ORIGINAL ARTICLE

Reliability of diagnosis and asthma knowledge, attitudes and perception (KAP) in rural population of NWFP, Pakistan.

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Abstract
Beliefs and attitudes have been proposed as partial explanations for low adherence to medical therapy and the consequent high morbidity from asthma. Out of a database of Rural Health Center in Northern Pakistan, one hundred and seventy three self reported asthmatics were interviewed; 75% of whom were diagnosed by doctors and 25% self diagnosed. The participants' mean age was 39.4±18 years; 59% were females. Thirty seven percent were housewives, 18% farmers, 15 % students whereas 40% were unemployed. The mean duration of illness was seventy two months (range 1 to 480 months). Monthly income of 79% of the participants was less than Rs.5000.00. On assessment, the diagnosis of asthma was confirmed by experts in 143 (83%) cases, mean FEV1 76.6±28.4% predicted; whereas 30 (17%) patients with mean FEV1 48.6±23.1% predicted, were found to be suffering from COPD on the basis of history, examination, spirometry, reversibility testing and response to treatment. The KAP results showed the following perceptions among the asthma patients: Asthma can be cured (50%); Asthma requires life long medication (54%); Asthma can not be cured (27%); My children will also suffer from asthma (26%); Asthma is fatal disease (53%) and Asthma is contagious disease (50%). KAP of asthma patients in rural communities regarding asthma is low and majority of the patients have poorly controlled asthma. Self reported asthma should be confirmed by trained health professionals.

Key Words: Asthma, KAP, Pakistan,

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INTRODUCTION

Asthma is a severe and sometimes fatal chronic disease affecting a large proportion of the population. Pakistan has high prevalence rate of asthma in children, which has gone up from 9 to 18 percent over a 5 years period[1.] This is in line with the increase in asthma prevalence worldwide despite availability of effective treatment[2].

Guidelines are seen as a primary mechanism to combat the increase in asthma prevalence[3] and a number of international and national guidelines (GINA, BTS, ATS, ERS) have been developed over the last 10 to 15 years[4, 5, 6, 7]. Pakistan Chest Society (PCS) [8] has also published its own guidelines in 2001 to streamline the diagnosis and management of asthma in Pakistan. The latter adopt the GINA goals for the long term management of asthma: minimal chronic symptoms; minimal exacerbations; no emergency visits; minimum need for as – required bronchodilators; and no limitations to daily activities.

Research published since the release of various guidelines indicate that in many countries patients with asthma are inadequately treated [9, 10] and adherence to asthma treatment guidelines is generally poor and in result, the goals of guidelines is difficult to achieve[11, 12] .The Asthma Insights and Realty in Europe (AIRE) reveals that only 5.3% of the population surveyed met all the goals of GINA guidelines and 50% of patients with severe disease perceived their asthma to be well controlled given the relatively poor quality of life and high level of healthcare utilisation[3] .

OBJECTIVES

The objectives of the present study were to:

- Assess baseline disease related Knowledge (K), Attitudes (A), Perception (P) in Asthma Patients in rural population of North West Frontier Province (NWFP), Pakistan.
- Assess the accuracy of diagnosis in self reported asthmatics.
- Find out the number of COPD patients among the self reported "asthmatics".

METHODS

Nahaqi research database has been created to facilitate national and international research in various disciplines of health in a Rural Health Centre (RHC) Nahaqi, acquired on lease from the Department of Health, NWFP. RHC Nahaqi has a homogenous and indigenous catchment population. The data was collected in phases and the area was divided into sectors and clusters. A Lady Health Worker (LHW) was recruited, as Research Assistant (RA), per cluster of 1000 people and a questionnaire was developed and administered by the RAs to the head of the household. Demographic, socioeconomic and disease status, birth and mortality data was collected. Data of 146, 321 persons from 21,341 households have been computerized. Average family size is 7 persons per household and there are 53% male and 47% female in the population. Five thousand and twenty one individuals were reported to have chronic non communicable diseases and among these 687 (13%) reported to be suffering from asthmas.

For the present study 340 "self reported asthmatics", aged 10 and above from the database were invited from two union councils selected randomly and 173 of the

invited patients attended. They were administered a questionnaire through face-to-face interview. Data was collected on asthma severity, lifestyle restrictions, use of asthma medications, asthma management practices e.g. peak expiratory flow (PEF) monitoring, seasonal variations, dietary issues, use of alternative medicine, patient's (or parents') knowledge, attitude and perception (KAP) about asthma. History and clinical examination was conducted by a team of pulmonologists, base line spirometry was done in all cases and post bronchodilator reversibility testing was done in selected cases. Asthma and chronic obstructive pulmonary diseases (COPD) diagnosis was made on the basis of history, clinical examination, spirometry, reversibility and response to treatment. Data of 173 patients was further analyzed using statistical software SPSS version 12.1.and t-test was applied to find the difference between the groups.

RESULTS

Table 1 gives the details of study participants. Majority of the patients were females, 59% were married and the mean age was 39.9 years. The mean duration of the illness was 72 months with a range of 1 to 480 months. 79% of the participants had monthly income less than Rs.5000.00. Thirty seven, eighteen and fifteen percent of the participants were house wives, farmers and students respectively while forty percent were unemployed.

One hundred and thirty (75%) were diagnosed as asthmatics by doctors and 43 (25%), were self-diagnosed asthmatics. On the basis of history, examination, spirometry, reversibility and response to treatment, the diagnosis of asthma was confirmed by experts in 143 (83%) cases while 30 (17%) were found to be suffering from COPD. Hence the agreement between self-reported asthma and pulmonologist-diagnosed asthma was present in 83 percent of the cases and disagreement in 17% of patients.

Table1 Descriptive Statistics of the study sample

Patients (number)	173
Mean age± SD (yrs)	39.9±18
Male %	41
Mean BMI±SD	22.9±6.9
Mean Pulse ±SD	88.5±13.8
Mean Systolic BP (mm/Hg) ±SD	121.4±21
Mean Diastolic BP (mm/Hg) ±SD	80.1±14
Mean Resp.rate±SD	21.9±15.9
Mean FEV1 (%predicted) ±SD	71.8±29.5
Mean FVC (%predicted) ±SD	72.2±26.9
Mean PEFR (%predicted) ±SD	65.9±31.5
Mean duration of illness ±SD (months)	72.5±79.4

Table 2 provides the comparison of asthma and COPD groups. The mean age and BMI of the COPD group is on the higher side though not significantly different. There is higher proportion (33%) of current smokers in the COPD group compared to the asthma group. The spirometry values of the COPD group are significantly lower than the asthma group.

Table 2 Break up of the study group into Asthma and COPD patients

	Asthma	COPD	p valve (95%confidence interval of the difference)
Patients (number)	143	30	
Mean age± SD (yrs)	38.9±17.6	45 ±19.3	.089 (-13.2 – 0.9)
Male %	37	60	
Smoking %	9	33	
Mean BMI ±SD	22.6±6.5	24.3±8.4	.240 (-4.4 – 1.1)
Mean Systolic BP (mm/Hg) ±SD	118.4±20	136±23.9	.*000 (-25.8 ─ -9.3)
Mean Diastolic BP (mm/Hg) ±SD	78.6±13.5	87.1±18.6	*.004 (-14.2 – -2.7)
Mean FEV1 (%predicted) ±SD	76.6±28.4	48.6±23.1	*.000 (16.8 ─ 39.2)
Mean FVC (%predicted) ±SD	75.9±26.1	54.3±23.4	*.000 (11.1 ─ 31.9)
Mean PEFR (%predicted) ±SD	70.4±30.5	44.3±27.3	*.000 (13.9 ─ 38.1)
Inhalers use %	17.5	33	
Current symptoms (cough, wheeze, chest tightness and dyspnoea) %	94	87	
Difficulty in sleeping due to symptoms (last week) %	65	60	
Usual asthma symptoms during day (last week)%	76	70	
Symptoms made worse by oily and cold food %	99	97	
Use of alternative medicine %	28	20	

*p<0.05

Table 3, 4 and 5 reveals the Attitudes, Knowledge and Perception (KAP) of the asthmatics patients regarding asthma. Patients understanding of their asthma are poor and there was no difference between the KAP of the male and female patients.

Table 3 Approach to asthma during an acute attack.

Action	**No. of patients (%)**
Go to the doctor	72 (50.3)
Manage with existing medications	42 (29.4)
Manage without medications	25 (17.5)
Do not know	4 (2.8)
Total	**143 (100.0)**

Season		No. of patients (%)
1	Spring	8 (6)
2	Summer	34 (24)
3	Autumn	1(1)
4	Winter	55 (38)
5	All seasons	38 (28)
6	Do not know	7(5)
	Total	**143(100)**

Table 4: Precipitation of asthma symptoms according to season.

Table 5: Knowledge, attitude and perception regarding asthma

Variables	**Yes (%)**
Asthma can be cured	50.3
Asthma requires life long medication	53.8
Asthma can not be cured	26.6
My children will also suffer from asthma	25.9
Use of alternative medicine is beneficial	27.3
Asthma is fatal disease	53.1
Asthma is contagious disease	50.1
My asthma affects my daily activity	79.7
My asthma gets worse by oily and cold food	89.9

DISCUSSION

Regular treatment and good self care is essential in a chronic intermittent condition such as asthma. Patients should be able to recognise acute attacks and take appropriate action.

This study supports others [3,13,14,15] in showing that many patients may make serious errors in their management of attacks. Only 50% will consult a doctor, 29% will manage with existing medicines and 18% will not use any medication or see a doctor (Table 3). Others found similar patterns and reported that 17% of their patients would not summon medical help during acute asthma attack[13].

This study provides direct evidence that the asthma control in rural population of Nahaqi is suboptimal. Inhalers were used only by a minority (17.5%) and majority of them were using reliever inhalers. The reasons for poor compliance with treatment are not clear. It is reported that 50% of patients suffering from chronic diseases do not comply with the doctor's advice on treatment [16, 17, 18] though there has been little agreement about the causes of non compliance [19, 20]. Among asthmatics there are deniers and acceptors of the diagnosis, including misconceptions about inhalers[24], and it is postulated that these beliefs and attitudes influence the medication practice[21]. In our study probably the direct cost of the treatment, which has to be born by the patient, is one of the main factors for poor compliance with the treatment as majority of the patients, 78%, had reported monthly household income less than Rs. 5000.

In our study 94% had asthma symptoms at the time of the study, 65% had sleep disturbances in the last week and 80% had impaired daily activities. The proportion of symptomatic patients is higher in our study as compared to similar studies such as Asthma Insight and Reality in Europe (AIRE), European Community Respiratory Health Survey (ECRHS) and Asthma In America (AIA) survey. In the AIA survey 30% of patients experienced weekly sleep disturbance and 48% had restricted social activities. In AIRE study[3] 50% of adult patients had weekly daytime symptoms, 30% had weekly sleep disturbances and only 57% had symptoms in the last month. The possible reasons for this difference could be the difference in the prophylactic inhaler use, poor understanding of the disease and use of alternative medicine.

The data was collected from the rural community and the disease status was self reported and no written records were available. According to the patients the diagnosis was made by doctors in 72% of the cases, 15% were self diagnosed and the rest were diagnosed by family members and traditional healers such as maulvis and hakims. Seventeen percent of the patients were found to be misdiagnosed and were suffering from Chronic Obstructive Pulmonary Disease (COPD).

In our study 28% were using only homeopathic and herbal medicine while 69% were using or have used other alternative and complimentary medicine such as yoga, breathing exercises and acupuncture along with allopathic medicine. It is reported that

people turn to complimentary medicine because of a positive valuation of complimentary medicine, the ineffectiveness of orthodox treatment, side effects of drugs, other people's recommendations and concerns about communication with doctors and availability of alternative medicine[22, 23].

CONCLUSION

The KAP of asthma patients in rural communities regarding asthma is low and majority of the patients have poorly controlled asthma. Self reported asthma has to be confirmed by trained health professionals.

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