

Original Article

Interprofessional collaboration to manage allergic disorders in rural areas of Himachal Pradesh

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Abstract

Background: Allergic disorders are common and affect a large population even in rural areas. Medical care is not easily accessible to rural population especially in hilly terrain. Health camps are effective method to deliver medical care in such areas. Interprofessional collaboration involving various professions who work together as a team for management of various disorders is being studied and practiced recently.

Aims and Objectives: To study the impact of interprofessional collaboration at these rural health camps to control allergies prevalent in the rural areas of the region.

Methodology: Around 18 interprofessional health camps involving doctors of various disciplines – ENT, pulmonary medicine, skin, eyes, yoga experts, health and sanitation workers, public health, lab technicians, pharmacist and nursing staff were held in rural areas with an attempt to manage allergic disorders prevalent there as a team. The treatment was provided as a collaboration of various professions.

Results: 608 patients of allergic disorders were identified at these camps which were more prevalent in younger and middle age group and females. The common allergens were dust mite mix, pine mix, cockroach and grass pollen. Nasal allergies were more common followed by skin and pulmonary allergies. On follow up, allergies were more controlled (48%) in patients who followed interprofessional advise and treatment as compared to (5%) in those who didn't follow the same.

Conclusion: Allergic disorders can be best managed by a holistic approach of treatment involving various professions. Health camps through interprofessional approach are an excellent method to provide medical care to rural population in difficult hilly terrain.

Keywords: Allergies; Interprofessional practice; Skin prick tests; Yoga

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Introduction

Allergic disorders are common and affect around 20% of world population.¹ They are also seen in large population in rural areas of Himachal Pradesh.² They are one of the most under diagnosed and under treated diseases.³ Allergies are associated with significant co morbidities and health issues.^{4,5} To impound the problem, most of the health care facilities are concentrated in cities and that too metros especially those dealing with specialized disorders like allergies. In rural areas mostly unskilled or semi skilled or untrained practitioners attend the patients.⁶ To add to this, ignorance, poverty, superstitious and traditional beliefs inhibit the rural population to take treatment in big cities.⁷ Bad infrastructure of roads in many of

these far flung hilly areas with difficult terrain and improper transportation adds to the problem

Health camps are an excellent means to provide health care at affordable costs to the rural population in such terrains.² Interprofessional (IP) collaboration involving various professionals who work together to improve quality of health services can be a excellent method of providing health care for treating various disorders.⁸ Interprofessional practice (IPP) means when multiple health workers from different professional backgrounds work together with patients, families, care givers and communities to deliver highest quality of health care.⁹ This has never been tried as a model of management of chronic disorders in our region including allergies

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So the aim of our study was to study the impact of IPP collaboration at these rural health camps to control allergies in the inaccessible areas. The objectives of our study were to analyze the demographic profile of allergy patients in the rural population, clinical profile of the symptomatic patients, allergen profile of the symptomatic patients and impact of IPP if any to motivate them and to control their symptoms

Materials and Methods

This study was conducted in rural areas of Solan, Sirmour and Shimla districts, coordinated by our medical college and hospital. The permission of our institutional ethical committee was taken vide letter no. MMMCH/IEC/18/178 issued by Principal and incharge Institutional Ethical Committee of our medical college. 18 interprofessional health camps involving various interprofessional (IP) team members (Table 1) were held between July 2018 to June 2019. The focus was on chronic disorders and main one of them was allergic disorders. The patients were screened for allergies and those diagnosed were treated by a holistic interprofessional approach which included yoga specialist for teaching yoga, dietician for dietary advise among others (Table 1).

Table 1. Interprofessional (IP) Team composition

IP Member	Role
ENT specialist	For nasal and ear allergies
Pulmonary specialist	For pulmonary symptoms
Skin specialist	For skin allergies
Eye specialist	For ocular allergies
Yoga specialist	For yoga training
Dietician	For dietary advise
Nursing staff	Patient care and assist the doctors
Pharmacist	Dispense medicines for allergies
Lab technicians	Perform skin prick tests
Public health officer	For housing and sanitation
Local health workers	Health and hygiene awareness to prevent allergies

The analysis done in 1st phase was demographic and clinical profile of allergy patients, skin prick test sensitization and findings, Required medications were provided to the patients at the camp as per their disease and symptoms. Skin prick tests were done by the staff nurse (2nd author) in the supervision of the main author who is a allergist by training. Required equipments to manage anaphylactic reactions were

available. Since it's a skin prick test with minimal risk, no anaphylactic reaction was reported on any patient.

Follow up:

These patients were followed up for 6 months. The follow up was done by the local members of same IP team and other members on their regular visits to the areas. At the end of 6 months, these patients were analysed for patient adherence to treatment by interprofessional holistic approach, symptom control in adhered and non adhered group

Ethical Clearance: yes

The permission of our institutional ethical committee was taken vide letter no. MMMCH/IEC/18/178 issued by Principal and incharge Institutional Ethical Committee of our medical college

Results:

18 IP camps were held and a total of 10095 patients attended these camps, out of which 608 (6%) were having allergy complaints. (Table 2)

Table 2. Health Camps location and number of patients attended

Location	IP CAMPS		
	Date held	Patients	Patient with allergies
Kotkhai	18/7/18	2505	182
Rabon	24/7/18	357	14
Balag	16/9/18	488	31
Kuthar	23/9/18	284	12
Kunchar	30/9/18	228	9
Chambaghat	4/11/18	356	7
Chamkadi	25/11/18	285	22
Pattabarori	9/12/18	408	32
Arki	24/12/18	187	7
Mehendo Baag	24/2/19	355	14
Jaman Ki Sher	28/2/19	256	21
Darlaghat	9/3/19	410	16
Mamlig	24/3/19	350	21
Noradhar	31/3/19	418	25
Dadahu	7/4/19	374	19
Mandal	20/4/19	1350	82
Pulvahal	26/5/19	1100	77
Kandaghat	2/6/19	586	17
TOTAL		10095	608 (6%)

Most of the patients were in younger age group with slight predominance in females over males (Table 3)

Table 3. Demographic profile of allergy patients

Age	Male	Female	Total
0 – 18 years	22	27	49
19 – 40 years	155	204	359
41 – 60 years	63	89	152
> 60 years	23	25	48
Total	263	345	608

Most of the allergy patients had nasal complaints of nasal discharge, nasal obstruction, sneezing and itching in the nose followed by skin complaints of itching, redness and wheal formation and pulmonary complaints of chronic cough including night cough, wheezing and breathlessness (Table 4)

Table 4. Clinical profile of allergy patients specifying kind of allergies

Complaints	Number of Patients	Percentage
Nasal	368	60%
Skin	220	36%
Pulmonary	171	28%
Eye	153	25%
Ear	61	10%

70% of these patients were sensitized to skin prick tests using common allergens (Figure 1) and the most common allergens were dust mite, followed by cockroach and pine mix (Table 5)

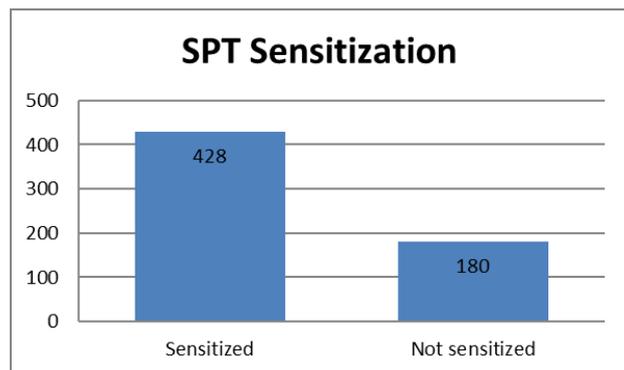


Figure 1 Skin Prick Test sensitization

Table 5. Allergen profile of the patients specifying the allergen sensitivity

Sensitization	Number of Patients	Percentage
Dust Mite Mix	248	58%
Cockroach	240	56%
Pine Mix	233	54%
Grass Pollen Mix	163	38%
Mould Mix	78	18%
Peanut	41	10%

Though the adherence rate to the patients who followed IP treatment after camp was 36% but considering the literacy level it was significant (Figure 2)

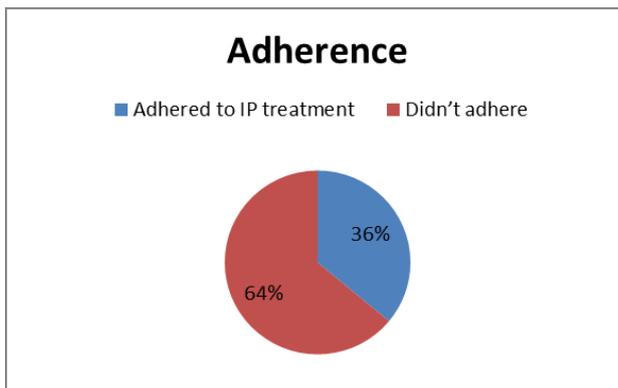


Figure 2 Adherence to treatment by patients on follow up

Nearly 48% of patients who followed IP treatment had controlled symptoms as compared to 5% who didn't (Figure 3)

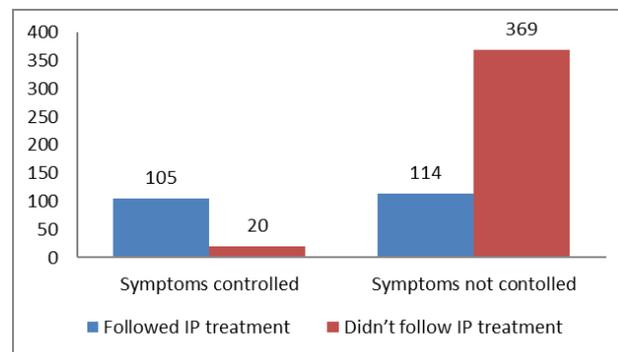


Figure 3 Symptoms control seen on follow up

Discussion

18 Interprofessional camps were held and total 608 patients with allergic complaints were diagnosed. The allergies in our study were more common in younger age groups and in females. Most of the patients had nasal complaints with features of allergic rhinitis. The tests carried out for conforming the diagnosis were Skin Prick Tests (SPT) which are said to be the gold standard tests for diagnosing allergies.³ The most common allergen found out was Dust Mite in our study. All the allergy skin prick tests were done by and under supervision of the authors. No anaphylactic reaction was reported on any patient in our study

Similar results have been obtained in other studies. Another hospital based study carried out in our region found Dust mite to be the most common allergen.¹⁰

They have also found nasal complaints to be most common in allergy patients.¹⁰ We obtained similar results in our community based study in rural areas, the first of this kind in our region. Pine mix was also found to be a major aero allergen in our study and even in the hospital based study done two years back.¹⁰ Another study by Oladeji SM et al also found dust mite to be the most common allergen.¹¹ A study by Wiqar SA also found nasal complaints to be most common among allergy patients in India.¹² Mean age of allergy patients was found to be in younger age group (29.3 years) according to Desalu et al¹³. Rasool R et al¹⁴ and Giridhar BH et al¹ also found female predominance among allergy patients

Our study stands out in a way that ours is a first community based study using interprofessional approach in the region for managing allergic disorders. We got good adherence to the IP treatment and excellent symptom control in patients who followed IP treatment. A more satisfying results possible by sharing of knowledge between different professionals and working together as a team with effective communication led to more effective integrated patient care and benefitted the rural population of this hilly region.

Hudson et al also found benefits of IP collaboration in his study.¹⁵ According to Gajuryal et al such camps

form a more bond of community participation and more effective results.¹⁶ According to literature, IPP can be a excellent way to provide quality health care to the patients at minimal costs using holistic approach which has yielded good results.⁹

Conclusion

Allergic disorders best managed by holistic approach of IPP involving various professions. Health camps through IP approach to provide treatment to rural hilly population. There is good acceptability of IP treatment with encouraging outcomes in terms of disease control

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Conflict of Interest

The authors declare that there is no conflict of interest

Source of Fund: Nil

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