

الاختلافات الصحية بحسب الجنس والخصائص الاجتماعية بين المسنين الكويتيين

يعقوب يوسف الكندري
دوغلاس كروز

ملخص: تسعى الدراسة الراهنة إلى الكشف عن الاختلافات في بعض من الخصائص الاجتماعية والصحية لدى المسنين في المجتمع الكويتي. فتركز الدراسة على الاختلافات بين الجنسين في بعض الخصائص الصحية، وكذلك الاجتماعية ولا سيما الدعم الاجتماعي. شملت عينة الدراسة 1427 من كبار السن من الكويتيين، الذين تتجاوز أعمارهم ستين عاماً (472 من الرجال و955 من النساء). اعتبرت الاستبانة الأداة الرئيسة للدراسة وتم طلب مجموعة من المتغيرات الأساسية، والاجتماعية والصحية للمسن. وقد شملت أداة الدراسة متغيرات عن العمر، والجنس، والحالة الاجتماعية، والدخل، ومستوى التعليم، وعدد الأطفال، وعدد الأبناء الذين يعيشون في نفس المنزل مع المسن. وطبقت أداة الدراسة من خلال مقابلات منزلية. وقيس ضغط الدم الانقباضي والانبساطي، وتم الحصول على عينة من الدم لقياس السكر في الجسم. هذا، بالإضافة إلى طلب مجموعة من المقاييس الاجتماعية التي تتعلق بالدعم الاجتماعي، وبعض المقاييس الصحية المتمثلة بمقاييس الأعراض الجسدية، والمقياس الذاتي للصحة العامة. واعتمد على البرنامج الإحصائي SPSS لإدخال وتحليل النتائج. وقد كشفت النتائج عن أن هناك فروقاً دالة إحصائياً بين الذكور والإناث من المسنين في مستويات اجتماعية وصحية متعددة، تمثلت في المستوى التعليمي، والمستوى الاجتماعي الاقتصادي، وعدد الأبناء، وعدد الأبناء الذين يعيشون مع المسن في المنزل، ودرجة وقوة الاتصال مع الأقرباء والأصدقاء. كما كشفت النتائج أن هناك اختلافات بين الجنسين في عشرة

أعراض صحية. وكانت هناك أربعة فروق فقط بينهما في المرحلة العمرية التي تراوح بين 60-69، بينما كانت الفروق سبعة أعراض عند المسنين البالغة أعمارهم 70-79، واثنى عشر فرقاً في هذه الأعراض للمسنين الكبار جداً الذين تتجاوز أعمارهم الثمانين عاماً. كشفت النتائج أيضاً عن أهمية الزوج والزوجة في حياة المسن. كما كشفت النتائج أن الإناث من المسنين يعانين من أعراض صحية أكبر بالمقارنة بالذكور، ولكنهن أكثر رضاً عن حياتهن الصحية. قد تكون الاختلافات بين النوع في الأعراض الصحية ترجع إلى الفوارق بين الأدوار الاجتماعية للذكور والإناث في المجتمع التقليدي.

المصطلحات الأساسية: المسنون في الكويت، الاختلافات النوعية للمسنين، الصحة.

Health Variations by Gender and Sociological Characteristics Among Elderly Kuwaitis

Yaqoub AL-Kandari*
Douglas Crews**

Abstract: Research examined whether there are differences in selected sociocultural and social support measures and health assessments among elderly men and women. A sample of 1,427 elderly Kuwaiti respondents, aged 60 years and over, (472 men and 955 women) participated in a 20__ survey. Our survey instrument included questions from scales designed to obtain sociocultural, social support, health, and demographic information. Age, sex, social status, income, level of education, number of children, number of children living in the same household were self-reported during household interviews. Systolic and diastolic blood pressure was measured and a sample of blood obtained from each participant. Using the Statistical Package of Social Sciences, men and women differ significantly for years of education, socio-economic status, number of children, number of children living in the elder's household, and the frequency and strength of contact with relatives. Of 60 somatic symptoms, significant sex differences were observed for only 10. Only 4 somatic symptoms differed significantly between young-old men and women participants (ages

* Department of Sociology and Social Work and Anthrpology, Kuwait University.

** Department of Anthropology and Schools of Public Health, The Ohio State University.

60-69). Among 70-79 year olds, men and women were significantly different for 7 items. Among the oldest-old elders, 12 significant somatic differences were observed. Regardless of sex, spouses generally are important sources of social support. One's sex is significantly predictive of differences in associated self-reported somatic symptoms and health over the last year. Women report more somatic symptoms, but also greater satisfaction with their health than do elderly men. One's sex also is significantly related to sociocultural measures, including income and education levels. Given historical differences in men's and women's activities, the Kuwaiti population provides a model laboratory for exploring sex differences in how health varies across social and cultural measures and social support among Arab elders.

Keywords: Elderly in Kuwait, Variation among elderly, Health.

Introduction

Over the past four decades, population health has improved for the Kuwaiti population as indicated by declines in morbidity and mortality (Shah & Shah, 1987). At 77.7 years (76.4 men; 79.0 women) (The World Factbook, 2014), life expectancy compares well with other populations worldwide. Kuwait today has a high standard of health, (WHO, 2014, p.4) according to physiological indicators, placing among the best countries worldwide.

In Kuwait, as in all Arab countries, men participate more in social and political activities outside the home than women. Women's lives focus on their family and home. Traditionally, Kuwaiti women seldom left their home except in an emergency. Their work was in the home and their social contact was only with relatives and neighbors. Given their traditional roles, women attained smaller social networks than men over their lives. In modern settings, women's social networks are more extended but, men still have larger social networks, because they are involved in more activities outside the home and most communal activities outside the home are designed for men. For example, "Diwaniyyahs" (daily or weekly male social gatherings), clubs, and civil institutions are spheres of activity for men in the modern Arab societies, but not women. As more women are educated, they have joined the workforce and now participate more in non-family interactions. In general, both quality and satisfaction with social support are salient promoters of high self-reported health (Sarason et al., 1986). Although social contact and networking differs between Kuwaiti men and women,

it is likely that perceived social support will influence self-perception of health among both.

Across cultures, women generally self-report poorer health than men, while also living longer than men (Case and Paxson, 2004; Crews, 2004; Mendoza-Sassi and Beria, 2007; Waldron, 1967). As Mendoza-Sassi and Beria (2007) note, “it is well known that although men have higher rates of mortality, women report and have more morbidity than men” (p. 341). Men suffer higher rates of diseases which directly result in death, while women suffer more from chronic degenerative diseases but live with these conditions longer. Employment, marriage, smoking cigarettes, Type-A behaviors (tendency to be self-critical and time-oriented), drinking, and other life style factors that affect health are molded by a society’s culturally-prescribed gender roles and may contribute to observed sex differentials in morbidity and mortality (Wingard, 1984). Sex-specific biological differences also affect health. Hormones protect from disease, while genetic variation and reproductive factors affect risks and pathology for multiple chronic diseases (Verbrugge, 1985). Verbrugge (1982) enumerates four factors contributing to gendered differences in health: “...inherited risks of illness, acquired risks of illness and injury, illness and prevention orientations, and health reporting behavior” (p. 417). These likely differ across cultures due to variable sociological and ecological characteristics (Kunst et al., 1995).

Sex differences in health occur at all ages (Verbrugge, 1982) and differential health symptomology between elderly men and women is well documented (e.g., Crimmins, 2010; Deeg et al., 2002; Molarius and Janson, 2002; Murtagh and Hubert, 2004; Oman et al. 1990; Schet al. 2010; Zunzunegui et al., 2009). For example, elderly men experience more cancer and neurological diseases than do women, but elderly women have higher incidences of renal diseases and rheumatoid arthritis (Molarius and Janson, 2002). Older men also more often suffer heart and lung diseases than women, while older women tend to suffer mental and somatic conditions more often than men (Deeg et al., 2002). Elderly women suffer more physical disabilities than men over their lives (Murtagh and Hubert, 2004; Oman et al., 1990). This is as true in Asian populations as in European and other Western populations (Crews and Li, 2011).

One aspect of social life closely related to individual health across cultures is social support. In general, adult health closely follows sociocultural differences and social support is a major factor influencing differential health outcomes between individuals and among elders across

different cultures (e.g., Okamoto and Tanaka, 2004; Al-Kandari, 2001a; Chou and Chi, 2003; Gadalla, 2009; Horman, 1989; Johnson, 1996; Muramatsu et al., 2010; Shin, 2008). Marital status is directly related to health variation at older ages. Elderly married persons are healthier than are the unmarried, suggesting spousal support aids in maintaining health among elders (Barron et al., 1994; Crews and Li, 2011; Gliksman et al., 1995; Wyke and Ford, 1992).

Support from children also is an important contributor to health and well-being of older persons. Elders who receive more frequent visits from their children report better social lives and health, and have longer life spans than those visited less often (Spitze and Logan, 1990). Number of children residing in their parents' household is directly associated with health of their elderly parents (Al-Kandari, 2011). Examined by sex of children, daughters tended to provide more social aid and support to elderly parents than did sons (Rosenthal, 1985). In general, Akiyama et al. (1996) found spouses, children, siblings, and friends were "...important in determining the structure and function of older people's support networks...(and that) norms for adult children in relation to elderly parents are stronger than sex norms in structuring the support network" (p. 380).

Sociocultural Background

Cultural traditions regarding familial social support for senior members differ today between Western and Eastern societies. In Kuwait, as in most Arab nations, familial social support for elderly relatives is highly valued culturally and observed more often than in most Western settings. This is in part due to adherence to a tradition of living in extended family households as compared to nuclear family residence in more Westernized settings. Number of children, gender preference, type of marriage (consanguineous; non-consanguineous), and family type (extended; nuclear), are associated significantly with size of social networks (Al-Kandari et al., 2001). Arab traditions promote high fertility (Al-Kandari, 2007), encourage consanguineous marriage (Al-Kandari, 2006; Al-Awadi, et al., 1985), and extended families (Al-Kandari, 2010; El-Haddad, 2003). There is also a preference for male over female offspring (Barakat, 2008). With modernization social and family structures have changed (AlKandari, 2010). Still, familial social

support is important in community and family life for the well-being of elders. Aid from relatives and friends is an important function of everyone's social life and livelihood, especially the elderly. Today's older women who lived more traditional lives in earlier Arab societies and developed smaller social networks than did same-age men continue to be secluded from non-familial men and social activities outside the home (Al-Kandari, 2010). Older men who engaged more in outside social relationships likely have wider social networks and may receive greater social support than same-age women.

In Kuwait, male elders traditionally made all decisions for the extended family household within their local tribe (Kay, 1978). As women aged, they gradually reduced their dominant role maintaining the household, as younger women took over their duties and responsibilities. Conversely, older men continued to meet and interact with friends and relatives. More modern lifestyles have altered such traditional family dynamics. Today, older family men, although still retaining high social status in society (Audah, 1986), exact less control over their extended households than did former, more patriarchal family leaders (El-Haddad, 2003). Although distinct social changes have affected aspects of society concerning gender and behavior, women - young and old - continue to face traditional and customary restrictions on their activities and valuation by society. For example, Al-Issa and Ismail (1994) reported male college students received greater social support than do female students. This may reflect young men having larger social networks than young women, as is seen throughout Kuwaiti society, or lower familial support for educating young women.

Social support or its absence directly relates to health among Kuwaiti elders. Al-Kandari (2003) determined that religiosity provided social support for individuals and contributed to lower diastolic and systolic blood pressure in a selected sample. In another study, Al-Kandari (2008) found a significant relationship between social support and networking and the general health of elderly in Kuwaiti society. Family members were found to play an important role in providing support to elders, and this support was associated with lower systolic and diastolic blood pressure in the recipient (Al-Kandari, 2001a). Al-Issa and Ismail (1994) examined social support and depression among college students in Kuwait with respect to primary and secondary social support.

Depression was higher among women, especially those with lower social support, compared to men (Al-Issa and Ismail, 1994).

Little is known on how social support associates with health among elderly Kuwaitis. Our goal in this paper is to determine if selected aspects of sociocultural life, social support, and health differ between older Kuwaiti men and women and co-vary with one another. We determine if self-reports of somatic symptoms differ between older men and women and examine if those who have a spouse differ in health and well-being from those without a spouse. We also explore if social support influences on health differ by sex of elders. We also examine if currently married elders differ from those without a spouse for systolic and diastolic blood pressure, glucose (diabetes), reported somatic symptoms, or self-reported satisfaction with their health in general and specifically in the last year. Finally, we examine associations of living with one's spouse with health outcomes, socioeconomic status (SES), age, and social support.

Using these analyses we test multiple hypotheses. First, do self-reported or assessed aspects of health and social characteristics differ significantly between older Kuwaiti men and women? Do elderly Kuwaiti men and women differ in self-reported somatic symptoms? Do self-reported somatic symptoms that differ significantly between men and women vary with age? Do men and women living with a spouse differ in their systolic and diastolic blood pressure, serum glucose, somatic symptoms, or self-reported health from those without a spouse? Do assessed measures of social support significantly associate with health in either men or women?

Materials and Methods:

Sample: This report is part of a larger project funded by Kuwait University (Project number SO 03/04) to examine health and well-being of 1,427 elderly respondents aged 60 years and over (472 males and 955 females) representing all six governorates in Kuwait. Average age in this representative sample of Kuwaiti elders is 77.12 years ($SD = 9.41$). All data were collected by nurses trained as Research Assistants (RAs) for taking project assessments. The RAs distributed the questionnaires, collected all sociocultural data, and conducted interviews with participants and their caretakers or the person who is with the participant most often. Interviews were completed in the elderly participant's home at an appropriate time.

Help in completing questionnaire protocols was obtained from the person in the household most familiar with the elder's health status, cultural background, and social behavior - most often a spouse. When a spouse was not in the household another close relative aided the participant. In general, all procedures were completed in the elder's home at night before the evening meal. Prior knowledge and previous research indicated this was the best time to visit elders and their families.

Questionnaires: Sociocultural and health data were obtained using self-report questionnaires (available from first author). Questionnaires included several standard scales for obtaining sociocultural, social support, health, and demographic information. Age, sex, social status (married/not married), income, level of education, number of children, number of children living in the same household, and other sociocultural data were all self-reported by the participant or their closest companion, usually a spouse. A single item self-reporting health scale based on a ten-point distribution (0 = poor to 10 = highest level) was used to assess general health and health in the last year. Degree of religiosity also was assessed on a ten-point scale using a single item self-report. These two single item self-reports have been used previously for research in Kuwait (Al-Kandari, 2011; Abdel-Khalek, 2006). For example, the self-report scale for religiosity shows temporal stability and both concurrent and factorial validity (Abdel-Khalek, 2007, pp. 213-14). Abdel-Khalek (2006) reports, "Although there are Western-developed inventories to measure religiosity, they are based on the Christian concept of God. It is not yet known whether these inventories are valid for Islamic conceptions". A one week test-retest of reliabilities for these two scales was completed; this showed a correlation of 0.77 and 0.89 for these two scales, respectively.

The Social Support Scale (SSS) used here has been used in other local studies (Al-Kandari, 2001a; 2002; al-Mutiri, 2000); minor modifications to better fit the experiences and sociocultural/ecological settings of elderly adults constituting this sample were incorporated. The overall scale includes 12 sentences. Participants' family members were asked to respond using a six-point scale: from strongly agree (6) to strongly disagree (1) to report the participant's social support. This scale has high internal consistency overall (alpha coefficient of 0.87).

We used a frequency of contact scale that included questions concerning kin and friends' frequency of contact with the elderly participant

in daily life (spouse, children, cousins, close friends, and others). A strength of relationship scale was used to assess how strong participants report their associations with family and kin to be. This is a five-point scale from always/strong (5) to never/weak (1). These two scales also have high internal consistency overall (alpha coefficients of 0.84 and 0.85, respectively).

The self-report questionnaire also included physical and health self-assessments. A somatic symptoms inventory (SSI) developed by Abdel-Kalek (2003a), reported for other Kuwait samples of elders (Abdel-Kalek, 2003a; Al-Kandari, 2001a), provided information on physical health of respondents. Most items included in the somatic symptoms inventory request self-reports of physical and organic aspects of current health: e.g., toothaches, dyspnea, gastric upset, joint pains, and otitis media. Obviously, with self-reports it is difficult to differentiate psychologically-based complaints from somatic ones. The 60 somatic symptoms in the inventory are scored on a four-point Likert-type scale (SSI: 0 = None, 1 = Some, 2 = Much, and 3 = Always). This estimate of somatic symptoms shows high internal consistency overall for this sample (alpha coefficient of 0.92).

Physical Assessments: During each home visit, RAs measured systolic and diastolic blood pressure of each participant using an aneroid sphygmomanometer (desk model). Systolic pressure was read as the first Korotkoff phase or the onset of sound. Diastolic pressure was read as the fifth Korotkoff phase or complete disappearance of sound. After arriving at the participant's home and explaining study objectives, all participants completed an informed consent. Following this and after approximately 10 minutes of relaxing while visiting, participants were asked to be seated, if able, with their arm supported at heart level. Three blood pressure measurements were completed at different times during the visit. The average of these three readings was recorded and is used as the major dependent variable for systolic (SBP) and diastolic blood pressure (DBP) in these analyses. RAs also obtained a small sample of blood to assess glucose. Almost all visits occurred at night before dinner and about 4 to 5 hours after lunch. Thus, these assessments likely represent normal blood glucose concentration.

Statistical Analysis: The Statistical Package for the Social Sciences (SPSS version 17) was used for data entry and analysis. We used t-tests to examine sex differences in sociocultural/social support (education, SES, number of children, number of children living in elder's household, level

of religiosity, SSS, frequency of contact, and strength of contact) and health variables (general self-rating of health and health over the last year, glucose, and SBP/DBP, and somatic symptoms). Similarly, t-tests were used to explore health differences between elderly married and not married participants. We relied on regression to examine relationships effects of sex to selected sociocultural, social support and health measures. Multivariate regression models allowed us to determine whether associations of social support measures, particularly presence or absence of a spouse, on health outcomes occurred independent of measures of education, SES and age.

Statistical significance of differences between groups is estimated using actual p-values, observed differences and 95% Confidence intervals (CIs). Given the large sample sizes, even small differences may be statistically significant at the standard $p < 0.05$. Exact p-values rather than arbitrary cut-points allow readers to observe associations and judge their possible significance. For several risk factors high-risk clinical cut-points have been defined. For example SBP over 140 mmHg or DBP over 90 mmHg are well defined indicators of hypertension. However, for most variables examined no well-defined clinical criteria exist. For example, there is no defined value for low social support or at what point it becomes a risk for disease outcome? Similarly, what differences in “number of reported somatic symptoms” indicates “high risk”? We may postulate that a 5 mmHg difference in DBP or a 10 mmHg one in SBP are clinically significant because such differences can be verified as being associated with greater mortality in longitudinal research (Crews, 1988). For the remaining variables we might arbitrarily state what differences may be “clinically meaningful,” but we do not have longitudinal data supporting such cut-points. For these reasons, results are presented as absolute differences, 95% CIs and exact p-values.

Results

Age Differences

Sampled men are slightly older (average age 77.8 years) than women (average 75.7 years) by 2.1 years ($p < .0005$). All additional comparisons between men and women within the full sample (472 men, 955 women) are reported after statistically controlling possible effects of age. Across age groups, 22.2% of our sample (84 men, 233 women) is aged 60-69, 38.3% aged 70-79 (173 men, 373 women) and 38.5% aged 80+ years (215 men, 349 women).

Sex Differences in Social and Health Measures

Average values for all measures were determined independently for men and women (Table 1) and assessed for statistically significant differences using t-tests. Men report significantly more years of education, children, and children living in their homes, along with greater frequency of contact and strength of contact with their family and friends, and higher SES than do women (Table 1). Men average 1.5 more children than women and report more contact with their offspring than women (Figure 2). No large differences between the sexes are observed for religiosity, social support, self-reported health, health over the last year, physiological measures of health, or somatic symptoms (not tabled).

Table 1: Sex Differences in Social and Health Measures of 1,427 Elderly Kuwaitis

Measure	Men (472)	Women (955)	p
	Mean (sd)	Mean (sd)	
Education years	1.76 (1.10)	1.30 (0.71)	< 0.001
Number of Children	7.80 (3.55)	6.26 (2.86)	< 0.001
Children in home	2.66 (1.89)	1.97 (1.29)	< 0.001
Socioeconomic states	4.31 (1.64)	3.48 (1.37)	< 0.001
Frequency of contact with	21.59 (10.82)	18.70 (10.15)	< 0.001
Strength of relations with	22.90 (10.36)	20.79 (10.17)	< 0.001
Self-reported health last year	2.89 (0.85)	3.01 (0.92)	0.019

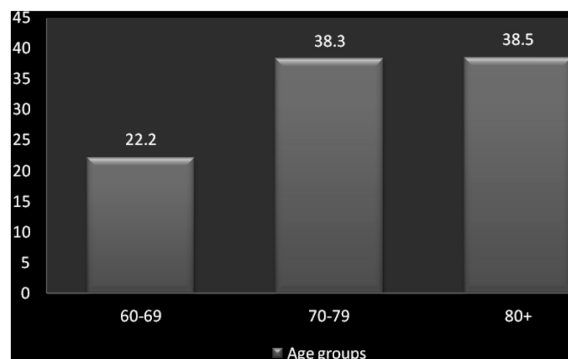


Figure (1) Percentage of sample by age group

Table 2: Sex Differences in Somatic Symptoms of 1,427 Elderly Kuwaitis*.

Measure	Men (472)	Women (955)	p	DIFF
	Mean (sd)	Mean (sd)		
Weight gain in last year	1.35 (0.68)	1.42 (.73)	0.005	-0.07
Decreased hearing	2.75 (1.07)	2.58 (1.12)	0.002	0.17
Nocturnal enuresis	3.12 (1.01)	2.99 (1.02)	0.022	0.13
Cold and hot flashes	1.79 (0.77)	1.89 (.82)	0.018	-0.10
Speech disorder	2.40 (1.19)	2.24 (1.23)	0.020	0.16
Change body temp.	1.75 (0.73)	1.83 (.75)	0.005	-0.08
Joint pains	2.52 (0.97)	2.68 (.98)	0.003	-0.16
Loss of hair	1.49 (0.81)	1.61 (.88)	0.016	-0.12
Frequency of micturition	3.07 (0.99)	2.90 (1.04)	0.004	0.17
Sexual disorders	1.16 (0.60)	1.05 (.32)	0.001	0.11

* Of 60 somatic symptoms, for only 10 were sex differences found.

Sex Differences in Somatic Symptoms

Of 60 symptoms included in the SSI (Abdel-Kalek 2003b), only 10 were significantly different between men and women ($P < 0.05$; Table 2). Observed significant differences were small and not likely to be of clinical importance.

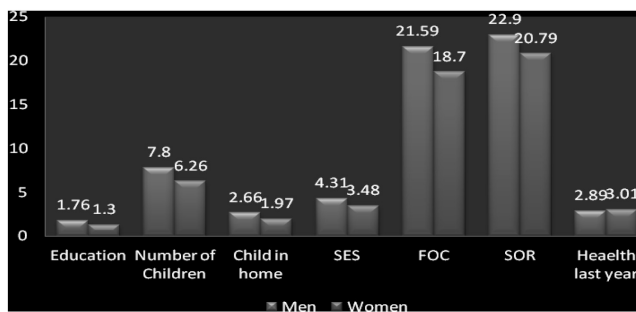


Figure (2) Sex differences in social and health measures

Only 4 of 60 somatic symptoms were significantly different between men and women in the young-old age-group (Table 3), 1 in 15 is about

what one would expect by chance alone. Men reported more headaches, nocturnal enuresis, and sexual disorders than did women, while the latter reported greater joint pain (Table 3). Among 70-79 year participants, significant differences were observed between men and women for 7 items (Table 3), about 1 in 10. Men more often reported skin rash, speech disorders, difficulty falling asleep, sexual disorders, and bleeding nose, and a greater frequency of micturition and irregular heartbeat than women (Table 3). Among the oldest-old elders, 12 (1 in 5) significant differences were observed and the pattern changed as more women than men reported symptoms (Table 3). Among the oldest-old, women report more symptoms of cold extremities, hypertension, gastric upset, cold and hot flashes, lump in throat, insomnia, increased sweating, exhaustion, blurred vision, general body aches, joint pains, and loss of hair than men (Table 3). Again, observed differences are small and not likely of clinical importance. However, these results are similar to reports from multiple samples worldwide wherein older women report more symptoms, illness, and disability than same-age men.

Table 3: Multiple Sociocultural Factors and Yypes of Social Support are Independently Related to Health among Elderly Kuwaiti Men (N= 472).

Dependent Variable	Independent Variables	Cumulative R-square	Regression Coefficien	p
Satisfaction with health now	Religiosity	.280	.41	.001
	Social support	.322	.19	.001
	Frequency of contact	.354	.17	.001
	Number of children	.368	.12	.01
Health year past	Religiosity	.196	.35	.001
	Social support	.265	.23	.001
	Living spouse	.310	.22	.001
Glucose	Living spouse	.04	-.20	.001
SBP	Education	.045	.40	.01
	Living spouse	.058	-.20	.001
	Number of children	.067	-.11	.05
	Children in household	.079	-.11	.01
	Frequency of contact	.093	.10	.01
	Strength of contacts	.096	.14	.01
	Religiosity	.099	-.08	.05

Cont. Table 3

Dependent Variable	Independent Variables	Cumulative R-square	Regression Coefficien	p
DBP	Strength of contacts	.029	-.30	.001
	Frequency of contact	.055	-.21	.001
	Religiosity	.060	-.07	.05
Somatic Symptoms	Frequency of contact	.035	-.49	.001
	Strength of contacts	.084	.40	.001
	Children in household	.174	-.20	.001
	Social support	.192	-.16	.001
	Religiosity	.204	-.12	.001

Based upon forward stepwise regression and listed by order of entry.

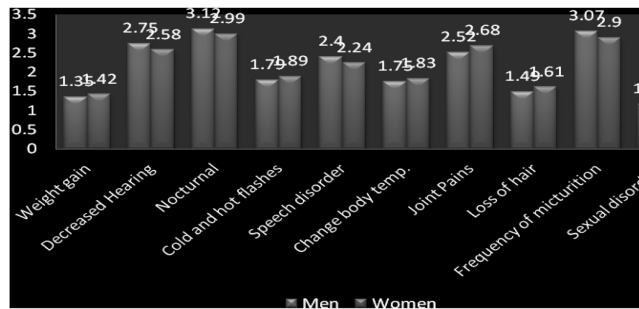


Figure (3) Sex differences in somatic symptoms

Sex, Social Support and Health

Regardless of sex, spouses generally provide one another social support. Given that social support may directly influence health, we examined differences in reported and assessed health problems among those currently living with and not living with a spouse (Table 4). Men living with their spouses showed lower SBP, DBP, and blood glucose and reported fewer somatic symptoms than those living without a spouse (Table 4). Self-reported general health and satisfaction with their health over the last year also were higher among men with spouses (Table 4). A similar pattern is observed among women; those with a spouse show lower DBP and report fewer somatic symptoms, and better general health and health over the last year than women who have no spouse (Table 4). Comparisons within age-groups yielded similar results.

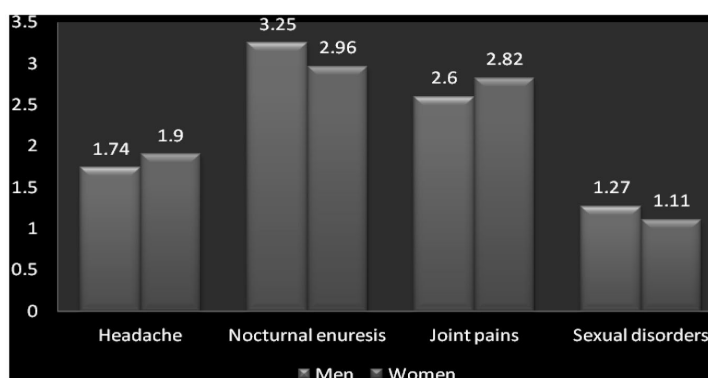


Figure (4) Sex differences in some somatic symptoms at ages 60-69 years.

Next, presence of a spouse, education, SES, and age were explored for independent associations with health using variables in multiple regressions specific to each sex. Having a spouse remained significantly associated with health, health in the last year, SBP, DBP, and somatic symptoms among both men and women while statistically controlling for these possible confounding variables.

To complete analyses, we examined social support, all sociocultural measures, presence of a spouse, education, SES, and age for possible independent associations with our assessed six health outcomes. The most effective model for health in the last year, glucose, and SBP among men included having a spouse and measures of social support (Table 5). For women, somatic symptoms also were best assessed by presence of a spouse and other measures of social support (Table 6). Presence of a spouse independently associated with 3 of 6 health outcomes among men, but only 1 of 6 among women (Table 6). Among women frequency of contact with family and friends associated consistently and independently with all 6 health outcomes, but only did so with 4 outcomes among men (excepting glucose and health in the last year). Religiosity associated significantly and independently with the same health measures (excepting glucose) in both men and women (Tables 5 & 6). The social support scale independently associated with the same three outcomes (health, health in the last year, and somatic symptoms) in both men and women, but also SBP in women (Tables 5 & 6). Strength of relations positively and independently associates with SBP in men and women, and positively with DBP in men, but negatively in women, and negatively with somatic symptoms in both sexes

(Tables 5 & 6). Children living with the participant are negatively associated with SBP and somatic symptoms in men and with DBP and somatic symptoms in women. Number of children is positively associated with health in men, but negatively associated with SBP in both sexes, and negatively associated with somatic symptoms in women (Tables 5 & 6). Both SES and education are more predictive of women's health outcomes (4 of 6 and 3 of 6, respectively) than they are with the health of men (2 of 6 and 1 of 6, respectively) (Tables 5 & 6).

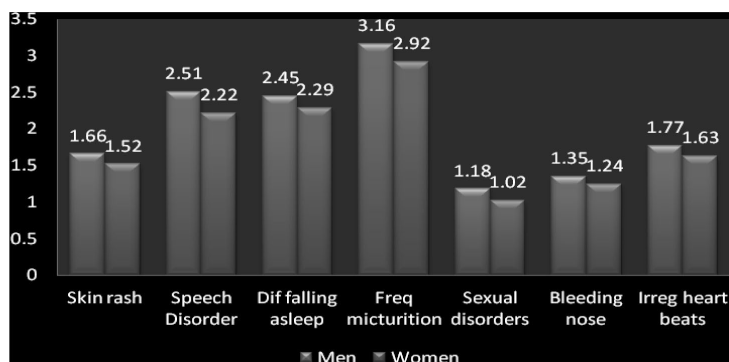


Figure (5) Sex differences in some somatic symptoms at ages 70-79 years.

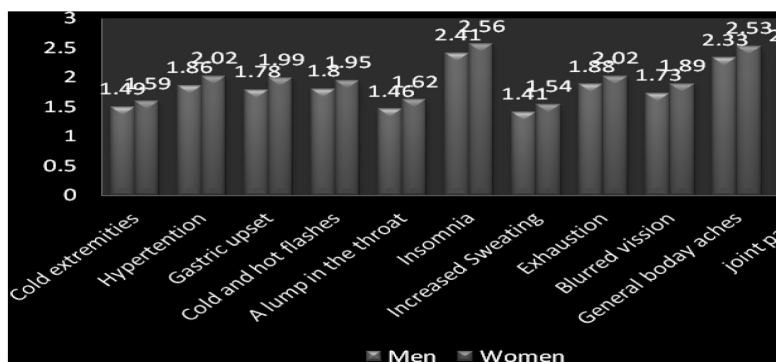


Figure (6) Sex differences in some somatic symptoms at ages 80+ years.

Table 4: Multiple Sociocultural Factors and Types of Social Support are Independently Related to Health among Elderly Kuwaiti Women (N = 955).

Dependent Variable	Independent Variables	Cumulative R-square	Regression Coefficient	p
Satisfaction with health now	Religiosity	.325	.41	.001
	SES	.367	.32	.001
	Education	.390	-.18	.01
	Social Support	.397	.17	.001
	Frequency of contact	.400	.06	.05
Health year past	Religiosity	.239	.31	.001
	SES	.294	.29	.001
	Education	.311	-.24	.001
	Social Support	.321	.20	.001
	Frequency of contact	.329	.01	.05
Glucose	Frequency of contact	.006	-.08	.01
SBP	Religiosity	.007	-.14	.01
	Strength of contacts	.080	-.08	.05
	Frequency of contact	.089	-.07	.05
	Number of children	.090	-.07	.05
	Strength of contacts	.027	-.27	.001
DBP	Frequency of contact	.074	-.26	.001
	Education	.080	.23	.001
	Social Support	.084	-.09	.05
	Religiosity	.098	-.09	.05
	Children in household	.101	-.07	.05
Somatic Symptoms	Strength of contacts	.062	-.40	.001
	Frequency of contact	.092	-.31	.001
	Social Support	.119	-.24	.001
	SES	.164	.16	.001
	Number of children	.190	-.16	.01
	Children in household	.205	-.13	.05
	Living spouse	.218	-.09	.01
	Religiosity	.222	-.08	.05

Based upon forward stepwise regression and listed by order of entry.

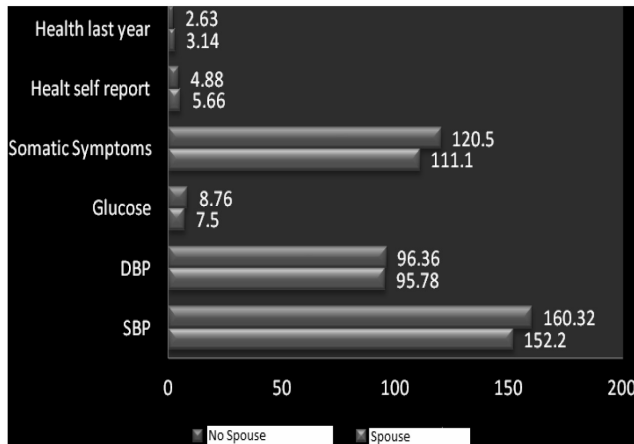


Figure (7) Differences in overall health among elderly men with and without a living spouse

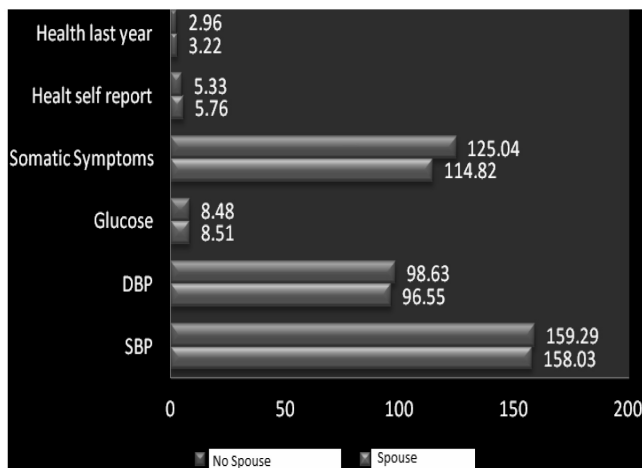


Figure (8) Differences in overall health among elderly women with and without a living spouse

Discussion

We observed multiple statistically significant differences in social lives and health between older Kuwaiti men ($N = 472$) and women ($N = 955$). Men have higher education and SES than do women, but these differences are small, less than the sd of their respective means. For almost all assessed measures of health, differences between men and women are small and not likely of clinical significance. Multiple

sociocultural factors we assessed suggest men are healthier, enjoy more social support, and experience benefits from traditional aspects of Kuwaiti society. Because men and women are segregated in traditional society, men are more active outside the home, and wives and daughters remain at home much of their lives, we anticipated differences between elderly men and women in frequency of contact and strength of relationships with friends and relatives. Women care for their households and children, and engage more in family activities and prayer than do men. By contrast, men work outside the household and interact regularly with friends and relatives. Therefore, we expected elderly men to be in better health than women. But no large differences in health or social activities were observed.

Men work outside the home, while women are restricted to leave their homes to work. Among the oldest-old, women were not treated equally in work or education. Education was not an option for girls when these were younger. However, most men have traditionally attended lessons presented by *mutawa'a* (A religious person who teaches the holy Qur'an, some of Prophet Mohammed's words and the Arabic language to boys.). Such laws have changed since the 1950s. Thereafter girls were allowed more equal education (Al-Falah, 1989). By the 1970s, education was mandatory for all boys and girls in Kuwait. However, older Kuwaiti women represent cohorts who did not have these opportunities for education and work. Traditionally in Kuwaiti society among older Kuwaiti men, polygamy was practiced frequently, among men today this is less so. However, because of multiple spouses among older Kuwaiti men, their average number of children is higher than that of elderly women in this sample.

In modern Kuwaiti society, elderly men and women appear similar on multiple social factors and may be confronted with similar outside stressors. Although men tend to have more social contacts than women, both are exposed to the same physical environment, diets, and general non-gendered sociocultural conditions. Most commonly, offspring reside in their parents' household and receive financial and social support. As men's exclusive roles in society have declined in recent decades, they also have become more equal to women within their households. Elderly men have lost their absolute power as household decision makers. Because they retain Kuwaiti heritage and values, whether male or female, Kuwaiti elders are accorded high social status within their family and society (Audah, 1986).

Since most elderly men and women are not working, this further increases their similarity in exposures to current environmental stressors, perhaps explaining in part the lack of major differences observed in their SPB, DBP, and blood glucose. Crimmins et al.(2010) suggest that physiological differences between men and women may be moderated by behavioral similarities. In this sample, the major difference observed between elderly men and women was in their satisfaction with their own health over the last year. Elderly women reported greater satisfaction with their health than did elderly men. This may partly reflect the greater stability of women's social lives compared to men's. Also, during recent modernization, men lost power and decision making roles within their households. Losing traditional rewards of high social standing both within and outside their homes may have affected men's satisfaction with their lives and health, but not women's since their social standing improved. Crews (1993) reported a similar loss of social status in traditional settings due to the introduction of new "modern" measures of social status as a possible reason for greater stress and blood pressure among older Samoan men. Still, that elderly Kuwaiti men and women report such similarity in social and health factors seems to run contrary to what we have come to expect as the male-female morbidity-mortality paradox (Case and Paxson 2004; Crimmins et al 2010).

Here we find young-old and old-old women reporting slightly fewer somatic and health symptoms than men, but the oldest-old women reporting more than the oldest-old men. This difference from the standard male-female morbidity-mortality paradox makes the Kuwaiti case particularly interesting as we may be in a position to document how this seemingly universal paradox develops across age groups in a changing sociocultural setting. Additional study of Kuwait's unique social system and health should aid in understanding how social support moderates male-female morbidity-mortality differences. Young-old Kuwaiti men and women differ in only 4 somatic symptoms and the old-old in only 7, while the oldest-old differed in 12 (Table 3). One important difference to note is that elderly men have higher averages for all somatic symptom classes, except joint pain, in age groups 60-69 and 70-79 years old. Conversely, elderly women have higher means for all somatic symptoms at 80 years and older. An increased number of somatic symptoms among older women may be secondary to biological/

genetic factors or reflect the fact that men die at younger ages. Consequently, women may suffer more somatic problems simply due to living longer. This seems especially possible in Kuwait where life expectancy is higher in women than men. According to the WHO (2006) life expectancy for men is 76 years, while that for women is 78 years in Kuwait. Death itself is a permanent form of disability, which men suffer at much higher rates at earlier ages.

According to Case and Paxson (2004), "Studies from a large number of countries find that women use more health services and report worse self-rated health than men." (P. 1). Here differences between elderly men and women in somatic symptoms were found in only 10 of 60 items, confirming to some degree previous research elsewhere. Case and Deaton (2003) reported that sex differences decrease at older ages; as did Leinonen et al. (1997) who reported that health differences by sex disappeared in older age groups. In some populations, lack of differences between older men's and women's health status may be related to their similarity in environments. In this sample, sex differences in perceived health increase from the young-old to the oldest-old, contrary to these previous reports, but this difference switches from poor to men to poorer in women at older ages.

The importance of spouses for an elder's health and life spans has been reported for Kuwait and elsewhere (Al-Kandari, 2011; Al-Kandari and Crews, 2014). Results here show that the health of elderly Kuwaiti men may be affected more than that of elderly women by lack of a spouse. Elderly men without a spouse have slightly higher SBP, DBP, and glucose, and report more somatic symptoms and lower current health satisfaction now and over the last year than elderly men who are married. A spousal effect also is seen for elderly women. Unmarried elderly women have higher DBP and report more somatic symptoms and lower overall satisfaction with their current health and their health over the last year than do married elderly women. Although there is a statistically significant difference between the DBP of men with and without a spouse in the expected direction, this difference is only plus 0.58 mmHg, less than the expected error of measurement. Conversely, the substantially larger 8.12 mmHg difference observed in SBP between men with and without a spouse is beyond the error of measurement and closer to the level one might expect to be associated with differences in long-

term survivorship in some populations (Crews, 1988). Similarly, differences in "Somatic Symptoms" are rather large and in the predicted direction, while those for "Self-Reported Health" are small, but in the expected direction. The difference in glucose mmol/l is relatively large, and in the predicted direction. Among women neither SBP nor glucose show differences while DBP is only 2.08 mmHg different and not likely to be of clinical significance. Similarly, "Self-Reported Health" is barely different across the sexes, only 0.43 units. The difference in reported "Somatic Symptoms" is larger than that among men (10.2) and supports the hypothesis that having a spouse is beneficial to the health of elderly Kuwaitis. A traditional responsibility of wives in Kuwaiti society is caring for their husbands. Within the household, women complete many activities to support their spouses. Together these results suggest elderly men may be affected more by death of their spouse because they are more dependent on their spouses in their daily life. When a man's spouse dies he loses his closest social support and caregiver at the same time that he is losing friends and relatives due to retirement and death.

Children also are important in elder's lives, but they do not replace one's spouse. Data from a local study (Al-Kandari, 2011) showed no relationship between number of children and health among Kuwaiti elders. Living with one's children is another story. As family structure shifts, children prefer to live in nuclear families rather than with their extended family. They leave their family of origin to start their own families in a separate household. However, despite trends toward Western family types as a result of modernity (Al-Thakeb, 1985), many children still live in their elderly parents' homes to support and help them. This differs from Western culture in which children commonly leave their parents' household at an earlier age, often even before they marry. In Kuwait, children represent social support and help for the elderly.

Multiple sex differences in health and well-being among elderly Kuwaitis are documented. Most likely they are of little clinical significance. These sex differences vary across age categories of elders. For example differences in somatic symptoms are higher among the oldest-old, than in the young-old elders. Differences also are observed between men with and without spouses in their SBP and glucose, but not between women living with or without a spouse. Sex also is related to most sociocultural and social support measures (Table 5), but again the actual differences are

generally slight, except for number of children living in the elder's household, and frequency of contact with relatives and friends.

Upon further exploring relationships between having a spouse and health outcomes while controlling for education, SES, and age, we observe that presence of a spouse in the elder's household is independently associated with 5 of 6 health outcomes (excepting glucose) in both men and women, suggesting a consistent and independent association of spouses with better health across the sexes. However, further exploration of these relationships including not only education, SES, and age as factors, but also all assessments of possible social support revealed a more complex and nuanced association of spouses and social support with health among Kuwaiti elders. For one, having a spouse has a more salient independent effect on health among men than women, while other aspects of social support, education, and SES are more important for the health of elderly women than is the presence of a spouse. As we discussed earlier, elderly Kuwaiti men are more dependent upon their spouses for care and support within the household than are women on men. Woman's health apparently is significantly more affected by their education and SES and their frequency of contact with relatives and friends than is the health of older Kuwaiti men. A general finding across multiple studies is that men with spouses are healthier and live longer than those without, while women without spouses are healthier and live longer than those who are married. This general trend appears to characterize Kuwaiti elders also. Kuwait is an ideal setting for exploring sex differences in health, social measures, and social support among elders and associations of these with one another to better understand how health is influenced by sociocultural factors.

Comparing findings from this study with other Arab population is difficult as there are few studies among elderly Arab samples. Here we report differences between elderly men and women in multiple social factors, somatic symptoms and health. In the Arab population of Southeast Michigan, United States, for example, elderly women have higher body mass Index (BMI) and systolic and diastolic blood pressure than do men. Men however have higher average total and HDL-cholesterol than women (Hatahet et al., 2002). Our research did not find significant differences between men and women in systolic and diastolic blood pressure but women were heavier than men. In the Arab

population living in Dearborn, Michigan, USA, Jaber et al. (2003) report women suffer from more diagnosed and undiagnosed diabetes than do men at ages 60 years and over. In Kuwait, we did not see such differences between men and women in blood glucose. Elsewhere, Azaiza and Brodsky (2003) report that Arab women living in Israel suffer greater losses of ADLs (bathing, dressing, eating, mobility in home, rising and sitting, getting in and out of bed) than do men. In another study in southern Israel, Plakht et al. (2011) report elder Bedouin women have more acute myocardial infarction than men. In Saudi Arabia, Alotair and Bahammam (2008) found the prevalence of obstructive sleep apnea was higher in women than men and was related to being postmenopausal.

In the Arabian Gulf region, few studies have reported how elderly health is related to social support. Compared with other countries, Khan (2014) found that women in Saudi Arabia receive more help and social support from relatives and friends than did women in other countries receiving greater financial support from younger generations. Women in Saudi Arabia receive more help and care than do men. Compared with 21 countries, "... in Saudi Arabia that implies females are almost five times more likely to be involved than males in providing help and care to other family members" (P. 313). Khan and Raeside (2014) report elderly Saudi Arabian women exhibit worse health than do men, while in Bahrain, older women suffer more from chronic diseases than do men (Musaiger, 2004). In Oman, hyperlipidaemia and obesity also are observed more often in men than women (Riyami et al., 2010). Multiple differences in somatic factors are observed between elderly men and women in Arab populations worldwide. This variation suggests comparative studies of Arab populations are needed to fully explore differences between men and women in their somatic responses to long life in modernizing settings.

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Submitted: March 2014

Accepted: May 2015

