Investigation of Consumer Attitudes, Intentions and Brand Loyal Behavior on the OTC Drugs in Bangladesh

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Authors' contributions

This work was carried out in collaboration between all authors. Author MS designed the study and wrote the protocol. Authors TI, AI and MMR collected data and performed the statistical analysis and wrote the first draft of the manuscript. Authors MS and MMAA managed the literature searches. Author MMAA managed the analyses of the study and finalize the manuscript. All authors read and approved the final manuscript.

Research Article

ABSTRACT

Aims: To investigate the consumers' attitudes and intentions to exhibit brand loyal behavior of Bangladeshi consumer on over the counter (OTC) drugs.
Study Design: A cross- sectional survey.
Place and Duration of Study: Consumers from the five major hospitals (Dhaka, Bangladesh) had been surveyed between January 2012 and June 2012.
Methodology: The study was conducted among 100 OTC consumers in Bangladesh. Data were collected through questionnaire surveys and personal interviews.
Results: The experimental data suggest that direct experience with the product, price range and brand reliance are important determinants of repetitive purchase behavior on OTC drugs. Cost sensitivity had a vital effect on intention to further purchase ($r = .02$, $p = 0.05$). Moreover, earlier experience with the brand was critical in determining trustworthiness, beliefs, price sensitivity and purchase behavior. The behaviors of OTC consumers are influenced by a different set of factors. Previous experience and price sensitivity is dependent (Chi square = 31.603; $p = 0.01$. Furthermore, medical experience

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and buying an OTC product is dependent and the result were also found significant (Chi square = 32.292; p = 0.01).
Conclusion: Present study shows that branding and prior experience remains the major influences to buy an OTC drug in Bangladesh.

1. INTRODUCTION

Pharmaceutical manufacturers in Bangladesh are satisfying more than 97% of internal demands [1]. This sector has a huge opportunity due to the large number of customers and its reputation in maintaining the maximum quality in home and abroad. In the past few years, we have seen rapid changes in the landscape in which companies in the pharmaceutical industry of Bangladesh operate and compete. Increasing pressure for new product development, the rate of technological change and variation in the competitive environment put pharmaceutical companies under pressure to maintain loyal customers. Different types of non-prescription or Over-The-Counter (OTC) medications such as coughs and colds, fever, heartburn and aches and pains, are being used to treat common ailments. The uses of OTC medicines are increasing day by day in Bangladesh [2]. OTC buyers are mostly self medicated. Self medication due to medical cost to seeing a physician [3], transportation problem of elderly people were noticed in Japan. Once consisting of a relatively small number of medications, OTC medicines now account for the majority of all medications used in the Bangladesh. According to the Bangladesh Development Series published by World Bank (2008), there are more than 8000 drug products on the market today encompassing 117 essential drugs and 100 supplementary drugs [4]. The pharmaceutical market in Bangladesh earns total revenue of over 91.2 billion BDT (Bangladesh currency in Taka) with a growth of 12% annually of which a large percentage comes from sales of OTC medications and are expected to increase more in coming years [1,5]. Approximately 40 to 50% of total pharmaceutical sales (around 40 Billion BDT equivalent to £334 million) in Bangladesh come from OTC sales. Other countries like UK spent £1268.5 million in 1994 [6] and Germany spent £5.4 million in 2006 on OTC medicines [7]. With so high sales figures suggesting more and more Bangladeshis using so many OTC medicines, an important question for the public health community is, "How well do consumers actually understand and process essential information about OTC products?" [2].

Consumers learn about the effect of drugs depending on their physical well-being after they have taken it due to remedy a certain ailment. Drugs taken to treat non-chronic ailments are typically used up or discarded after the patient recovers or when the patient has switched it for another drug because the first drug did not work satisfactorily. This observation allows the conjecture that the recurrent use of a drug creates a learning opportunity at each purchase occasion based on the consumer's perception of the drug. Consumers keep learning either because of their condition differs from that at the time of the last purchase, or treatment circumstances have altered, or product quality has been modified. As a result, consumer's understanding of a drug may change. Since the best test of whether a medication performs as expected is usually through experience, there is an ongoing and continuous updating of perceived product efficacy in the over-the-counter drug category [8]. In this trial and error process, if the consumer tries a drug and finds it safe and efficacious, they are more likely to buy it again when a similar condition recurs. Therefore, learning about

the drugs by consumer may play a vital role in making the purchase decision [9]. Learning is beneficial for the patient because they are not wasting their time and money to go to the doctor's door. But consumers may also forget about OTC brand and its information regarding the treatment. Consumers memory can be decayed in turn, affect the brand information and learning the uses of it [10]. So how consumers differ in their learning about OTC drugs and how this affects consumer's buying decision are needed to be explored.

1.1 Objective of the Study

Present study was conducted to investigate the determinants of consumers' attitudes and intentions to exhibit brand loyal behavior. Specifically, this study employed the theory of planned behavior to investigate the antecedent factors contributing to an individual's brand choice decision within the over-the-counter (OTC) pharmaceutical market. We aimed to investigate the involvement of trustworthiness, price and past experience in determining consumer's attitude towards OTC brand choice. Furthermore, attitudes and subjective norms can also be examined to determine whether they affect consumers' intention to repurchase from the same brand. This study's empirical evidence suggest that direct experience with the brand, price tolerance, brand trust and the subjective opinions of others are important determinants of repeat purchase behavior of OTC pharmaceutical products. Price sensitivity had a significant effect on attitude to repurchase, which in turn affect intention to repetitive purchase, whilst past experience with the brand.

1.2 Hypothesis

In this study, several hypotheses in relation to the theory of planned behavior were investigated. The word of mouth might be an important factor when buyers usually go to buy an OTC product. Annual income, company reputation, price of the product, brand reputation and previous experience might have a relationship while buying an OTC product. We thought that previous experience, price, company reputation, annual income may largely influence to buy an OTC product.

2. MATERIALS AND METHODS

2.1 Data Collection

Data collection for the current project was done from the popular pharmacy shops at Dhaka in Bangladesh. Data was collected through questionnaire surveys and some personal interviews. The sample size was 100. After collecting the necessary data, it was run through SPSS software for analytical purpose. A questionnaire (Appendix) with 20 (twenty) questions were developed for obtaining qualitative as well as quantitative primary data for the survey. These questions were clearly represented and focused our point of interests. In order to construct the theoretical part, a number of books and online resources were consulted and referred to.

2.2 Data Analysis

Continuous variables were characterized as mean ± standard deviation (SD). Categorical variables were expressed by frequencies and percentages. All statistical tests were performed at a significance level of p= 0.05. SPSS for Windows, version 16, was used.

Multiple linear regression analysis models were created. Durbin Watson test were also done to see the correlation among the variables.

3. RESULTS AND DISCUSSION

3.1 Consideration of Choosing an OTC Product

The respondents were asked to find out the factors they consider when they purchase an OTC product. There were 36% people who believe that trust of the company is an important consideration to buy an OTC drug. Besides, 46% people think that previous experience also matter and 18% respondents thought that word of mouth also play an important role (Table 1).

3.2 Type of OTC Product Purchased

The respondents were also asked about the type of OTC product they usually bought from pharmacy. Painkillers usually buy by 36% respondents, 59% buy cold and flu remedies and 5% respondents voted for vitamins.

3.3 Reason behind Buying an OTC Product rather than Going to the Doctor

Respondents were answered about the reason behind buying an OTC product rather than going to the doctor. There were 6% respondents who believe that going to a doctor is expensive. Moreover, 6% agreed about it kill their valuable time. Interestingly, 82% people believe that it's unnecessary to go to a doctor because respondent had previous experience. In the contrary, 6% respondents thought that going to the doctor depends on their mood (Table 1).

Table 1. Independent variables

	Variables	Frequency (%)
	Trust to the company	36.0
	Previous experience	46.0
	Word of mouth	18.0
Type of OTC product that customer usually purchase	Painkillers	36.0
	Cold and flu remedies	59.0
	Vitamins	5.0
Reason behind buying an OTC product rather than going to the doctor	It's expensive	6.0
	It kills my valuable time	6.0
	It's unnecessary	82.0
	Depends on my mood	6.0

3.4 Multiple Linear Regression Model

A multiple linear regression model was conducted in which dependent variable was how often one buys an OTC product and the rest were independent variables (Table 2). In this regression model, independent variables were quantified by the amount that affected the dependent variable. The model summary shows some important indicators of the explaining power of the model. The R^2 value shows how much change in the dependent variable is caused by the independent variables. In this case an R^2 value of 0.972 or 97.2% means 97.2% of the change in dependent variable is caused by the independent variables. On the

other hand, the adjusted R^2 value shows how much change in the dependent variable is caused by statistically significant variables. So, an adjusted R^2 value of 0.935 or 93.5% indicates that 93.5% of the change in dependent variable is caused by statistically significant variables. The standard error of the estimate measures the accuracy of the predictions within the regression line, which is an around estimate. The Durbin-Watson test result was 1.515, which indicates positive serial correlation available among the variable.

From the ANOVA table we found the total variation (SST), variation explained by regression (SSR) and variation explained by regression error SSE is 106.840, 100.840 and 6.0 respectively. So the explaining power of the regression model is good since SSR is less than SSE. If we divide the SSR with SST, we get the value of R^2 which we have already found out to be 94.4%.

Annual income has an unstandardized beta of -0.885 which means that if other variables are held constant, then for every unit of increase in annual income, the sale of OTC product will decrease by 0.885 units. Consideration has an unstandardized beta of 0.138 which indicates that if other variables are held constant, then for every unit of increase in consideration of buying an OTC product the sales will increase by 0.138 units. Company reputation has an unstandardized beta of -1.437 which means that if other variables are held constant, then for every unit of increase in company reputation, the sale of OTC product will decrease by 1.437 units. Practically, "if the reputation of a company increases, then its OTC sales increase". Asking opinion has an unstandardized beta of -1.405 which means that if other variables are held constant, then for every unit of decrease in asking opinion to shopkeeper, sale of OTC product will fall by 1.405 units. Going to doctor has an unstandardized beta of -0.030 which means that if other variables are held constant, then for every unit of increase in going to doctor, sale of OTC product will decrease by 0.030 units. Cheaper medicine has an unstandardized beta of 4.985 which means that if other variables are held constant, then for every unit of increase cheaper medicine, sale of OTC product will increase by 4.985 units.

Table 2. Coefficients (β) of Independent Variables

Coefficients[a]					
Variables	**Unstandardized coefficients**		**Standardized coefficients**	**t**	**Sig.**
	B	**Std. error**	**Beta**		
(Constant)	-0.493	0.370		-1.332	0.18
Annual income	-0.855	0.084	-0.565	-10.137	0.00
Consideration	0.138	0.063	0.095	2.197	0.03
Company reputation	-1.437	0.083	-1.079	-17.367	0.00
Type of OTC	2.927	0.137	1.586	21.291	0.00
Asking opinion	-1.405	0.115	-0.950	-12.222	0.00
Going to doctor	-0.030	0.025	-0.048	-1.177	0.24
Price matter	1.149	0.114	0.519	10.058	0.00
Impact of brands	-0.154	0.106	-0.088	-1.447	0.15
Medical expense	-3.202	0.127	-2.109	-25.203	0.00
Previous experience	0.743	0.032	0.739	22.972	0.00
Cheaper medicine	4.985	0.228	2.188	21.855	0.00
Alternative	-0.390	0.096	-0.185	-4.062	0.00
Switch brand	-0.693	0.135	-0.218	-5.155	0.00

[a]*Dependent variable: How often*

Annual income has a standardized beta of -0.565 which means that if other variables are held constant, then for every unit of increase in annual income, the sale of OTC product will decrease by 0.565 units (Table 2). Consideration has a standardized beta of 0.095 which indicates that if other variables are held constant, then for every unit of increase in consideration of buying an OTC product the sales will increase by 0.095 units. Company reputation has a standardized beta of -1.079 which means that if other variables are held constant, then for every unit of increase in company reputation, the sale of OTC product will decrease by 1.079 units. Asking opinion has a standardized beta of -0.950 which means that if other variables are held constant, then for every unit of decrease in asking opinion to shopkeeper, sale of OTC product will fall by 0.950 units. Going to doctor has a standardized beta of -0.048 which means that if other variables are held constant, then for every unit of increase in going to doctor, sale of OTC product will decrease by 0.048 units. Cheaper medicine has a standardized beta of 2.188 which means that if other variables are held constant, then for every unit of increase cheaper medicine, sale of OTC product will increase by 2.188 units.

Correlation analyses were also done to test our hypothesis. There was not a positive correlation between buying an OTC product and individual's belief, $r = .11$, $p = 0.05$. So experience with a brand of OTC pharmaceutical product doesn't determine an individual's beliefs about the trustworthiness of the brand. There was also not a positive correlation between sensitivity of price and individual's belief, $r = .03$, $p = 0.05$. The individual's beliefs in the trustworthiness of an OTC product make less sensitive to the price. We have found a significant correlation between price sensitivity towards an OTC brand and repetitive purchase of the brand $r = .02$, $p = 0.05$. Hence, people who are more price-sensitive toward an OTC brand, the more likely they are to repeat purchase the brand. We have also found positive correlation between high annual income and buying an OTC brand, $r = .02$, $p = 0.05$. This result indicates that customer whose annual income is high usually comfortable to buy an OTC product.

To ascertain whether a difference was present in our study (i.e., previous experience and cheaper medicine, buying OTC brand and medical expense), a Pearson chi-square test was conducted. Previous experience and price sensitivity is dependent and the result was found significant (Chi square = 31.603; p = 0.01). Moreover, medical experience and buying an OTC product is dependent and the result were also found significant Chi square = 32.292; p = 0.01.

The experimental result suggests that the annual income, price sensitivity influence the decision to buy an OTC drug. Moreover, experienced with an OTC drug can not influence an individual's beliefs about the trustworthiness of the brand. Furthermore, individual's beliefs about the trustworthiness of an OTC drug make less sensitive to the price.

OTC products are very popular among the mass people. Self prescription becomes a common habit for the people who are well experienced and known about the OTC drugs. They do not want to go to the physician due to this experience and drug exposure physical and informative ways. In our present investigation most of the people said that the previous experience motivate them to buy an OTC drug. Lodorfos et al., in 2006 was also reported that consumer usually give preference to the previous experience and brand value of the product while buying an OTC medication [11]. So, until any complication occurs, consumers keep taking OTC product.

Price has an important correlation with the buying of the OTC product, that is to say OTC product buyer usually checks the price before buying it. However, contrary to popular expectations, a higher price seems to be of little concern for the majority of consumers [8], or even, as in the case of an ample proportion of the sample, is contributing to the purchase choice. This finding is indicative of fairly limited price sensitivity for a particular drug category. Consumers may attribute this as a high quality product due to its higher price, combined with a degree of loyalty to a drug already perceived as efficacious, which renders price of minor importance [12,13].

What the people do although they are experienced but still confused to buy an OTC drug? To answer this question people ask the retailers regarding the information of OTC drugs. In this case pharmaceutical enterprise has a great role to the society. They can offer chemist education about the OTC medications. Chemist education program are currently offering by the top ranked pharmaceutical companies in Bangladesh. If the retailers are well informed about the OTC drugs then they can help to take the decision of OTC buyers.

What the customer do if the target OTC is not available in the shop? Retailers are always wanted to bias the customer to buy the brand with same generic they stored in the shop. Buyers are not aware of many brand names that have same generic in turn they become confused. So, it is also an important factor for the pharmaceutical companies to available their OTC brands to every pharmacy shops. Availability of the OTC brands can stop the customer to switching to the other brand of the same medication [14].

3.5 Recommendation

Every pharmaceutical company is overly enthusiastic to capture this potential source of revenue from the large size of the OTC market. Product availability in the pharmacy shops and mass awareness make sure more profits in this non-prescription drug market. Upgrading OTC products knowledgeable of retailers can ensure maximum benefits of the end level users as well as OTC sales. In some instances price is not a crucial factor rather than the brand image of a company. So, making a strong brand value can also ensure sales of company and benefit of the OTC users. Moreover, advertising of OTC product can be helpful for brand remembrance in that it has a reminding and reinforcing role. Nevertheless, it is expected that the effect of personal knowledge of the drug will control the process of assessment updating and carryover, advertising apart. In other words, it can be said that the role of advertising is expected to be mostly instructive and suggestive of application specifics and its influential impact will be noticeable only prior to trial. So, this issue deserves further investigation when more data on advertising are available.

3.6 Limitations and Future Study

Our main focus was determining the responsible factors affecting attitudes and intention to repeat the purchase of OTC products. Although implications from this investigation can be discussed with respect to other non-resilient product classes, the research model is restricted as to the type of market/product it may be applied to, as investigation in the pharmaceutical market may not resemble other markets. Secondly, this research relies heavily on the theory of planned behavior as a highly regarded framework for studying attitudes in respect to future behavior. Despite extensive effort to ensure the validity and reliability of the findings, some readers may be concerned with the predictability of behavior from attitude and intention. Thirdly, this research was conducted solely in Bangladesh.

Therefore the composition of the sample may not be analogous to the wider OTC consumer population due to the selective region used in the sampling technique. So, large volume of sample and multinational studies are needed to investigate our hypothesis.

4. CONCLUSION

The results reveal that familiarity with an OTC product is the key factor in determining the repetitive purchase of the OTC drug. The OTC market in Bangladesh is expanding gradually because of its large population and mass awareness. Every pharmaceutical company will try to snatch and expand their market share. In some extent companies get involved with harmful competition for capturing the market. In the foreign market it is mandatory to show the prescription to the pharmacy shop before buying a product and OTC drugs are sold by the grocery shops. In the context of Bangladesh, the retailers don't ask for anything before giving the medicine except sedative and some dangerous medications. According to the experts, the consequences of this practice are not good. In these contexts the drug controlling authority has to come forward to raise the awareness about the list of OTC drug and the cruel fatality of excessive uses of the OTC medications. Moreover, upgrading the knowledge of retailers can accelerate the decision of OTC buyers. Hence mass people can be staying safe from the fatality of drug action.

CONSENT

Not applicable.

ETHICAL APPROVAL

Not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX

Questionnaire on Consumer Behavior about OTC Products

Gender: Female / Male

Age range: i. 15-24; ii. 25-34; iii. 35-44; iv. 45-54; v. 55-64; vi. 65+

1) Household annual income?
Tk. 50000 – Tk.100000   Tk. 100001 – Tk.500000 Tk. 500001 – Tk. 1000000
Tk. 1000001– Tk. 5000000 Tk. 5000000+

2) Do you purchase an OTC product from the store (without prescription)?
Yes No

3) How often you purchase an OTC medicine?
Frequently Very frequently Often Very often Never

4) Which of the following you consider while purchasing OTC products -
Price Trust to the company Previous experience Word of mouth
Availability of medicine

5) Name three companies you consider while purchasing an OTC drugs.
a) _____b)_____c)_____

6) While purchasing an OTC medicine based on company reputation, how much it effects on your decision making?
Frequently Very frequently Often Very often Never

7) What type of OTC medicine did you purchased most often in the past twelve months?
Painkillers Cold and flu remedies Vitamins Allergy relief Other

8) Do you usually ask shopkeeper about the brand of the OTC medicine before buying?
Yes No Not often

9) How often you go to doctor with the same problem without buying the medicine?
Very Unlikely   Somewhat Unlikely   Neither Unlikely nor Likely   Somewhat Likely Very Likely Not applicable

10) Why don't you go to the doctor rather than buying an OTC product?
It's expensive It kills my valuable time It's unnecessary because I already have previous experience Depends on my mood

11) Do price play an important role when you are going to buy an OTC Medicine?
Yes No Sometimes

12) To what extent does the brand of this product affect your purchase decision?
Mostly Moderately No impact

13) What are your monthly medicine expenses (approximate)?
Tk. 0-200 Tk.201-500 Tk.501-1000 Tk.1001-2000 Tk.2000 +

14) If I had a good experience with a brand of pharmaceuticals product, I would recommend it to friends -
Frequently Very frequently Often Very often Never

15) I prefer to purchase a brand of pharmaceuticals product that I have previously purchased -
Frequently Very frequently Often Very often Never

16) Are you prepared to pay more for a pharmaceuticals product that you have had a good experience?
Yes No

17) Will you buy pharmaceuticals product that is cheaper than others?
Yes No

18) Would you switch to a different brand if a cheaper alternative is available?
Yes No

19) Would you choose a different brand to my usual one if I could not find it in the first shop I visited?
Yes No

20) What's your overall experience about the OTC medicines (in short)?

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