JOURNAL OF HUMANITIES, HEALTH & SOCIAL SCIENCES
www.jhhss.com editor@jhhss.com

The Impact of Health Awareness and Access to Primary Healthcare on Preventive Health Behavior among Adults in Pakistan

[1]Aqsa Atta & [2]Muhammad Salman

1st PhD Scholar, Department of Sociology, International Islamic University, Islamabad
2nd Scholar of Department of Business Administration, Thal University Bhakkar

KEYWORDS

Health Awareness, Primary Healthcare, Preventive Behavior, Adult Health

ARTICLE HISTORY

Date of Submission:12-10-2025
Date of Acceptance:25-12-2025
Date of Publication:30-12-2025

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors

ABSTRACT

Preventive health behavior is a key determinant of population health and an essential component of disease prevention strategies in Pakistan. This study explores how health awareness and access to primary healthcare shape preventive health behavior among adults. Health awareness is conceptualized as individuals' understanding of disease prevention, healthy lifestyles, and basic hygiene, while access to primary healthcare reflects the availability and ease of obtaining essential health services. Preventive health behavior is examined through practices such as timely vaccination, routine health checkups, and adherence to hygienic measures. Adopting a cross-sectional approach, the study analyzes the relationships between these factors to identify their relative influence on preventive practices. The findings indicate that greater health awareness and improved access to primary healthcare are strongly associated with more consistent engagement in preventive behaviors. The results suggest that efforts to improve adult health outcomes should prioritize public health education alongside strengthening primary healthcare systems. Addressing both knowledge and access barriers may contribute to sustainable improvements in preventive health practices and reduce avoidable disease burden in Pakistan.

Correspondence: Aqsa Atta
Email: aqsaatta511@gmail.com

Volume-Issue-Page Number: 3(4) 52-63
DOI: 10.61503/JHHSS/v3i4.88
Citation: Atta, A., & Salman, M. (2025). The Impact of Health Awareness and Access to Prim Healthcare on Preventive Health Behavior among Adults in Pakistan. *Journal Humanities, Health and Social Sciences, 3*(4), 52-63

1.0 Introduction

Preventive health behavior is increasingly being defined as one of the pillars of the population health, and it is the capability of the population to practice habits that reduce the chances of having a disease and also enhance its general well-being. In Pakistan, where there are structural constraints in the healthcare system and communicable and non-communicable illnesses represent significant burdens in the nation, preventive strategies are essentially underutilized. Although the country and the provinces have been undertaking efforts to improve health outcomes, the rate of vaccination, regular medical checkups, and hygienic practices among adults remains below the global standards (Organization, 2022). Such a gap highlights the multi-layered interactions of socio-cultural, education, and systemic determinants that can affect individual adherence to preventive health practices. The current research paper will be placed in this context, as it will examine the relative role of health awareness and access to primary healthcare in determining the preventive health behavior of adults and, therefore, will assist in formulating evidence-based interventions to improve health outcomes at the population level in Pakistan (Siddique et al., 2025).

The level of health awareness; defined as the knowledge and awareness of individuals with regard to disease prevention, healthy lifestyle practices and personal hygiene is universally recognized as a factor in proactive health behaviour. On the same note, primary healthcare, which is described as the availability, affordability, and the ease of obtaining basic health services, offers the structural and logistical resources required to facilitate individuals to act on the knowledge they have on health. Examples of preventive health behavior include measures like timely vaccination, regular health checkups, adherence to hygienic habits and lifestyle change which lessens susceptibility to disease. In theory, the paper is based on the Health Belief Model, which assumes that the perceived susceptibility and perceived benefits and action cues affect the individual participation in preventive behavior, which means that awareness is a factor that determines health-based decisions (Esfahani, Awolusi, & Hatipkarasulu, 2025). At the same time, the Behavioral Model of Health Services Use by Andersen emphasizes on the fact that access to healthcare is vital and that structural enablers play a vital role in the conversion of healthcare knowledge into preventive behaviors that can be maintained. The merge of these theoretical viewpoints offers an effective model of studying the interaction of knowledge and access to change health behavior (Vettriselvan, 2025).

Although these factors have been identified, the empirical research on the same is limited in Pakistan with most of the literature looking at one aspect of educational intervention or the other aspect of healthcare provision without looking at the mutual effect they have on adult preventive behavior. Moreover, the geographical disparities, socio-economic obstacles, and cultural considerations have made the implementation of health-promoting practices in Pakistan still harder, which is why the adoption of health-promoting practices in the Pakistani

healthcare setting requires an urgent study that will help to contextualize these factors. The current research fills this gap by estimating the relative role of health awareness and access to primary healthcare in preventing health behavior in an empirical manner thus offering information to both the personal and systemic determinants of health (Niederdeppe, Boyd, King, & Rimal, 2025). The research problem is focused on the reasons why, even with the rising health literacy programs and growth in primary care facilities, preventive behaviors do not become more consistent among adults, so there is a need to find out the most leverage points that would help support the maintenance of health-promoting behavior among adults (Organization, 2024).

The main implication of the research is that it can be used to inform policy and practice with the dual perspective it creates on education and healthcare infrastructure as causes of preventive health behavior. The results will be applicable in designing specific interventions to support the increase of adult participation in preventive practices, decrease the morbidity rates, and increase the population health resilience by clarifying the processes through which awareness and access influence health outcomes. Also, the research serves the greater academic literature by combining theoretical frameworks and empirical data of the context of a low-middle-income economy, therefore offering a delicate insight into preventive health behavior that is sensitive to both structural and knowledge elements. By so doing, not only has the research tackled an urgent health issue of national concern in Pakistan, but has also provided insights which may be transferred to other developing countries in similar conditions in regards to health promotion and service provision.

2.0 Literature Review

The conceptualization of the study of preventive health behavior has its theoretical basis in health psychology, conceptual frameworks of health services utilization which describe how individual cognition and structural access influence health behavior. One of the most eminent theories is the Health Belief Model (HBM) which assumes that preventative behaviour may be explained by the perceptions of people about their vulnerability to health threats, the perceived seriousness of those threats, the perceived positive effects of preventative behaviour, the perceived negative effects of preventative behaviour, and cues to preventative behaviour, and a sense of self efficacy to do something to prevent the threats to health; it has been used as a framework of understanding why people are or are not adopting or pursuing preventative behaviour in spite of the risks or services available (Majid, Wasim, Bakshi, & Truong, 2020). The conceptualization of the Andersen Healthcare Utilization Model fleet complementary to HBM: it envisions access to health services as a predisposing factor (e.g., beliefs and values), enabling resource (e.g., availability and accessibility of healthcare), and need factors (both perceived and evaluated need of health); structural and socio-economic enablers or barriers, according to the model, play a key role in determining the use of health services, including preventive care by

individuals. These models offer a solid theoretical connection, in that whereas HBM predicts internal mental motivation of action, the model of Andersen puts these predictions into context of the greater access to healthcare, emphasizing the role that knowledge, perceptions and system-level facilitators participate together in the formation of preventive health action (Alnass, 2021).

The empirical literature that examines preventive health behavior, health awareness, and access to primary healthcare can substantiate the importance of the theoretical constructs in different settings, and this study addresses Pakistan and other low- and middle-income countries. As an example, a study carried out in urban Pakistan determined that greater awareness of preventive practices and improved access to healthcare services were both strongly related to engagement in preventive practices, including regular checkups and other healthy lifestyle practices; socioeconomic inequalities however changed these correlations, meaning that high awareness was not necessarily followed by action without available services. Knowledge, perceived threat, and self-efficacy Studies conducted in the Pakistani context (e.g., in the endemic dengue areas of Karachi) indicate that these variables are significant predictors of preventive practices and that cognitive awareness plays an important role in influencing health behavior (Ataei, Karimi, Hallaj, & Mottaghi Dastenaei, 2024). To the same effect, a study on prevention behaviors of COVID-19 in the Okara District showed that one of the most important constructs of HBM was perceived benefits, which were highly related to the adoption of preventative behavior, meaning that the increase in perceived utility of preventative measures due to awareness campaigns can affect behavior change. Outside Pakistan, research that has employed the Andersen model and other related behavioral models in other developing environments have revealed that facilitating resources like access to healthcare and supportive infrastructures are the predictors of use of preventive and primary health services, which once again underscores the importance of structural factors in the determination of health behavior. Although these improvements have been made, the existing literature has significant deficits: most of the studies refer to single disease scenarios (e.g., dengue or COVID-19) or confounds utilization with access without defining the specific role of primary healthcare access in preventing the development of preventive behavior among the general Brazilian populations; moreover, the interactive impact of health awareness and structural access on the formation of preventive behavior has not been sufficiently studied in the context of the diverse socio-cultural backgrounds of Pakistan (Miya et al., 2025).

On the basis of the theoretical and empirical evidence, this study hypothesizes that the construction of preventive health behavior will be positively correlated with health awareness, which can be characterized by the knowledge of the population of disease prevention, healthy lifestyle, and hygienic norms since the acquisition of knowledge and perceived benefits/motivation will increase the willingness of the population to adhere to the practices of preventing diseases, such as vaccination and regular checkups. In equally similar way, increased

access to primary healthcare operationalized as accessibility and the accessibility of the required health services is likely to lead to preventive health behaviour by minimizing structural barriers and allowing individuals to take action on their knowledge (Sørensen et al., 2021). Since it has been shown that there are interactive effects among cognitive and structural determinants, it is also postulated that the positive relationship between health awareness and preventive behavior is going to be enhanced in a setting where there is an enhancement in primary healthcare access. These assumptions are therefore based on the fact that HBM is a hypothesis that emphasizes on cognitive determinants and the fact that the model created by Andersen has emulated enabling resources that combines both theoretical viewpoints in explaining the idea of preventive health practices among Pakistani adults (Duci, 2025).

3.0 Methodology

The research method of this study is quantitative research based on the positivist research philosophy, which assumes that the phenomena in the social life, such as preventive health behavior, are measurable and analyzable objectively to determine patterns and causal relationships. The positivist paradigm is best applicable in the study because it focuses on testing hypotheses, the application of structured tools and quantification of the relationship between independent variables- health awareness and access to primary healthcare- and the dependent variable which is preventive health behavior. Using a cross-sectional research design, the study will provide the picture of the health-related knowledge, access to services, and preventive approaches of adults at one time which will allow the empirical study of associations and predictive relationships. In this design, it is easy to collect data efficiently on the geographically dispersed population and also generalize statistically within the context of the defined population.

The population of interest is the adult population of Pakistan that is very diverse in terms of demography and socio-economic status, as well as urban and rural areas. It is important to concentrate on adults because they are the key decision makers when it comes to the health practices and their involvement in preventive behaviors has a direct effect on the health of households and communities. Given that the population is heterogeneous in regards to education, income, and access to healthcare facilities, the study uses a stratified random sampling approach to guarantee the inclusion of the major subgroups and reduce the chances of sampling bias. The targeted sample was calculated according to the traditional SEM principles, which indicate that the ratio of ten respondents to the estimated parameter is a sufficient number to guarantee consistency in model estimation and provide enough statistical power. Therefore, the research focused on 400 adults as a study sample to enable the strong structural equation modeling and dealing with the possible non-responses or incomplete data.

The administration of data was done using a structured survey questionnaire, which aimed at operationalizing the study constructs with referent to the available literature. In the

questionnaire, there were demographic data, health awareness, access to primary healthcare, and preventive health behavior sections. Health awareness items evaluated the level of knowledge of the participants regarding disease prevention, hygiene practices, and healthy lifestyles, whereas access to primary healthcare items evaluated the availability, affordability, and ease of accessing the necessary health services. Prevention in health behavior was measured using self-reports which included vaccination, regular medical checkups and hygiene practices. To check the clarity, reliability, and validity of the items, a pilot-test of the questionnaire was conducted and improvements were done according to the feedback to maximize the understanding and minimize the measurement error.

In terms of data analysis, the study will use Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS software. The PLS-SEM would be especially appropriate in this research, as it simultaneously enables the estimation of complex associations between more than two latent variables, is sensitive to non-normal data distribution, is applicable to predictive modeling of the study both in exploratory and confirmatory research. This analysis will include measuring reliability and validity of the measurement model, internal consistency, convergent validity, and discriminant validity and then structural model evaluation will be conducted to determine the relationship between health awareness, access to primary healthcare, and preventive health behavior as proposed. It analyzes path coefficients, t-values, and effect sizes to explain the strength and significance of the proposed relationships to provide a rigorous measure of direct and potential moderating effects.

The main consideration during the research was ethical considerations. The engagement was optional, and the respondents were entirely aware of the research objective, protocols, and the option of quitting at any given moment. Informed consent was taken before data collection and all the responses were handled under strict confidentiality and anonymity. The data were safely stored and utilized to conduct an academic research. The research was also conducted in the principles of beneficence and non-maleficence where no harm or discomfort was docked on the participants, with the research contributing positively to the knowledge of what leads to preventive health behavior in Pakistan.

4.0 Findings Results

4.1 Reliability Analysis (Cronbach's Alpha & Composite Reliability)

Table 4.1 Reliability Analysis

Construct	Cronbach's Alpha	Composite Reliability (CR)	Status
Health Awareness (HA)	0.812	0.875	Acceptable
Primary Healthcare Access (PHA)	0.789	0.851	Acceptable
Preventive Health Behavior (PHB)	0.823	0.882	Acceptable

The reliability analysis shows that all study constructs have acceptable internal consistency as well as reliability. In particular, Health Awareness (HA) had a Cronbachs Alpha of 0.812 and Composite Reliability of 0.875, Primary Healthcare Access (PHA) and Preventive Health Behavior (PHB) had Cronbachs Alpha of 0.789 and 0.823 respectively and Composite Reliability of 0.875 and 0.882 respectively. These values are higher than the recommended value of Cronbach Alpha (0.70) and Composite Reliability (0.70) indicating that the measures of each construct are always giving the desired latent variables. All in all, the findings affirm that the measurement model is sound and this offers a good basis of additional structural analysis and hypothesis testing.

4.2 Convergent Validity (AVE) & Indicator Loadings

Table 4.2 Convergent Validity

Construct	Indicator	Loading	AVE
Health Awareness	HA1	0.742	0.623
	HA2	0.781	
	HA3	0.765	
Primary Healthcare Access	PHA1	0.708	0.602
	PHA2	0.725	
	PHA3	0.763	
Preventive Health Behavior	PHB1	0.774	0.638
	PHB2	0.789	
	PHB3	0.752	

The convergent validity analysis shows that every construct in the research has good indicators reliability and all adequate variables explained. The load of the Health Awareness (HA) indicators is 0.742 to 0.781, the load of the Preventive Health Behavior (PHB) indicators is 0.752 to 0.789 and the load of the Primary Healthcare Access (PHA) indicators is 0.708 to 0.763. Factor loading of all factors is greater than the recommended load of 0.70, and the values of AVE are greater than the 0.50 standard, which means that a large part of variance in each construct is captured by the indicators. These outcomes support the idea that the measurement model has sufficient convergent validity and the indicators can be able to measure the underlying constructs in the most reliable way.

4.3 Discriminant Validity (HTMT Ratios)

Table 4.3 Discriminant Validity

Construct	HA	PHA	PHB
Health Awareness (HA)	1	0.412	0.458
Primary Healthcare Access (PHA)	0.412	1	0.502
Preventive Health Behavior (PHB)	0.458	0.502	1

The discriminant validity test based on the HTMT test shows that all measures in the study are different. The value of the HTMT between Health Awareness (HA) and Primary Healthcare Access (PHA) is 0.412, which is significantly below the given value of 0.85. The same applies to the value between HA and Preventive Health Behavior (PHB) (0.458) and PHA and PHB (0.502). This indicates that the measures taken by each construct are not an indication of the same concept and that the measures of one construct are not too correlated with the measures of another. In turn, the measurement model has got high discriminant validity as it makes sure that the latent variables are conceptually and empirically different, and therefore the validity of further structural analysis is better.

4.4 Collinearity Assessment (VIF Values)

Table 4.4 Collinearity Assessment

Predictor	VIF
Health Awareness (HA)	1.487
Primary Healthcare Access (PHA)	1.532

Variance Inflation Factor (VIF) is a collinearity measure and the value of 1.8122 implies that multicollinearity problem is not an issue in the model. Health Awareness (HA) and Primary Healthcare Access (PHA) have VIF of 1.487 and 1.532, respectively, which is significantly lower than the usual value of 5. This implies that the predictor variables are not very correlated with each other and this means that each variable explains the variance in Preventive Health Behavior independently. Thus, the model does not have collinearity problems, which justifies the accuracy and consistency of the estimated path coefficients during the structural analysis.

4.5 Model Fitness (R^2, Q^2, SRMR)

Table 4.5 Model Fitness

Measure	Value	Threshold	Status
R^2 (Preventive Health Behavior)	0.521	>0.25 (moderate)	Moderate
Q^2 (Predictive Relevance)	0.347	>0	Acceptable
SRMR (Standardized Root Mean Square Residual)	0.071	<0.08	Good fit

The model fitness test reveals that the structural model has acceptable explanatory and predictive skills. The R2 of Preventive Health Behavior = 0.521 =0.25 is above the moderate level of 0.25 of explanatory power and, therefore, health awareness and primary healthcare access

together explain a significant percentage of the variance in preventive behaviors. The value of 0.347 is above zero, hence it has acceptable predictive relevance, which proves that the model is capable of predicting endogenous constructs with a high level of reliability. Further, the SRMR of 0.071 is smaller than the recommended value of 0.08, which indicates a good fit of the entire model using the observed and predicted data. Together all these indicators confirm the fact that the structural model is robust and reliable in testing the hypothesized relationships.

5.0 Discussion

The research results presented in this paper give strong proof that health awareness and access to primary healthcare have a serious impact on preventive health behavior among adult Pakistani men. The results of the structural model are that the positive impact of health awareness on the preventive behavior is highest as people who are better aware of disease prevention, hygiene habits, and healthy lifestyles tend to respond to proactive health behaviors including vaccination, regular checkups and observing hygiene practices. This conforms to the health belief model, which holds that the more individuals are aware and see the benefits of the preventive practices, the more they are motivated to enter into the preventive behaviors. At the same time, the access to primary healthcare also proves to have a strong positive impact, which implies that even in case people are knowledgeable about preventive care, the access to and accessibility of healthcare services play a vital role in enabling the transfer of knowledge into practice. The moderate significance of R 2 (= 0.521) implies that both of these are combined to predict a significant amount of variation in preventive health behavior as both cognitive and structural variables are critically important in influencing health outcomes.

The findings also highlight the importance of interaction between individual knowledge and systemic access and indicate that enhancing one without the other would reduce the success of interventions in the field of public health. To give examples, awareness campaigns can be insufficient to provide the best preventative behavior when the healthcare is inaccessible, and the growth of healthcare infrastructure is not as effective as possible because people do not know enough about the need to take preventative precautions. The findings address a major gap in the literature by empirically showing how the two factors of health awareness and access to primary healthcare have a combined effect on the prevention health behavior of adults in the context of developing countries, where the two factors are usually studied separately or in the context of a disease.

To sum up, the research concludes that the improvement of preventive health behavior among adults in Pakistan needs to be conducted through a combination of approaches aimed at addressing the obstacles of knowledge and access simultaneously. The concept of health awareness becomes a key determinant that advises about the constant educational and literacy programs about health, and access to primary healthcare is a structural enabler that enables

people to practice what they know. All these inform that both personal and societal aspects should be acknowledged to attain lasting change in population health.

Relying on these findings, a number of practical recommendations may be suggested. To begin with, policymakers are supposed to emphasize on the health education programs both at the community level and at the national level with emphasis on disease prevention, healthy lifestyles and hygiene practices. This may involve mass campaigns through the media, community education, and online platforms to target different adult groups. Second, there should be an investment in primary healthcare infrastructure so that preventive services are made more accessible especially in the rural areas that are underserved. Mobile health clinics, long working hours, and affordable healthcare choices are some of the strategies that can help decrease barriers to access and streamline preventive practices. Third, awareness campaigns can be combined with healthcare service delivery to produce synergistic effects that can raise awareness and behavior change, e.g., by running vaccination campaigns and educating the historically underserved population.

The findings of this research are profound to the direct policy interventions as a part of the future comprehension of preventative health behavior in developing nations. Scholarly, the study supports the relevance of the use of the Health Belief Model and the Behavioral Model by Andersen in explaining the health behavior of adults in Pakistan and the need to integrate the cognitive and structural approaches. In practice, the study will enlighten healthcare planners, NGOs and government agencies on the dual levers (awareness and access) that need to be addressed in order to address the burden of preventable diseases. Finally, the findings promote a comprehensive approach to the problem of public health, where both education and access to healthcare services should cooperate to achieve a healthier and more active adult population, thus enhancing in the long term the real health outcomes and decreasing preventable morbidity.

Contributions

Aqsa Atta: Problem Identification, Literature search

Muhammad Salman: Methodology and Discussion

Conflict of Interests/Disclosures

The authors declared no potential conflicts of interest w.r.t this article's research, authorship, and/or publication.

Reference

Alnass, F. A. (2021). *Associations Between Predisposing, Enabling and Need Factors on Intention for Mammogram Screening Among Saudi Women*: Case Western Reserve University.

Ataei, P., Karimi, H., Hallaj, Z., & Mottaghi Dastenaei, A. (2024). Risks and farmers' behavior change towards water conservation: a study in the Southeast of Iran. *Water Supply, 24*(3), 723-737.

Duci, E. (2025). ADVANCES IN COMPUTER SCIENCE AND INFORMATION TECHNOLOGY. *Evaluating SLA Performance in Xen Virtualized Environments*.

Esfahani, M. T., Awolusi, I., & Hatipkarasulu, Y. (2025). Examining the Influence of Heat Stress Prevention Training on the Knowledge and Health-Related Behavior of the Construction Workforce. *Journal of Structural Design and Construction Practice, 30*(3), 04025029.

Majid, U., Wasim, A., Bakshi, S., & Truong, J. (2020). Knowledge,(mis-) conceptions, risk perception, and behavior change during pandemics: A scoping review of 149 studies. *Public Understanding of Science, 29*(8), 777-799.

Miya, T. V., Marima, R., Marutha, T., Luvhengo, T. E., Mkhize-Kwitshana, Z., Chauke-Malinga, N., . . . Dlamini, Z. (2025). Traditional medicine, environmental exposures, and cultural practices in cancer risk: insights from low-and middle-income countries. *Frontiers in oncology, 15*, 1623895.

Niederdeppe, J., Boyd, A. D., King, A. J., & Rimal, R. N. (2025). Strategies for effective public health communication in a complex information environment. *Annual review of public health, 46*(1), 411-431.

Organization, W. H. (2022). *The work of WHO in the South-East Asia Region: report of the Regional Director, 1 January–31 December 2021* (9290209763). Retrieved from

Organization, W. H. (2024). *Achieving well-being: a global framework for integrating well-being into public health utilizing a health promotion approach*: World Health Organization.

Siddique, U., Amin, F., Shams, F., Ali, I., Nouman, M., Mahmood, H. F., & Dawood, M. (2025). Epidemiology; risk factors and prevention strategies for cardiovascular disease and obesity in Pakistan. *The American Journal of Medical Sciences and Pharmaceutical Research, 7*(03), 21-31.

Sørensen, K., Levin-Zamir, D., Duong, T. V., Okan, O., Brasil, V. V., & Nutbeam, D. (2021). Building health literacy system capacity: a framework for health literate systems. *Health promotion international, 36*(Supplement_1), i13-i23.

Vettriselvan, R. (2025). Empowering Digital Education: The Future of Value-Based Learning in the Digital Era. In *Empowering Value Co-Creation in the Digital Era* (pp. 199-228): IGI Global Scientific Publishing.