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To Estimate the Experience of Medical Practitioners in the prevention and Control of Gastric Cancer

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ABSTRACT

Background: Among all types of cancer, gastric cancer ranks fifth in both morbidity and mortality. Public knowledge about cancer is as important as early detection, screening, prevention, and treatment.

Objectives: The study aimed to estimate medical practitioners' knowledge, attitudes, and experiences regarding gastric cancer and its prevention.

Methods: We conducted a cross-sectional study involving medical practitioners from Tbilisi and Senaki (Georgia) in 2024. Data was collected through self-completed questionnaires. We performed a descriptive analysis of the data, including estimation of proportions and mean values. In bivariate analyses, study participants' knowledge was estimated by age group and other characteristics. We calculated the Odds ratio (OR), 95% Confidence Interval (CI), and p-value; a p-value <0.05 was considered statistically significant.

Results: Of 80 study participants, the most significant proportion was women (80%), and 65% were under 40 years of age. More than 80% of respondents were medical doctors. About 90% of respondents believe that Helicobacter pylori infection, gastrointestinal ulcer disease, long-term tobacco use, and alcohol consumption are risk factors for stomach cancer. Over 85% of medical practitioners are well aware of high-risk groups and early symptoms of stomach cancer. Eighty percent of medical practitioners demonstrated a positive attitude toward gastric cancer screening and prevention, while participation of respondents in gastric cancer management and prevention was low (45%).

Conclusions: According to the study results, knowledge about gastric cancer among study participants is high, and their attitude towards gastric cancer screening and prevention is positive; however, their participation in public awareness activities about the disease and risk factors is low.

Keywords: Descriptive analyses; gastric cancer; Georgia; KAP survey.

BACKGROUND

Cancer is one of the most common noncommunicable diseases in the world and the second leading cause of mortality after cardiovascular diseases.[1] Among all types of cancer, stomach cancer ranks fifth in both morbidity and mortality.[2] Public knowledge about cancer is as important for cancer management as early cancer detection, screening, prevention approaches, and treatment.[3]

Primary and secondary preventive measures can reduce the incidence of cancer, the proportion of severe cases, and lower the burden of cancer.[4-11] Cancer control requires the appropriate application of knowledge. To primarily prevent gastric cancer, it is necessary to increase public awareness of risk factors, early signs and symptoms, and preventive measures.[12,13] According to studies, knowledge of stomach cancer and its associated risk factors is relatively low among populations in China, Korea, and Saudi Arabia.[3,14,15] In China, gastric cancer screening (secondary prevention) is performed individually, upon doctor recommendations, mainly during routine checkups.[15]

Young generations, such as students, are the main sources of information at the community level. The knowledge that medical students gain at universities is critical.[16] In 2022, a cross-sectional study was conducted at the University of Medical Sciences in Iran to assess medical students' knowledge, attitudes, and practices regarding gastric cancer. The study questionnaire collected information on respondents' sex, age, academic field, and clinical practice. A total of 558 students were enrolled in the study. According to the results, more than 40% of students believed that Helicobacter infection, tobacco, and high salt consumption play a major role in the development of gastric cancer. They highlighted that a high intake of vegetables and fruits can prevent the disease. Moreover, 35% of respondents considered stomach cancer avoidable.[17] Most respondents in Iran had moderate knowledge about the disease, unlike Saudi Arabia and China, where studies have shown lower levels of awareness.[14,15] However, these results may be due to differences between the study groups. The study in Iran involved medical students, while in the other two countries, respondents were selected from the general population.[14,15,17]

Our study aimed to estimate medical practitioners' knowledge, attitudes, and experiences regarding gastric cancer and its prevention. The objectives of the study were: (i) to assess the awareness of the study participants about gastric cancer risk factors, symptoms, primary and secondary prevention measures; (ii) to assess the experience of the study participants in gastric cancer primary and secondary prevention.

METHODS

Study design

We conducted a cross-sectional study.

Study participants

Medical practitioners were sampled randomly from medical facilities in Tbilisi and Senaki.

Inclusion criteria

Healthcare providers from Tbilisi and Senaki employed in public hospitals with direct patient contact. Direct contact with a patient may include treatment, counseling, patient education, or other aspects of providing healthcare.

Sample size calculation

The sample size of survey participants was determined using the standard formula ($S=z^2 \times p \times [(1-p)/d^2)]$): assuming that 30% (p=30%) of primary care practitioners have adequate knowledge about gastric cancer, with a 95% confidence interval (z=1.96), and a 10% relative precision (d=10%), the sample size equals to 80 participants (https://www.openepi.com/SampleSize/SSPropor.htm).

Data collection

We developed a standard questionnaire that collected demographic information and knowledge among study participants regarding symptoms, potential risk factors, preventive measures, and their experiences with primary and secondary prevention of gastric cancer. Data was collected through self-completed questionnaires.

Exposure variables

- Demographic and socioeconomic characteristics (sex, age, profession);
- Knowledge regarding gastric cancer symptoms, possible risk factors, and preventive measures.

Outcome variables

- Participants' attitudes toward primary and secondary prevention of gastric cancer;
- Involvement of participants in activities for primary and secondary prevention of gastric cancer.

Data statistical analyses

A descriptive analysis of data, including estimation of proportions and mean values, was conducted. The chi-square test was used to compare frequencies of categorical variables. In the bivariate analysis, study participants' knowledge was assessed by age group and other characteristics. For this purpose, respondents were divided into different groups based on age (under 30 years and others) and family history of stomach cancer. Additionally, the correlation between the level of knowledge and attitudes towards gastric cancer prevention, as well as their involvement in preventive measures, was assessed. We calculated the Odds Ratio (OR), 95% Confidence Interval (CI), and p-value. P-value <0.05 was considered statistically significant.

RESULTS

Participant characteristics

Of 80 study participants, the most significant proportion was women (80%, n=64), and 65% (n=52) were under 40 years of age. More than 80% (n=65) of respondents were medical doctors, 28% (n=22) had working experience of 5-10 years; about one-third (36%) of participants reported having family members or friends with stomach cancer or other stomach disorders (Tab.1).

TABLE 1. Characteristics of study participants

Characteristics	Number (%)
Sex	
Male	16 (20%)
Female	64 (80%)
Age groups	
<30 years	28 (35%)
31-40 years	24 (30%)
41-50 years	18 (22.5%)
>50 years	10 (12.5%)
Profession	
Doctor	65 (81.25%)
Nurse	15 (18.75%)
Working experience	
≤5 years	31 (38.75%)
5-10 years	22 (27.5%)
11-15 years	16 (20%)
≥16 years	11 (13.75%)
Do any of your family members or friends have chronic stomach diseases, chronic gastritis, ulcers, or cancer?	
Yes	29 (36.25%)
No	34 (42.5%)
Do not know	17 (21.25%)

More than 90% (n=72) of respondents believe that Helicobacter pylori infection, gastrointestinal ulcer disease, long-term tobacco use, and alcohol consumption are risk factors for stomach cancer. A lower proportion of respondents (70-80%) consider that older age, male gender, family history of esophageal or stomach cancer, and obesity (body mass index ≥ 30) are risk factors for developing stomach cancer.

Additionally, 40-60% of study participants commented that unhealthy diet, such as irregular diet, every extra meal at midnight, or not eating breakfast, frequent consumption of processed meat or sausages (on average ≥2 times/week), eating spicy and pickled, smoked, fried food, and eating too fast are correlated with the development of Stomach cancer.

More than 85% of medical practitioners are well aware of high-risk groups and early symptoms of stomach cancer, and

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Helicobacter pylori screening opportunities, while a much smaller proportion of respondents are familiar with endoscopic screening. Eighty percent of medical practitioners demonstrated a positive attitude towards screening and prevention of stomach cancer. Participation of respondents in stomach cancer management and prevention is low, with less than 45% of medical practitioners reporting that they contribute to raising public awareness about the importance of screening for early detection of gastric cancer.

The bivariate analyses revealed that the age of participants or the presence of a diagnoses of stomach cancer in family members or friends did not correlate with adequate knowledge of the disease; however, the profession was associated with the knowledge of participants: doctors are more likely than nurses to have significantly higher levels of knowledge about gastric cancer (Tab.2).

TABLE 2. Correlation between demographic characteristics and adequate knowledge of study participants

Study groups	**Have adequate knowledge about high-risk groups for gastric cancer**		**Have adequate knowledge about gastric cancer risk factors**		**Have adequate knowledge about gastric cancer prevention**	
	OR; 95%CI	*p-value*	OR; 95% CI	*p-value*	OR; 95% CI	*p-value*
Age groups						
Above 29 y vs. Under 30 y	1.24; 0.4-3.7	0.70	1.05; 0.4-2.8	0.92	1.0; 0.4- 2.9	1.00
Sex						
Male vs. Female	2.33; 0.5-1.4	0.29	1.80; 0.5-6.2	0.35	1.57; 0.4- 6.2	0.52
Profession						
Doctor vs. Nurse	6.29; 1.9-21.2	0.003	3.63; 1.1-11.6	0.03	4.26; 1.3-13.6	0.01
Have family members or friends with chronic stomach diseases, chronic gastritis, ulcers, or cancer						
Yes vs. No	0.9; 0.3 - 2.5	0.62	1.03; 0.4 - 2.7	0.94	1.08; 0.4 -3.1	0.89

Unfortunately, adequate knowledge was not associated with adequate attitudes towards primary prevention and screening for gastric cancer (Tab.3); however, adequate knowledge was correlated with respondents' participation in disease prevention activities (OR=3.12, 95%CI=1.20-8.14; OR=8.84, 95%CI=2.86-7.37) (Tab.4).

TABLE 3. Correlation between knowledge and attitude of participants

	Adequate attitude toward GC screening		***Adequate attitude towards primary prevention of gastric cancer***	
Knowledge of participants	OR 95% CI	*p-value*	OR 95% CI	*p-value*
Adequate vs. inadequate knowledge of high-risk groups for GC	0.83; 0.21-3.35	0.80	1.02 0.34-3.09	0.97
Adequate vs. inadequate knowledge of GC risk factors	0.91; 0.28-3.00	0.88	1.07; 0.40-2.86	0.93
Adequate vs. inadequate knowledge of GC prevention measures	1.11; 0.31-3.99	0.87	0.92 0.31-2.78	0.89

TABLE 4. Correlation between awareness/attitudes and involvement of participants in prevention activities

	Involved in campaigns to raise public awareness about GC and its screening		***Encourages patients to adopt a healthy lifestyle and undergo screening to prevent advanced GC***	
Knowledge and attitudes	OR; 95% CI	*p-value*	OR; 95% CI	*p-value*
Adequate knowledge vs. inadequate of GC risk factors	3.12; 1.20 - 8.14	0.02	8.84; 2.86 –7.37	< 0.001
Adequate vs. inadequate attitude toward GC screening	1.03; 0.33-3.14	0.98	1.02; 0.29-3.67	0.97

DISUCSSION

Medical practitioners' knowledge and attitudes shape the participation of the target population in screening programs.[15] A population-based cross-sectional study conducted in Iran to assess knowledge about gastric cancer patterns, as expected, showed that doctors and nurses were well aware of gastric cancer prevention and treatment compared to other respondents who had never experienced gastric cancer.[17] To improve the experience of medical practitioners and promote cancer care at the national level, it is necessary to develop and implement programs focused on improving public health, in which the role of medical staff from different levels of medical care will be defined.[18,19]

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Strengths and limitations

The study has some limitations: because we set a 10% relative precision, the sample size was small (only 80 participants), which likely reduced the statistical significance of the results; we used self-administered questionnaires rather than face-to-face interviews. In addition, the vast majority of study participants were women.

A strength of our study is its focus on an important public health issue - gastric cancer is among the top causes of cancer-related morbidity and mortality worldwide. Assessing medical practitioners' knowledge and attitudes addresses a critical component of cancer control. The study evaluates those who play a direct role in early detection, prevention, and patient education. Their knowledge and attitudes directly impact population-level outcomes. Participants were recruited from the capital city of Tbilisi and the regional municipality of Senaki, providing relevant, region-specific data. Moreover, finally, the findings can inform training programs, policy development, and cancer awareness campaigns in Georgia.

CONCLUSIONS

The study demonstrated a high level of knowledge regarding gastric cancer among participants, and their attitude towards gastric cancer screening and prevention is positive. Nevertheless, a favorable attitude toward gastric cancer prevention and screening does not guarantee engagement in public awareness initiatives or preventive health programs. It is necessary to train/mobilize physicians/nurses/medical staff to ensure their participation in activities that promote early detection of gastric cancer. Further research is recommended to assess public awareness of gastric cancer.

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REFERENCES

1. GBD 2015 Mortality and Causes of Death Collaborators. Global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death, 1980–2015: a systematic analysis for the Global Burden of Disease Study 2015. Lancet. 2016;388(10053):1459-1544. doi:10.1016/S0140-6736(16)31012-1.
2. Sung H, Ferlay J, Siegel RL, et al. Global Cancer Statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2021;71(3):209-249. doi:10.3322/caac.21660.
3. Oh DY, Choi KS, Shin HR, Bang YJ. Public awareness of gastric cancer risk factors and disease screening in a high-risk region: a population-based study. Cancer Res Treat. 2009;41(2):59-66. doi:10.4143/crt.2009.41.2.59.
4. Argueta EA, Moss SF. The prevention of gastric cancer by Helicobacter pylori eradication. Curr Opin Gastroenterol. 2021;37(6):625-630. doi:10.1097/MOG.0000000000000777.
5. Chen Q, Yu L, Hao CQ, et al. Effectiveness of endoscopic gastric cancer screening in a rural area of Linzhou, China: results from a case–control study. Cancer Med. 2016;5(9):2615-2622. doi:10.1002/cam4.812.
6. Fan X, Qin X, Zhang Y, et al. Screening for gastric cancer in China: advances, challenges and visions. Chin J Cancer Res. 2021;33(2):168-180. doi:10.21147/j.issn.1000-9604.2021.02.05.
7. Huang RJ, Epplein M, Hamashima C, et al. An approach to the primary and secondary prevention of gastric cancer in the United States. Clin Gastroenterol Hepatol. 2022;20(10):2218-2228.e2. doi:10.1016/j.cgh.2021.09.039.
8. Jun JK, Choi KS, Lee HY, et al. Effectiveness of the Korean National Cancer Screening Program in reducing gastric cancer mortality. Gastroenterology. 2017;152(6):1319-1328.e7. doi:10.1053/j.gastro.2017.01.029.
9. Park JY, Herrero R. Recent progress in gastric cancer prevention. Best Pract Res Clin Gastroenterol. 2021;50-51:101733. doi:10.1016/j.bpg.2021.101733.
10. Yan L, Chen Y, Chen F, et al. Effect of Helicobacter pylori eradication on gastric cancer prevention: updated report from a randomized controlled trial with 26.5 years of follow-up. Gastroenterology. 2022;163(1):154-162.e3. doi:10.1053/j.gastro.2022.03.039.
11. Zhang X, Li M, Chen S, et al. Endoscopic screening in Asian countries is associated with reduced gastric cancer mortality: a meta-analysis and systematic review. Gastroenterology. 2018;155(2):347-354.e9. doi:10.1053/j.gastro.2018.04.026.
12. Huang Z, Liu W, Marzo RR, Hu Z, Wong LP, Lin Y. High-risk population's knowledge of risk factors and warning symptoms and their intention toward gastric cancer screening in Southeastern China. Front Public Health. 2022;10:974923. doi:10.3389/fpubh.2022.974923.
13. Ray K, Mandal S. Knowledge about cancer in West Bengal—A pilot survey. Asian Pac J Cancer Prev. 2004;5(2):205-212.
14. Almaghrabi M, Qanadeely E, Almaghrabi H. Knowledge of gastric cancer risk factors, warning symptoms, and screening among the general population in Makkah, Saudi Arabia. Majmaah J Health Sci. 2022;10(1):17-24. doi:10.5455/mjhs.2022.01.004.
15. Liu Q, Zeng X, Wang W, et al. Awareness of risk factors and warning symptoms and attitude towards gastric cancer screening among the general public in China: a cross-sectional study. BMJ Open. 2019;9(7):e029638. doi:10.1136/bmjopen-2019-029638.
16. Althobaiti A, Jradi H. Knowledge, attitude, and perceived barriers regarding colorectal cancer screening practices and risk factors among medical students in Saudi Arabia. BMC Med Educ. 2019;19:421. doi:10.1186/s12909-019-1857-7.
17. Mansour-Ghanaei F, Joukar F, Soati F, Mansour-Ghanaei A, Naserani SB. Knowledge about gastric carcinoma in North of Iran, a high prevalent region for gastric carcinoma: a population-based telephone survey. Asian Pac J Cancer Prev. 2012;13(7):3361-3366. doi:10.7314/apjcp.2012.13.7.3361.
18. Mutyaba T, Mmiro FA, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulago Hospital, Uganda. BMC Med Educ. 2006;6:13. doi:10.1186/1472-6920-6-13.
19. Zhang H, Zhao C, Song C, et al. Knowledge, attitude, and practice of healthcare workers on early gastrointestinal cancer in China. Front Public Health. 2023;11:1191699. doi:10.3389/fpubh.2023.1191699.

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