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Health Screening Of Chronic Medical Conditions In Community Pharmacies Of Mysuru City

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Abstract

Introduction: Hypertension is chronic cardiovascular incurable disorder where it may not precipitate the symptoms in each and every individual. In other words hypertension is also called silent killer, where it can damage heart, kidney, eye and brain if left untreated. People in the advanced age as well as people with risk factors such as smoking, obesity, sedentary life style habits, consuming more salt and fat in the food diet etc should always be screened for blood pressure. Health screening services are those health care services provided to Study Subjects and general public by health care professionals such as measurement of capillary blood glucose by glucometer, measurement of peak expiratory flow rate by using spirometry, measurement of blood pressure by sphygmomanometer etcOur practising community pharmacists work only in the interest of business welfare rather than public health welfare. Therefore research investigators thought that introduction of health screening service of blood pressure in community pharmacy can create awareness to general public and this type of health care service rendered in one community pharmacy can spread to another community pharmacy, so that role of community pharmacist can be recognised in terms of professionally rather than meagrely businessmen by general public.

Objective of the Study: To screen the public visiting and to implement and evaluate health screening and monitoring services for hypertension, in professional community pharmacy, Mysore.

Methodology: This was prospective observational study carried out in professional community pharmacy over a period of one year. Subjects who met study criteria were enrolled in this research study by giving consent form. Demographic details such as age, gender, qualification status, marital status, social history was documented in suitably designed data collection form. Ausculatory method was applied to find out blood pressure of study subjects.

Results and Discussion: Mean change of systolic blood pressure observed among screened Study Subjects were 11 plus or minus 3.68 and mean change of diastolic blood pressure observed among screened study subjects were 04.52 plus or minus 1.04. Mean change of systolic blood pressure observed among monitored study subjects were 7.32 plus or minus 0.75 and mean change of diastolic blood pressure observed among monitored Study Subjects were 04.41 plus or minus 0.83.

Conclusion: The mean change of of systolic and diastolic blood pressure observed among screened and monitored Study Subjects were found to be statistically significant of P Value <0.05.

Key words: Health, Screening, Monitoring, Community Pharmacist, Community Pharmacy, Blood Pressure.

Background of the Study:

Hypertension is chronic cardiovascular incurable disorder where it may not precipitate the symptoms in each and every individual. In other words hypertension is also called silent killer, where it can damage heart, kidney, eye and brain if left untreated.[1] People in the advanced age as well as people with risk factors such as smoking, obesity, sedentary life style habits, consuming more salt and fat in the food diet etc should always be screened for blood pressure. There are two types of hypertension known as primary and secondary. Primary hypertension is also called idiopathic as the exact cause is not known, more often primary hypertension is always diagnosed by considering risk factors of individual such as smoking, obesity, physically inactive, family history, consuming more salt and fat in food diet.[2] Whereas secondary hypertension can be acquired by an any individual due to medical conditions such as endocrine disorders such as hypothyroidism, hyperthyroidism, etc followed by renal disorders such as bilateral renal artery stenosis, chronic kidney disease etc a and medications such as oral contraceptives, oral corticosteroids, any medicinal product containing high amount of sodium etc. Therefore people after 30 years or having any risk factors need to have screening for high blood pressure and if found any abnormality in their blood pressure values needs to adopt good life style habits . Most often now days especially in Indian population, there is lack of awareness among general public with regarding to hypertension which makes them more complacent or negligent to undergo screening for blood pressure.[3] There is another false perception among general public where they depend only on doctors for screening blood pressure, without knowing other health care professionals can also do this type of blood pressure screening without any consultation charges. Health screening services are those health care services provided to Study Subjects and general public by health care professionals such as measurement of capillary blood glucose by glucometer, measurement of peak expiratory flow rate by using spirometry, measurement of blood pressure by sphygmomanometer etc.[4] Screening always allows earlier diagnosis of any medical condition, where it can be done by any health care professional, rather depending only on doctors. Moreover any medical condition that needs to screened always have simple procedure rather than complicated procedure and moment once any medical condition is suspected proper preventive measures can be taken in according to that. Today medical conditions such as hypertension and diabetes mellitus needs to be screened as the age progresses, if these medical conditions goes unnoticed it may end up with more morbidity and mortality in future. Whenever medical conditions such as stroke, chronic kidney disease, hyperlipidaemia is seen most often risk factors will be hypertension, family history and male gender.[5] Screening will always help in making earliest intervention so that disease will have good prognosis. There are overseas research studies reflecting that screening hypertension, diabetes, hyperlipidaemia have been able to identify cardiovascular disease risk factor by community pharmacist was able to minimize further progression of disease in according to the risk factor. There was one research study carried out in overseas reflecting that community pharmacist is the only who can be easily accessible in community setting where pharmacist can take better precautionary measures in according to Study Subjects who are at risk of disease. One of the research study carried out in Australia reflects that community pharmacist was able to help in making the diagnosis of diabetes in majority of Australian population where the general public was unaware of it.[6]

Overseas research studies was carried out with respect to health screening services such as hypertension, hyperlipidaemia and more number of other disorders that was associated to cardiovascular disease risk in Australia and small number of other countries.[3] One of the research study conducted in Australia reflected that pharmacists can play vital role in the disgnosis of diabetes where most of Australian general public were unaware of it.

The main objective of initiating this type of health care service to general public in Australia was due to appointment of health screening among elderly Study Subjects who have difficulty in accessing general practitioner, may be obtained by pharmacist without any waste of time and free consultation charges, apart from that role of pharmacist in general public may be well recognised by providing different types of health screening services such as measuring blood pressure, blood sugar. Cholesterol and total triglycerides, peak expiratory flow rate etc so that role of pharmacist in society may be well recognised as health care professional which can ultimately help in building good rapport with each and every person among elderly and adult Study

Subjects for receiving this type of health care services.[7]
There were certain advantages that were reflected in health screening services by providing to general public of Australia are listed below.
Created awareness to general public about the importance of health screening services.
How role of pharmacist can play significant role in health screening services, thereby showing broader role of pharmacist in this society.

Finally pharmacists can play significant role in health screening services other than dispensing and selling medicine in Australia.[3]

Today in India practising community pharmacists know only about dispensing and selling medicines rather than knowing profession nal health care services such as health screening, patient counselling, etc. The reason behind why our practising community pharmacists are lacking professional health care services was due to lack of training by professional governing body. Our practising community pharmacists work only in the interest of business welfare rather than public health welfare. Therefore research investigators thought that introduction of health screening service of blood pressure in community pharmacy can create awareness to general public and this type of health care service rendered in one community pharmacy can spread to another community pharmacy, so that role of community pharmacist can be recognised in terms of professionally rather than meagrely businessmen by general public.

Specific objectives of the study:

To screen the public visiting at professional Community Pharmacy for hypertension,.
To implement and evaluate health screening and monitoring services for hypertension, in professional community pharmacy**,** Mysore.

Methodology:

This was prospective observational study carried out in professional Community Pharmacy over a period of one year. Subjects who met study criteria were enrolled in this research study by giving consent form. Demographic details such as age, gender, qualification status, marital status, social history was documented in suitably designed data collection form. Subjects having abnormal blood pressure values were counseled about the importance of good life style habits and medication adherence.

Subject Enrollment

Subjects visiting to professional Community Pharmacy, Mysore were requested to undergo health screening of blood pressure and whoever found to slightly elevated blood pressure was suggested to adopt good life style habits and asked to come for follow up after one week. If blood pressure was increased despite of good life style habits during follow up, they will be referred to general practitioner for further evaluation of the same. Subjects with known case of hypertension were placed in screening and monitoring group. Subjects falling under screening and monitoring group were having follow up once in every 20 days and during follow up concerned subjects blood pressure and body mass index were evaluated, if any abnormality were found in this regard they were counselled in according to that and follow up card was given to those subjects where they have been asked to bring follow up card at next visit without fail.

Subjects visiting to professional Community Pharmacy for purchase of medicinal products were screened for blood pressure and body mass index, if found abnormal on these vital parameters, they were requested to come for follow up on two different occasions. If blood pressure was elevated on all three different occasions, they will be referred to general practitioner for further evaluation of the same.

Study procedure

The professional community pharmacy was chosen as its large size, availability of an in-house physician and counseling chamber facilitated the establishment and evaluation of a screening and monitoring service. A health survey was done nearby Sri Shivarathreeshwara Nagar to find out the Study Subjects suffering from chronic diseases with the help of graduate and post graduate students. Door to door survey was done in Sri Shivarathreeshwara Nagar and explained the importance of health screening services of pharmacist to people residing in Sri Shivarathreeshwara Nagar so that they can approach to pharmacist for blood pressure screening and monitoring without any consultation charges and save the time .General public was created awareness of health screening services being provided in the professional Community Pharmacy.

Procedure for measurement of B.P. (using manual mercury sphygmomanometer):
The persons were asked to sit and relax for 5 min.
The right arm was placed at the level of the heart.

An appropriately sized rubber cuff was chosen.
The cuff was wrapped snugly around the arm with the center of the bladder over the brachial artery.
Measurements were taken with a validated manual mercury sphygmomanometer.
The ausculatory method was used to estimate systolic blood pressure, the cuff was inflated and the point at which the sounds were heard through the stethoscope was noted as systolic blood pressure and the point at which the sounds disappeared was noted as the diastolic blood pressure.
The cuff was deflated at a rate of 2 mm of Hg / second, once the diastolic blood pressure was noted, the cuff was then completely deflated. A second measurement was taken after 1-2 min on the same arm, if the readings differed by more than 6 mmHg, an additional measurement was done.
During the course of the study, a total of 1025 subjects visited the study site. All subjects agreed to have their blood pressure measured and BMI assessed, about 800 subjects were screened for hypertension and 225 subjects were screened and monitored for hypertension. We found that, 567 subjects had abnormal values of physiological parameters such as blood pressure and body mass index.[8]

Table 1: Results of screening and monitoring services at the study site (N=1025)

Particulars	n (%)
Total number of subjects	1025 (100)
Screened	800 (78.05)
Monitored	225 (21.95)
Details of subjects who were screened	
Number of subjects found to be normal	458 (44.68)
Number of subjects found to have abnormal values	567 (55.31)
Elevated Blood pressure	178 (31.39)
Increased Body Mass Index	114(20.10)
Decreased Body Mass Index	275(48.50)
Details of subjects who were monitored	
Hypertension	225 (21.95)

Table 2: Demographics of subjects screened for suspected disease (N=368)

Variables	n (%)
Gender	
Male	215 (58.42)
Female	153(41.57)
Age in years (mean ± S.D.)	
20-40	98 (26.63)
40-60	110 (29.89)
60-80	160 (43.47)
Social habits	
Smoking	
Smokers	78 (21.19)
Past smoker	45 (12.22)
Non smoker	245 (66.57)
Alcohol	
Alcoholics	22 (5.97)
Non alcoholics	330 (89.67)
Past alcoholics	16 (4.34)
Family history of HTN	
Positive	70 (19.02)
Negative	298 (80.97)
Education level	
Illiterates	65 (17.66)
Primary school	130 (35.32)
High school	56 (15.21)
Secondary school	99 (26.90)
Degree	18 (4.89)

Those who were suspected to have hypertension were asked to return to the pharmacy on two different occasions, so that the findings obtained at their first visit, could be verified.[9]If their values were still elevated at the third visit, they were directed to consult their physician. Only 20 subjects, from the group suspected to have hypertension returned for three visits. The details of these subjects are shown in Table no. 3[10]

Table 3: Details of screened subjects who completed preliminary visits (N=135)

Suspected Disease	No. of subjects at visit 1 n (%)	No. of subjects at visit 2 n (%)	No. of subjects at visit 3 n (%)	No. of subjects referred to GP
HTN	35 (28)	20 (16)	20 (16)	20 (16)

We requested the study subjects to come for three follow ups, after they consulted their respective GPs. Out of the 20 subjects who were referred to GPs for their elevated BP only fourteen subjects came for first follow up. The other six were lost to follow-up.

The details of subjects who completed the study after their consultation with their GPs are given in Table 4.

Table 4: Details of Screened Subjects who completed follow up

Suspected Disease Group	No. of subjects at 1st follow-up	No. of subjects at 2nd follow-up	No. of subjects at Final follow-up
HTN	14	11	09

Of the fourteen Study Subjects who were newly diagnosed to be hypertensive, nine subjects completed all the follow-ups and their BP was monitored at each follow up. The change in the blood pressure from baseline to final follow up was statistically significant.[11]The mean changes in their BP from baseline to final follow up are reflected in Table 5.[12]

Table: 5 Mean Change in BP seen in Subjects who completed the study (N=9)

No. of Subjects	Mean SBP in mmHg (mean ± SD)				Mean DBP in mmHg (mean ± SD)			
	Baseline	Final follow-up	Change	P value	Baseline	Final follow-up	Change	P value
09	143 ± 4.29	132 ± 7.97	11 ± 3.68	<0.05	87.77 ± 2.39	83.25 ± 1.35	4.52 ± 1.04	< 0.05

p value < 0.05 is significant as calculated by t-test

We found 35 were known to be hypertensive. The BP of the hypertensive Study Subjects at each follow-up. The number of Study Subjects monitored at baseline and each follow up is reflected in the Table 6 below.[13]

Table: 6 Number of Subjects in the monitoring group at baseline and each follow up (N= 85)

Subjects monitored for disease.	Baseline n (%)	No. of subjects at 1st follow up n (%)	No. of subjects at 2nd follow up n (%)	No. of subjects at final follow –up (%)
HTN	85 (100)	45(52.94)	30 (35.29)	22 (25.88)

Of the 85-hypertensive Study Subjects who were placed in the monitoring group, 22 subjects completed all the three follow-ups.[14] Their BP was measured at each follow up; there was a significant improvement in BP seen between baseline and final follow-up. This is reflected in Table 7.[15]

Table: 7 Mean Change in BP seen in monitored subjects completed the study (N=22)

No. of Subjects	Mean SBP in mmHg (mean ± SD)				Mean DBP in mmHg (mean ± SD)			
	Baseline	Final follow-up	Change	P value	Baseline	Final follow-up	Change	P value
22	146.22 ± 5.10	138.9 ± 4.35	7.32 ± 0.75	0.05	86.95 ± 3.79	82.54 ± 2.96	4.41 ± 0.83	0.05

p value < 0.05 is significant as calculated by t-test.

CONCLUSION

This research study concludes that common risk factors accountable for hypertension was found to be smoking (21.19%) , family history (19.02%), alcoholism (5.97%) , advanced age (43.47%), and obesity (20.10%). Mean change of systolic pressure and diastolic pressure observed among screened and monitored Study Subjects of our research study was found to be statistically significant i.e P Value <0.05. Sixty three Study Subjects were dropped outs from this research study due to lack of time , lack of awareness regarding hypertension, some of Study Subjects were residing too far away from research location site. This research study did not give information regarding perception of general public about the role of community pharmacist in health screening services of hypertension. In order to create more awareness among general public about the role of community pharmacist in health screening services, this type of research should be sustained for long period of time.

The key findings of this research study was reflected with following

- common risk factors accountable for hypertension was found to be smoking (21.19%) , family history (19.02%), alcoholism (5.97%) , advanced age (43.47%), and obesity (20.10%).
- Mean change of systolic pressure and diastolic pressure observed among screened and monitored Study Subjects of our research study was found to be statistically significant i.e P Value <0.05.
- Sixty three Study Subjects were dropped outs from this research study due to lack of time , lack of awareness regarding hypertension, some of Study Subjects were residing too far away from research location site.

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