

Awareness Level And Associated Factors For Non-Communicable Disease Screening Among Adults In Makkah, Saudi Arabia

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Abstract:

Background: Non-communicable diseases have emerged as a health problem of global priority in recent times. Screening and early diagnosis is important to plan appropriate interventions. Objectives: The objectives of the study were as follows: (1) To study the awareness of screening for hypertension (HTN), diabetes, cancer cervix, and cancer breast, (2) to study the status of screening for HTN, diabetes, cancer cervix, and cancer breast, and (3) to study the factors associated with not aware of screening for above non-communicable diseases. Materials and Methods: A community-based cross-sectional study was conducted in service practice area of a health care centers in Makkah, Saudi Arabia. Adults aged more than 30 years were included by simple random sampling technique. The required sample size was 400. Face-to-face interview was done using semistructured questionnaire. Basic sociodemographic details, awareness, and status of screening were collected. Data were entered analyzed in SPSS 20.0. Results: Of 398 study participants, majority (43.2%) belongs to 30–45 age groups. The mean age of the study participants was 49 ± 13 years. The prevalence of self-reported HTN and ¹diabetes in the present study was 24% and 19.8%, respectively. Nearly three-fourth of the study population had awareness of screening for HTN and diabetes. Awareness of cancer cervix screening was very low (35%) when compared to cancer breast (45%). Unmarried and below primary level of education were independently associated with unawareness of screening for non-communicable disease. Conclusion: Around 15% and 30% of the study population were never screened for HTN and diabetes, respectively, though the awareness was high, whereas more than three-fourth of the female participants were never screened for cancer breast and cancer cervix though the awareness was <50%. Non-communicable disease screening needs to be targeted more toward young

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females, those with below primary level of education with low socioeconomic background and elderly people.

Key words: Awareness; Screening; Non-Communicable Disease.

Introduction:

Non-communicable diseases (NCDs) are the major causes of mortality and morbidity globally. Non-communicable diseases (NCDs), mainly cardiovascular diseases (CVDs), were reported to be responsible for 64% of the global deaths during 201, more than 80% of deaths occurred in developing countries. In Eastern Mediterranean region every year 1.7 million people die from the four main NCDs (CVDs, cancer, chronic respiratory and diabetes), if no serious action is taken, the deaths due to NCDs is projected to reach 2.4 million in 2025. Moreover, Eastern Mediterranean region is recognized as the hot-spot of NCD particularly CVDs and diabetes. The trends of NCD showed variations between the countries of Eastern Mediterranean region of different income levels, and where the low income countries are still grappling with communicable diseases, while the tide of NCDs is increasing. Given that the rate of deaths from NCDs in 2014 was ranging from 19% in Somalia to 85% in Egypt and Lebanon. Likewise, Gulf Cooperation Council (GCC) countries have witnessed a higher burden of NCD mortality which ranged from 65% to 78% of the total adult deaths (WHO., 2014; WHO-EMRO., 2016; Murray & Lopez., 1996).

NCDs are considered the primary cause of death among adults, being implicated for most (78%) of the total deaths in Kingdom of Saudi Arabia (KSA) during 2014, of which CVDs were responsible for about (46%) of these deaths. KSA was exposed to a vast epidemiological transition, rapid economic development and ageing population. Subsequently, major modifications have happened in lifestyle behaviours such as: increased caloric and high fat-diet consumption; reduced physical activity and dramatic increase in obesity prevalence among different age-groups. This has all lead to increased prevalence of NCDs, including diabetes mellitus and CVDs (WHO-NCD-Profile., 2014; Alhyas et al., 2011).

Conventional risk factors of NCD are classified into two groups: behavioural NCD risk factors as tobacco use, physical activity and dietary pattern, and clinical NCD risk factors as obesity, hypertension, diabetes mellitus and hyperlipidemia (Aaronson et al., 2013). These risk factors have exhibited clustering, and synergizing over time, and association with higher prevalence of NCD, including cardiovascular events and related mortality (Kaukua et al., 2001).

More than half of the people with diabetes remain undiagnosed in both developed and developing countries, and this individual often presents with diabetes complications. Undiagnosed diabetes and pre-diabetes need to be detected and treated early through community-based screening (Julka et al., 2014). Cervical cancer is the fourth most common cancer among the women worldwide and the seventh overall. Approximately 87% of the worldwide mortality for cervical cancer occurs in underdeveloped countries (Julka et al., 2014).

Screening for precancerous lesions reduces the incidence and mortality from cancer cervix. Though the cytology based screening pap smear have been found to be effective in developed countries, an alternative screening methods using Visual Inspection Acetic acid (VIA) or Visual Inspection Lugals Iodine (VILLI) can be used more effectively in low resource settings (Siddharthar et al., 2014).

Community-based screening can improve the detection and treatment of NCDs. Studies from various parts of India have assessed the prevalence, awareness, treatment and control of NCDs and stressed upon the importance of early diagnosis by screening test, the present study has the novelty and aim to find out the proportion of population who have been aware and undergone screening for HTN, diabetes, cancer breast and cancer cervix and factors associated with unawareness of screening for non-communicable disease. Screening is an important aspect of the management of the disease, as it leads to early diagnosis and treatment and prevents risk of complications and future mortality.

MATERIALS AND METHODS

A community-based cross-sectional study was conducted in service practice area of a health care center, Makkah, from June to November 2022. Institute Research Committee and Ethics Committee approval were obtained before conducting the study. The health care center serves around 9000 population. Assuming 50% of adult population had undergone screening for non-communicable disease, 5% absolute precision with 95% confident interval, the estimated sample size was 384. Adults aged more than 30 years were randomly selected and included in the study until we achieved the sample size. Adults both men and women above 30 years were interviewed using the semi-structured questionnaire. Informed written consent was obtained. Basic sociodemographic details, prevalence of HTN and diabetes, factors associated with awareness, and status of screening were collected.

Statistical analysis:

Data analyzed in IBM SPSS 20. Categorical variables expressed in percentages. Continuous variables expressed in mean \pm 2SD. Factors associated with not aware of screening were analyzed using bivariate and multivariate logistic regression.

RESULTS

Of 398 study participants, majority (43.2%) belongs to 30–45 age groups. The mean age of the study participants was 49 ± 13 years. More than half (55.8%) of the people had below primary level of education, 56.5% were unemployed and unskilled workers, and 36.7% of persons belong to low socioeconomic class. Nearly three-fourth of the study population had awareness of screening for HTN and diabetes. Awareness of cancer cervix screening was very low (35%) when compared to cancer breast (45%). The prevalence of self-reported HTN and diabetes was 24% and 19.8%, respectively. Nearly one-fourth of the participants had family history of HTN and diabetes. Almost 84.7% of the study participants had undergone screening for HTN and 70.6% had undergone diabetes screening irrespective of awareness. Among females, 15.3% had undergone screening test for cancer breast, whereas only 7.4% of females had undergone screening for cancer cervix.

In Table 1, females are more aware of screening of HTN (73.3%) than the males (72.8%), but statistically there is no significant difference. Lower age group (30–45) is more aware (77.3%) of screening of HTN than other age groups without significant difference. Unmarried (aOR = 2.8 [1.3– 6.1]) and below primary level of education (aOR=2.8 [1.6– 4.8]) were independently associated with unawareness of screening for HTN.

Table 1: Factors affecting awareness of screening for hypertension among adults aged more than 30 years (n=398)

Sociodemographic details	Aware	Unaware	n (%)	Unadjusted OR	Adjusted OR	P value
Age group (years)						P=0.4
30–45	130 (75.6)	42 (24.4)	172 (43.2)	1	1	P=0.6
46–60	109 (71.6)	39 (28.3)	148 (37.2)	1.1 (0.6–1.8)	0.8 (0.4–1.3)	
>60	52 (66.6)	26 (33.3)	78 (19.6)	1.5 (0.8–2.7)	0.8 (0.4–1.6)	
Gender						P=0.6
Female	148 (72.9)	55 (27.1)	203 (51)	1.0 (0.6–1.5)	0.6 (0.3–1.0)	
Male	143 (73.3)	52 (26.7)	195 (49)	1	1	
Marital status						P=0.08
Married	275 (75.3)	90 (24.6)	365 (91.7)	1	1	
Single	16 (48.4)	17 (51.5)	33 (8.3)	3.2 (1.5–6.6)	2.8 (1.3–6.1)	
Educational status						P=0.001
Illiterate and primary	143 (64.4)	79 (35.5)	222 (55.8)	2.5 (1.5–4.1)	2.8 (1.6–4.8)	
Above primary	148 (84)	28 (15.9)	176 (44.2)	1	1	
Occupational status						P=0.1
Unemployed and unskilled	155 (68.8)	70 (31.1)	225 (56.5)	1.5 (0.9–2.4)	1.5 (0.9–2.6)	
Semiskilled and skilled	136 (78.6)	37 (21.3)	173 (43.5)	1	1	
Socioeconomic status						P=0.1
1–3	183 (72.6)	69 (27.3)	252 (63.3)	1.1 (0.7–1.8)	1.4 (0.8–2.3)	

4 and 5	108 (73.9)	38 (26)	146 (36.7)	1	1
Total	291 (73)	107 (27)	398		

OR: Odds ratio

In Table 2, the difference in awareness for diabetes screening between married (75.3%) and unmarried (48.4%) is statistically significant. People with above primary school education are more aware of diabetes screening (84%) than illiterate and primary (64.4%). This difference is statistically significant. Lower age group (30–45) is more aware (75.6%) than other age groups without any significant difference. Unmarried (aOR = 2.8 [1.3–6.1]) and below primary level of education (aOR = 3.1 [1.8–5.4]) were independently associated with unawareness of screening for diabetes.

Table 2: Factors affecting awareness of screening for diabetes among adults aged more than 30 (n=398)

Sociodemographic details	Aware	Unaware	n	Unadjusted OR	Adjusted OR	P value
Age group (years)						P=0.27
30–45	133 (77.3)	39 (22.6)	172	1	1	
46–60	106 (71.6)	42 (28.3)	148	1.3 (0.8–2.2)	0.9 (0.5–1.7)	
>60	52 (66.6)	26 (33.3)	78	1.7 (0.9–3.0)	0.9 (0.4–1.7)	
Gender						P=0.08
Female	149 (73.3)	54 (26.6)	203	1	1	
Male	142 (72.8)	53 (27.1)	195	1.0 (0.6–1.6)	1.8 (1.0–3.1)	
Marital status						P=0.001
Married	275 (75.3)	90 (24.6)	365	1	1	
Single	16 (48.4)	17 (51.5)	33	3.2 (1.5–)	2.8 (1.3–)	

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				6.6)	6.1)	
Educational status						P=0.0001
Illiterate and primary	143 (64.4)	79 (35.5)	2 2	2.9 (1.7–4.7)	3.1 (1.8–5.4)	
Above primary	148 (84)	28 (15.9)	1 7 6	1	1	
Occupational status						P=0.06
Unemployed and unskilled	155 (68.8)	70 (31.1)	2 2 5	1.6 (1.0–2.6)	1.6 (0.9–2.8)	
Semiskilled and skilled	136 (78.6)	37 (21.3)	1 7 3	1	1	
Socioeconomic status						P=0.2
1–3	183 (72.6)	69 (27.3)	2 5 2	1.0 (0.6–1.7)	1.3 (0.8–2.2)	
4 and 5	108 (73.9)	38 (26)	1 4 6	1	1	
Total	291 (73)	107 (27)	3 9 8			

OR: Odds ratio

In Table 3, women with above primary school education are more aware (56%) of screening for cancer cervix than illiterate and primary (24.8%). This difference is statistically significant. Middle age group women (46–60) are more aware (40.5%) than other age groups, but this difference is not statistically significant. Married women (36.5%) are more aware than unmarried person (25%) without any significant difference. Women in higher socioeconomic status (SES) (Classes 1–3) are more aware (39.4%) than lower SES (28.5%) without any significant difference. Below primary level of education is independently associated with aOR = 3.5 (1.8–6.9) unawareness of cervical cancer screening.

Table 3: Sociodemographic details and its association with unawareness of screening for cervical cancer (n=203)

Sociodemographic details	Aware	Unaware	n (%)	Unadjusted OR	Adjusted OR	P value
Age group (years)						
30–45	28 (34.5)	53 (65.4)	81 (39.9)	1		
46–60	32 (40.5)	47 (59.4)	79 (38.9)	0.7 (0.4– 1.4)		
>60	11 (25.5)	32 (74.4)	43 (21.1)	1.5 (0.6– 3.5)		
Marital status						P=0.6
Married	64 (36.5)	111 (63.4)	175 (86.2)	1	1	
Single	7 (25)	21 (75)	28 (13.8)	1.7 (0.6– 4.2)	1.2 (0.4– 3.1)	
Educational status						P=0.00 01
Illiterate and primary	34 (24.8)	103 (75)	137 (67.5)	3.8 (2.0– 7.1)	3.5 (1.8– 6.9)	
Above primary	37 (56)	29 (43.9)	66 (32.0)	1	1	
Occupational status						P=0.3
Unemployed and unskilled	58 (36.7)	100 (63.2)	158 (77.8)	1	1	
Semiskilled and skilled	13 (28.8)	32 (71.1)	45 (22.2)	1.4 (0.6– 2.9)	0.6 (0.3– 1.4)	
Socioeconomic status						P=0.5
1–3	47 (39.4)	72 (60.5)	119 (58.6)	1	1	
4 and 5	24 (28.5)	60 (71.4)	84 (41.4)	1.6 (0.8– 2.9)	1.2 (0.6– 2.3)	
Total	71 (35)	132 (65)	203			

OR: Odds ratio

In Table 4, women with above primary school education are more aware (65%) than illiterate and primary (35%) about screening for cancer breast with significant statistically difference. Married women (48%) are more aware than unmarried person (25%) with significant statistically difference. Lower age group women (30–45) are more aware (49.3%) than other age groups without statistically significant difference. Lower SES (Classes 4 and 5) is more aware (49%) than higher SES (42%) without any statistical difference. Being single (OR=2.7[1.1-6.8]) is associated with unawareness about breast cancer screening. Below primary level of education (aOR=4.0[2.0-7.8]) is independently associated with unawareness about breast cancer screening.

Table 4: Sociodemographic details and its association with unawareness of screening for cancer breast (n=203)

Sociodemographic details	Aware	Unaware	n (%)	Unadjusted OR	Adjusted OR	P value
Age group (years)						
30–45	40 (49.38)	41 (50.6)	81(39.9)	1		
46–60	34 (43.03)	45 (56.96)	79 (38.9)	1.2 (0.6–2.4)		
>60	17 (39.53)	26 (60.46)	43 (21.1)	1.4 (0.7–3.1)		
Marital status						
0.1						
Married	84 (48)	91 (52)	175 (86.2)	1	1	
Single	7 (25)	21 (75)	28 (13.8)	2.7 (1.1–6.8)	1.8 (0.7–4.8)	
Educational status						
0.0001						
Illiterate and primary	48 (35)	89 (65)	137 (67.5)	3.4 (1.8–6.4)	4.0 (2.0–7.8)	
Above primary	43 (65)	23 (35)	66 (32.5)	1	1	
Occupational status						
0.4						
Unemployed and unskilled	69 (44)	89 (56)	158 (77.8)	1.2 (0.6–2.3)	1.2 (0.6–2.6)	
Semiskilled and skilled	22 (49)	23 (51)	45 (22.2)	1	1	
Socioeconomic status						
0.03						
1–3	50 (42)	69 (58)	119 (58.6)	1.3 (0.7–2.3)	2.0 (1.0–3.7)	
4 and 5	41 (49)	43 (51)	84 (41.4)	1	1	

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Total	91	112	203
	(45)	(55)	

OR: Odds ratio

DISCUSSION

The prevalence of self-reported HTN and diabetes in the present study was 24% and 19.8%, respectively. Nearly three-fourth of the study population had awareness of screening for HTN and diabetes. Awareness of cancer cervix screening was very low (35%) when compared to cancer breast (45%). Unmarried and below primary level of education were independently associated with unawareness of screening for non-communicable disease.

The prevalence of self-reported HTN in this study shows 24% which is similar to the study from Puducherry and systematic review and meta-analysis from India 2014 (Anchala et al., 2014; Datta et al., 2019). In the present study, about 27% of the study participants were not aware of screening for both HTN and diabetes. Overall, 85% of the study populations were screened for their HTN status. More females (99%) were screened for HTN as compared to males (92%). A study from Puducherry reported that 60.8% of the study population was screened for their HTN and more females 68.4% were screened for HTN as compared to males (52%) which is low compared to the present study. The difference may be due to the difference in urban and rural setting (Datta et al., 2019). However, a study on screening for HTN among women of reproductive age group, in the U.S. in 2011, reported that 89.6% of the women had received screening for HTN (Robbins et al., 2011).

Young age group (44.2%), illiterate and primary (56.3%), employed (55.3%), and lower socioeconomic class (52.6%) were more screened for HTN which is contrast to the study done in Puducherry (2014). The prevalence of self-reported diabetes in the present study was 19.8%. There are other studies from various parts of India show the prevalence from 6% to 18.8% (Gupta et al., 2010; Anjana et al., 2017; Gupta et al., 2014). cervical cancer is the leading female genital cancer in developing countries. This high prevalence rate might be a reflection of the lack of an organized cervical cancer screening program and unhealthy life style. The majority of women were in the fourth, fifth, and sixth decades of life. Nearly 15% were young having age <40 years.

In the present study, 34% of women were aware of screening for cancer screening, another study from tertiary care hospital, Puducherry, shows 18% awareness,^[4] whereas the study from Kerala shows three-fourth of the study population aware of screening for cervical cancer.^[7] This difference could be explained in the difference in educational status in the study settings. Various studies show the awareness level of cancer cervix screening from 2% to 27% (Gupta et al., 2014; Alhyas et al., 2011) In the present study, 4% of women had undergone screening for carcinoma cervix, this study finding is consistent with the study from tertiary care center, Puducherry (2014), whereas the study from Kerala shows 6.9%.^[7] The screening coverage of Indian women in the age group of 18–69 years was 2.6% (4.9% among urban and 2.3% among rural) and was found to vary between 4% and 6% in poor and rich women in India.^[22]

In the present study, 45% were aware of screening (BSE), among them 15% had undergone screening for carcinoma breast. In this study, we found that lack of awareness is a predominant barrier for undergoing screening for cancer cervix and breast followed by ignorance and

no complaints, most of the studies revealed that lack of knowledge and awareness, fear of pelvic examination and disease, embarrassment and shy, lack of time, and family support were the important barriers (Aaronson et al., 2013; Kaukua et al., 2001).

Moreover, the KSA economic transition seemed to have changed traditional lifestyle and occupational patterns to the detriment of physical activity in KSA as well as in GCC region (Al-Hazzaa., 2014). In this study the majority of the participants (more than two thirds) reported to be physically inactive. Saudis and women were more likely to be physically inactive, which analogous to recent GCC reports (Al-Zalabani, et al., 2015 Al-Nooh et al., 2014)

CONCLUSION

Around 15% and 30% of the study population were never screened for HTN and diabetes, respectively, whereas more than three-fourth of the female participants were never screened for cancer breast and cancer cervix. Diabetes and HTN screening needs to be targeted more toward those with below primary level of education and elderly people. Cancer breast and cervix screening need to be targeted more toward women with extremes of age group, unmarried, low socioeconomic class, and below primary level of education.

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