

Preventive Practices and Non healthy Behaviors among female University employees in Saudi Arabia

Waleed A Milaat, MBChB, MPH, PhD (UK)*

Hussain S Al-Bar, MBChB, MPH, DrPH (USA)*

Tawfik M Ghabrah, MBChB, MPH, PhD (USA)*

Baha A Abalkhail, MBChB, MPH, DRPH (USA)*

Nadia K Suliman, MBChB, DPH, PhD (Egypt)*

Objective: To assess the prevalence of non healthy behaviors and the practice of health preventive measures among female university employees in Jeddah, Saudi Arabia.

Subjects and methods: Through a multi-stage stratified sample, a total of 299 female teaching staff and employees were interviewed by trained female medical students using a comprehensive questionnaire to determine non healthy behaviors and preventive measures practiced.

Results: Educational level of this group was high and their jobs were mostly in teaching and administration. Only one fourth of them practiced any form of physical exercise weekly and over half of them were either obese or severely obese. Obesity was seen more among mothers and older age groups and physical exercise was practiced more by non Saudis. Cigarette and Shisha smoking were reported by 10% and 11% of the group, respectively. Consumption of fatty foods was prevalent in more than half of university employees, while seat belt use for 20% of the time or more was very low (21.1%). Low rates of pap smear testing and mammography were reported and breast self examination (BSE) practice is still unpopular among Saudi females. BSE was highly associated with the performance of mammography and medical breast examination, while mammograms were carried out more in employees having relatives with breast cancer.

Conclusion and recommendation: Results from this study supports the general picture of obesity, low physical activity and high fat intake among Saudis and emphasizes the need for promoting physical fitness among them. Low rates of preventive screening practices such as mammography and pap smear testing were reported and alarming rates of smoking among them were also documented. This all emphasises the necessity for public educational efforts to promote healthy dietary habits and lifestyle and implement preventive screening tests.

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Prevention offers individuals and society a more rational strategy for dealing with disease and promotion of health. Primary prevention is meant to adopt life style and behaviors which prevent the occurrence of illnesses and diseases. Some risk factors for illnesses can be changed if recognized early and dealt with accordingly.

It is far more effective to prevent the occurrence of heart disease, for example, by modifying cardiac risk factors such as avoiding tobacco use or increasing physical activity than to attempt years later to regain the function of stenosed

coronary arteries or ischemia damaged myocardium¹. The change of lifestyle to a sedentary pattern in Saudi Arabia is documented in many studies and researchers feel that this change is not accompanied with the acquisition of healthy habits. The Practice of preventive measures in this sedentary life is an area which needs more attention in research and application. Furthermore, the status among females in Saudi Arabia is thought to be less explored and their lifestyle is less understood. This can be related to the scarcity of research in this area. Hence, the aim of this study was to

*Department of Medicine
King AbdulAziz University
Jeddah, Saudi Arabia

explore the prevalence of non healthy behaviors and the practice of health preventive measures among a selected group of educated females in Saudi Arabia, namely, the female university employees in one of the modern cities of the country, Jeddah. This study was part of a large health promotion campaign conducted by the community medicine department of the medical school to propagate healthy lifestyle and measure risk factors of all King Abdul Aziz University (KAU) employees.

METHODS

A multi-stage random sampling of all 1093 KAU female teaching staff and employees in various colleges, deanships and administrations was conducted. A first stage random sampling with proportional allocation was done to determine the proportions of total sample. This was followed by a systematic sampling to select the required number of subjects in each group based on its size. The total sample size was calculated to achieve a confidence level 0.05 and power of 0.20 with a minimum prevalence of 0.05 for the factors under study. This resulted in a total of 300 university female staff and the sample size was proportionally divided for various colleges and deanships.

In person interviewing of the sample was conducted by trained female medical students. The questionnaire was pilot tested beforehand for consistency, clarity and difficulty level.

The questionnaire included personal and social characteristics of the female employees in addition to their marital status, age at first pregnancy and history of current medical diseases such as high blood pressure and diabetes mellitus. Various health practices such as eating habits, physical exercise and smoking were also included in the interview. Fibers and fatty foods consumption were defined as eating regular amount of fibers or fatty products in one meal daily. Physical activity was considered as strenuous if done continuously for 20 minutes leading to deep breathing and palpitations, while smokers were defined as those who smoke continuously for the last 12 months and ex-smokers who stopped since 12 months or more. Cigarette smoking was divided to groups of smokers, ex-smokers and non smokers. A newly popular type of smoking among females in Arab countries, Shisha or Moasel (Water cooled pipe like smoking), was asked separately. As females are not driving cars in Saudi Arabia, questions were limited to their use of passenger seat belt in the car. Questions on the practice of breast self examination (BSE), medical breast examination and routine mammography were asked in addition to family history of breast cancers. History of rectal examination and cervical cytology (pap smear test) were meant to elicit any form of preventive medical screening measures.

Weights and heights of the respondents were measured to the nearest 0.5 Kg and 0.5 cm, respectively, with the female standing lightly clothed without shoes or head covers. Scales were calibrated periodically to assure accurate measurements. Results were used to calculate the body mass index using

the 26.9 figure as the cut off line to classify them into desirable weight (normal), obese (20% overweight) and severely obese (40% overweight)².

Frequency tables for the distribution of healthy lifestyle measures and harmful practices were prepared. Further cross tabulation analysis were made to demonstrate variables associated with obesity, smoking, BSE practice and mammography.

RESULTS

The sample was formed of 299 university female employees from 5 colleges (70.2% of the sample) and 4 supportive administrative departments and deanships (29.8%). Their age ranged between 23 and 62 years. Table 1 describes the general characteristic of the group. Educational level was considerably high as 81.3% were college graduates. Occupation in non manual type of work (teaching and administration) was found to be the majority among university employees (78.8%) while the rest worked in manual works as cleaner, laboratory technicians and security. Married employees formed 78.9% of the sample. Mothers with children formed 73.2% of the groups and their ages ranged between 13 and 35 at the time of birth of first child with a mean of 22.5 years (SD=4.7).

Frequencies of current or past preventive measures practiced by those employees are shown in Table 2. Only one fourth of them reported to practice any form of physical exercise weekly and one third of them reported practicing breast self examination monthly. Seat belt use was very low (21.1%) and history of medical rectal examination was extremely low.

Further analysis of these preventive practices among subgroups of university employees revealed that physical exercise was significantly practiced more by non Saudis ($X^2=9.5$, $P=0.002$), while wearing car seat belt was not associated with any factor under study. BSE was of a significant preponderance among mothers, non Saudis and employees with non manual type of work. BSE was also associated significantly with the performance of mammography and medical breast examination, while mammograms were carried out more in employees having relatives with breast cancer (Table 3).

Over half of the female university employees were either obese or severely obese. Table 4 describes the obesity level of the group, their smoking habits and consumption of fatty foods and current presence of some diseases. Further analysis showed obesity to be more among mothers, older age group and non Saudis, while no factor under study was associated with smoking habits (Table 5).

Cigarette and Shisha smoking were reported by 10% and 11% of the group, respectively, and both habits were highly correlated to each other ($r = 0.45$, $P=0.001$). Cigarette smokers reported consuming a mean of 11 cigarettes daily, while Shisha, which takes longer hours of smoking than cigarettes, was smoked 3-4 times weekly on the average.

Table 1: General characteristics of the sample

Item	No	%
Age groups:		
23-30	68	22.8
31-40	123	41.3
41-50	88	29.5
51 & above	19	6.4
Nationality:		
Saudi	235	78.6
Non Saudi (Arab)	43	14.4
Non Saudi (non-Arab)	21	7.0
Educational levels:		
Elementary or less	22	7.4
Hihg school	34	11.3
College graduate	121	40.5
Post College graduate	122	40.8
Occupations		
Administration	115	38.4
Teaching	100	33.4
Both	21	7.0
Technician	14	4.7
Labor/security	18	6.1
Others	31	10.4

Table 2: Frequency of current or past preventive practices among female university employees

The practice	No.	%
Practice any form of exercise weekly	71	23.7
Eating fibers daily	245	81.9
Had pap smear taken before	123	41.1
Practicing BSE monthly	106	35.5
Had breast exam by medical personnel	134	44.8
Had mammogram done during last 3 years	66	22.1
Had previously a rectal examination	39	13.0
Use car seat belt over 20% of the time	63	21.1

DISCUSSION

It is well established that morbidity and mortality can be reduced by some preventive measures and many health problems are related to some unhealthy practices implanted in the lifestyle of human population³. Recent literature showed that several preventive personal health practices were highly correlated with the physical health of American adults, among these practices are regular physical activity, never smoking cigarettes, currently being at, or near, prescribed height-adjusted weight and moderate or no use of alcohol⁴. Determination of these preventive practices and unhealthy behaviors and identification of factors associated with their occurrences in any community can be of special importance in the planning of health educational activities and the application of health preventive programs.

Finding from this study in a group of educated females in Jeddah revealed a high percentage of overweight and obesity in agreement with national percentage of overweight among adult Saudi women reported in the national chronic metabolic

Table 3: Distribution of breast self examination (BSE) practice and mammography among various subgroups of female university employees

Groups	%	X ² value	Pvalue
Practicing BSE monthly			
-35 yrs	27.3	4.30	0.17
35-44 yrs	38.2		
45-yrs	41.2		
Saudi	20.4	16.57	<.00001*
Non Saudi	57.8		
Mother	42.0	14.33	<.0001*
Non mothers	17.5		
Manual work	17.5	10.32	<.002*
Non manual work	40.3		
Di Mammogram	54.5	12.44	<.001*
No mammogram	30.0		
Breast exam by Dr	43.3	5.9	<.02*
No exam by Dr	29.1		
Mammogram done during last 3 years:			
-35 yrs	14.1	6.2	<.05*
35-44 yrs	24.4		
45-yrs	29.4		
Saudi	20.9	0.7	0.41
Non Saudi	26.6		
Mother	24.7	2.6	0.13
Non mothers	15.0		
Manual work			
Non manual work	22.5		
Relative with ca breast	77.8	13.6	<.001*
None	20.3		

Table 4 Frequency of obesity, no healthy practices and medical illnesses among female university employees

The practice	No.	%
Obese	81	27.1
Severely obese	70	23.4
Eat fatty foods daily	162	54.2
Current smokers of shisha	33	11.0
Current smokers of cigarette	30	10.0
Ex smoker of cigarettes	9	3.0
Diagnosed hypertensives	24	8.0
Diagnosed diabetics	13	4.3

survey⁵. Another unhealthy behavior measured in this study was cigarette and Shisha smoking which reached 10% and 11% respectively. This result is equally comparable to that of Felimban's study among female university students in Riyadh⁶, but is still lower than reported rate among male university students in Riyadh⁷. However, the rate of this behavior is totally unacceptable from university employees, particularly teachers, who can resemble a bad model for their students.

Regular physical exercise is an important preventive measure which seems to be practiced by an acceptable proportion of this group compared to adult population in USA⁸. This reflects the effect of high educational level of university

Table 5: Distribution of obesity level, current cigarette and Shisha among various subgroups of female university employees

Groups	%	X ² value	Pvalue
Obesity & overweight:			
-35 yrs	25.8	44.7	<0.00001*
35-44 yrs	55.4		
45+ yrs	77.6		
Saudi	42.9	23.6	<0.00001*
Non Saudi	78.1		
Mother	57.6	15.8	<0.001*
Non mothers	17.5		
Manual work	54.0	0.23	0.63
Non manual	49.6		
Current cigarette smokers:			
-35 yrs	7.1	3.49	0.17
35-44 yrs	13.7		
45- yrs	7.4		
Saudi	11.1	0.81	0.37
Non Saudi	8.1		
Mother	11.9	2.35	0.13
Non mothers	5.0		
Manual work	14.3	1.06	0.30
Non manual	8.9		
Current Shisha smokers:			
-35 yrs	14.1	4.1	0.13
35-44 yrs	11.5		
45- yrs			
Saudi	13.6	6.27	0.12
Non Saudi	1.6		
Mothers	12.8	1.93	0.1
Non mothers	6.3		
Manual work	12.7	0.06	0.80
Non manual	10.6		

employees on their lifestyle. Although this rate is acceptable at this point of time, but the goal should be to increase its prevalence to 30% or more of all adult population as has been set by Americans in their national health objective at year 2000⁹. It is also of significance to note that the rate of physical exercise among non Saudis is double that of Saudi females. This supports the general picture of low physical activity among Saudis and emphasizes the need for promoting physical fitness among them.

High level of dietary fibers is a proven preventive measure against colonic cancers. Although, finding from this study documented a very high percentage (82%) of daily consumption of fibers, but the study failed to investigate if the daily consumed fibers mount to the recommended amount of 20-35 grams daily⁹.

High consumption of fatty foods is a harmful practice related to dietary pattern. It is prevalent in more than half of university employees which can be thought to reflect the high socioeconomic status of the group and, undoubtedly, related to the prevailing high dietary fat content in Saudi Arabia.

Screening for breast and cervical cancers is of great public health concern and promotion of preventive services, to detect these cancers is important to decrease mortality and morbidity. Result of the 12 years Health Insurance Plan Randomized Study in New York indicated a 30% reduction of mortality from breast cancer as a direct effect of various breast screening methods for those >50 years of age¹⁰. Systemic cervical screening in Iceland and British Columbia, has been associated with 80% reduction in mortality from cervical cancer and invasive diseases¹¹. Americans have become more conscious about cancer screening¹ and the promotion of various screening tests as mammography, clinical breast examination and pap smear testing was met with promising success¹². In this study, a low percentage of pap smear testing among this highly educated women was noted. In fact, this is an extremely low rate compared to USA where > 75% of women over 18 had a recent pap smear and 89% of those women over 50 have taken the same test^{8,12}. Extra educational effort by the medical community in the country is required to promote this testing and encourage its implementation among married females. Rates of mammogram and clinical breast examination performed for the group are also considered very low compared with USA rates, where around 70% of women 50 years or older reported a prior mammogram and 86% reported having a clinical breast examination¹². This work emphasizes the need to educate the female community in Saudi Arabia about these screening tests specially over the age of 50 years. It is important to note that, the Saudi Ministry of Health does not have any enforced policy of periodic mammography, pap smear or rectal examination in the present time.

Breast self examination is considered an inexpensive and effective method of early breast cancer detections¹³. Encouraging the practice of BSE is an educational issue and women should be trained adequately. The practice is still unpopular among Saudi females and a lower rate (12%) was reported in a previous study in Jeddah¹⁴. A higher rate was reported in this study and might be related to the educational level of the group. This rate is comparable to results from a national survey in USA where 43% of women age 18 or older used to perform the procedures monthly¹⁵. Benefits of this preventive measure lies heavily on its ability to detect new masses in the breast which can be brought to medical attention¹⁶. BSE practice in this group was associated significantly with other breast screening methods, namely, the performance of clinical breast examination and mammography. Thus, we can safely assume that conscious women who are engaged in other screening services for breast cancer are performing BSE more. This makes it difficult to isolate the benefits attributable to breast self examination among the group and is considered one of the limitation of this procedure¹.

Seat belt restraints is the single most effective measure in protecting vehicle occupants against death and serious injury in road crashes. Rate of wearing seat belt (21.1%) reported among female university employee for 20% of the time and more can be considered encouraging compared with other

findings in Saudi Arabia. A study in the Eastern province of the country indicated a much lower wearing rate of 6.9%, and the students of the University of Petroleum and Minerals in the same province have a wearing rate of 14.8%. Nevertheless, this rate is much lower than that in USA (30-40%), New Zealand (79%) and Sweden (80%)¹⁷.

Although, this study do not reflect the whole women community in the Kingdom and findings might been influenced, to some extent, by the educational level of the studied group, but the results can serve to give a general guidance to types and prevailing rates of healthy preventive measures and non healthy behaviors among females in Saudi Arabia as a good basis for comparisons in the future. Further research is needed to understand the underlying social and educational factors related to the knowledge, practice and attitude of Saudi females in the context of Saudi society which affect their healthy practices and non healthy behaviors.

CONCLUSION & RECOMMENDATION:

Practicing preventive measures and avoidance of non healthy behaviors are usually affected by the amount of health education messages people are exposed to and the efficiency of these messages in changing the lifestyle and adopting healthy behaviors. This study revealed low rates of many preventive practices and alarming rates of some unhealthy behaviors among female community in the country indicating the necessity for public educational efforts for promoting healthy dietary habits and lifestyle, implementation of preventive screening tests and combating harmful behaviors like Shisha and cigarettes smoking.

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