Symptomology of Patients Presenting to the Medicine OPD of a Tertiary Care Hospital with Special Reference to Temporal Variation: A Survey from Eastern India

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Introduction

Internal medicine department has the highest patient footfalls in any hospital. Since this department utilises a vast array of medicines, it is often very difficult to keep a steady supply of all drugs without facing the dual problem of drug shortage and drug wastage. In this backdrop, it would be highly desirable to have an idea about the relative percentage of different symptoms with which the patients present to the medicine OPD (outpatient department). Since the treatment strategy for a significant proportion of patients at first contact is symptomatic relief, this data about the relative percentage of different symptoms would help the hospital authority in planning the supply of different drugs. This is particularly relevant for the remote or rural public hospitals, where procurement of medicines is a lengthy process. Also, physicians equipped with this data will be able to devise protocols for the treatment of common conditions. This will help in speeding up the process of patient care at already overloaded and understaffed hospitals of India.

However, the symptomology of patients is not uniform throughout the year. Changes in the length of daylight time, humidity and temperature can alter the intensity and duration of various bodily symptoms. Psychiatry is one field where a seasonal rhythm in various symptoms is well established[1]. Various psychiatric disorders are found to predominate at particular times of the year and this is also reflected in the relative bed occupancy ratio[2]. While this seasonal variation in psychiatric diseases is well-known, other clinical conditions have also been shown to have ups and downs in incidence throughout the year. Some of this can be simply explained by prevailing weather conditions with increase in vector borne diseases like scrub typhus and malaria during the monsoon season in tropical countries. But there are other non-infectious conditions too where there are inexplicable seasonal variations. For example, in a recent study from Kanpur, it was seen that even conditions like toothache and abdominal pain showed significant seasonal variation[3]. However, there are very few Indian studies in this regard.

This variation in symptomology with season has significant implications for the health system. In a resource-limited country like India, especially in the public sector, allocation of resources (medicines, manpower, or beds) is always a contentious issue. Some idea about this seasonal variation in presenting symptoms may help in better allocation of health resources at different times of the year (for example, commissioning a fever clinic or pain clinic at particular times). However, in a vast country like India, there will be considerable geographical variation in symptomology. The symptomology of patients in Medicine OPD will vary widely between the mountains, deserts, coastal areas and forested districts of India. Thus, loco-regional data will be needed to get a complete picture of symptoms of patients.

The present study is aimed at finding the symptomology of patients throughout the year in one urban medicine OPD clinic in a tertiary care hospital of Eastern India. This is expected to generate data which can be used by hospital administrators and health planners of this region.

Material and methods

This was an observational, cross-sectional, hospital-based, questionnaire-based survey. The study was done in the afternoon pay clinic (Medicine) of a Medical College in Kolkata. This particular clinic was functional for two days per week, two hours per day. This clinic was chosen as the general OPD is too crowded for conducting an academic study. The presenting symptoms of all patients presenting to this clinic were recorded. These were the symptoms which the patient described on entering the clinic, without any leading questions. Later, during analysis, the words which implied the same meaning were clubbed together under the same heading. For example, the Bengali terms, "gas", "indigestion" or "bloating" were all clubbed together as dyspepsia. Similarly, "pain in the throat", "blocked nose", "watery discharge from nose" and cough were all clubbed together as "cough and cold". Different Bengali/Hindi terms

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for pain like "Byatha", "Dard", "jontrona", "shulano", etc., were all clubbed together as "pain".

The study was done for a period of one year to capture the 12-month data. Consecutive sampling method was used as it suited the busy work schedule of the authors. One particular study subject was included in the data only once even if he/she came back multiple times for treatment. Only if they came back with a new symptom, they were considered as a new entry for this study.

The data was captured in data entry forms. Then, it was transferred to Microsoft Excel worksheet. Mainly a descriptive analysis of the symptoms was done using Excel software. P < 0.05 was considered significant.

Results

There were a total of 957 patients in this survey. Males constituted 55.5% of the patients. Average age was 40.6 ± 14.5 years with an age range of 8 - 88 years. As Table I shows, the maximum proportion (66.6%) of patients belonged to 21 - 50 year age group. Regarding occupation, the largest share was of homemakers (36.5%), followed by office workers (15%), (Table II).

Table I: Age and gender distribution of patients.

Age group (years)	Male (n)	Female (n)	Total (n)
≤ 20	32	42	74
21 - 50	341	296	637
> 50	158	88	246
Total	531	426	957

Table II: Occupation of the study subjects.

| Occupation	Number	Percentage
Home maker	349	36.5
Businessman	127	13.3
Labourer	79	8.3
Farmer	32	3.3
In-service	142	14.8
Student	98	10.2
Others	130	13.6

53.2% of the patients had one symptom, 38.5% had two symptoms, 6.7% had three symptoms and 1.5% had four symptoms. In November, patients were more likely to present with multiple symptoms. 28.6% of the OPD patients in November had 3 or 4 symptoms.

Table III describes the main symptoms with which the patients came to this medicine clinic. It is seen that different types of pain were the commonest symptom (51.6%) followed by dyspepsia (16.6%). 7.8% presented with generalised weakness. However, there was great variation in the site of pain (Fig. 1). 32% complained of abdominal pain while 16% complained of hand and foot pain. Headache was complained by 14%.

Table III: Main symptoms with which patients presented to the clinic.

| Symptom	Number (n)	Percentage
Pain (anywhere)	494	51.6%
Dyspepsia	159	16.6%
Constipation	47	4.9%
Weakness	75	7.8%
Vertigo	31	3.2%
Cough and cold	83	8.7%
Diabetes	66	6.9%
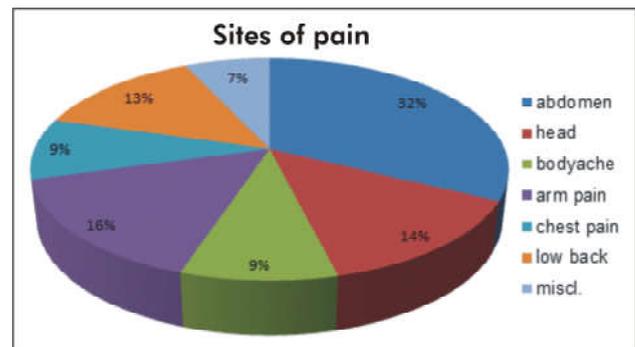
Fig. 1: *Pie chart showing the sites of pain, as complained by the patients.*

Fig. 2 shows the relative percentage of selected symptomology in different months of the year. As seen in this graph, abdominal pain was the commonest (25% of all patients) in October and December. Dyspepsia also peaked in December. Cough and cold peaked in January (around 20% of the patients) with a second smaller peak in October. Headache generally remained between 5 - 10%, except in July, when it showed a significant dip.

Weakness was another common symptom (not mentioned in Fig. 2). It was found that weakness, as the presenting symptom, was the highest in November (13%) followed by April (11.6%). The lowest percentage was in February (2.8%).

Table IV and Fig. 3 show the age and gender distribution of different symptoms/complaints. As seen here, dyspepsia was the commonest in 41 - 50 year age group (28.3%), while headache was commonest in 21 - 40 year group (61.8%). Diabetes, as expected, increased with age. Cough
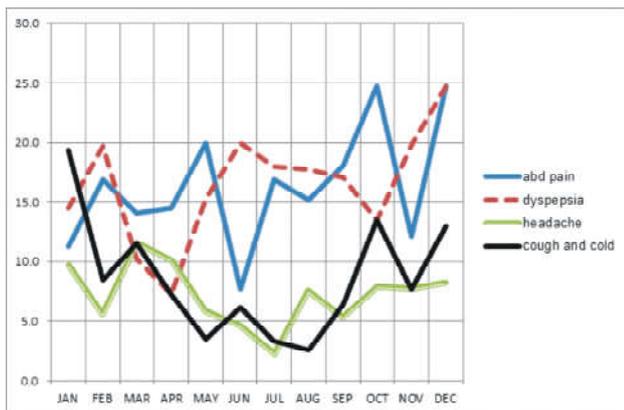
Fig. 2: Line graph showing monthly relative percentage of some symptoms.

and cold and constipation were most common in the above - 50 age group. Regarding gender, vertigo was commoner in females (54.8%), while constipation and dyspepsia were commoner in males (61.7% and 62.9% respectively).

Table IV: Table showing age-distribution of different symptoms.

Age group (years)	Dys-pepsia	Consti-pation	Weak-ness	Vertigo	Head-ache	Cough and cold	Dia-betes	Abdo-minal pain	LBP
≤ 20	7	1	4	2	10	7	0	21	1
21 - 30	30	9	16	7	23	12	1	44	12
31 - 40	44	14	18	4	19	23	7	40	18
41 - 50	45	8	18	12	10	16	28	35	25
> 50	33	15	19	6	6	25	30	20	11
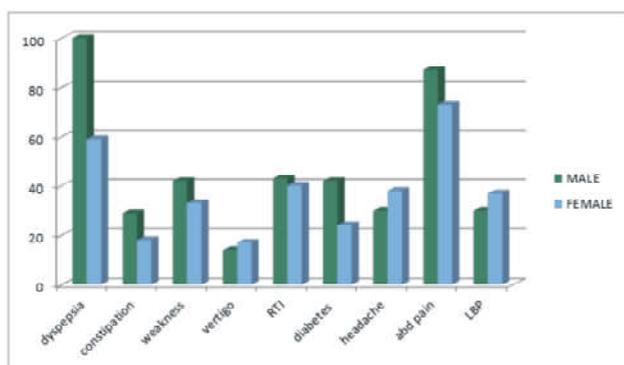
Fig. 3: Bar diagram showing the gender distribution of some select sympoms.

Discussion

The present study was a survey undertaken as a public health exercise. This survey has shown that in Eastern India, pain of different in is the commonest symptom of presentation

the medicine OPD. Symptoms like abdominal pain and respiratory infection showed considerable seasonal variation.

A similar study was done in a primary health centre of Kanpur[3]. There, the authors observed that presentation with gastritis was the highest in the month of May-June. In our study, abdominal pain and dyspepsia were highest in December. In the study from Kanpur, respiratory infections were the highest in the months of July-August, while in our study we found higher prevalence in December-January (Fig. 2). Overall, the commonest diseases presenting at the OPD in Kanpur health centre were skin infections, respiratory infections, COPD and gastritis. This is quite different from the symptomology of our subjects. But this may be explained by the fact that our study was a medicine OPD based survey in a tertiary centre, where the patients get channelled into severe specialities. But in a PHC, all patients will come to the same OPD.

A survey done in Nepal showed that acute respiratory infections (ARI) were the commonest cause of OPD visit, followed by wound infection, acid peptic disease and diarrhoea[4]. But this survey was done between the months of July and September and thus, gives no idea of the symptomology at other times of the year. Common symptoms like diarrhoea and minor wounds are more likely to be treated at a local level and thus, the patients coming to tertiary care hospitals like ours are likely to have other problems.

Similar to our study, Sharma *et al* also documented higher prevalence of ARI in winter months[5]. They also found that ARI was commoner in females. But in the present study, no such gender difference in ARI was found (Fig. 3). Sharma *et al* also reported higher presentation with diarrhoea in the summer months. But in our study, the number of diarrhoea patients was too small for analysis.

A study done in the OPD of a tertiary care hospital of Sri Lanka in 2012 reported that the main symptoms at OPD visit were body aches, cough and cold and abdominal pain[6]. They also reported that body ache was the commonest presenting symptom for both genders while abdominal pain and cough were the commonest symptoms in the 20 - 40 year age group. In our study, headache and abdominal pain were the commonest in the 21 - 40 year age group; in females, vertigo, headache and low back pain (LBP) were more common than males. In another recent (2015) study from Pune, it was seen that ARI and musculoskeletal pain were the two commonest causes of OPD visit[7]. Like our study, they also found a peak in ARI in January. They reported very small number of gastritis/dyspepsia cases. Symptoms like low back pain and ARI were commoner in females in Pune.

The reason for higher prevalence of body ache or low back pain in our sample patient population is a matter of speculation. Low back pain is not one uniform entity but there may be multiple causes for this symptom. Similarly dyspepsia is a heterogeneous entity. This survey establishes that non-communicable diseases like peptic ulcer disease or musculoskeletal pain constitute a significant proportion of the patients in the medicine OPD and physicians must be aware of the various management options of these symptoms like dietary modification and biofeedback manoeuvres.

Limitation

There are some limitations of this study. Firstly, this study was conducted in a tertiary care hospital. So, the data may not represent the community based symptoms.

Secondly, the present study is limited by the small number of patients. Also, this survey was conducted in a biweekly medicine clinic of the hospital. Inclusion of OPD patients from all weekdays can give a better idea of the overall symptomology. Also, the symptomology of inpatients was not included here.

Finally, while the symptomology is important, the data on the actual diseases affecting the patients (like diabetes or COPD) is also important for health planning. This can help in manpower deployment during particular seasons. Such studies are planned in the future.

Conclusion

This present study is probably the first of its kind from Eastern India. This study generates data for health planners and hospital administrators which can be used to decide on drug supply and also physician training priorities.

Recommendations

- In view of the high proportion of patients presenting with different types of pain, a separate "pain clinic" may be arranged in the tertiary hospitals of this region. This can be in association with other departments like psychiatry, physical medicine and neurology.

- Supply of medicines for respiratory infections must be increased during the winter months, December and January.

- Physicians attending geriatric clinics must be well versed in the management of conditions like constipation, respiratory infection, or diabetes.

References

1. Pirkola S, Eriksen HA, Partonen T *et al*. Seasonal variation in affective and other clinical symptoms among high-risk families for bipolar disorders in an Arctic population. *Inter J Circumpolar Health* 2015; 74: 1.

2. Shiloh R, Shapira A, Potchter O *et al*. Effects of climate on admission rates of schizophrenia patients to psychiatric hospitals. *Eur Psychiatry* 2005; 20: 61-4.

3. Kumari R, Nath B, Midha T *et al*. Morbidity Profile and Seasonal Variation of Diseases in a Primary Health Center in Kanpur District: A Tool for the Health Planners. *J Family Med Prim Care* 2012; 1: 86-91.

4. Shankar RP, Kumar P, Rana MS *et al*. Morbidity Profile, Prescribing Patterns and Working of the Community Drug Programme in a Health Post in Western Nepal. *World Health Popul* 2006; 8: 62-9.

5. Sharma MK, Bhatnagar T, Goel NK *et al*. Operationalisation of Surveillance of Communicable Diseases in Chandigarh. *J Commun Dis* 2005; 37: 197-202.

6. Dharmaratne S, Agampodi S, Dassanayaka S *et al*. Disease Burden Assessment Beyond In-patient Data: A Morbidity Profile Assessment of Outpatients. *Int J Prev Med* 2012; 3: 730-2.

7. Yadav V, Manjunath SR, Mukherji S *et al*. Morbidity Profile of OPD patients of an Urban Health and Training Center: A Tool for the Health Planners. *Ntl J of Community Med* 2015; 6: 46-50.