

To Study the Attitudes, Beliefs and Perceptions Regarding the Use of Inhalers among Patients of Obstructive Pulmonary Diseases and in the General Population in Punjab

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ABSTRACT

Introduction: Inhaler devices are an important part of the armamentarium of clinicians who treat obstructive pulmonary diseases. The effectiveness of inhaled drugs depends on the patient's ability to use the inhaler device correctly and the adherence to the treatment regimens is likely to be influenced by their opinions and feelings about the use of the inhaler as a mode of therapy. The patients' beliefs about their illnesses and therapy play a key role in determining their adherence to the treatment.

Aims and Objectives: However, there is paucity of studies investigating attitudes, beliefs and perceptions about the use of inhalers in patients of obstructive pulmonary disease and in the general population in India so we sought to study the attitudes, beliefs and perceptions regarding the use of inhalers by obstructive pulmonary disease patients and by the general population.

Material and Methods: Patients of COPD and asthma and the general population visiting the hospital were screened for recruitment into this study. A questionnaire which could identify the patients' potential attitudes, beliefs and perceptions about inhalers was designed and the answers were sought during interviews with the first contact OPD patients and the general

public visiting the hospital as relatives accompanying the patients, other than the patients of respiratory diseases. All the 'yes' answers were analyzed on a percentage scale.

Results: We studied 1276 patients and 1832 people from the general population. Only 15.1% patients and 17.2% subjects from the general population considered inhalers as the preferred mode of therapy. A majority of the patient population and subjects from the general population thought that the use of Inhalers was a social stigma and preferred oral medication they expressed their inhibitions for inhaler use in public, wanted to keep the inhaler use as a secret, expressed preference for a smaller inhaler device and a single dose inhaler and thought that inhalers are were used in for serious diseases which once started on, inhalers had to be taken life long.

Conclusion: We conclude that the results of our study highlighted the misplaced beliefs, attitudes and perceptions about inhalers among a majority of the patients and the common population, thus necessitating the urgent need for an individual and a collective national effort in the form of national educative programmes to dispel the misconceptions and inadequate knowledge, beliefs, attitudes perceptions of the patients and the common people towards inhalers.

Key Words: Bronchial Asthma, COPD, Knowledge, Social Stigma, Inhibition, Oral medication, Perceptions, Beliefs, Attitudes

KEY MESSAGE

- Patients' beliefs and practices play a role in understanding, defining and responding to illnesses.
- The attitudes, beliefs, and perceptions of the general population regarding the use of inhalers, is going to influence the acceptability of inhalers in the society.
- The present study reveals that on an average, the patients and the general population has misconceptions regarding the use of inhalers as a treatment modality, which needed to be rectified.

INTRODUCTION

In recent years, the prevalence of obstructive pulmonary diseases including asthma and chronic obstructive pulmonary disease (COPD) has shown a steady increase, with a corresponding increase in their social and economic impact. Bronchial asthma and COPD are two chronic obstructive airway diseases that exact an enormous toll on the patients, healthcare providers and the society. India has an estimated 15 to 20 million asthmatics.

Rough estimates indicate a prevalence of between 10% and 15% in children in the age range of five to eleven years. The median prevalence rates of COPD were assessed as 5 % for males and 2.7 % for female subjects of over 30 years of age. In India, COPD was accounted for 2.8% of the total deaths in 1990 and it was expected to rise to 6.5% deaths by 2020. Much of the morbidity from asthma is believed to be due to factors such as the denial of having a chronic condition, poor knowledge about the disease

process and medication use, poor understanding about the use of inhalers and poor self-management. Patient decisions to follow the recommended treatment are likely to be influenced by their beliefs about medicines, as well as their beliefs about the illness that the medication is intended to treat or prevent.

Inhaler devices are an important part of the armamentarium of clinicians who treat both these obstructive pulmonary diseases. The effectiveness of inhaled drugs depends on the patients' ability to use the inhaler device correctly and adherence to the treatment regimens is likely to be influenced by their opinions and feelings about the use of inhalers as a mode of therapy. The successful management of COPD and asthma requires attention not only to the observable behaviour of the patients, but also to the underlying attitudes and beliefs which drive that behaviour. It is a well accepted fact that the patients' views should be taken into account during the medical decision-making and the choice of therapy.

The patients' beliefs about their illnesses and therapy play a key role in determining their adherence to the treatment. Unless the patients possess basic knowledge about the ailment and its management, there is no chance to make the best use of the available facilities, thus resulting in the poor control of the disease. Beliefs and attitudes influence the behaviour and some theoretical models can explain up to 30% of the health behaviour

AIMS AND OBJECTIVES

However, there is paucity of studies which have investigated the attitudes, beliefs and perceptions about the use of inhalers in patients of obstructive pulmonary disease and in the general population in India and so we sought to study the attitudes, beliefs and perceptions regarding the use of inhalers by the obstructive pulmonary disease patients and the general population.

MATERIAL AND METHODS

Patients of COPD and asthma and the general population who visited the hospital were screened for recruitment into this study. To be eligible for the study, the subjects had to: [1] be between the ages of 15 and 60 years [2], know about inhalers as a treatment modality [3], be from the general population who visited the hospital with patients who had some other disease than respiratory disease [4] be a patient of COPD or asthma. Those subjects who were above the age of 60 years or below 15 years, those who had not heard about inhalers as a treatment modality, patients who were other than COPD or asthma patients and people who accompanied the respiratory disease patients were excluded from the study.

A questionnaire which could identify the potential attitudes, beliefs and perceptions about inhalers was designed for this study by the investigators. The study questions were not validated. Answers were sought during interviews with the first contact OPD patients of COPD and bronchial asthma and the general public who visited the hospital as relatives who accompanied the patients who had diseases other than respiratory diseases. The subjects' ability to answer the question was assessed by using the "yes" and "no" categories and the 'do not know' option was not considered. The questions included: 1. Do you consider inhalers as the preferred mode of therapy? 2. Do you consider inhaler use as a social stigma? 3. Do you prefer oral medication over inhalers? 4. Do you feel inhibition for inhaler use in public? 5. Will you prefer to keep the inhaler use a secret? 6. Will you prefer a smaller device? 7. Will you prefer a single dose inhaler? 8. Do you think that the inhaler is used for serious diseases? 9. Do you think that once started on, inhalers

have to be taken life long?

All the 'yes' answers were analyzed on a percentage scale. Those subjects who were not able to read or write any local language were categorized as illiterate and those who were able to read or write any local language were categorized as literate. Those subjects who belonged to an area which was governed by municipal committees or corporations were categorized as urban and those who belonged to areas which were governed by panchayats were categorized as rural subjects.

RESULTS

We studied 1276 patients and 1832 people from the general population [Table/Fig-1], shows the demographic distribution among the study population. The patient population of 1276 included 61.3% males and 38.7% females, 40.1% were illiterate and 59.9% were literate and 46.3% belonged to the urban areas and 53.7% to the rural areas. Similarly, the general population of 1832 subjects included 59.2% males and 40.8% females and 49.8% illiterate, 50.2% literate, 48.6% urban and 51.4% rural subjects.

The results of the response to the questions by the patients are shown in [Table/Fig-2] and the response by the general population is shown in [Table/Fig-3]. Only 15.1% patients and 17.2% subjects from the general population considered inhalers

Characteristics	Total	Sex		Education		Region	
		Male	Female	Illiterate	Literate	Urban	Rural
Patients	1276	61.3 (782)	38.7 (494)	40.1 (512)	59.9 (764)	46.3 (591)	53.7 (685)
General population	1832	59.2 (1084)	40.8 (748)	49.8 (913)	50.2 (919)	48.6 (891)	51.4 (941)

[Table/Fig-1]: Demographic Profile. % (n)

Questions	Total	Sex		Education		Region	
		Male	Female	Illiterate	Literate	Urban	Rural
	(1276)	61.3 (782)	38.7 (494)	40.1 (512)	59.9 (764)	46.3 (591)	53.7 (685)
1. Inhalers as preferred mode	15.1 (192)	17.1 (134)	11.7 (58)	6.6 (34)	20.6 (158)	20.4 (121)	10.3 (71)
2. Inhalers use as a social stigma	86.8 (1107)	82.4 (644)	93.7 (463)	92.4 (473)	82.9 (634)	78.5 (463)	94.1 (644)
3. Oral over inhalers therapy	90.7 (1157)	87.7 (686)	95.3 (471)	95.1 (487)	87.6 (670)	86.6 (512)	94.2 (645)
4. Inhibition for inhaler use in public	89.5 (1142)	87.6 (685)	92.7 (457)	92.3 (473)	87.6 (669)	85.1 (503)	93.3 (639)
5. Prefer to keep inhaler use a secret	91.6 (1169)	89.7 (701)	94.8 (468)	96.1 (492)	88.6 (677)	90.1 (532)	93.1 (637)
6. Prefer a smaller device	95.5 (1219)	95.4 (746)	95.7 (473)	96.6 (495)	94.8 (724)	93.7 (554)	97.1 (665)
7. Prefer single dose inhaler	96.7 (1234)	97.7 (764)	95.1 (470)	97.1 (497)	96.5 (737)	95.9 (567)	97.4 (667)
8. Inhaler use is for serious disease	84.9 (1083)	80.6 (630)	91.8 (453)	94.9 (486)	78.1 (597)	81.5 (482)	87.7 (601)
9. Once started, has to be taken life long	79.6 (1016)	74.1 (579)	88.5 (437)	90.7 (464)	72.3 (552)	77.8 (460)	81.2 (556)

[Table/Fig-2]: Attitudes, Beliefs and Perceptions About Use of Inhalers in Patients. % (n-1276)

Questions	Total	Sex		Education		Region	
		Male	Female	Illiterate	Literate	Urban	Rural
	1832	59.2 (1084)	40.8 (748)	49.8 (913)	50.2 (919)	48.6 (891)	51.4 (941)
1. Inhalers preferred mode	17.2 (316)	18.3 (199)	15.6 (117)	8.1 (74)	26.3 (242)	20.3 (181)	14.3 (135)
2. Inhalers use as a social stigma	84.2 (1542)	81.4 (882)	88.2 (660)	91.1 (831)	77.5 (711)	79.1 (704)	89.1 (838)
3. Oral over inhalers therapy	92.4 (1692)	90.7 (983)	94.8 (709)	96.3 (879)	88.5 (813)	87.3 (778)	97.1 (914)
4. Inhibition for inhaler use in public	87.8 (1608)	85.1 (922)	91.7 (686)	94.4 (861)	81.3 (747)	82.6 (735)	92.8 (873)
5. Prefer inhaler use a secret.	93.3 (1709)	91.6 (992)	95.8 (717)	94.9 (866)	91.7 (843)	91.1 (811)	95.4 (898)
6. Prefer a smaller device	97.5 (1786)	96.9 (1050)	98.4 (736)	97.5 (890)	97.5 (896)	96.7 (861)	98.3 (925)
7. Prefer single dose inhaler	94.2 (1725)	92.7 (1005)	96.2 (720)	96.7 (882)	91.7 (843)	93.8 (836)	94.5 (889)
8. Inhaler use is for serious disease	82.6 (1513)	79.8 (865)	86.6 (648)	91.6 (836)	73.7 (677)	76.2 (678)	88.7 (835)
9. Started, taken life long	75.9 (1390)	72.7 (788)	80.5 (602)	87.2 (796)	64.6 (594)	66.0 (588)	85.3 (802)

[Table/Fig-3]: Attitudes, Beliefs and Perceptions About Use of Inhalers in General Population. % (n-1832)

as a preferred mode of therapy and among both the groups, the responses of males and, the literate and the urban subjects were as better than that of the females illiterates, and the rural subjects. The graphical comparison for the response to the question no 1 by the patients and the general population including the males, females, illiterates, literates and the, urban and rural subjects is expressed in [Table/Fig-4].

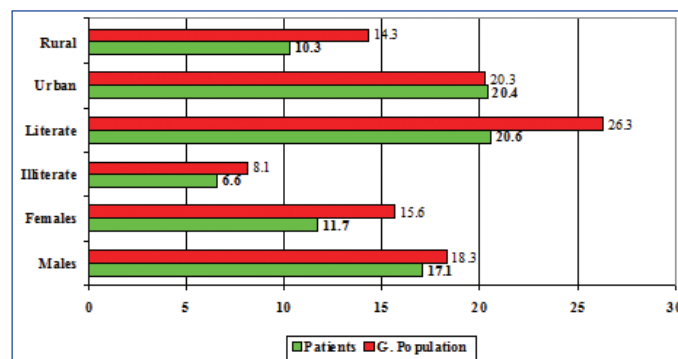
A majority of the patient population (86.8%) and subjects from the general population (84.2%) thought that the use of inhalers was a social stigma and this view was more prevalent among females, illiterates and rural subjects among both the groups. [Table/Fig-5] demonstrates the comparative response of the males, females, illiterates, literates and the urban and rural subjects among both the groups.

Oral medication was preferred by 90.7% patients including 87.7% males, 95.3% females, 95.1% illiterates, 87.6% literates and 86.6% urban and 94.2% rural patients. Similarly, a preference was expressed by 92.4% subjects among the general population and by females (94.8%), illiterates (96.3%) and rural subjects for oral medication than the males (90.7%), literates (88.5%) and the urban (87.3%) subjects. [Table/Fig-6] expresses the comparative results among the males, females, illiterates, literates and the urban and rural subjects of both the groups.

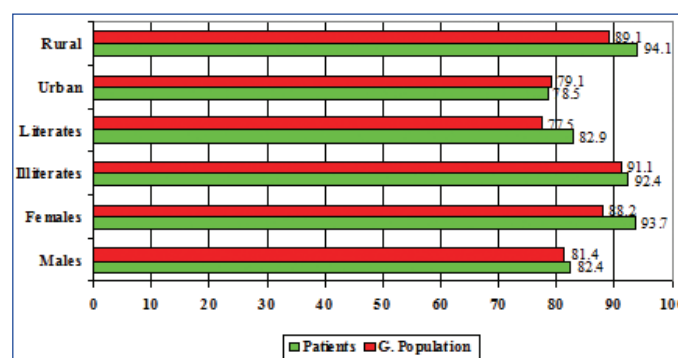
89.5% patients and 87.8% subjects among the general population expressed an inhibition for inhaler use in public and this feeling of inhibition was more among the females, illiterates and the rural subjects among both the groups. The comparison of the response of inhibition among the males, females, illiterates, literates and the urban and rural subjects of both the groups is shown in [Table/Fig-7]. 91.6% patients and 93.3% subjects among the general population wanted to keep the inhaler use a secret

and this secretive tendency was more among females, illiterates and rural subjects in both the groups. [Table/Fig-8] expresses as to how the subjects from both the groups responded to question no. 5.

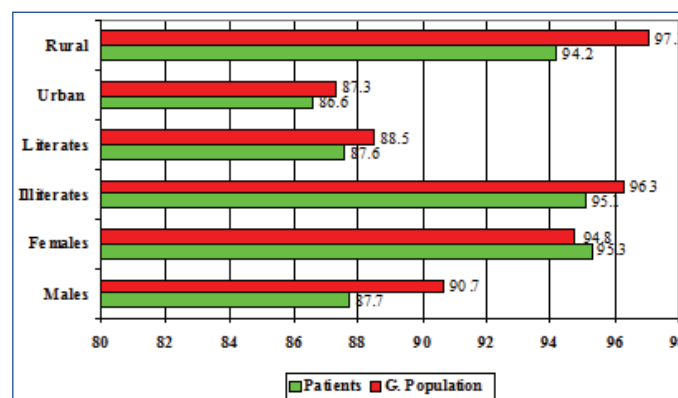
The results of our study showed that 95.5% patients including 95.4% males, 95.7% females, 96.6% illiterates, 94.8% literates, and 93.7% urban and 97.1% rural subjects preferred a smaller inhaler device and almost a similar response was expressed by subjects from the general population. [Table/Fig-9] shows the graphic analysis of the comparative responses of the males, females, illiterates, literates and the urban and rural subjects among both the groups to the question of preference for a smaller device.



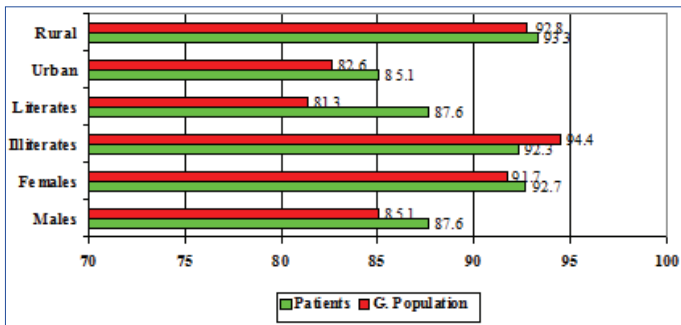
[Table/Fig-4]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (1) Do you consider inhalers as preferred mode of therapy? All 'yes' answers are expressed in the figure.



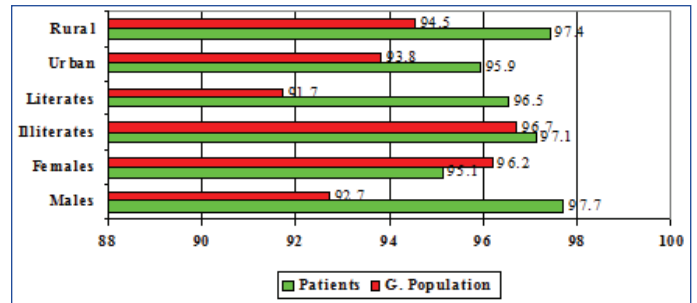
[Table/Fig-5]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (2) Do you consider inhaler use as a social stigma? All 'yes' answers are expressed in the figure.



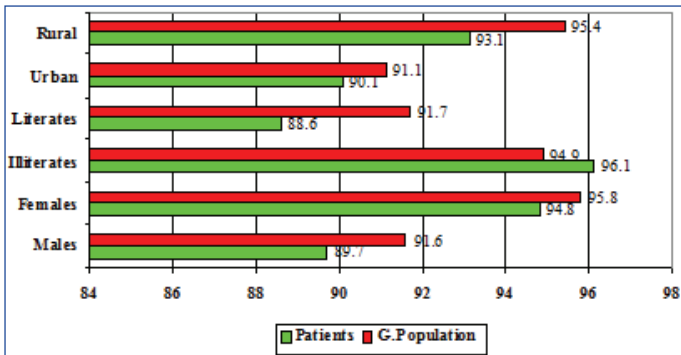
[Table/Fig-6]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (3) Do you prefer oral medication over inhalers? All 'yes' answers are expressed in the figure.



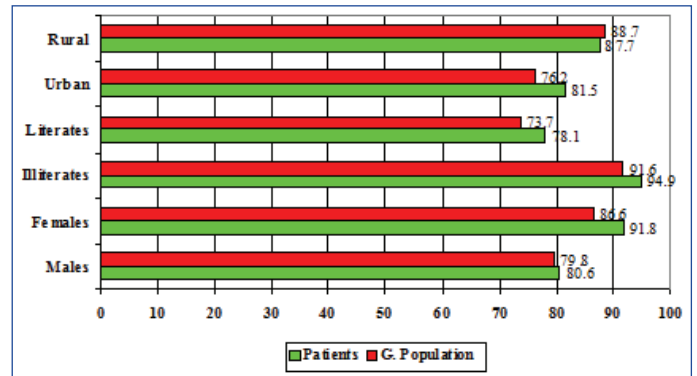
[Table/Fig-7]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (4) Do you feel inhibition for inhaler use in public? All 'yes' answers are expressed in the figure.



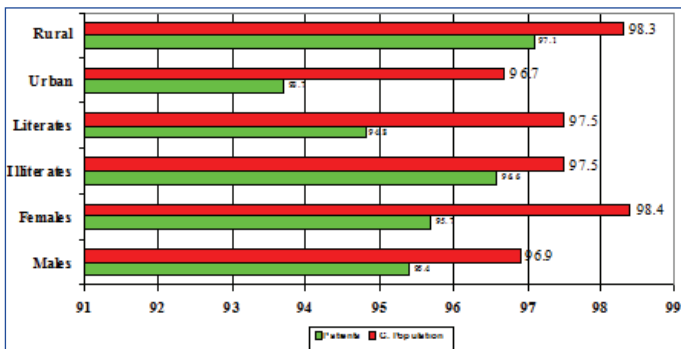
[Table/Fig-10]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (7) Will you prefer single dose inhaler.? All 'yes' answers are expressed in the figure.



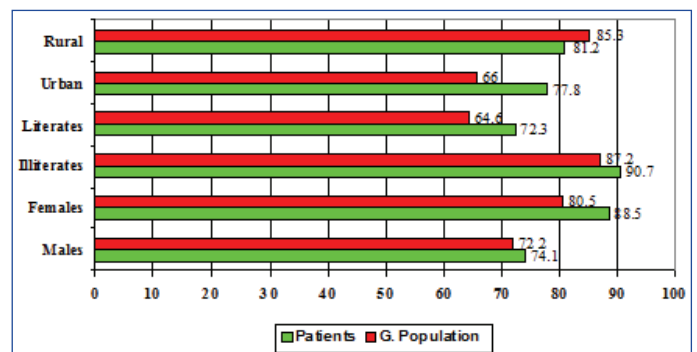
[Table/Fig-8]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (5) Will you prefer to keep inhaler use a secret? All 'yes' answers are expressed in the figure.



[Table/Fig-11]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (8) Do you think inhaler use is for serious disease? All 'yes' answers are expressed in the figure.



[Table/Fig-9]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (6) Will you prefer a smaller device? All 'yes' answers are expressed in the figure.



[Table/Fig-12]: The graphical comparison for the response of patients and general population including the male, female, illiterate, literate, urban and rural subjects to question no (9) Do you think once started inhalers have to be taken life long? All 'yes' answers are expressed in the figure.

The preference for a single dose inhaler was expressed by 96.7% of the patients and 94.2% subjects from the general population. The results showed that the preference for a single dose inhaler was expressed by all the groups and the comparative analysis about this is expressed in [Table/Fig-10].

The results of our study showed that 84.9% patients and 82.6% subjects from the general population thought that inhalers were used for serious diseases and this thought was more among females, illiterates and the rural population in both the patient and the general population groups. [Table/Fig-11] shows the comparative thoughts among all the groups which were studied.

79.6% patients and 75.9% subjects from the general population nursed the belief that once started on, inhalers had to be taken life long and this belief was more among females, illiterates and rural patients and subjects as compared to the males, literates and the urban subjects. [Table/Fig-12] shows the graphic representation of the comparative beliefs among both the groups.

DISCUSSION

Patients' beliefs and practices play a role in understanding, defining and responding to illness and so our study was aimed at exploring the existing attitudes, beliefs, and perceptions of the patients and the general population with regards to inhalers as a treatment modality. People have different levels of knowledge about the use of inhalers in obstructive pulmonary diseases disease and diverse underlying disease-related beliefs. The patients' use of inhaler devices and their adherence to the treatment regimens is likely to be influenced by their attitudes, beliefs, and perceptions about inhalers. Moreover, the attitudes, beliefs, and perceptions of the general population regarding the use of inhalers will influence the acceptability of inhalers in society. Incorrect underlying beliefs about inhaler use may constitute a major obstacle to the adherence to disease management and other self-management behaviour and such beliefs thereby, may contribute to poor treatment outcomes.

There is a global problem with asthma management, either under treatment due to ignorance or due to the distorted information/knowledge of the patients about their disease and a similar situation is also expected with respect to COPD management. The present study reveals that an average patient has misconceptions which need to be rectified.

The analysis of the results showed that only 15.1% patients and 17.2% subjects of the general population considered inhalers as the preferred mode of therapy and the preference for inhaler therapy was expressed more by males (17.1%), literates (20.6%) and urban (20.4%) patients than the females (11.7%), illiterates (6.6%) and the rural (10.3%) patients. Almost a similar result pattern was observed in the general population regarding inhalers as the preferred mode of therapy. In a study on 135 patients, 7 (5.2%) patients preferred to use inhaled drugs. In the same study, out of the total 135 patients, 26(19.3%) were not prescribed any inhaled therapy by their doctors. Of the 109 patients, who were prescribed inhaled therapy, 30(27.5%) patients discontinued the use of inhalers or feared using inhalers because of social factors (43.3%) and reasons such as the difficulty in using it (63.3%), the difficulty in carrying it (33.3%) and its habit forming (53.3%) property. In our study, a large number of patients (86.8%) and people from the general population (84.2%) considered inhaler use as a social stigma.

More number of females, illiterates and rural subjects, both from the patient and the general populations considered inhaler use as a social stigma than the males, literates and the urban subjects. 90.7% patients and 92.4% people preferred oral medication over the inhalers. Oral medication was preferred by females, illiterates and the rural subjects, both from the patient and the general population. In a national (UK) survey, a significant number of patients (41%) expressed concern about using their inhalers in public, whereas in our study many more that is 89.5% patients and 87.8% people felt an inhibition for the use of inhalers in public. Moreover, in our study, this inhibition was more prevalent in females, illiterates and rural patients, as well as in subjects from the general population. In our study, 91.6% patients and 93.3% people preferred to keep the inhaler use a secret whereas in the national (UK) survey, 22% preferred to keep their inhalers hidden and 19% preferred that others should not know about their inhaler use.

The results of the National UK survey showed that 75% felt that it was important for the devices to be small and 76% felt that it should be easy to carry inhalers around but in our study, more number of subjects, ie. 95.5% patients and 97.5% of the general population preferred a smaller device. In comparison to 77% expressing a preference for minimizing the number of daily doses and 59% preferring a single inhaler in the UK study, in our study, 96.7% patients and 94.2% subjects from the general population expressed a desire for a single dose inhaler. The misconception that inhalers were used for serious disorders was quite common among the patients (84.9%) and the common people (82.6%). 79.6% patients and 75.9% people thought that once inhalers were started on, they had to be taken life long.

The analysis of the data showed that the attitudes, beliefs, and perceptions of males, literates and urban patients and subjects from the general population regarding the use of inhalers were better with respect to the prevalence of the misconceptions, wrong attitudes, beliefs and the perceptions among the females, illiterates and the rural patients and subjects from the general population. Observations on the lack of awareness among the

patients about the benefits of inhaled therapy have also been reported by Bedi in his study which was carried out among 160 patients of rural Punjab. In his study, only 18% patients agreed to try inhaler therapy, even after motivation. Our study has some limitations. All subjects were chosen from the outpatient clinic of the hospital and all the interviews were conducted by the first author of the study. This might have resulted in a bias in the sample which was studied and may have led the patients or the subjects to certain answers. For future research, to reduce the sample bias, more community-based investigations should be undertaken to represent the full spectrum of the people. In addition, more standardized questionnaires should be used to assess the patients' and the general populations' attitudes, beliefs and perceptions. Improvement in the quality of care in asthma and COPD requires a comprehensive knowledge of the patients and the management of their disease. It has been suggested that the patients are relatively unaware that most of their asthma-related problems are due to inadequate control, and that a more appropriate behaviour towards the asthma control therapy could improve this situation.

Therefore, it has been suggested that better patient education is necessary in order to improve the management of asthma. Studies have reported that a better knowledge of the disease in the patients improved the adherence to treatment and changed their perception of the disease.

CONCLUSION

We conclude that the results of our study highlighted the misplaced beliefs, attitudes and perceptions about inhalers among a majority of the first contact patients and the common population which are more prevalent in females, illiterates, and rural subjects as compared to the males, literates and the urban subjects. We feel that such misplaced beliefs, attitudes and perceptions about inhalers among a majority of subjects will definitely inhibit the proper utilization of inhaler therapy. More importantly, the results have necessitated the urgent need for an individual and a collective national effort in the form of national educative programmes to dispel the misconception and inadequate knowledge, beliefs, attitudes and the perceptions of the patients and the common people towards inhalers. Sincere and sustained efforts are required to disseminate the knowledge about all the aspects of COPD and asthma and their management amongst the patients and to dispel their myths and misconceptions which are associated with these diseases and their therapy. This will help the patients to participate in self-management plans and for a better control of their disease.

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DECLARATION ON COMPETING INTERESTS:

No competing Interests.

Date of Submission: **Mar 30, 2011**

Date of per review: **Apr 18, 2011**

Date of acceptance: **Apr 18, 2011**

Date of Publishing: **June 13, 2011**