



Assessment of Asthma Prevention Knowledge and Practices Among Rural Residents in Waghodia: A Descriptive Study

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Abstract

Introduction: Asthma, a chronic inflammatory disorder of the airways, presents episodic breathing difficulties, affecting individuals across all age groups. The study aimed to assess the knowledge and practice regarding asthma prevention among rural residents in selected villages of Waghodia, Vadodara.

Methods: This non-experimental descriptive study involved 100 rural individuals selected via convenient sampling. A structured knowledge questionnaire was administered to evaluate participants' understanding of asthma prevention. Descriptive statistics were used to analyze the collected data.

Results: Analysis revealed a significant association between education level and previous knowledge with knowledge scores. However, demographic variables such as age, gender, education level, type of family, history of illness, previous knowledge, incidence, and treatment did not correlate significantly with practice scores.

Conclusions: The study emphasizes the importance of education and previous knowledge in influencing knowledge scores regarding asthma prevention. However, it underscores the necessity for heightened attention and knowledge dissemination among rural populations regarding asthma prevention strategies.



Keywords:

Asthma, Knowledge, Practice Checklist, Rural Population.

Introduction:

Asthma is a chronic respiratory disease characterized by episodic difficulty in breathing, often beginning in childhood and affecting all age groups.^{1,2} It is caused by inflammation of the airways, leading to symptoms such as wheezing, breathlessness, chest tightness, and coughing. Various factors, including genetic predisposition, respiratory infections, allergies, and environmental exposures, can contribute to the development of asthma.^{3,4,5,6} Despite being a non-communicable disease, asthma is prevalent globally, with an estimated 235 million people affected worldwide and approximately 180,000 deaths annually.^{7,8,9,10} The disease is often underdiagnosed and undertreated, particularly in low- and middle-income countries, highlighting the need for improved awareness and management strategies, especially in rural areas where access to healthcare and education may be limited.^{11,12,13,14}

Research indicates that asthma management and prevention are hindered by a lack of understanding among patients and healthcare providers, particularly in rural settings. Studies in rural India and Pakistan have shown that asthma patients often lack knowledge about their condition, including triggers and proper treatment, leading to suboptimal management. Additionally, misdiagnosis and underdiagnosis of asthma in rural areas due to a lack of trained healthcare professionals and diagnostic tools further complicate the issue. To address these challenges, educational interventions and awareness programs are crucial to improve asthma care in rural populations. Efforts to increase knowledge and access to appropriate treatment can help alleviate the burden of asthma and improve the quality of life for those affected.

Research Methodology:

The methodology chapter outlines the systematic approach undertaken to collect data for the study, focusing on the assessment of asthma prevention knowledge and practices among rural residents in selected villages of Waghodia. It describes the study population, sample selection, data collection techniques, survey administration, and data analysis procedures. The research approach employed was quantitative, utilizing a non-experimental research design. Variables, including an independent variable (self-structured questionnaire on asthma prevention knowledge and practice) and dependent variables, were identified and measured. The target



population consisted of rural residents in community areas, with data collection conducted in the villages of Waghodia, approximately 10 km from Vadodara city. A sample size of 100 was selected using a non-probability convenient sampling technique. The development of the research tool involved a literature review, expert consultation, and tool refinement for content validity. The tool comprised socio-demographic data, a knowledge questionnaire, and a practice checklist related to asthma prevention. Inclusion criteria for participants included willingness to participate and availability during data collection, while exclusion criteria comprised individuals below 18 years of age. The study aimed to uncover the root causes of asthma in the area, contribute to the development of future guidelines, and aid in asthma prevention efforts. The validity of the tool was ensured through expert consultation, and reliability was assessed for consistent measurement results. Data collection involved obtaining formal permissions and participant consent, followed by survey distribution and systematic assessment. Data analysis included descriptive statistics for mean, frequency, and standard deviation, and inferential statistics, such as the chi-square test, to examine associations. This comprehensive methodology ensures the scientific rigor and validity of the study's findings, providing valuable insights into asthma prevention knowledge and practices in rural settings.

Result:

Section I

Table 1: Frequency And Percentage of Demographic Data of The Participants.

Sr. No.	Demographic variables	Frequency	Percent
1.	Age		
	30 years & below	24	24.0
	31 years to 45 years	50	50.0
	46 years to 60 years	22	22.0
	61 years & above	4	4.0
2.	Gender		
	Male	42	42.0
	Female	58	58.0



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3.	Education		
	Primary	40	40.0
	Secondary	43	43.0
	Graduation	17	17.0
4.	Types of family		
	Joint family	60	60.0
	Nuclear family	40	40.0
5.	History illness		
	Yes	40	40.0
	No	60	60.0
6.	Previous knowledge		
	Yes	55	55.0
	No	45	45.0
7.	Incidence		
	Yes	40	40.0
	No	60	60.0
8.	Treatment		
	Yes	39	39.0
	No	61	61.0

Table 1 presents the frequency and percentage distribution of demographic variables among participants. The largest proportion of participants falls within the age group of 31-45 years, constituting 50% of the sample, while 24% are aged 30 years and below, and only 4% are aged 61 years and above. The study comprises 58% female and 42% male participants. Regarding education level, the highest percentage of participants (43%) have completed secondary education, while the lowest percentage (17%) have attained graduation or higher education. The majority of participants (60%) reside in joint family households, with 40% living in nuclear family settings. Additionally, 60% of participants report no history of illness, while 40% indicate a history of illness. Fifty-five percent of participants possess prior knowledge of asthma, whereas 45% do not. Furthermore, 61% of participants have not received treatment for asthma, while 39% have undergone treatment.



Section- II

Table 2: Mean, Median, Mode and Standard deviation score of the knowledge and practice category

	Knowledge	Practice
Mean	7.27	27.23
Median	7	27
Mode	7	27
Std. Deviation	2.335	2.098

Table 2 presents the descriptive analysis for knowledge and practice-related scores. The mean knowledge score is 7.27, indicating an average level of knowledge among participants. The median value of 7.00 suggests that half of the participants scored below 7.00, while the other half scored above this value. The mode of 7 indicates that 7 was the most common score among participants. Additionally, the standard deviation of 2.335 suggests a moderate level of variability in knowledge scores.

For practice-related scores, the mean score is 27.23, representing an average level of practice application. The median value of 27.00 indicates that half of the participants scored below 27.00, while the other half scored above it. The mode of 27 suggests that 27 was the most frequently reported practice score. Similarly, the standard deviation of 2.098 suggests a moderate level of variability in practice scores.

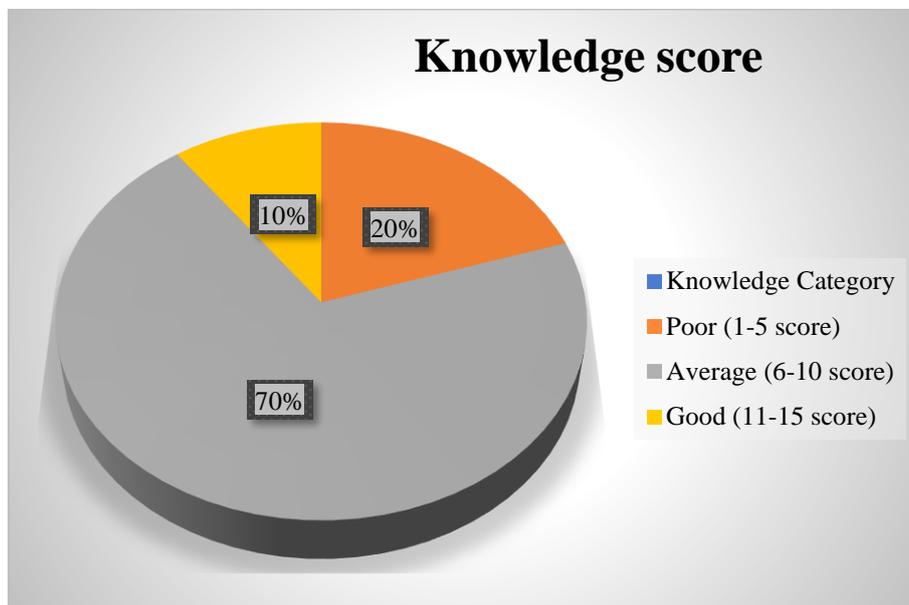
Table 3: Poor, average and good score showing the percentage of knowledge category

Knowledge Category	Percentage
Poor (1-5 score)	20%
Average (6-10 score)	70%
Good (11-15 score)	10%

Table 3 illustrates the distribution of participants' knowledge scores across three defined categories. Approximately 20% of participants scored between 1 to 5, indicating limited understanding or awareness of asthma prevention. The majority of participants (70%) scored



between 6 to 10, indicating a moderate level of knowledge. A minimum of 10% of participants scored between 11 to 15, indicating a higher level of understanding in asthma prevention.

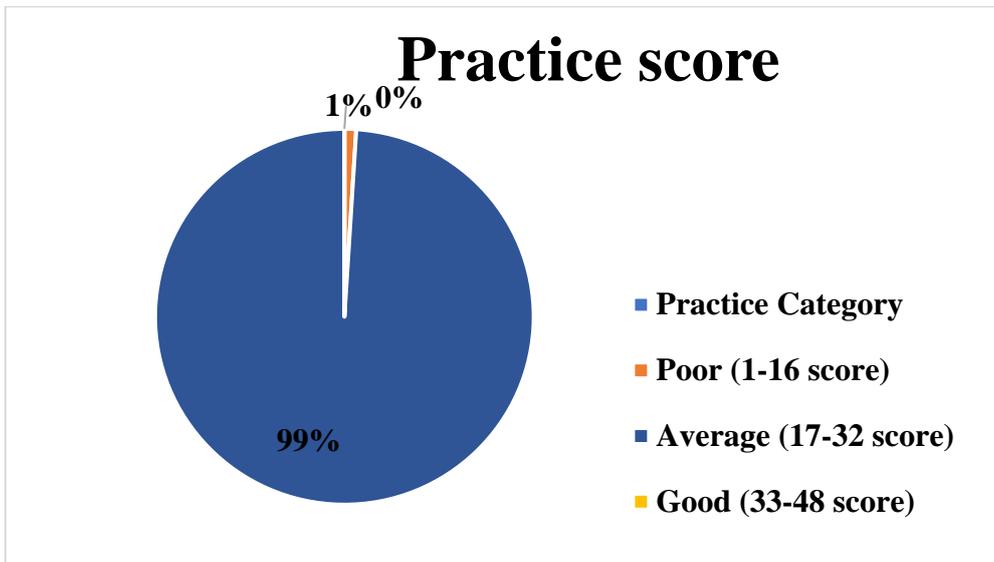


Graph 3: The pie graph depicts the percentage distribution of knowledge categories

Table 4: Poor, average, good score showing the percentage of the practice category.

Practice Category	Percentage
Poor (1-16 score)	01%
Average (17-32 score)	99%
Good (33-48 score)	00%

Table 4 displays the distribution of participants' practice scores across three categories. Only 1% of participants fell into the poor practice category, indicating a limited application of knowledge. The majority (99%) of participants were categorized as having average practice, demonstrating effective application of theoretical knowledge in practical situations. This highlights a strong correlation between knowledge and practical implementation in asthma prevention. Notably, no participants were classified in the good practice category.



Graph 4: The pie graph illustrates the percentage distribution of practice categories

Section III

Table 5: Findings Related to the association of the demographic variables with the Knowledge Score

Sr. No.	Demographic variables	F	Knowledge Score			X ² Value	df	p-value
			Poor	Average	Good			
1	Age							
	30 years & below	24	3	20	1	7.874	6	0.247
	31 years to 45 years	50	14	29	7			
	46 years to 60 years	22	3	17	2			
	61 years & above	4	0	4	0			
2	Gender							
	Male	42	8	32	2	2.416	2	0.299
	Female	58	12	38	8			
3	Education							
	Primary	40	13	26	1	15.286	4	0.004*
	Secondary	43	5	29	9			
	Graduation	17	2	15	0			
4	Types of family							
	Joint family	60	14	42	4	2.5	2	0.287
	Nuclear family	40	6	28	6			
5	History illness							
	Yes	40	8	29	3	0.476	2	0.788
	No	60	12	41	7			
6	Previous knowledge							



	Yes	55	5	43	7	9.351	2	0.009*
	No	45	15	27	3			
7	Incidence							
	Yes	40	8	29	3	0.476	2	0.788
	No	60	12	41	7			
8	Treatment							
	Yes	39	8	28	3	0.378	2	0.828
	No	61	12	42	7			

Here, * showing the significant value.

Table 5 displays the results of the analysis examining the relationship between demographic variables and knowledge scores within the studied population. The findings reveal a significant association between education level and previous knowledge with knowledge scores. Specifically, the chi-square test yielded a p-value of 0.004, indicating a significant relationship between education level and knowledge scores. Similarly, participants were divided into two groups based on previous knowledge, and the chi-square test revealed a p-value of 0.009, suggesting a significant association between previous knowledge and knowledge scores. However, variables such as age, gender, type of family, history of illness, incidence, and treatment did not show a significant association with knowledge scores.

Section III

Table 6: Findings Related to the association of the demographic variables with the Practice Score

Sr. No.	Demographic variables	F	Practice Score			X ² Value	df	p-value
			Poor	Average	Good			
1	Age							
	30 years & below	24	0	24	0	3.581	3	0.31
	31 years to 45 years	50	0	50	0			
	46 years to 60 years	22	1	21	0			
	61 years & above	4	0	4	0			
2	Gender							
	Male	42	0	42	0	0.731	1	0.392
	Female	58	1	57	0			
3	Education							
	Primary	40	1	39	0	1.515	2	0.469
	Secondary	43	0	43	0			
	Graduation	17	0	17	0			
4	Types of family							
	Joint family	60	1	59	0	0.673	1	0.412



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	Nuclear family	40	0	40	0			
5	History illness							
	Yes	40	1	39	0	1.515	1	0.218
	No	60	0	60	0			
6	Previous knowledge							
	Yes	55	0	55	0	1.235	1	0.267
	No	45	1	44	0			
7	Incidence							
	Yes	40	1	39	0	1.515	1	0.218
	No	60	0	60	0			
8	Treatment							
	Yes	39	1	38	0	1.58	1	0.209
	No	61	0	61	0			

Table 6 presents the analysis of the relationship between demographic variables and practice scores within the studied population. The results indicate that none of the demographic variables, including age, gender, education level, type of family, history of illness, previous knowledge, incidence, and treatment, showed a significant association with practice scores.

Discussion:

The present study assessed the knowledge and practice regarding the prevention of asthma among rural populations in selected villages of Waghodia. The findings revealed that a majority of participants had average to poor knowledge and practice scores related to asthma prevention. These results are consistent with previous research conducted by Nsereko, E et al. (2019),¹⁵ which also found low levels of knowledge and practices regarding asthma prevention among rural populations in North India. Another study by Jha, M. K., et al. (2021)¹⁶ supported these findings, showing that a significant portion of participants lacked understanding of asthma symptoms and preventive measures. Additionally, the study by E. Vlaski and J.A. Lawson (2013) highlighted urban-rural differences in asthma prevalence among adolescents, suggesting that environmental factors may influence asthma rates in different regions. These findings underscore the importance of targeted health education initiatives to improve asthma knowledge and practices in rural communities.¹⁷

The correlation between knowledge and practice regarding asthma prevention was also explored in this study. While education level and previous knowledge were significantly associated with knowledge scores, demographic variables such as age, gender, type of family, history of illness, incidence, and treatment did not show a significant association. This aligns



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with the findings of a study by Johanna et al. (2021), which demonstrated that having a relative with asthma was associated with better knowledge and practices regarding asthma prevention. Overall, these findings emphasize the need for comprehensive public health interventions to enhance asthma awareness and management practices in rural populations, including targeted education campaigns and improved access to healthcare services.¹⁸

Conclusion:

In conclusion, this study sheds light on the knowledge and practices related to asthma prevention among rural populations in selected villages of Waghodia. The findings highlight a concerning lack of awareness and suboptimal practices regarding asthma prevention, indicating a need for targeted health education interventions. While education level and previous knowledge were found to be significantly associated with knowledge scores, demographic variables such as age, gender, and family type did not show a significant association. These results underscore the importance of tailored public health initiatives to improve asthma awareness and management practices in rural communities, ultimately aiming to reduce the burden of asthma and improve the quality of life for affected individuals.

Nursing Implication:

Nurses in rural areas play a crucial role in addressing asthma challenges. They should prioritize education and support for patients, tailor self-management plans, and regularly assess knowledge and behaviors. Nursing education programs need to enhance asthma content and communication skills. Administrators should allocate resources and advocate for policy changes. Further research is needed to understand and address rural asthma needs, with nurses contributing to evidence-based interventions for better outcomes.

Recommendation:

The recommendations emphasize the importance of investigating factors contributing to low asthma knowledge and practices in rural areas. Future studies should assess educational interventions, socio-demographic impacts, healthcare access barriers, and healthcare providers' knowledge. Evaluating environmental factors' impact on asthma is also crucial. These efforts will inform strategies to enhance asthma prevention and management in rural communities.

Conflict of Interest: In this study, no conflicts of interest exist.



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References:

1. Symptoms associated with asthma. Retrieved from https://www.researchgate.net/publication/327987774_An_Overview_of_Asthma_and_its_treatment
2. Dasgupta, R., MD. (2023, January 5). Causes asthma. Retrieved from <https://www.medicalnewstoday.com/articles/323523#types>
3. American Lung Association Scientific and Medical Editorial Review Panel. (2023, April 19). Asthma causes and risk factors. Retrieved from <https://www.lung.org/lung-health-diseases/lung-disease-lookup/asthma/learn-about-asthma/what-causes-asthma>
4. Narayan Health. (2019, May 21). There is about the asthma related to. Retrieved from <https://www.narayanahealth.org/blog/know-asthma-to-beat-asthma/>
5. Narayan Health. (2019, May 21). There is more information about the Asthma. Retrieved from <https://www.narayanahealth.org/blog/know-asthma-to-beat-asthma/>
6. Dasgupta, R., MD. (2023, January 5). Asthma is characterized by. Retrieved from <https://www.medicalnewstoday.com/articles/323523#types>
7. Goodwin, M., MD, FAAFP, Holland, K., & Goldman, L. (2023, January 30). Asthma. Retrieved from <https://www.healthline.com/health/asthma#symptoms>
8. American Lung Association Scientific and Medical Editorial Review Panel. (2023, April 19). Retrieved from <https://www.lung.org/lung-health-diseases/lung-disease-lookup/asthma/learn-about-asthma/what-causes-asthma>
9. Narayan Health. (2019, May 21). There is information about the Asthma prevention. Retrieved from <https://www.narayanahealth.org/blog/know-asthma-to-beat-asthma/>
10. Goodwin, M., MD, FAAFP, Holland, K., & Goldman, L. (2023, January 30). Asthma diagnosis. Retrieved from <https://www.healthline.com/health/asthma>



Glorious International Journal of Nursing Research

(An International Peer-Reviewed Refereed Journal)

ISSN: 2583-9713

www.gloriousjournal.com

11. Goodwin, M., MD, FAAFP, Holland, K., & Goldman, L. (2023, January 30). Asthma treatment. Retrieved from <https://www.healthline.com/health/asthma>
12. Global Initiative for Asthma. (2021). Global Strategy for Asthma Management and Prevention. Retrieved from <https://ginasthma.org/wp-content/uploads/2021/04/GINA-Main-Report-2021-V2-WMS.pdf>
13. Gupta, P., Oommen, A. M., & Balamugesh, T. (2015). Prevalence of bronchial asthma and its association with smoking habits among adult population in urban and rural areas of Ahmedabad district. *Journal of Family Medicine and Primary Care*, 4(1), 64–68. <https://doi.org/10.4103/2249-4863.152245>
14. World Health Organization. (2021). Asthma. Retrieved from <https://www.who.int/news-room/q-a-detail/asthma>
15. Nsereko, E., Musinguzi, G., Kirenga, B. J., Worodria, W., Mukasa, B., Nakiyingi, L.... Joloba, M. L. (2019). Misdiagnosis and mistreatment of asthma among adults ≥ 40 years old in a rural district in Uganda. *Allergy, Asthma & Clinical Immunology*, 15, 6. <https://doi.org/10.1186/s13223-019-0323-6>
16. Jha, M. K., Prasad, R., Singh, A. R., Kumar, S., & Kumar, A. (2021). Prevalence, management and awareness of asthma among school children in rural areas of Bihar, India. *Journal of Family Medicine and Primary Care*, 10(2), 874-878. https://doi.org/10.4103/jfmpe.jfmpe_1394_20
17. Vlaski, E., & Lawson, J. A. (2013). Urban-rural differences in asthma prevalence among young adolescents in Canada. *Allergologia et Immunopathologia*, 41(5), 329-333. <https://doi.org/10.1016/j.aller.2012.09.011>
18. Heldin, J., Malinovschi, A., & Johannssen, A. (2022). Clinical remission of asthma and allergic rhinitis: A longitudinal study. *Allergy, Asthma & Clinical Immunology*, 18, 6. <https://doi.org/10.1186/s13223-022-00780-2>