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Life Style as a Risk Factor of Disease: An Awareness of Immunological Disease

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ABSTRACT

Various studies reported that, nowadays, our lifestyle is a major source of many diseases. The present aim of this paper is to cross-sectional study about the awareness of a group of people regarding their lifestyle, associated disease, and awareness of government health care facilities. We carried our study in Ha'il, Kingdom of Saudi Arabia (KSA). For the present study, we consider 292 objects from Ha'il, Kingdom of Saudi Arabia, with various exclusion criteria such as suffering from any form of mental illness, suffering from any form of physical disabilities, suffering from any chronic illness that require regular prescriptions, no formal education, age below 25 years and above 50 years. The questionnaires were distributed among the participants. Next, we analyzed the data using various statistical measures. Our analysis showed that awareness among the group of people regarding their lifestyle, associated disease, and awareness of government health care facilities is not satisfactory. They have very few training in immunology. They have some awareness about government health care policies. Our study concludes that there is an urgent need for people's awareness by establishing various health camps as well as various media. Our study will help the government policymaker to design effective policy regarding better health care facilities for the public especially in Ha'il, Kingdom of Saudi Arabia. Moreover, further study is required for finding the missing link between people's awareness and available public health care facilities.

Keywords: Risk factors, Lifestyle, Immunological diseases, Risk factors, Heath care

INTRODUCTION

Lifestyle is generally associated with the habits of a person or group. Lifestyle may be healthy or unhealthy that depends on food habits, the activity level daily, etc. Various reports suggest that the unhealthy lifestyle habit includes smoking, unhealthy diet, low physical activity, nowadays account for just >60% of the overall global burden of disease, rising to an expected 80% by the year 2020 [1]. Therefore, primary health care is a suitable setting for interventions to identify and reduce behavioural risks factors and recommend preventive activities (including immunizations, screening for cardiovascular risk factors and cancer and counseling). The European definition of general practice/family medicine published by WONCA Europe in 2002 emphasizes the role of GPs in prevention, listing one of the core competences of the family doctor as the promotion of health and well-being by applying appropriate strategies [2].

The lifestyle of the public in the Kingdom of Saudi Arabia has tremendously changed in the past decades, which includes physical activity and eating habits [3]. The changes in physical activity and eating habits have found to be a negative impact on the health of society. Various diseases have been reported so far related to the change in lifestyle [4,5]. A government survey report indicates that there is an abrupt reduction in daily physical activity and energy expenditure of the Saudi people relative to earlier times. It is also reported that physical inactivity ranged from 43% to 99%, depending on gender, age, location, and target population among the Saudi population [6]. According to a WHO

report, prevalence rates of physical inactivity among Saudi children, youth and adults were roughly 60%, 70%, and 80% respectively. Smoking is also one of the important risk factors of lifestyle disease. A report predicts that currently in Saudi Arabia there are 5 million smokers present which expected to be around 10 million by 2020 [7]. A recent report suggests that the prevalence of obesity in Ha'il is around 63.6% in which the prevalence of males is found to be 56.2% and the prevalence of females is found to be 71% [8]. The present aim of this paper is to cross-sectional study about the awareness of a group of people in Ha'il, Saudi Arabia, regarding their lifestyle, associated disease, and awareness of government health care facilities.

MATERIALS AND METHODS

For the present study, we consider 292 objects with various exclusion criteria such as suffering from any form of mental illness, suffering from any form of physical disabilities, suffering from any chronic illness that requires regular prescriptions, no formal education, age below 25 years and above 50 years. The present work is carried in Ha'il city, Kingdom of Saudi Arabia. The questionnaire was prepared very carefully and such that it includes various important parameters directly related to awareness of the population. We first studied and extract information regarding demographic profile such as age of the objects, gender of the objects, level of the education (e.g., Primary, Lower secondary, Upper secondary, Diploma, Tertiary, etc.), education of the spouse (e.g., Primary, Lower secondary, Upper secondary, Diploma, Tertiary, etc.), education of guardian/parents (e.g., Primary, Lower secondary, Upper secondary, Diploma, Tertiary, etc.). Next, extract information regarding any formal training/education in Immunology. Then we also extract information regarding other parameters such as Opinion about Health dimensions, Activities in terms of contribution towards a healthy nation, Opinion about treatment options, Preference about treatment options, Practice of lifestyle, Distribution of hygienic Practices, Will take those vaccines which are not obligatory according to the Government health care policies, Distribution of use of health care facilities, Practice of treatment for common ailments, Distribution of subjects according to primary health care knowledge, Level of awareness emerging health concerns. The questionnaires were distributed among the participants. Next, we analyzed the data using various statistical measures.

RESULTS AND DISCUSSIONS

At first, we presented the demographic profile of respondents as shown in Table 1. It is revealed that about half of the respondents were between 20-30 (49.7%) years. More than half the respondents were males (53.8%) and had a tertiary level of education (57.5%). About one-third of the spouse had a tertiary level of education (35.3%). About one-fourth of guardians had an upper secondary level of education (26.4%) (Table 1). All the above demographic parameters are shown in Figure 1. Next, we presented and analyze as shown in Figure 2, about the formal training/education in immunology. It is found that the majority of the respondents did not have any formal training/education in immunology (89.7%) as listed in Table 2. A reasonable score was found for all the health dimensions (Table 3 and Figure 3). Similarly, a reasonable score was found for all the activities in terms of contribution towards a healthy nation except for celebrating a day of healthy living every year to promote awareness (Table 4 and Figure 4). Next, we listed in Table 5, about the use of treatment options such as modern medicine, homeopathy, traditional/herbal/Ayurvedic and others. It is noticed that the majority of the respondents preferred modern medicine (77.1%) as a treatment of options. However, 14.7% preferred for homeopathic treatment as shown in Table 5 and Figure 5. Next, Awareness was the main factor in the preference for treatment options (Table 6 and Figure 6) [9]. Again we studied about the lifestyle of the respondents it is found that nearly half of the respondents were sleeping 6-8 hours (48.3%) and 20.9% had an irregular sleeping habit as shown in Table 7 and Figure 7. Next, we studied about the distribution of hygienic Practices such as Practice of brushing (as every morning after waking up, before sleep at night and after every meal) and Washing hands and faces (as when come in from outside, In the morning after waking up, before going to bed, before handling food). It is found that in the case of the practice of brushing, 42.5% of respondents regularly practice brushing every morning after waking and about 48.3% of the respondents are rarely brushing after every meal). It is found that in case of washing hands and faces, 57.9% respondents regularly wash hand and faces when coming in from outside, In the morning after waking up (82.2%), Before going to bed (48.3%) and Before handling food (63.7%) as listed in Table 8 and Figure 8. It is found that about 46.9% of respondents take those vaccines which are not recommended by the Government health care facilities. Similarly, 53.1% of respondents not taking those vaccines which are not recommended by the Government health care facilities as shown in Table 9 and Figure 9 [10]. We analyze that more

than 39% of respondents' intake vitamins, minerals or other supplements on the recommendation of doctors. It is also observed more than 52% of the respondents agreed that the reasons behind the intake of vitamins, minerals or other supplements. It is noted that more than 86% of the respondents visit health centers only when they feel sick and less than 8% of the respondents visit the health center for a regular checkup. It is also pointed out that less than 27% respondent completes the prescribed course of antibiotics as shown in Table 10 and Figure 10. Again, it is found that for the common ailments more than 28% of respondents take OTC (over-the-counter) drugs immediately. Also, less than 30% of the respondents visit the health center if symptoms last >24 hours. Also, less than 14% of the respondents often seek medical advice immediately. Moreover, less than 20% of the respondents often take medicine with doctor's advice for the common ailments as shown in Table 11 and Figure 11. We also analyze the distribution of subjects according to primary health care knowledge. It is found that more than 60% of the respondents know that individuals suffering from diabetes should not donate blood, more than 69% of the respondents know that blood donation once in every three months will not cause any harm to a healthy individual, more than 66% of the respondents know that mental stress can cause diseases of the heart, more than 66% of the respondents know that vaccines prevent bacterial or viral growth into the body, more than 61% of the respondents know that vaccines prevent entry of disease-causing virus or bacteria into the body, less than 29% of the respondents know that immune system cannot act against bacteria or virus without medicine for example antibiotics, less than 29% of the respondents know that Vaccines are used to treat a disease as shown in Table 12 and Figure 12 [4].

At last, we present the data on the level of awareness emerging health concerns. Significantly high scores are found for reading health-related articles online or in magazines/newspapers/books for acquiring knowledge of the disease. Moreover, high scores are observed for an effort to learn about disease only if at risk (In the event of a sudden epidemic or major public health concern such as H1N1 and Dengue) as shown in Table 13 and Figure 13 [11,12].

Table 1 Demographic profile of respondents

Demographic Profile	No. (n=292)	Percentage (%)
Age in Years		
<20	36	12.3%
20-30	145	49.7%
31-40	56	19.2%
41-50	46	15.8%
>50	9	3.1%
Gender		
Male	157	53.8%
Female	135	46.2%
Education of Respondents		
Primary	5	1.7%
Lower Secondary	4	1.4%
Upper Secondary	77	26.4%
Diploma	38	13%
Tertiary	168	57.5%
Education of Spouse		
Primary	14	4.8%
Lower Secondary	12	4.1%
Upper Secondary	94	32.2%
Diploma	69	23.6%
Tertiary	103	35.3%
Education of Guardian/Parents		

Primary	47	16.1%
Lower Secondary	33	11.3%
Upper Secondary	77	26.4%
Diploma	59	20.2%
Tertiary	76	26%

Table 2 Any formal training/education in Immunology

Any Formal Training/Education in Immunology	No. (n=292)	Percentage (%)
Yes	30	10.3%
No	262	89.7%

Table 3 Opinion about health dimensions

Health Dimensions	Scores (Mean ± SD)
Physical Health	4.22 ± 1.26
Mental Health	3.96 ± 1.42
Emotional Health	3.10 ± 1.57
Social Health	3.32 ± 1.55
Spiritual Health	3.94 ± 1.45

Table 4 Activities in terms of contribution towards a healthy nation

Activities	Scores (Mean ± SD)
Celebrating a day of healthy living every year to promote awareness	2.80 ± 1.73
Promoting a healthy lifestyle through TV/Radio/other media	3.59 ± 1.51
Providing free healthcare services such as free medical check-ups	3.99 ± 1.46
Providing health classes in schools as well as for the public	3.62 ± 1.55
Supporting the health sector by providing more funds for R and D and the use of cutting-edge healthcare technology	3.63 ± 1.65
Children need to learn mechanisms (immunology) in school	3.54 ± 1.71

Table 5 Opinion about treatment options

Treatment Options	No. (n=292)	Percentage (%)
Modern Medicine	225	77.1%
Homeopathy	43	14.7%
Traditional/Herbal/Ayurvedic	20	6.8%
Other	4	1.4%

Table 6 Preference for treatment options

Preference	Scores (Mean ± SD)
Most effective as know	4.07 ± 1.50
Financial reason	2.27 ± 1.24
Availability	3.23 ± 1.48

Table 7 Practice of lifestyle

Variables	No. (n=292)	Percentage (%)
Sleeping		
< 6 hrs	44	15.1%
6-8 hrs	141	48.3%
> 8-10 hrs	36	12.3%
>10 hrs	10	3.4%
Irregular	61	20.9%
Physical Activity/Exercise		
Everyday	21	7.2%
5-6 days	32	11%
3-4 days	42	14.4%
1-2 days	27	9.2%
Irregular	170	58.2%

Table 8 Distribution of hygienic Practices

Hygienic Practices	Rarely		Seldom		Occasionally		Often		Regularly	
	No.	%	No.	%	No.	%	No.	%	No.	%
Practice of Brushing										
Every morning after waking up	65	22.30%	21	7.20%	31	10.60%	51	17.50%	124	42.50%
Before sleep at night	83	28.40%	20	6.80%	50	17.10%	50	17.10%	89	30.50%
After every meal	141	48.30%	29	9.90%	41	14%	21	7.20%	60	20.50%
Washing Hands and Faces										
When come in from outside	37	12.70%	16	5.50%	31	10.60%	39	13.40%	169	57.90%
In the morning after waking up	27	9.20%	4	1.40%	6	2.10%	15	5.10%	240	82.20%
Before going to bed	51	17.5%	25	8.6%	37	12.7%	38	13%	141	48.3%
Before handling food	43	14.7%	25	8.6%	8	2.7%	30	10.3%	186	63.7%

Table 9 Will take those vaccines which are not obligatory according to the Government health care policies

	No. (n=292)	Percentage (%)
Yes	137	46.9%
No	155	53.1%

Table 10 Distribution of use of health care facilities

	No. (n=292)	Percentage (%)
Intake of Vitamins, Minerals or Other Supplements		
Only upon doctor's advice	115	39.4%
Daily	37	12.7%
Weekly	27	9.2%
Rarely	59	20.2%
Irregularly	54	18.5%
Reasons for the intake of Vitamins, Minerals or Other Supplements		
Doctor's advice	153	52.4%
Feel better	28	9.6%
Think it is better	74	25.3%
Used	6	2.1%
No reason	31	10.6%
Type of Health Checkup		
Feel sick	253	86.6%
Need it for Job-related reasons	16	5.5%

Regularly	23	7.9%
Completion of the Prescribed Course of Antibiotics		
Always	78	26.7%
Often	65	22.3%
Sometimes	66	22.6%
Occasionally	54	18.5%
Never	29	9.9%

Table 11 Practice of treatment for common ailments

	Rarely		Seldom		Occasionally		Often		Regularly	
	No.	%	No.	%	No.	%	No.	%	No.	%
Took OTC (over-the-counter) drugs immediately	67	22.9%	29	9.9%	59	20.2%	82	28.1%	55	18.8%
Sought medical advice if symptoms last >24 hours	43	14.7%	31	10.6%	60	20.5%	87	29.8%	71	24.3%
Took OTC drugs if symptoms last more than 24 hours	41	14%	34	11.6%	60	20.5%	82	28.1%	75	25.7%
Sought medical advice if I am unable to engage in daily activities	44	15.1%	33	11.3%	63	21.6%	78	25.7%	74	25.3%
Sought medical advice immediately	73	25%	57	19.5%	73	25%	39	13.4%	60	17.1%
Took medicine with doctor's advice	54	18.5%	52	17.8%	64	21.9%	57	19.5%	65	22.3%

Table 12 Distribution of subjects according to primary health care knowledge

Primary Health Care Knowledge	Correct		Incorrect	
	No.	%	No.	%
Individuals suffering from diabetes should not donate blood	176	60.3%	116	39.7%
Blood donation once in every three months will not cause any harm to a healthy individual	203	69.5%	89	30.5%
Mental stress can cause diseases of the heart.	193	66.1%	99	33.9%
Mental and emotional stress can increase the risk of physical illness and infectious diseases	167	57.2%	125	42.8%
Both bacteria and virus are living organisms	204	69.9%	88	30.1%
The immune system cannot act against bacteria or virus without medicine for example antibiotics	83	28.4%	209	71.6%
Vaccines prevent bacterial or viral growth into the body	195	66.8%	97	33.2%
Vaccines prevent virus or bacteria into the body entry of disease-causing	179	61.3%	113	38.7%
Vaccines are used to treat a disease	101	34.6%	191	65.4%
Confidential and private health problems should not be disclosed to physicians/doctors	44	15.1%	248	84.9%
Patients should not ask the doctor for reasons why the medicine(s) is/are prescribed	57	19.5%	235	80.5%
In case of continuation of the symptoms of the health complications after completing the prescribed medicine, patients should seek a second opinion from a different doctor	200	68.5%	92	31.5%
Food allergy is primarily a problem with the digestive system	144	49.3%	148	50.7%
Food allergy develops only at birth and remains throughout the lifetime.	95	32.5%	197	67.5%
Finding an effective drug to treat AIDS is difficult because HIV attacks cells that are normally responsible to fight diseases	210	71.9%	82	28.1%

Table 13 Level of awareness emerging health concerns

Awareness	Scores (Mean ± SD)
Read health-related articles online or in magazines/newspapers/books	3.05 ± 1.59
Watch health-related programs on television	2.92 ± 1.47
In the event of a sudden epidemic or major public health concern such as H1N1 and Dengue	
Made an effort to learn about it only if at risk	3.43 ± 1.57
Dependent on media reports to learn about it	3.08 ± 1.51

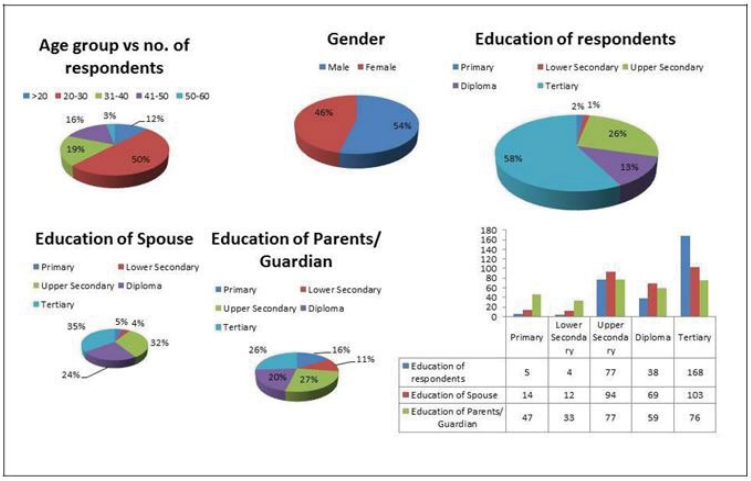


Figure 1 Demographic profile of respondents

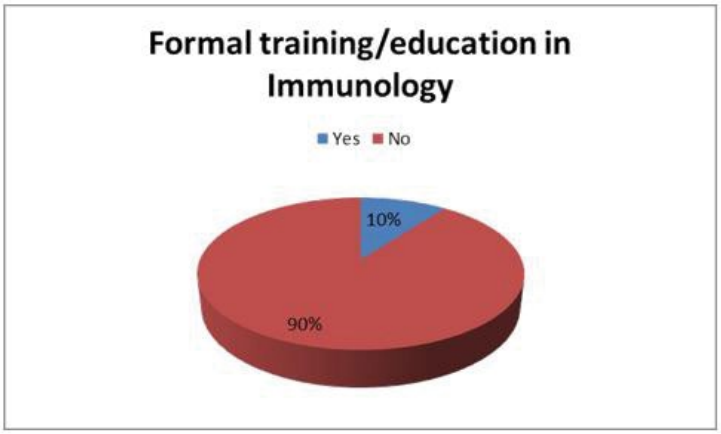


Figure 2 Any formal training/education in immunology

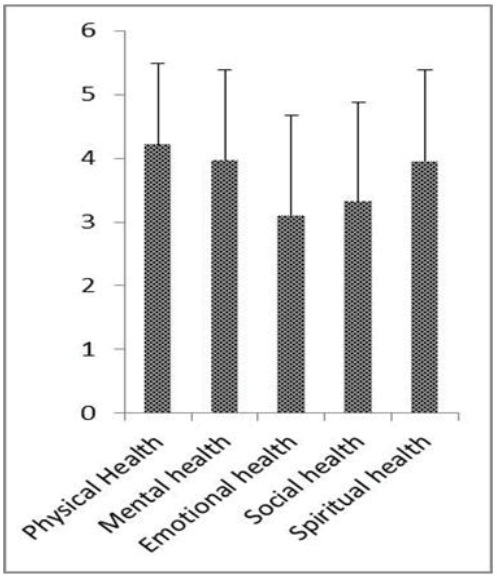


Figure 3 Opinion about Health dimensions

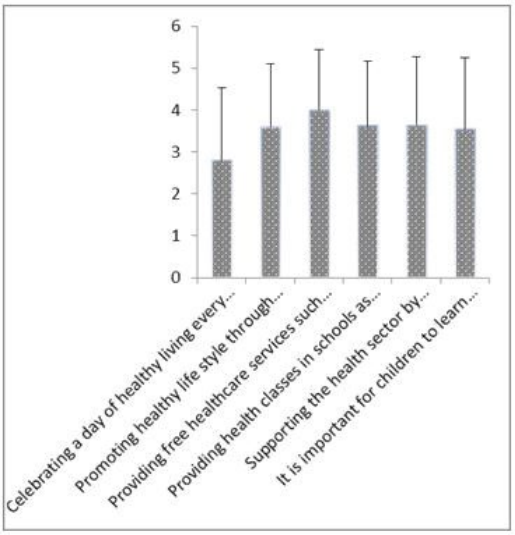


Figure 4 Activities in terms of contribution towards a healthy nation

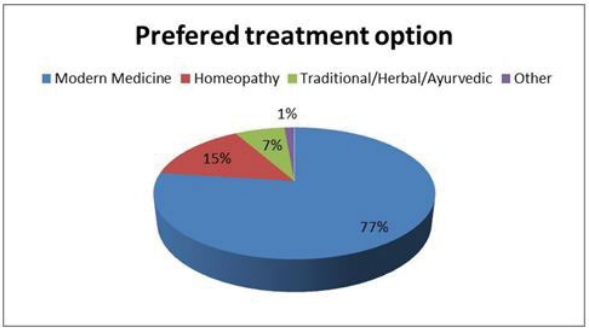


Figure 5 Opinion about treatment options

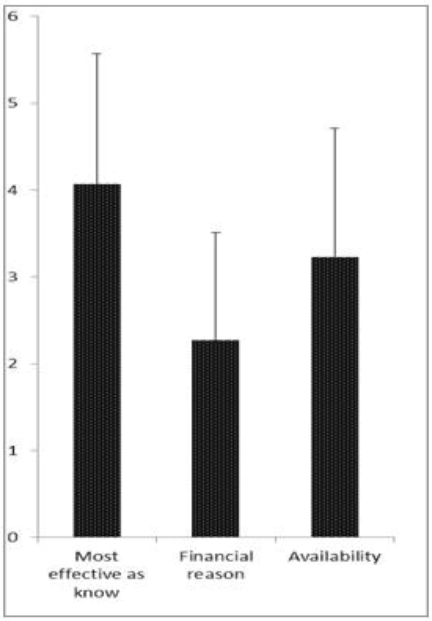


Figure 6 Preference about treatment options

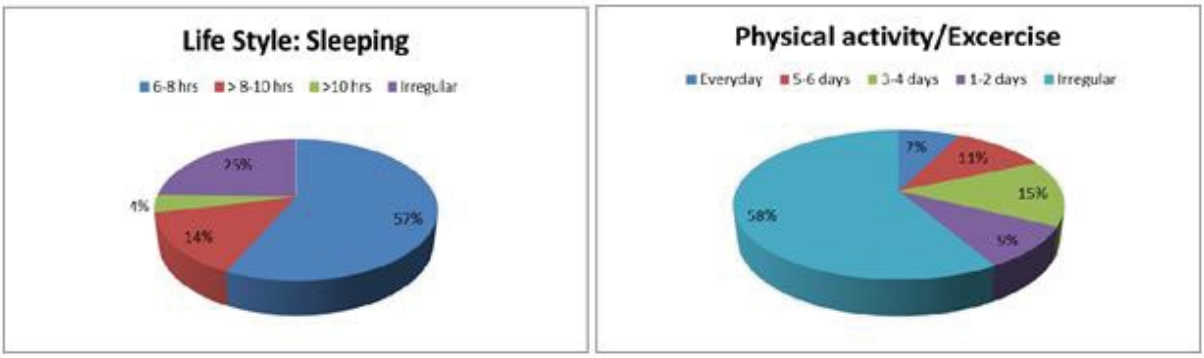
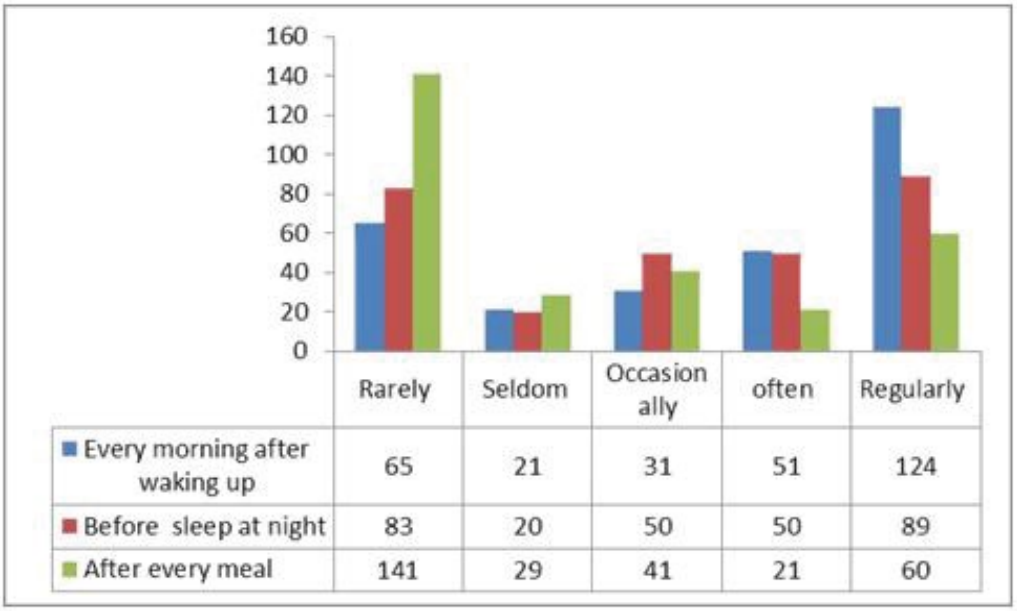


Figure 7 Practice of lifestyle



	Rarely	Seldom	Occasionally	often	Regularly
Every morning after waking up	65	21	31	51	124
Before sleep at night	83	20	50	50	89
After every meal	141	29	41	21	60

Figure 8 Distribution of hygienic Practices

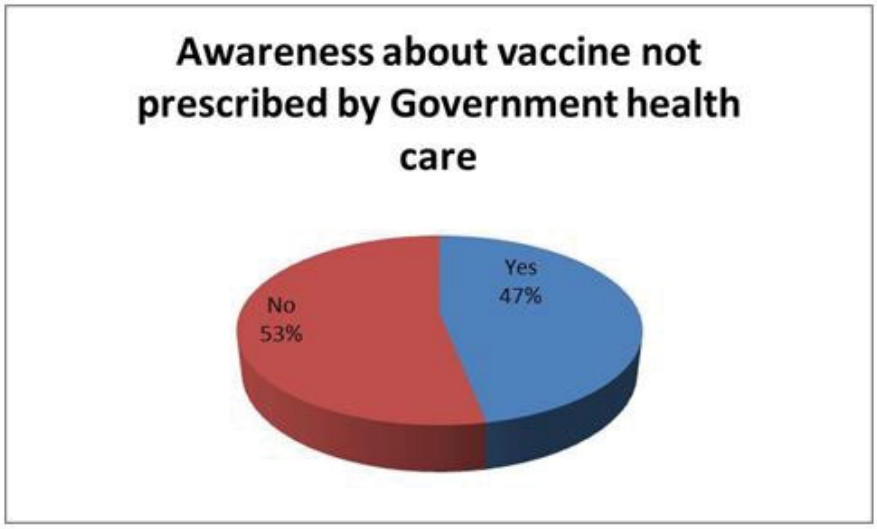


Figure 9 Awareness about vaccine not prescribed by Government health care

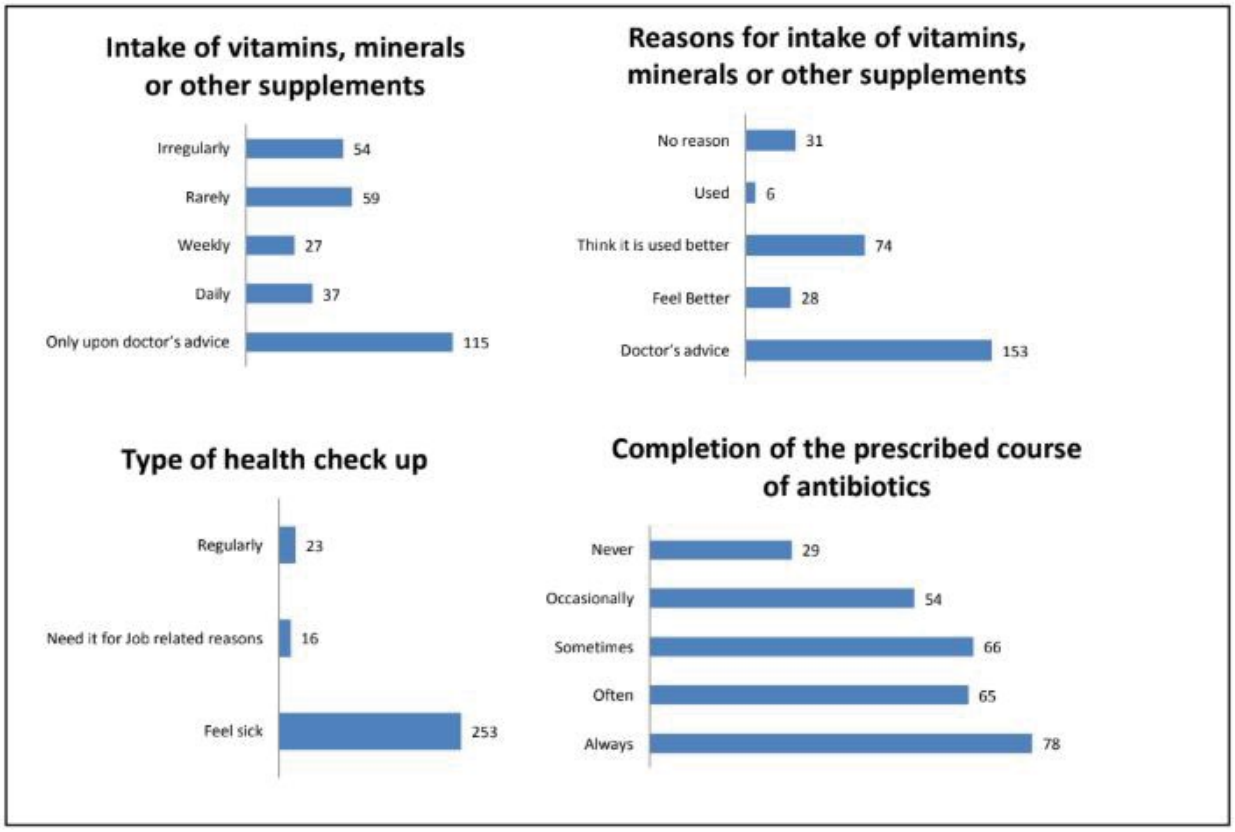
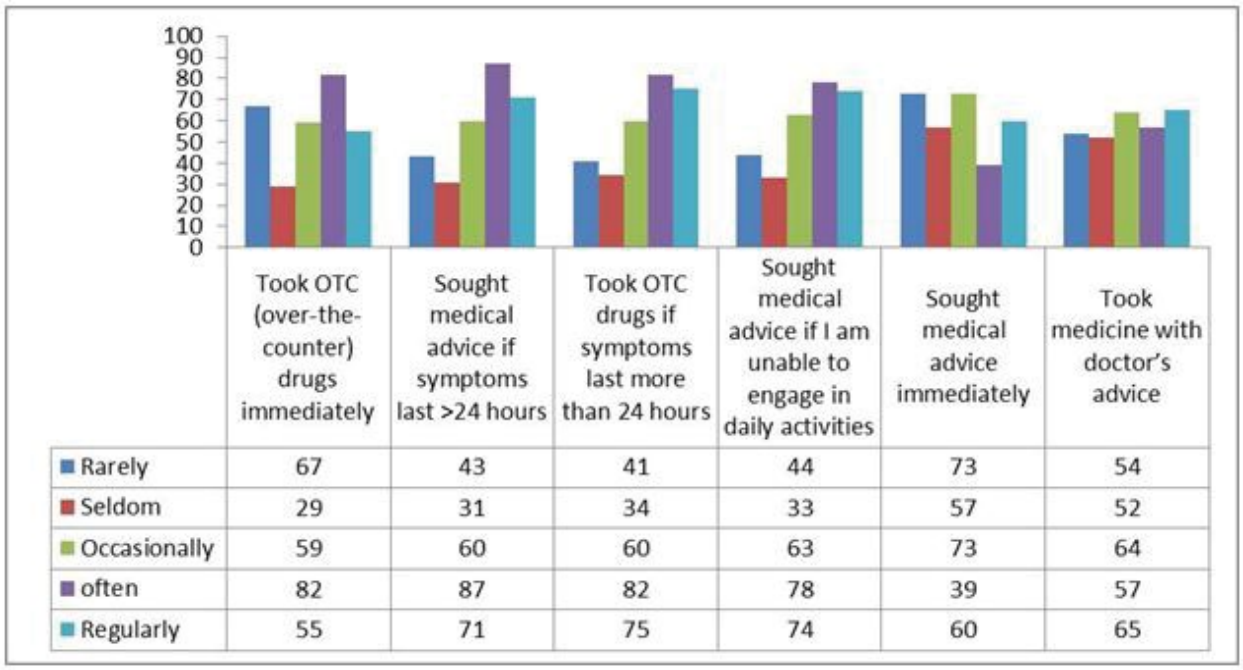


Figure 10 Distribution of use of health care facilities



	Took OTC (over-the-counter) drugs immediately	Sought medical advice if symptoms last >24 hours	Took OTC drugs if symptoms last more than 24 hours	Sought medical advice if I am unable to engage in daily activities	Sought medical advice immediately	Took medicine with doctor's advice
Rarely	67	43	41	44	73	54
Seldom	29	31	34	33	57	52
Occasionally	59	60	60	63	73	64
often	82	87	82	78	39	57
Regularly	55	71	75	74	60	65

Figure 11 Practice of treatment for common ailments

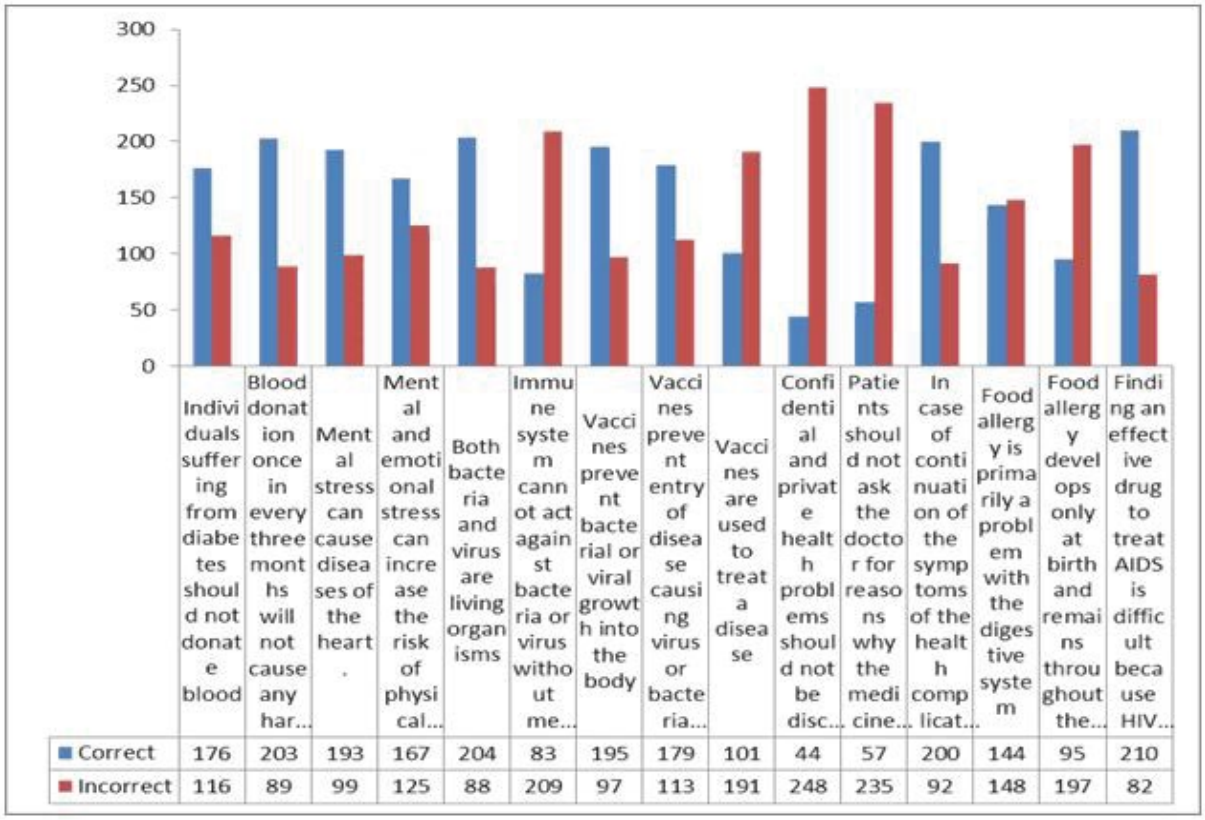


Figure 12 Distribution of subjects according to primary health care knowledge

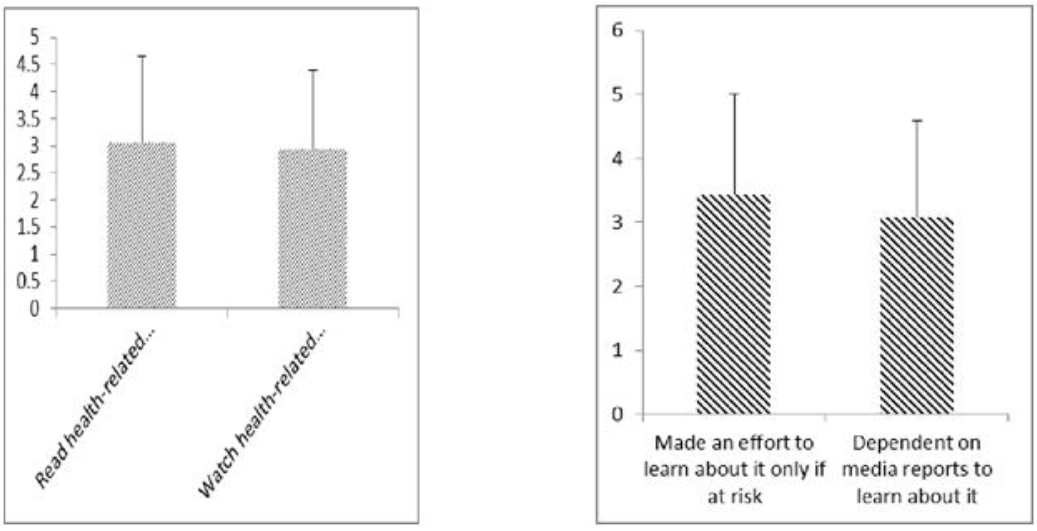


Figure 13 Level of awareness emerging health concerns

CONCLUSION

We studied various parameters as well as various important criteria related to the awareness, among a group of people residing in Ha'il, Saudi Arabia, about immunological diseases. A cross-sectional study has been performed about the awareness of a group of people regarding their life style, associated disease, and awareness of government health care

facilities. It is concluded overall study and analysis that people residing in Ha'il, Saudi Arabia are lagging behind the information of the basic awareness of immunological diseases. Moreover, our study further concludes that there is an urgent need for people's awareness by establishing various health camps as well as various media. Our study will be helpful for the government policymaker to design effective policy regarding better health care facilities for the public in Ha'il, Kingdom of Saudi Arabia. Moreover, further study is required for finding the missing link between people awareness and available public health care facilities.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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