

Knowledge of General Practitioners Regarding Some Fundamental Aspects of *H. Pylori* Infection in a Developing Country

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ABSTRACT

Objective: This study was conducted to assess the level of knowledge of Pakistani GPs regarding various aspects of *H. pylori*.

Methodology: This cross-sectional survey was carried out all over Pakistan from July to December 2019. Close-ended questionnaires were distributed to a convenience sample of 150 GPs and were requested to answer questions on demographics, importance, diagnosis, treatment and complications of *H. pylori*. The analysis of the data was done by SPSS version 20.0.

Results: The mean age of all GPs was 42.6±8.2 years and females were in majority 53.8%. Most of the respondents 73.1% were graduates, 56.3% worked in clinics and 43.7% in Hospitals. Regarding the knowledge of various aspects of *H. pylori*, 45.4% to 58% positive responses were obtained to different questions. lowest score 45.4% was obtained regarding the question of whether *H. pylori* constitutes an important public health problem and highest score 58% on the question regarding the infectious nature of peptic ulcer disease. There was little correlation between demographic and professional features of GPs and knowledge about *H. pylori*.

Conclusion: It was observed that the knowledge of most Pakistani GPs is only modest about *H. pylori*. There is a need of increasing awareness and educating GPs about this important pathogen.

Key Words: general practitioners, *H. pylori*, questionnaire, survey, knowledge.

INTRODUCTION

H. pylori is an important chronic gastrointestinal bacterial pathogen in humans and is associated with a number of upper gastrointestinal (GI) and extra-GI diseases.¹⁻³ In addition, the International Agency for Research on Cancer (IARC) categorized *H. pylori* as a type I carcinogen and it is measured as commonest risk factor of gastric adenocarcinoma and MALToma of stomach. Commonest cause of the peptic ulcer disease is the *H. Pylori*, so its eradication reduces the cases of peptic ulcer and decreases gastric cancer risk.^{2,3} *H. Pylori* is a common infection in humans.^{4,5} Approximately, this bacterium effected half of population throughout the world. The infection is decreasing in the developed countries due to better therapeutic regimens and improved hygiene. On the other hand, the situation is entirely opposite in the developing world due to poor hygiene, treatment failure and emergence of drug resistance.^{4,5} Since, *H. Pylori* infection is a common health problem, the prominent national and international organizations including the World Gastroenterology Organization (WGO) and American College of Gastroenterology (ACG) have formulated consensus guidelines and recommendations for the diagnosis and management of *H. pylori* infection.⁶⁻¹² As the diagnosis and treatment of *H. pylori*-associated diseases is predominantly the responsibility of GPs, so it is important that, they should be well-educated to diagnosis and treat this important pathogen.¹³ Several studies has been done to assess the knowledge, practice and attitude of the primary care physicians or GPs in different parts of the world. Overall, these studies have shown low level of knowledge and many gaps in knowledge and practice of GPs.¹⁴ One such study was also conducted in Pakistan in the metropolitan city of Karachi, which concluded that GPs

lacked proper knowledge in the management of *H. pylori* infection.¹⁵ This study was aimed to gauge the knowledge and understanding of *H. pylori* infection and approach to address this important public health problem by the GPs, who are the first line of hierarchy for the delivery of healthcare to the vast majority of the general population and also to correlate various demographic and professional features of GPs and their level of knowledge about *H. pylori* infection, which has been studied very little till date.

METHODOLOGY

A one-page close-ended 10-question based questionnaire was formulated and distributed to a convenient, random sample of 150 GPs working in different cities and towns all across Pakistan from July 2019 to December 2019. Some of the questionnaires were distributed personally and others were sent by courier services; no reminders were sent. Questionnaire was self-designed after discussion with the help of a statistician and validated on a pilot sample of 20 GPs (Table 1). Vague or un-clear questions were removed. The questions were formulated to assess the knowledge regarding epidemiology and pathogenic role of *H. pylori* (questions 1-4), its diagnosis (question 5), treatment (questions 6,7), complications (questions 8, 9) and follow-up testing (question 10). The close-ended questionnaire with two only two options (YES or NO) was used to facilitate completion in a short time (about 5 minutes) to obtain greater number of responses in a relatively short period of time. And since, the questionnaire was addressed to highly educated and professional personnel, we used the close-ended approach. An informed consent was taken all the study subjects. The study was conducted according to the ethical principles of

Declaration of Helsinki. Data was analyzed by (SPSS) version 20.0.

RESULTS

Out of 150 questionnaires sent, a total of 119 responses were returned and out of them 46.2% males and 53.8% females. Overall mean age of the respondents was 42.6±8.2 years. Majority of respondents (73.1%) were graduates with basic medical qualification. Among these, 56.3% were working in private clinics and 43.7% in hospitals. Table.1

Regarding the knowledge of various fundamental aspects of *H. pylori* infection, 45.4% to 58% of the respondents provided positive response to different questions. Lowest score (45.4%) was obtained regarding the question of whether *H. pylori* constitutes an important public health problem and highest score (58%) was obtained on the question regarding the infectious nature of peptic ulcer disease. Among various demographic characteristics of GPs, age correlated significantly with the level of knowledge to questions 1, question 3 and question 4 (p<0.05) but not to question 2 (p=0.53). Gender and place of work of GPs did not show correlation with the questions related to epidemiology and pathogenic role of *H. pylori*. Fresh graduates were more aware of importance and epidemiology of *H. pylori* than older GPs for questions 4 and 1, (p<0.05).

Diagnosis of *H. pylori* infection: There was one question regarding diagnostic algorithm of *H. pylori* infection, as it incorporates all tests required to diagnose it. A total of 58 (48.7%) GPs were aware of the diagnostic algorithm to follow for an accurate diagnosis of active *H. pylori* infection, whereas slightly more than half (51.3%) GPs were not aware of the diagnostic approach to follow for investigation. Age, gender and workplace of GPs did not correlate with question 5 regarding algorithm of diagnosing *H. pylori*.

Treatment of *H. pylori* infection: There were two questions on treatment of *H. pylori*, as it is a fundamental factor in controlling and reducing the disease burden. 57(47.9%) GPs thought that *it should be treated* if detected and 60(50.4%) GPs were aware of updated guidelines on the diagnosis and management of *H. pylori*. Gender and workplace of GPs correlated with question 7 regarding latest guidelines of treatment of *H. pylori* (p<0.05).

Complications of *H. pylori* infection: There were two questions on complications of *H. pylori*; these are crucial in increasing seriousness of the illness. A total of 60(50.4%) GPs were aware of the long-term complications of persistent, active *H. pylori* infection, and 57 (47.9%) were aware of increasing problem of antibiotic resistance in the management of *H. pylori*. Age, gender and workplace of GPs did not correlate with question 5 regarding the algorithm about diagnosing *H. pylori* infection.

Follow-up of *H. pylori* infection: There was one question related to follow-up of patients of *H. pylori* infection, as this infection frequently recurs. A total of 61 (51.3%) GPs thought that eradication of *H. pylori* should be confirmed by repeat testing. Only workplace of GPs correlated with question 10 regarding the follow-up testing of *H. pylori* infection (p value=0.04).

Table.1. Demographic characteristics of the study participants n=119

Variables		Statistics
Age (mean±SD)		42.6±8.2 years
Gender	Male	55 (46.2%)
	Females	64 (53.8%)
Working place	Private clinic	67 (56.3%)
	Hospital	52 (43.7%)

DISCUSSION

This is an important study on the assessment of basic knowledge, awareness and understanding of GPs regarding an important human pathogen, which is highly prevalent in general population, particularly in the developing world. Since, most patients present first to GPs regarding their upper GI complaints, it is important to investigate the ground facts and then enhance the level of knowledge and understanding of this group of healthcare professionals through various strategies.¹⁶

In this current digital era, knowledge and evidence-based management of diseases is growing at a fast pace, forcing national and international organizations to generate evidence-based and updated guidelines (by specialists) but their impact at the GP level, who are the end users in the prevailing healthcare delivery system, is not fully realized, especially in developing countries.^[6-12] In this context, there is also an explosion of information about diagnosis and management of *H. pylori* infection since its discovery in 1983, but a number of surveys during past decade have shown that this has caused more confusion than clarity or consensus in the minds of GPs regarding its diagnosis and management.^[16] Studies have shown different thoughts among gastroenterologists and GPs in attitudes and beliefs about relationship between *H. pylori* infection and upper GI diseases, and that could be the reason of different approaches to manage patients.^{13, 16, 17}

Before implementation of any strategy, it is important to know the basic knowledge of the target population about the problem and identify the lacunae in knowledge and awareness of the population. This will help in proper planning and implementation of appropriate strategies for increasing awareness, continued medical education and management of such problems.¹⁶

The current study shows that the knowledge level of GPs in Pakistan is only modest regarding almost all aspects of *H. pylori* infection. Slightly higher than half of GPs (54.6%) did not consider *H. pylori* as an important public health hazard. This is not only a problem of Pakistani GPs, but a worldwide problem. Different studies have analyzed different aspects of knowledge about the infection. A global survey of primary care physicians (PCPs) by Huang et al. in 2003 found that overall, 92.1% of PCPs were concerned about the pathological role of *H. pylori*, however, PCPs from South Africa were less concerned about its pathological role (63%), than PCPs from other regions of the world (93.2%).¹⁶ Our results are even lower than those of South African PCPs.¹⁶ Similarly, only 46.2% GPs in our survey considered that *H. pylori* is a declared carcinogen, as compared to 61% PCPs in a worldwide survey.^[16] This is highly alarming piece of information and must be addressed seriously and aggressively by all stakeholders in Pakistan. There was

seen a little impact on Korean GPs' clinical practice of the guidelines on the treatment of *H. pylori*.¹⁷ Bolton et al. from Israel, did internet-based survey of 314 PCPs and found that overall PCPs adherence to management guidelines is low. In their study, guidelines was linked to the younger age, clinic location at central urban and highly of *H. pylori* cases.¹⁸ A Turkish study on 109 GPs also mentioned gaps in knowledge and practice of *H. pylori* infection.¹⁹ Similarly, a study in Italy on 100 randomly selected GPs found the persistence of uncertainty regarding indications for *H. pylori* treatment, diagnostic testing, and patients follow-up.¹⁴ Another study from Iran showed better results in interns as compared to GPs for both knowledge and practice regarding *H. pylori* infection.²⁰

A targeted education of PCPs may be an effective strategy to enhance compliance of guidelines of the treatment of *H. pylori* infection as reported by Bolton et al.²¹ Internet and social media platforms may prove effective tools of more information-sharing among PCPs and gastroenterologists, and thereby enable a better approach to *H. pylori* diagnosis and management. Currently, fewer than 40% of PCPs provide *H. pylori* treatment according to guidelines recommendations.²¹ Therefore, it is imperative to increase the dissemination of the educational initiatives for continued medical education and interaction of PCPs with specialists for better compliance to the standard guidelines and recommendations.²²⁻²⁴ There are some limitations of the study as only assessed the level of understanding and knowledge of *H. pylori* infection but not about their actions/practice. We believe that practice is based on sound knowledge and if knowledge is deficient, practice will also be deficient. The sample size is also not very large, but we think, it is sufficient to give baseline data on the subject. We also suggest to exercise some caution in generalization of these results. The questionnaire was self-built and it needs validation in more studies.

CONCLUSION

In conclusion, our results demonstrated that most Pakistani GPs do not have enough knowledge about many aspects of *H. pylori* infection. In addition, many GPs are not fully aware of standard guidelines for diagnosis, management and prevention of this disease. There is a need to increase the awareness of GPs on this highly prevalent microbial infection.

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