

Original Research

Pharmaceutical interventions: A solution to stop smoking

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Abstract

Background: Smoking has become a worldwide problem and the more problematic is when the youth of any country is highly involved in consuming tobacco that is dangerous for the human being. The Indian youth is involved in smoking-like activities that are dangerous for them. **Objectives:** To analyze the role of new treatment ways including nicotine gum, nicotine patch, and nicotine replacement therapy backed by pharmaceutical interventions to eliminate smoking from Indian society. **Method:** The hypotheses of this study are formed on the basis of previous studies and the identification of gap in practices. This study is based on the cross-sectional data that was collected with the help of a questionnaire based on a five-point Likert scale from the Indian pharma industry people. The sample size for this study was 340 with a response rate of 50%. **Results:** In this study, 179 valid questionnaires were collected back from the respondents, and according to the results, nicotine gum, nicotine patch, and nicotine replacement therapies have a significant ($p < 0.05$) effect on smoker attitudes. **Conclusion:** This study concludes that pharmaceutical interventions are critical to stopping the smoking habit in Indian society, and this contribution is providing a solution to stop smoking by affecting the smoker's attitude and smoking behavior.

Keywords: Nicotine gum; Nicotine patch; Nicotine replacement therapies; Smoker attitude; Smoking behavior

INTRODUCTION

In the recent era of medical advancement, the innovation and transformation of traditional medicines to the modern way of treatment has become critical for the survival of human beings. However, not only medical and modern treatment is approaching to people for providing a sustainable and healthy way of living, but at the same time, diseases are increasing, particularly it is noted in the tobacco industry and its consumption.¹ In India, a large number of the population is involved in consuming tobacco, and taking nicotine has become a habit for people Digard, Proctor, Kulasekaran, Malmqvist, Richter.² According to the study of Maclaskey, Buchholz, Hodges, Bourgeois,³ a large number of researches have been conducted on it, and different ways of treatment are introduced, but the consumption of nicotine is not reduced in India. It is also a fact that the pharmaceutical industry of India is working on a

limited pattern to develop new ways and effective treatments and therapies to reduce the consumption of nicotine from the people of India.¹ On the other hand, contrary to the Indian pharma industry, the different rich and advanced countries in medicines are working on the pattern to improve the health of chain smokers by reducing their consumption of nicotine to limit their smoking behavior.⁴

Nicotine gum is one of the developed alternatives that is widely being used in different rich and advanced countries to reduce the consumption of tobacco.³ It is believed that with the help of this gum, doctors are improving the standard of living of the people because this gum provides the alternative nicotine to reduce the level of tobacco consumption.⁵ Similarly, another alternative for tobacco consumption is a nicotine patch. This way of treatment is also used by the medical field to treat the people of different countries who are involved in tobacco consumption since it was invented by the pharma industry.⁵ Importantly, the modern treatment for nicotine consumption is nicotine replacement therapy which has a critical impact on smoking behavior of people.¹ In Norway, nicotine replacement therapy is being practiced on a larger scale, to ensure that the large consumption of tobacco should be reduced, and the people must be treated in effective ways for their betterment.⁴ In this regard, the attitude of the smoker matters a lot, and to change this attitude, the government and other regulatory authorities are spreading social awareness programs to educate the people to realize them smoking is not better for them.⁶ Also, the behavior of smoking behavior of people refers to the habit and circumstances, in which the smokers are ready to get all the information about their smoking patterns.⁵ The behavior of smokers varies from person to person, and it is continuously changing over time.

The objective of this study is to identify to what extent the pharmaceutical industry is contributing to providing a solution

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to stop smoking among the Indian people. It is due to a fact that no study earlier has considered the role of nicotine gum, nicotine patch, and nicotine replacement therapy to change the attitude of Indian smokers. In this way, this study aims to analyze to what extent pharmaceutical interventions are important to provide a way for the Indian people to stop smoking. In this regard, the study is designed to understand the role of nicotine gum, nicotine patch, and nicotine replacement therapies in modifying and reshaping the behavior of Indian smokers who are in large quantities.

The significance of this study is that it is designed to provide a theoretical contribution to the literature because a clear theoretical gap was identified related to the theoretical framework of this study. At the same time, this study is to provide the practical implications that are important not only for the pharma industry but at the same time, for the smokers as well to consider these all variables concerning provide a different way and design a gameplan for stopping the smoking behavior of the people. Additionally, this study would be useful for designing the strategies for fundamental literary information about the smoker attitude and smoking behavior of the Indian people that would ultimately help the Indian pharma industry to work in a new and targeted direction for getting things differently.⁵ Also, the relationship between the theoretical framework of the study would help pharmacist to treat people in a new direction.

ROLE OF NICOTINE GUM AND SMOKER ATTITUDE

Nicotine gum is one of the modern treatment medicines that is widely been used as an alternative to taking nicotine from tobacco that is dangerous for the health of the human being.⁴ It is a fact that smokers are addicted to the consumption of tobacco because they get this addiction due to the reaction of nicotine in their bodies.⁷ However, the government and other concerned authorities are working to improve the health of people by stopping them from taking nicotine from tobacco, these authorities are working with different pharma industries worldwide to introduce new ways of treatment.⁸ In advanced and rich countries like the USA, the pharma industries are working to ensure the standard of living of people with the help of nicotine gum as an alternative to getting nicotine from tobacco.⁵ Moreover, it is not an easy task to influence the attitude of smokers to motivate them to not consume cigarettes Taylor, Claire, Campbell, Coleman-Haynes, Leonardi-Bee, Chamberlain, Berlin, Davey, Cooper, Coleman,⁹ but it is an alternative way of therapy for getting betterment. It is noted that most smokers believe that it would be a useless and hard job to reduce the consumption of nicotine because it has become their habit now.⁶ Meanwhile, according to Fang, Lu, Lin, Kuo, Sun, Chen, Chang,¹ the smokers who were consuming tobacco in the past believed that with the help of different alternatives including nicotine gum it has become easier for them to give up the consumption of tobacco. The study of Fernandes, Oliveira, Silva, Santos¹⁰ demonstrates that it is also important to consider that human perception is different from

person to person and in this regard, the responsibility of the authority is to ensure that the conception of tobacco should be reduced in society. The backward countries are the target market of the tobacco industry because it is believed that the uneducated people are more addicted and the potential buyer of cigarettes.^{11,12} In this regard, the responsibility of the government and other regulatory authorities is to consider the role of nicotine and provide different alternative ways to reduce its consumption of it.¹³ Until and unless, the government would not be involved in this procedure of limiting the consumption of smoking in society, it would be difficult for civil society and the pharma industry to educate the people about not consuming tobacco.

H1. There is a relationship between nicotine gum and a smoker's attitude.

ROLE OF NICOTINE PATCH AND SMOKER ATTITUDE

The nicotine patch is an innovation of the medical industry that is one of the alternatives that are used for reducing the consumption of nicotine from tobacco and cigarettes.^{4,14} In modern times, different researches are being conducted to introduce the modern time and the different dynamics for providing nicotine to the people who are addicted smokers.¹⁰ In the urban areas of developed countries Maclaskey, Buchholz, Hodges, Bourgeois,³ different companies are designing and producing nicotine patches for consumers, because it is believed that with the help of this nicotine patch the behavior of consumers would be negative to consuming cigarettes. On the one hand, it is also perceived that some consumers believe that smoking is injurious to health that's why they go for nicotine patches for getting nicotine.^{15,16} On the other hand, some consumers believe that smoking is not environmentally friendly in this regard, to avoid the cigarette they go for the nicotine patch. In backward countries, people are not provided with the opportunity to get the nicotine patch because of its unavailability.¹⁷ However, in rich countries, these nicotine patches are easily available to every citizen.¹ It is important to consider that the pharma industry has developed this kind of alternative in the form of nicotine patch that is helping people to improve their standard of living. According to the study of,¹⁸ nicotine is not health-friendly, but a large number of people are consuming tobacco because of their addiction over the past few years. In the same way, smokers when they are treated with the nicotine patch, of them get it easy as an alternative to smoking because their nicotine needs are fulfilled by these innovations.¹⁰ The experts of the pharmacy industry believe that the behavior and perception of the different smokers are different to the way of treatment by these patches because the effect and the reaction of the people are different when they are treated with it. Importantly, most people feel well when they are provided with effective treatment with nicotine patches to stop the ill habit of smoking.^{19,20}

H2. There is a relationship between nicotine patches and smoker attitude.



ROLE OF NICOTINE REPLACEMENT THERAPIES IN SMOKER ATTITUDE

Nicotine replacement therapies are the treatment ways that are introduced with the help of pharma and medical fields to facilitate the people who are involved in the ill habit of nicotine consumption by tobacco and smoking.²¹ Smoking is considered the basic reason for different types of cancers of the mouth because it is directly targeting the lungs and liver as well.³ In this way, the government of different countries is working with different stakeholders to provide nicotine replacement therapies to the people to ensure that they would develop alternative strategies, and their habit of smoking would be reduced.^{10,22} However, it is also noticed that different smokers have different perceptions and behavior toward nicotine replacement therapies because some of them believe that it is an effective way for reducing the consumption of nicotine. On the other hand, according to Scherer, Mütze, Pluym, Scherer,⁴

some smokers believe that nicotine replacement therapies are important to consider when it comes to the process of giving up smoking. In this regard, different medical centers in the USA are also working to provide the services of nicotine replacement therapy to chain smokers to ensure that they would be fit, and their health condition would be restored.^{22,23} Oppositely, the uneducated smokers in the backward areas are not familiar with such kind of treatment Fang, Lu, Lin, Kuo, Sun, Chen, Chang,¹ and they consider it as wrong treatment. It is ethical to provide an alternative way of treatment to the people to ensure that they would not be involved in any kind of illegal and useless adventure of smoking that is affecting the sustainability of the atmosphere to a greater extent.^{24,25}

H3. There is a relationship between nicotine replacement therapies and smokers' attitudes.

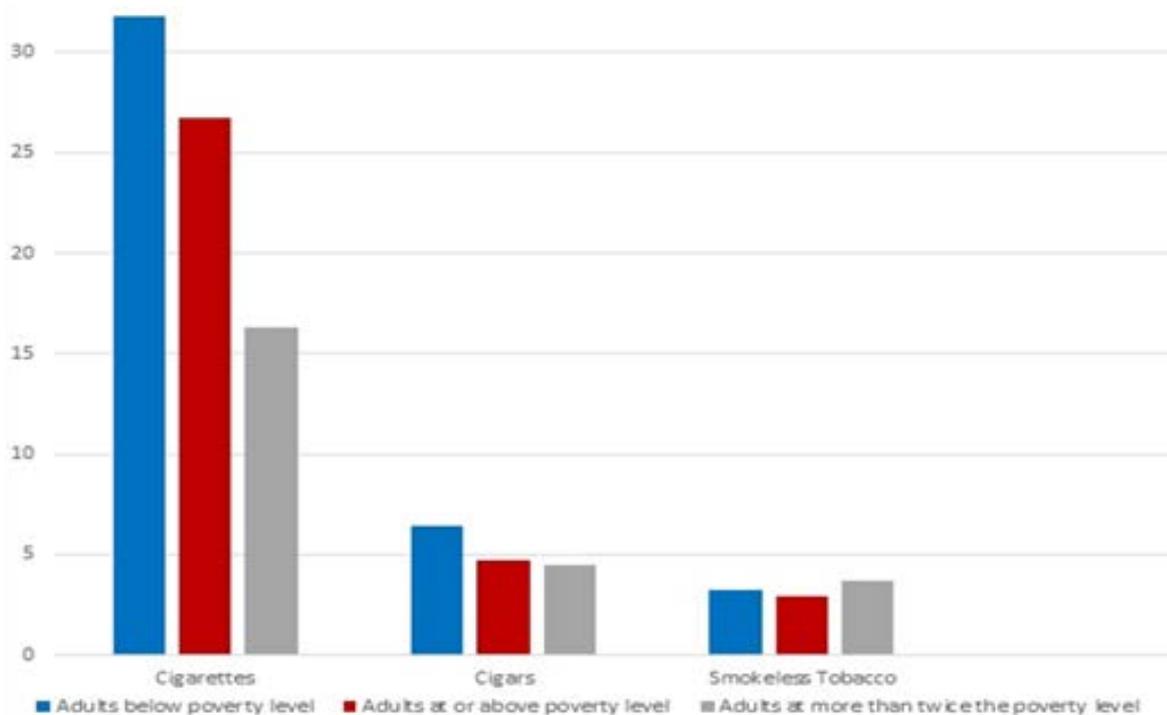


Figure 1. Smoking behavior in India
Source: Centers for Disease Control and Prevention

ROLE OF SMOKER ATTITUDE IN SMOKING BEHAVIOR

It is a fact that behavior is the extension of attitude and is also directly responsible for attitude.²² As for as, the behavior of smokers is concerned, it is also directly affecting the values of society because these smokers are not considered good citizens in modern societies.²⁶ The behavior is representing the values that are important to consider when it comes to the management of the life rules of the people.⁴ In this regard, the people who are smokers, their attitude to nicotine is different as consider to the other people in the pharma industry. According to the study of Hung, Chen, Chen, Ou, Fang,²²

smokers are consumers of nicotine, and they believe that they should get mental comfort. No doubt, to a greater extent, it provides mental comfort, but this comfort is not alone they get from nicotine, but there are different kinds of damages they get from nicotine and other problems.^{27,28} In this regard, their perception and values become their attitude towards nicotine, and they get it to a higher level, which is not good for their health. Additionally, this system of values is not good for the smoker's attitude, because it leads their behavior to consume more nicotine that is not beneficial for their health, not only for the long but also for the short-term goals.³ The theoretical framework of the study is provided in Figure 2.



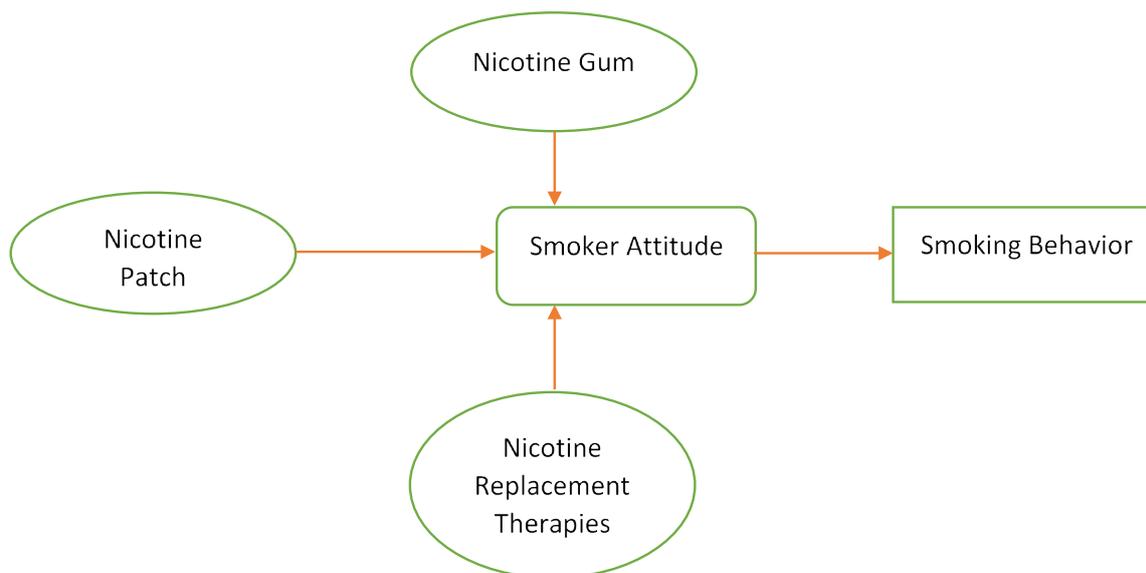


Figure 2. Theoretical framework

H4. There is a relationship between smoker attitude and smoking behavior.

METHODOLOGY

Prepare questionnaire

For this study, the questionnaire was prepared in two different sections to collect the data from the respondents. The scale items were presented to collect the data to measure the relationship between the variables presented in the theoretical framework. In this regard, five scale items for nicotine gum, nicotine patch, and nicotine replacement therapies were taken from the study of Sakka, Al-Shatanawi, Bataineh, Haddad, Al Tamimi, Salamat, Al-mistarihi, Alsulaiman, Kheirallah.²⁹ These scale items were to identify the effect of nicotine gum, nicotine patches, and nicotine replacement therapy on smoker attitude. Furthermore, to measure the smoker attitude, three scale items were taken from the study of Kazemitabar, Garcia,³⁰ and three scale items were taken to measure smoking behavior from the study of Damiri.³¹ In this regard, the questionnaire was reviewed by the experts, and it was recommended as an effective tool to measure the data.

Data collection process

For this study, the data was collected from Indian respondents from February 2022 to March 2022 who are associated with the pharma industry. In this regard, several 340 questionnaires were mailed to the respondents with a brief introduction of the study as well. The current study is quantitative approach and cross-sectional research design. Also, convenient sampling method is used in it. Furthermore, the respondents were asked to provide a bias-free response to the questionnaire to contribute to the worth of the study. They were also provided with the email address of the researcher which was helpful for

them to ask any queries related to the questionnaire. Similarly, all of their questions were responded to on time to ensure the smoothing in response to the questionnaire. Furthermore, to proceed with the data analysis 179 questionnaires were selected as valid and correct. The response rate to the questionnaire was 50%.

Ethical consideration

In this study, the ethical consideration was taken to the advance level. It was ensured that there would not be any kind of bias against anyone in this study. Furthermore, it was also practiced in this study that no violation of the individual freedom and confidentiality would be done to damage the dignity of the respondents. Additionally, it was ensured that the information would be collected with consent and voluntary participation would be practiced.

The used statistical analysis

In this study, the statistical analysis of the data was done with the help of Smart PLS 3 software because it was adopted for the data analysis of this study. Convergent validity was to check how much the scale items of a single variable are supporting each other to measure the data for this study. Discriminant validity was checked to check the distinction between the variables. Moreover, the relationship between the variables were tested with PLS Bootstrapping.

RESULTS

In the first section, the demographic information of the respondents was required. In this regard, 90% of the respondents were male and 10% were female. Similarly, 50% of the respondents were married, and 50% of them were unmarried. Importantly, most of the respondents were intermediate, however, in graduation there were respondents



Table 1. Factor Loadings, Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE)						
Variables		Scale Items	Loadings	Alpha	CR	AVE
Nicotine Gum	"Nicotine gums are available in 2mg and 4mg dosages.	NG1	0.771	0.772	0.845	0.523
	Nicotine gum is not chewed like regular gum.	NG2	0.682			
	Patients using nicotine gum should not eat or drink 15 minutes before and during use.	NG3	0.760			
	The taste of nicotine gum may be unpleasant at the start, but patients are advised to continue use.	NG4	0.707			
	Some side effects of nicotine gum are mouth soreness, dyspepsia and jaw ache."	NG5	0.692			
Nicotine Patch	"The 16-hour patch is available in 10mg, 15mg, 25mg dosages.	NP1	0.626	0.854	0.895	0.636
	The Patch should be rotated and not put on the same site on consecutive days.	NP2	0.656			
	The Patch should be applied to clean, dry intact areas of hairless skin (upper arm, back, shoulder).	NP3	0.887			
	Nicotine patches are long-acting Nicotine Replacement Therapy (NRT).	NP4	0.903			
	The patch has a slower onset of delivery than NRTs."	NP5	0.870			
Nicotine Replacement Therapies	"Use NRT with care in patients with gastritis, peptic ulcers, and esophagitis	NRT1	0.714	0.788	0.853	0.539
	The period from waking up to the first cigarette should be considered in the selection of NRT form.	NRT2	0.652			
	The number of cigarettes smoked daily should be considered in the selection of NRT dose.	NRT3	0.709			
	The number of waterpipe heads should be considered in the selection of NRT dose.	NRT4	0.769			
	NRT can be used to help waterpipe smokers to quit."	NRT5	0.817			
Smoker Attitude	I avoid about reading the risks of smoking.	SA1	0.61	0.755	0.864	0.685
	I have enough information about the risks of smoking.	SA2	0.914			
	Smoking increases the risk of lung cancer.	SA3	0.922			
Smoking Behavior	My cigarette habit is very important to me.	SB1	0.920	0.845	0.907	0.765
	Smoking would make me less depressed.	SB2	0.927			
	Smoking now would make things just perfect.	SB3	0.769			

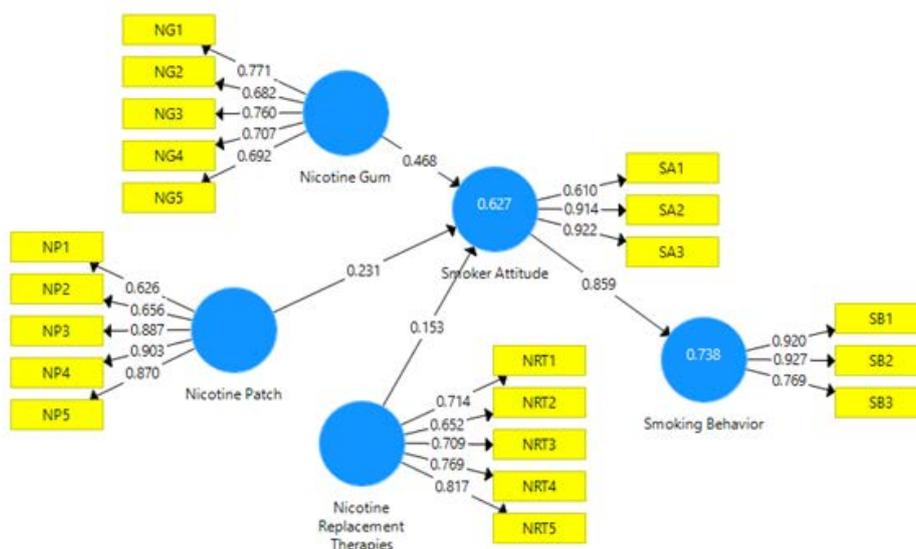


Figure 3. PLS measurement model



less than the respondents of intermediate. Most of the respondents of this study have age between 14-40.

Convergent validity

This section of the study has information related to convergent validity was checked. In this regard, PLS Algorithm calculations were identified to check the Cronbach's alpha, composite reliability (CR), and average variance extraction value (AVE). According to Table 1, the values of factor loadings for each scale item were greater than 0.60 which is strongly recommended by Wong³² for modern studies. Similarly, the value of Cronbach's alpha was not less than 0.70. and the value of composite reliability was not less than 0.70. In the same way, the value of AVE for every variable was greater than 0.50 which is also recommended by Ramayah, Cheah, Chuah, Ting, Memon³³ for modern studies. The values of Figure 3 show that there was a clear convergent validity in the results.

Discriminant validity

This section of the study has the information about the discriminant validity and it was checked to identify the distinction between the variables and scale items. In this study, the (Heteritrait-Monotrait) HTMT method was used to check the discriminant validity with the help of Smart PLS 3. According to Table 2, all the values were less than 0.90 which is strongly recommended by the study of Ringle, Da Silva, Bido³⁴ for discriminant validity.

The partial least Square – Structure equation modeling results

In this section of the study, the results of the hypotheses were checked with Smart PLS 3 software. In this regard, PLS bootstrapping calculations^{35,36} were identified (see Table 3). Therefore, H1 was tested to check its significance and according to the results Nicotine Gum has a significant effect on Smoker Attitude ($\beta = 0.468$, $t = 7.391$, $p = 0.000$) and H1 is supported. Similarly, H2 was tested to check its significance and according to the results Nicotine Patch has a significant effect on Smoker Attitude ($\beta = 0.231$, $t = 2.980$, $p = 0.003$), and H2 is supported. In the same way, H3 was tested to check its significance and according to the results, Nicotine Replacement Therapies have a significant effect on Smoker Attitude ($\beta = 0.153$, $t = 2.321$, $p = 0.021$), and H3 is supported. Lastly, H4 was tested to check its significance and according to the results, Smoker Attitude has a significant effect on Smoking Behavior ($\beta = 0.859$, $t = 41.360$, $p = 0.000$), and H4 is supported. The results are also available in Figure 4.

DISCUSSIONS

The results of H1 show that there is a significant relationship between nicotine gum and a smoker's attitude. In this regard, it is critical to understand that nicotine gum is the best alternative to smoking and consuming nicotine from tobacco because tobacco is dangerous to health. As an alternative,

	Nicotine Gum	Nicotine Patch	Nicotine Replacement Therapies	Smoker Attitude	Smoking Behavior
Nicotine Gum					
Nicotine Patch	0.839				
Nicotine Replacement Therapies	0.833	0.881			
Smoker Attitude	0.820	0.879	0.851		
Smoking Behavior	0.818	0.871	0.789	0.836	

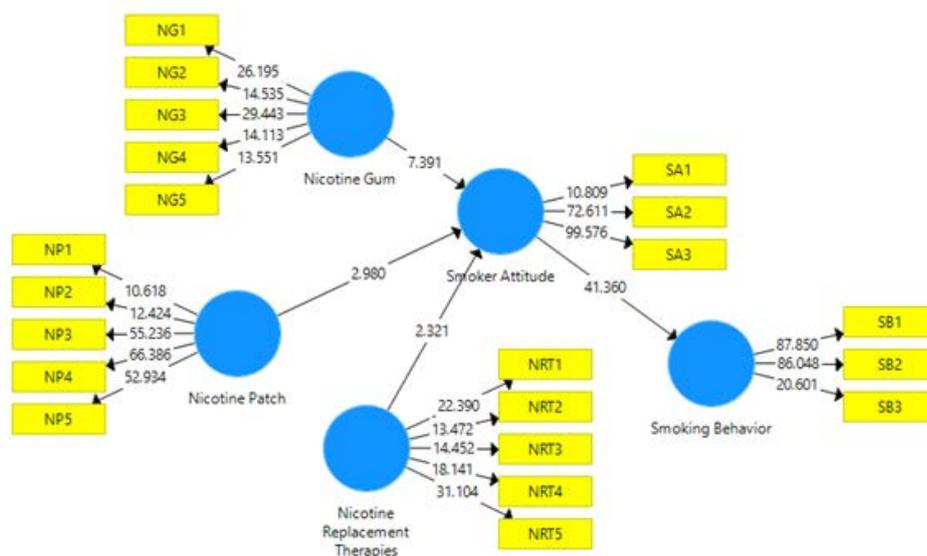


Figure 4. PLS structural model



Table 3. Direct effects					
Hypotheses	Beta Value	(STDEV)	T Values	P Values	Decision
H1. Nicotine Gum -> Smoker Attitude	0.468	0.063	7.391	0.000	Supported
H2. Nicotine Patch -> Smoker Attitude	0.231	0.077	2.980	0.003	Supported
H3. Nicotine Replacement Therapies -> Smoker Attitude	0.153	0.066	2.321	0.021	Supported
H4. Smoker Attitude -> Smoking Behavior	0.859	0.021	41.360	0.000	Supported

nicotine gum is providing the sufficiency of nicotine to people who are addicted to smoking behavior and it is useful for them to quit smoking.⁴ In rich and developed countries, nicotine gum is easily available in pharmacies to ensure that people must go with the best alternative for consuming nicotine.²² However, different ethical studies also criticize the use of nicotine gum as an alternative to smoking but these studies must understand that it is better than getting involved in smoking activities.²² In the same way, it helps to modify the attitude of the smoker because the smokers believe that this gum is a sufficient alternative for them, they stop smoking earlier than other people. On the other hand, smokers who have a negative attitude to nicotine gum these smokers are hard to use nicotine gum as an alternative.⁴

According to the results of H2, there is a significant relationship between nicotine patches and smoker attitude. It is a fact that people who are chain smokers and they believe smoking is not dangerous to their health, these people are facing a different kind of psychological problems due to their smoking attitude.⁴ On the one hand, the developed countries are working on a different alternative to provide maximum benefit to the people to help them for stopping smoking activities.²² On the other hand, the people of poor and backward countries are the large market for the smoking industry.^{10,22} In this way, the damage is to the people not to the smoking industry, because the smoking industry is generating a lot of profit.²⁹ However, the awareness in the large cities is helpful for the people because the educated people are going to nicotine patches as an alternative to smoking. Once the behavior of people is changed to nicotine activities, it would be appropriate for them to quit smoking as early as possible by utilizing a nicotine patch.²²

In the results of H3, there is a significant relationship between nicotine replacement therapies and smoker attitude. The attitude of the smoker is the fundamental factor that is affecting all of the activities in consuming nicotine from different resources.⁴ The services of nicotine replacement therapies provided by different pharma industries are important to consider because with the help of these services people are changing their attitude to consume nicotine from different resources.^{10,22} They believe that if the nicotine replacement therapies are changing their attitude toward smoking, then they would recommend more and more chain-smokers quit smoking with the help of these therapies. In this way, the effectiveness of nicotine replacement therapies is considered critical in advanced and in developed countries. The responsibility of the Indian pharma industry is to create awareness in the people about getting nicotine replacement

therapies because these therapies are changing the attitude of people concerning their smoking behavior and nicotine consumption.³⁰ The government regulations must be to stop smoking in Indian society, particularly among the youth of India. In this way, more reliable and easier accessible opportunities must be provided for the people with the help of the pharma industry to reduce the consumption of nicotine from tobacco in the Indian industry.

The results of H4 show that there is a significant relationship between smoker attitude and smoking behavior. It is a fact that the attitude of the smoker is a critical and necessary factor in changing and influencing the smoking behavior of the people. In this way, if the pharma industry and other interventions of government regulations provide a sufficient way for the people to change their smoking attitude in this regard the smoking behavior of the people would be changed.^{10,22} On the one hand, the people who are consuming tobacco, these people are highly in dangerous situations because tobacco is not good for human health.²⁹ In this manner, the attitude of these people would not help them to change their minds and stop smoking. On the other hand, the people who are provided with opportunities to get nicotine from different other resources rather than tobacco, these people are changing their attitude towards smoking, and ultimately their behavior would be changed. According to the study of Sakka, Al-Shatanawi, Bataineh, Haddad, Al Tamimi, Salamat, Al-mistarihi, Alsulaiman, Kheirallah,²⁹ this technique is being used by the pharmaceutical industry of advanced and developed countries to influence the behavior of people by targeting their attitudes towards smoking.²²

CONCLUSION

The study concludes that nicotine gum is not as dangerous as consuming nicotine from tobacco because it is just like chewing and throwing it. In a nutshell, the intervention of the pharma industry and its innovation of new products and services are helpful for people to stop smoking and consuming nicotine from tobacco. In this regard, a nicotine patch is one of the modern alternatives to getting nicotine at a sufficient level without the use of tobacco. The people who are highly involved in smoking activity, are highly encouraged by doctors and the pharma industry to use a negative patch for getting rid of smoking activities. Importantly, people have different believe and most of them go with rumors, in this regard it is not an easy task to change and modify their attitude toward nicotine patches instead of consuming nicotine from tobacco. In this way, the responsibility of the government and other stakeholders is



to ensure that the attitude of the smokers is changed from consuming nicotine from tobacco to consuming nicotine from nicotine gum, nicotine patch, and nicotine replacement therapy as a result their behavior would be changed.

Theoretical implications

This study provides a significant theoretical implication that is important to consider when it comes to the intervention of the pharma industry in the smoking behavior of Indian people. In this regard, this study addresses that theoretical gap in the literature that was not identified earlier by any study. The study provides theoretical information to the stakeholders that are connected with the smoking industry and the alternative to smoking. This study highlights that nicotine gum must be considered in a way that would be helpful for the people who are involved in smoking activities. Also, the study highlights the importance of nicotine patches that are used as an alternative to consuming nicotine from tobacco. This study demonstrates that the focus of the pharmaceutical industry should be to develop effective nicotine gum and nicotine patch to provide the best alternative to the people. Also, the study highlights that there is a critical role of the attitude of the smoker in smoking behavior because behavior is always a reflection of attitude. In this way, the pharmaceutical industry of India must work on a game plan to develop new products and alternative ways of services to uplift the Indian youth from smoking and nicotine consumption activities.

Practical implications

The study also provides practical implications that are important to consider by the stakeholders of the Indian pharma industry to root out the evil of consuming nicotine from tobacco and cigarettes. The study provides a detailed discussion on the relationship between nicotine gum, nicotine patch, nicotine replacement therapy, and the attitude of the smoker. It is important to understand that awareness must be created in the people to go with the modern therapy of stopping smoking because it is good for the health of the human being. In this regard, the Indian pharma industry has to collaborate with different stakeholders to ensure that people are provided with the right opportunities to stop smoking. In this way, it would be effective for getting things in the right way and ensure the health of the people by working on nicotine gum and nicotine patch as a suitable alternative and helpful situation for stopping smoking.

LIMITATIONS AND FUTURE DIRECTIONS

This study was conducted to check the role of nicotine gum,

nicotine patch, and nicotine replacement therapies in changing the smoker attitude and smoking behavior of the Indian people. Importantly, the sample size for this study was limited to 149. Therefore, the future studies need to focus on the large sample size to determine the results. However, some other different factors are also influencing the smoking attitude and behavior of people. In this regard, future studies must consider the price of the cigarettes, the quality of nicotine, and government regulations to check the influence of these factors on smokers' attitudes and smoking behavior. In this way, it would be a great contribution to future studies.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

The author namely; "Muhammad Murad" worked on the literature of this study. The corresponding author "Waseem Ul Hameed" presented the main idea and worked on key section of this study. Suresh Chandra Akula worked on data collection and findings. Finally, Pritpal Singh proofread the article and improve the whole study.

AVAILABILITY OF DATA AND MATERIAL

Secondary data from prior studies were used to build the theoretical basis of the current study, as cited in the body of manuscript and references are given in bibliography. However, primary data were collected from respondents. The dataset used and analyzed during this study is available from the corresponding author on reasonable request.

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