Personal caution about some cancer-related lifestyle habits in Northern Saudi Arabia

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Abstract. – **OBJECTIVE:** The present study aimed at assessing community familiarity with cancer-related lifestyle habits in Northern Saudi Arabia.

SUBJECTS AND METHODS: This descriptive cross-sectional study involved a community-based sample of 442 civilians living in Hail, Northern Saudi Arabia. Data were collected during the period between October and November 2020. Data were randomly collected from different public gathering places regardless of age or sex.

RESULTS: Higher nescience percentages were associated with physical inactivity followed by obesity and fast food, representing 328/390 (84%), 311/390 (80%), and 263/390 (67%), respectively.

CONCLUSIONS: Northern Saudi Arabia has a high negative attitude toward cancer risk factors, necessitating the implementation of community-based health education and cancer awareness programs. Level of education and age have no significant role in the level of cancer awareness.

Key Words:
  Cancer, Risk factors, Tobacco use, Alcohol consumption, Physical activity, Fast food, Saudi Arabia.

Introduction

Cancer is emergent as the disease of the highest clinical, disability-adjusted life, and socioeconomic burden compared to all other conditions affecting humans. The recent cancer epidemiology shows that the risk of developing cancer within 0-74 years is 20.2% (22.4% *vs.* 18.2%, males *vs.* females)[1].

Several risk factors have been emerging to the increased risk of different cancers. However, dietary factors, age, sex, hereditary, and comorbidities are implicated[2]. The reported cancer risk factors are tobacco use and alcohol consumption[3], chemical usage[4], plasticizers intake[5], insecticides exposure[6], physical inactivity[7], obesity/overweight[8], fast food[9], soft food[10], consumption of preserved food[11], and immersing in civilized live[12]. On the other hand, numerous factors can prevent or reduce cancer risk, such as physical activity, eating natural healthy food, consuming vegetables and fruit, and drinking green tea[13]. Many cancer risk factors are preventable. Raising population awareness of such elements can effectively reduce the cancer burden in the target population.

Studies[14] from Saudi Arabia report an increased burden of cancer with low proportions of awareness towards cancer-related risk factors with escalating negative attitudes towards the daily exposed positively or negatively associated risk factors[15]. Therefore, the present study aimed at assessing community familiarity with cancer-related lifestyle habits in Northern Saudi Arabia.

Subjects and Methods

This descriptive cross-sectional study involves a community-based sample of 442 civilians living in Ha'il, Northern Saudi Arabia. Data were randomly collected during the period between October and November 2020 from different public gathering places regardless of age or sex. After signing a written ethical consent, each participant was interviewed to obtain the required variables. Such variables were documented using a purposeful questionnaire. Besides the demographical characteristics of the participants, the study undertook data referring to cancer risk factors such as tobacco use and alcohol consumption, chemical usage, plasticizers intake, insecticides exposure, physical inactivity, obesity/overweight, fast food, soft food, consumption of preserved food, and immersing in civilized life. Many factors can

prevent or reduce cancer risk, such as physical activity, eating natural healthy food, vegetable & fruits, and drinking Green Tea.

Statistical Analysis

After preparing the data in a standard master sheet, the variables were entered into SPSS software (version 23) (IBM Corp., Armonk, NY, USA) for analysis. Percentages, frequencies, and cross-tabulations were obtained. Chi-square test was considered significant if p-value was < 0.05.

Results

Table I, Figure 1, summarizes the participants' distribution by familiarity with factors increasing cancer risk. Better knowledge was only credited for tobacco use (26/390, 93.3%). We detected high proportions of health nescience towards cancer risk factors in all remaining aspects. The ratios are increasingly indicated in Figure 1.

The study population's distribution by familiarity with factors decreasing cancer risk is summarized in Table II, Figure 2. We saw high percentages of nescience in all the mentioned factors.

Table III and Figure 3 summarize the education level by a negative attitude towards factors increasing cancer risk. Higher nescience percentages were associated with physical inactivity, followed by obesity and fast food, representing 328/390 (84%), 311/390 (80%), and 263/390 (67%), respectively. We observed variable percentages when calculating within each education level,

Table I. Distribution of the study population by familiarity with factors that increase cancer risk.

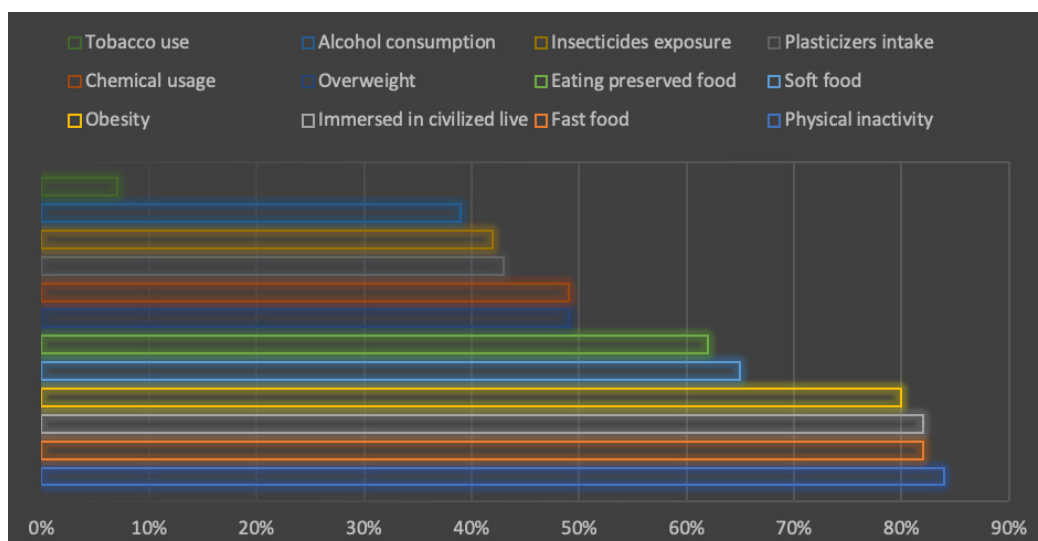| Category	Yes	No	Total
Tobacco use can increase the risk of cancer	364	26	390
Alcohol consumption can increase cancer risk	241	151	392
Chemical usage can increase cancer risk	224	218	442
Plasticizers intake can increase cancer risk	222	170	392
Insecticides exposure can increase cancer risk	228	163	391
Physical inactivity can increase cancer risk	64	328	392
Obesity can increase cancer risk	80	311	391
Being overweight can increase cancer risk	224	218	442
Fast food can increase cancer risk	79	363	442
Soft food can increase cancer risk	136	256	392
Eating preserved food can increase cancer risk	150	242	392
Immersed in civilized life can increase cancer risk	79	363	442

Figure 1. Participants by nescience towards some cancer risk factors.

Table II. Distribution of the study population by familiarity with factors that decrease cancer risk.

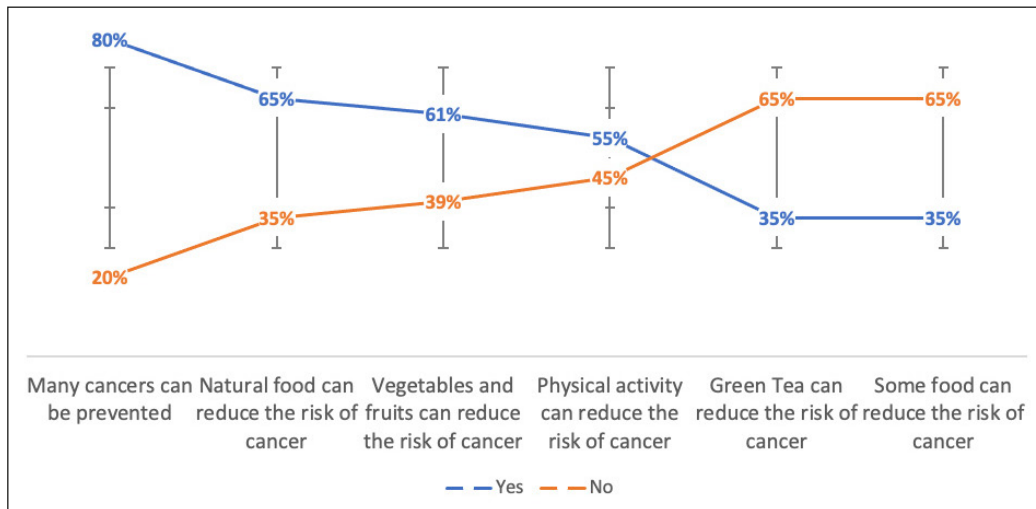| Category	Yes	No	Total
Many cancers can be prevented	195	49	244
Physical activity can reduce the risk of cancer	245	197	442
Some food can reduce the risk of cancer	154	288	442
Natural food can reduce the risk of cancer	287	155	442
Vegetables and fruits can reduce the risk of cancer	207	135	342
Green Tea can reduce the risk of cancer	154	288	442

Figure 2. The study population by familiar with factors decreasing the risk of cancer.

but people with a university level of education displayed better awareness, as shown in Figure 3. Similar results were demonstrated for factors decreasing cancer risk, as shown in Table IV.

Table V summarizes the age distribution by a negative attitude towards factors increas-ing cancer risk. In the age group ≤ 18 years, the majority was associated with fast food (29/34, 85%) and chemical usage (27/34, 79%). The majority of people aged 19-24 years were associated with fast food and civilized life (101/103, 98%) and physical inactivity (85/103, 83%). In

Table III. Education level by a negative attitude towards factors increasing the risk of cancer.

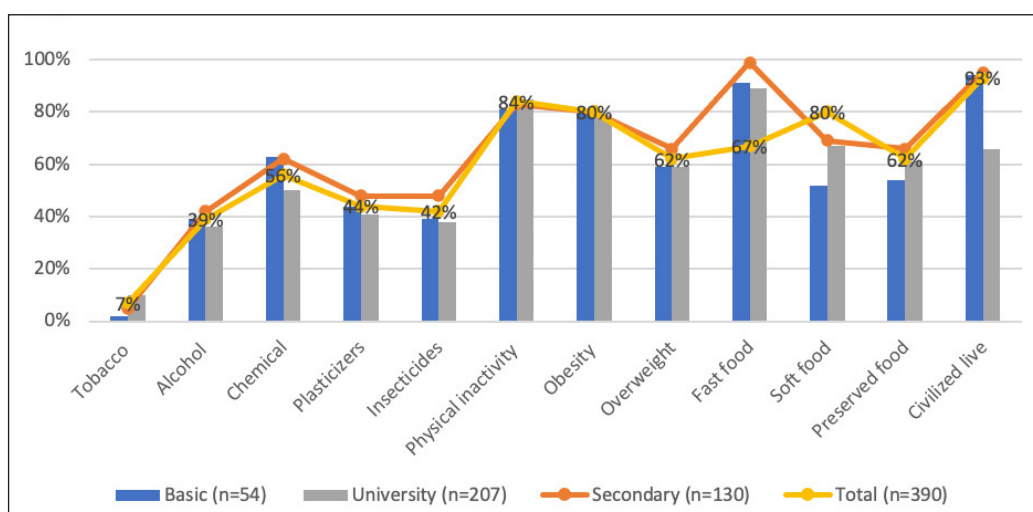| Category	Basic (n=54)	Secondary (n=130)	University (n=207)	Total (n=390)
Tobacco use can increase the risk of cancer	1	6	20	27
Alcohol consumption can increase cancer risk	21	55	75	151
Chemical usage can increase cancer risk	34	81	103	218
Plasticizers intake can increase cancer risk	24	62	84	170
Insecticides exposure can increase cancer risk	21	63	79	163
Physical inactivity can increase cancer risk	44	108	176	328
Obesity can increase cancer risk	44	104	163	311
Being overweight can increase cancer risk	32	86	123	241
Fast food can increase cancer risk	49	129	185	263
Soft food can increase cancer risk	28	90	138	256
Eating preserved food can increase cancer risk	29	86	127	242
Immersed in civilized life can increase cancer risk	51	124	188	363

Figure 3. Education level by a negative attitude towards factors increasing the risk of cancer.

Table IV. Education level by a negative attitude towards factors decreasing the risk of cancer.

Category	Basic (n=54)	Secondary (n=130)	University (n=207)	Total (n=390)
Many cancers can be prevented	7	15	27	49
Physical activity can reduce the risk of cancer	32	59	106	197
Some food can reduce the risk of cancer	37	101	151	289
Natural food can reduce the risk of cancer	17	66	72	155
Vegetables and fruits can reduce the risk of cancer	26	45	64	135
Green Tea can reduce the risk of cancer	42	110	136	288

Table V. Age by a negative attitude toward factors increasing the risk of cancer.

Category	≤18yrs (n=34)	19-24 (n=103)	25-34 (n=111)	35-44 (n=81)	≥45 (n=62)	Total (n=390)
Tobacco use can increase the risk of cancer	0	4	6	12	4	26
Alcohol consumption can increase cancer risk	6	44	50	29	22	151
Chemical usage can increase cancer risk	27	57	69	38	27	218
Plasticizers intake can increase cancer risk	19	57	40	29	25	170
Insecticides exposure can increase cancer risk	17	54	53	26	13	163
Physical inactivity can increase cancer risk	22	85	96	72	53	328
Obesity can increase cancer risk	26	75	91	69	50	311
Being overweight can increase cancer risk	26	61	67	49	38	241
Fast food can increase cancer risk	29	101	102	70	51	353
Soft food can increase cancer risk	19	73	83	53	28	256
Eating preserved food can increase cancer risk	24	71	77	41	29	242
Immersed in civilized life can increase cancer risk	37	101	100	69	56	363

the age group of 25-34 years, most were associated with fast food (102/111, 92%) and civilized live (100/111, 90%). Most of the age group 35-44 years were associated with physical inactivity (72/81, 89%) and fast food (70/81, 86%). In the age group ≥ 45 years, the majority was associated with civilized live (56/62, 90%) and physical inactivity (53/62, 85%).

Age by a negative attitude towards factors decreasing cancer risk is summarized in Table VI, Figure 4. Age ranges ≤ 18 years, 19-24, 25-34, 35-44, and 45+ were more frequently ignor-

ing the positive role of green tea 31/34 (91.2%), food decreasing cancer risk 80/103 (77.7%), food reducing cancer risk 57/81 (70.4%), and food decreasing cancer risk 49/62 (79%) in that order, as seen in Figure 4.

Discussion

As cancer is becoming an emerging health issue worldwide, combined efforts to decrease the cancer burden are necessary at all disease-fighting levels. Broad-spectrum steps starting from prevention and early detection at the community base to intracellular genetic complexity are required in all nations. In recent years, Saudi Arabia has witnessed amassed surfs of cancer cases, mostly with advanced disease stages and relatively in the younger population[14].

Younger patients and many advanced stages necessitate urgent intervention at the community base. To evaluate the pitfall at the community level, we performed this investigation to enable further prevention and control measures.

Besides tobacco use, the percentages of negative attitudes towards almost all cancer risk factors were very high, indicating low awareness levels. Previous studies[16-18] attributed the tragedy to the lack of awareness and absence of health education programs in most parts of the country, including Northern Saudi Arabia. Most people had not heard about cancer risk factors, prevention, or early detection. A recent study[19] that measured breast cancer awareness among Saudi female teachers (in female schools) found poor overall knowledge with a negative attitude. Another study[20] that assessed the awareness level of colorectal cancer among teachers found that 39% of the male teachers and 42% of the female teachers were unaware of the colorectal risk factors, though 12.8% reported having a family history of colon cancer. Educational entities are the most appropriate models to deliver awareness and health education programs. Most awareness programs in

Table VI. Age by a negative attitude towards factors decreasing the risk of cancer.

| Category	≤18yrs (n=34)	19-24 (n=103)	25-34 (n=111)	35-44 (n=81)	≥45 (n=62)	Total (n=390)
TMany cancers can be prevented	3	9	11	16	10	49
Physical activity can reduce the risk of cancer	14	45	71	40	27	197
Some food can reduce the risk of cancer	23	80	80	57	49	289
Natural food can reduce the risk of cancer	22	52	33	30	18	155
Vegetables and fruits can reduce the risk of cancer	10	22	49	32	22	135
Green Tea can reduce the risk of cancer	31	77	85	54	41	288
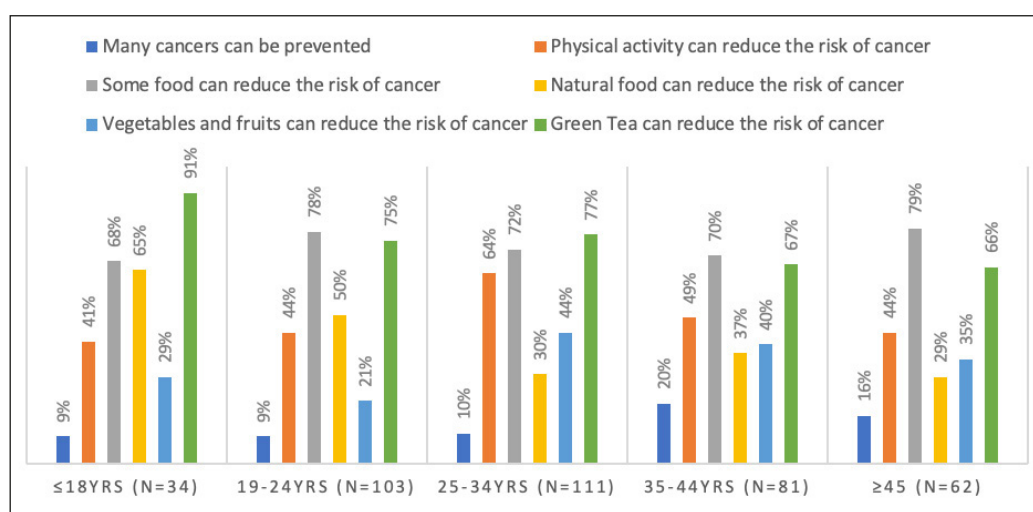
Figure 4. Age by a negative attitude towards factors decreasing the risk of cancer.

the country are oriented to breast cancer and minimally to colon cancer in terms of early detection. A broad spectrum of sustainable prevention and early detection programs is necessary for most cancers in different regions.

A minor positive difference appeared when correlating the awareness levels, attitude towards cancer risk factors, and education level with university-level education. Though no available studies compare the level of cancer risk awareness in different levels of education, no vast difference was expected, except for those having medical education, since no perceived cancer awareness programs are standing in the country.

Nevertheless, the present study has no perpetual correlation between awareness and negative attitude towards a particular cancer risk factor and age (younger or older). It was reported by Bakarman and AlGarni[21] that an increased level of awareness towards colon cancer might be seen among the more aging population, yet a higher level of awareness towards breast cancer may be seen among the younger female population[22]. Moreover, variables related to lifestyle, environmental, and health services have an impact on the incidence of cancer; these same variables also have an impact on cancer deaths and lost life years[23].

Limitations

Although the current study has presented helpful information for future cancer prevention and control through stimulation of further research and inspiration from healthcare and non-governmental organizations, it has limitations, including its cross-sectional setting and limited cancer risk factors.

Conclusions

Northern Saudi Arabia has a high negative attitude toward cancer risk factors, necessitating the implementation of community-based health education and cancer awareness programs. Level of education and age have no significant role in the level of cancer awareness.

Conflict of Interest

The authors declare no conflict of interest.

Ethics Approval

Not applicable. The study did not involve the use of any human materials.

Informed Consent

Each participant who agreed to participate has signed a written ethical consent before the interview to take the information.

Availability of Data and Material

The data presented in this study are available on request to the corresponding author.

Authors' Contributions

-HGA: Conception, administration, analysis, drafting, and approval of the final version.
-AMAA: Conception, design, data acquisition, practical part, approval of the final version.
-EAAA: Conception, analysis, drafting, practical part, approval of the final version.
-GMOE: Conception, design, data acquisition, approval of the final version.
-SAM: Conception, analysis, drafting, and approval of the final version.
-RAHA: Conception, analysis, drafting, and approval of the final version.
- AYB: Conception, analysis, drafting, and approval of the final version.
-MSAM: Consultation, analysis, drafting, and approval of the final version.

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