QC+QE+QB), QC-cognition or knowledge score, QE-emotional score, QB-behaviour score, MS-marital status, LBH- lost better half, HOPCI-history of percutaneous coronary intervention, CHD-Coronary Heart Disease, Renal DIS -Renal disease, QT denotes total score (QC+QE+QB).

Table S1: sociodemographic data associated with significant

Mean±SD of QT scores

Variables	QT score		
	Mean±SD	F	P
Current Marital Status			
Married	32.98±1.95		
Single	34.31±2.86	23.229	0.000
Divorced	35.46±3.35		
Widowed	34.51±4.29		
Level of education			
Basic and middle	35.01±3.30		
High school	33.55±2.52	25.488	0.000
Tertiary	32.93±2.52		
Income/month			
<4000	34.75±3.26		
4000-8000	33.61±2.75	12.851	0.000
>8000	33.18±2.50		
Number of Children			
one	32.93±2.75		
two	33.96±2.83	23.69	0.000
Three or more	35.26±2.83		
Family Meeting			
Daily	34.33±2.93		
Weekly	33.57±2.98		
Monthly	33.44±2.75	2.745	0.028
Half a year	33.24±2.41		
Yearly	34.15±3.02		



QT- total score on the Con-Men syndrome perception scale

Discussion

Are superstitions only medieval notions, no more common in our modern society?

According to our study, 463(83.0%) of the participants believe the factuality and viability of 73-84 superstition, and males registered higher total scores (QT) and emotional scores (QE) on the CSPS than females; 34.06 ± 3.03 versus 33.59 ± 2.77 , $p = 0.027$, and 8.57 ± 1.44 versus 8.26 ± 1.43 , $p = 0.021$ respectively and minority ethnic groups scored higher than the Han group (35.32 ± 3.67 versus 33.76 ± 2.85 , $p = 0.024$). Most of the believers of the Con-Men's superstition recalled with clarity the date and time when a relative, spouse, friends, or influential persons had fallen terminally ill and consequently died upon the attainment of the ages 73 or 84 years. Superstitions are simply built on legends, old traditional practices, customs, divinations, and private experiences (15). And with advancements in science, tangible explanations put forth based on the evidence one hopes that should make it possible to dispel into obsolescence the scary shadows and darkness surrounding many primitive beliefs. Just as the discovery of microbes and anti-microbial agents vanquished many theories of "gods of the unseen world" and ever-since our understanding of the physical or material universe continues to evolve at a tremendous pace.

While the common denominator of most superstitious/religious sects is a firm belief in a higher, all-knowing, all-seeing, invisible, and all-controlling being, some idolize or see certain historical "individuals" as "demigods". Belief in these perceived superhuman beings creates psychological subcultures that dictate (sometimes negatively) the way of life of the devotee.

Con-Men's syndrome/73-84 superstition is a typical example of such beliefs that may impact negatively on mental development. Our findings are similar to other studies (16,17) and stress the fact that despite overwhelming contrary scientific evidence, the propensity of people, especially the elderly to accept pseudoscience and superstition may be higher than expected. Another study reported, about 40% of Europeans are superstitious (18) and about 1 in 3 Americans believe in the strange phenomenon of extrasensory perception (19). Even though these occurrences could simply be causal illusions, devotees are led to confirming a perception of a causal relationship between unrelated events (20). Most of these superstitious beliefs are predominantly exhibited among the senior community, thus there is the need to be on the lookout for sociocultural behaviors that offer clues to long-held notions that may affect mental health quality of life and compliance to treatment among geriatric patients with coronary heart diseases undergoing PCI.



Are Aging and declining social life, potential breeding grounds for psycho-social disturbance?

Our study revealed many respondents live lonely lives; about 22.2% (124) of the participants live alone. The interaction with family can be expressed as such: 23.8% and 47% meet their families and friends respectively every month. 102(18.3%) are single, 99(17.7%), divorced, 193(34.6%) have only one child with whom they meet once a year, and 65(11.6%) had lost their partners. The above findings are possible psychosocially stressful factors that may have roles to play in why old people become more religious, spiritual, and sometimes superstitious in an attempt to meet their health needs other than “swallowing” pills. The narrative and experience of many septuagenarians and octogenarians reveal something far contrary to the rosy life that might be expected of retirees by the younger generation. To many of the seniors interviewed, post-retirement life is more psycho-socially stressful.

The perceived joy of having been cut loose to pursue one’s own life is quickly replaced by a sense of purposelessness, hopelessness, idleness, and boredom. They identified most with the question “what next”, and a feeling of “end of service, end of the road” type mentality that torments them day and night and may contribute to a rapid downward spiral of health among many seniors (21). Whether or not retirement could account for this rapid downward spiral in health conditions among many old folks is another subject that should be addressed separately. It is not uncommon to see deteriorating health, dwindling physical strength, increased injuries due to falls from a loss of balance and coordination, immobility due to osteoarthritic diseases, compromised immune system, frailty, poor appetite, insomnia, and depression among persons after 60 years of age.

Can aging and superstition affect compliance in Coronary heart diseases?

Cardiovascular disease (CVD) poses a great burden for geriatric patients, their relatives, caregivers, and healthcare delivery systems (22). We identified 44.6% of participants as active smokers, 60.9% with hypertension, 29.2% with diabetes. 3.9% had chronic obstructive pulmonary diseases, while 11.6% had renal disease. About 22.2% of the subjects interviewed live all by themselves. Also, 26.2% reported impaired vision. The term impaired vision was used by some to mean an inability to read and write, and could also affect their compliance to treatment; comprehending directions for use of medication, and identifying the right pill to take. Adherence to clinical treatment; use of blood-thinning agents, dual antiplatelet therapy (DAPT) following drug-eluting stent implantation in percutaneous coronary intervention the mainstay for the management of coronary heart disease is crucial.

Inability to follow physicians’ directives can lead to poor treatment outcomes and complications from adverse events like bleeding. Sometimes compliance could be related to socioeconomic factors. 29.7% of participants lived on a monthly family income of less than 4000 Chinese yuan, while the cost of getting



a refill for some of the new agents (without health insurance coverage) in the management of coronary heart diseases and associated risk factors are higher than the above figure. The survey also revealed 103(18.5%) of the subjects prefer traditional Chinese medical products to western medication; claiming the latter had too many side effects, which may be true considering their age, comorbidities, and the number of medications required in the management of all comorbidities.

About 463(83.0%) of participants have enough past evidence to believe health dwindles and life ends at 73 or 84 years, 423(75.8%) were undergoing PCI and also 393(70.04%) had a history of PCI including stenting. These findings may not directly imply they suffer from the anxiety associated with CMS and thus direct correlation with poor compliance, but taking into account the continuous rise in the cases of in-stent restenosis among seniors, it is worth noting. Managing (geriatric) patients requires meticulous care; reducing side effects and not worsening the functions of other organs in the process of improving the function of another. Memory loss is not uncommon among seniors (23), and the likelihood of patients forgetting to take their medication is high, it is important to identify and rectify the factors that otherwise could affect compliance to treatment.

The biomedical model versus the biopsychosocial model in geriatric cardiology

A geriatric syndrome is proposed to denote the non-disease clinical condition of older persons featured by multiple causes determining a unified manifestation (24). Even though the appreciable percentage of seniors suffer from mental issues (25), the current study revealed astonishingly only 5(0.9%) of participants ever had psychiatric or psychological consultation. We have to remember a patient is a person (which is composed of body, mind, and soul) with a clinically diagnosed disease and should be managed holistically. This means that principles of treatment should be administered with the understanding that, far beyond a patient's physical well-being, there is a deep pool of ideology to navigate.

As to the effects of most medical interventions—surgeries, pharmacological therapies: they are designed under the principle assumption that the pathology of a given condition is mostly the result of the biological dysfunction of an organ system of the body, and that some damage may be caused to other organ systems in or by the treatment process considering most geriatric patients suffer from multisystem impairment. Especially when some interventions are administered repeatedly and requiring polypharmacy to augment desired therapeutic outcome. Therefore, utilizing a comprehensive, biopsychosocial model approach (26) will help offer holistic care and better care for geriatric patients with coronary heart disease. Full integration of all the determining factors toward the achievement of optimal health proposed by the biopsychosocial(s) health model cannot be over-emphasized enough in this



situation. The need to promote and incorporate the biopsychosocial(s) model into our everyday clinical practice is essential in a variety of situations.

Implementation requires practical steps in diagnostic work-ups wherein we consider patients' psychological history. These clinical exercises are non-invasive, cheap, and necessary in familiarizing ourselves with our patients' socio-cultural dispositions. Personal interpretation of health conditions affects decisions about medical care and, for that matter, treatment outcomes. The rate and prevalence of in-stent restenosis, repeat hospitalization and out-patient visits are high among geriatric patients despite tremendous advances made in interventional cardiology. It is also known that superstitious orientations affect disposition towards care—the likelihood of compliance with treatments. There is the need for physicians to thoroughly identify and address the psychological needs of patients strongly exists, especially with the elderly, even in reportedly atheist—non-religious—societies.

Paying incisive attention to cultural and religious environments is a key element when offering holistic health care services. Psychiatric assessments should be a routine part of patient management: this will help to determine the extent to which certain religious-cultural preconceptions affect variables and constraints against the health-care cycle in patients. In conclusion, “73-84 “superstition is still high among geriatric patients undergoing repeat percutaneous coronary intervention. This superstition tends to affect the mental health quality of life of old folks if get into “Con-Men’s syndrome”. Psychiatry consultation remains low for cardiovascular encounters and calls for routine application of the BPS model for geriatric patients with coronary heart diseases.

References

1. Francesco Panini, Candela Diaz Cañestro, Peter Libby, Thomas F. Lüscher, Giovanni G. “Camici, The Aging Cardiovascular System Understanding It at the Cellular and Clinical Levels”. J Am Coll Cardiol 2017; 69:1952–67
2. North BJ, Sinclair DA. “The intersection between aging and cardiovascular disease”. Circ Res 2012; 110:1097–108.
3. Heidenreich PA, Trogon JG, Khavjou OA, et al. “Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association”. Circulation 2011;123: 933–44.
4. Lim SS, Vos T, Flaxman AD, Danaei G, Shibuya K, Adair-Rohani H, et al. “A comparative risk



- assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010”. *Lancet*. 2012;380(9859):2224–60.
5. Brian J. North and David A. Sinclair. “The Intersection Between Aging and Cardiovascular Disease”. *Circ Res*. 2012 April 13; 110(8): 1097–1108
6. Banning AP, Baumbach A, Blackman D, et al. “Percutaneous coronary intervention in the UK: recommendations for good practice 2015”. *Heart* 2015; 101:1–13.
7. Palmerini T, Stone GW. “Optimal duration of dual antiplatelet therapy after drug-eluting stent implantation: conceptual evolution based on emerging evidence”. *Eur Heart J* 2016;37: 353–364.
8. Matthew J. Czarny, Ashwin S. Nathan, Robert W. Yeh. “Adherence to dual-antiplatelet therapy after coronary stenting: a systematic review”. *Clin Cardiol*. 2014 August; 37(8): 505–513.
9. Alfonso F, Byrne RA, Rivero F, Kastrati A. “Current treatment of in-stent restenosis”. *J Am Coll Cardiol* 2014; 63: 2659-2673.
10. Bailey CM. “The effects of religion on mental health: Implications for seventh-day Adventists”. In: 20th International Faith and Learning Seminar held at Loma Linda University Loma Linda, California, USA-June 15-26, 1997.
11. Prakash B. “Behere, Anweshak Das, Richa Yadav, Aniruddh P”. Behere. Religion and mental health. *Indian J Psychiatry* 55: Indian Mental Concepts I -Supplement, January 2013
12. Wig NN. “Influence of religion on mental illness in India. In: International Congress of Social Psychiatry, Yugoslavia 1970, 21st -27th September 1970”.
13. Deborah Matteliano, Barbara J. St. “Marie, June Oliver, Adherence Monitoring with Chronic Opioid Therapy for Persistent Pain: A Biopsychosocial-spiritual Approach to Mitigate Risk Pain Manag Nurs”. 2014 March; 15(1): 391–405
14. Me´lanie Sustersic, Aure´lie Gauchet, Anaïs Kernou, Charlotte Gibert, et al. “A scale assessing doctor-patient communication in a context of acute conditions based on a systematic review”. *PLoS ONE* 13(2):



e0192306

15. Mullen Patrick B. "The Relationship of Legends and Folk Beliefs." *The Journal of American Folklore*, vol.84, no.334, 1971, pp 406-413. JSTOR, www.jstor.org/stable/539634.

16. Achenbach, J. "Why Do Many Reasonable People Doubt Science? National Geographic". Available at: <http://ngm.nationalgeographic.com/> [accessed March 28, 2015].

17. Lewandowsky, S., Ecker, U. K. H., Seifert, C. M., Schwarz, N., and Cook, J. "Misinformation and its correction: continued influence and successful debiasing". *Psychol. Sci. Public Interest* 2012; 13, 106–131.

18. European Commission. Special Eurobarometer 224: "Europeans, Science and Technology". EBS Report 2005; No. 224. Brussels: European Commission.

19. Moore, D. W. "Three in Four Americans Believe in Paranormal". Princeton: 2005 Gallup News Service.

20. Matute H, Blanco F, Yarritu I, Díaz-Lago M, "Vadillo MA and Barberia I Illusions of causality: *Front. Psychol.* 2015; 6:888

21. Iris van der Heide, Rogier M van Rijn, Suzan JW Robroek, Alex Burdorf, et. Al. "Is retirement good for your health? A systematic review of longitudinal studies". *BMC Public Health* 2013, 13:1180

22. Francesco Panini, Candela Diaz Cañestro, Peter Libby, et al. "The Aging Cardiovascular System Understanding It at the Cellular and Clinical Levels". *J Am Coll. Cardiol*, 2017; 1952 – 67

23. Annette Meng, Mette Andersen Nexø, Vilhelm Borg, et al, "The impact of retirement on age-related cognitive decline – a systematic review", *BMC Geriatrics*, 2017; 17:160

24. Matteo Cesari, Emanuele Marzetti, Marco Canevelli, et al. "Geriatric syndromes: How to treat VIRULENCE", 2017; 5, 577–585

25. Inouye SK, Studenski S, Tinetti ME, Kuchel GA. "Geriatric syndromes: clinical, research, and policy implications of a core geriatric concept". *J Am Geriatr Soc* 2007; 55:780-91.



26. Isabelle Scholl, Jo"rdis M. Zill, Martin Ha"rter, Jo"rg Dirmaier, et al, "An Integrative Model of Patient-Centeredness – A Systematic Review and Concept Analysis". PLoS ONE 9(9): e107828.

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