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Research Article

Role of Community Pharmacist in the prevention and management of Cardiovascular Diseases: A pilot study

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Abstract:

Community pharmacists have substantial knowledge and ability to beat crucial threat associated with cardiovascular disease (CVD) in the clinical settings. This elemental study was organized to govern the influence of pharmaceutical care provided by community pharmacists on the therapeutic management of various cardiovascular problems. This study involved 50 community pharmacists near hospital areas where OPD's are conducted on regular basis by consultants. A questionnaire was designed to collect the feedback from patients to measure the outcomes of community pharmacists' role. Our study showed that community pharmacists have enough knowledge to identify risk factors, manage and advice about their medications and need of life style changes to manage their conditions. The outcomes of study shows that more than the half of the patients were gratified with the services of community pharmacists for treating or compensating crucial stages of cardiovascular diseases.

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INTRODUCTION:

With the explicit purpose of improving patient outcomes, community pharmacies provides more formalized relationship between the pharmacist, patient and health care provider. To serve society as caring, ethical professionals and enlightened citizens, pharmacy students should be educated by pharmacy education [1]. To solve the challenges faced by the community, community engagement allow students to learn about cultural diversity values, ethics and leadership [2]. Community pharmacy not only reflects the exact role of pharmacist in the society and among other health professions but also increases the level of pharmacy profession [3].

Community pharmacists have a systematic communication with hypertensive patients so they might guide hypertensive patients in many ways [4]. Information and major health services about hypertension are provided by the pharmacists. They prefer less use of antihypertensive therapy [5]. Hypertensive patients should be convinced by the pharmacist to seek information, instruction and prevention suggested by their general practitioner. Non-drug therapy of hypertension should also be given by the pharmacist [6-8] Pharmacists examine all the details required for the prevention of thromboembolism in hospitals until patients are discharged from hospital. Initial evaluation of risk, recommendation and administration information should be collected by a pharmacist. Doctors and nurses are guided by the pharmacist about how to

prevent or treat thrombosis. In order to review the risk factors of thrombosis, pharmacist should check that whether the patient has acute severe illness, cardiac failure myocardial infarction, difficulty in movement or swelled leg. [8]. Further, to reduce premature morbidity and mortality, reduce healthcare cost, improve quality of life, intensive glycaemic control by using insulin therapy may be appropriate for many of the healthy older adults. Complications from hyperglycemia such as confusion and dementia have more chances to develop in elderly peoples. As compared to intermittent hyperglycemia, older persons with type 2 diabetes mellitus are at greater risk of death from cardiovascular diseases. Therefore, cardiovascular disease prevention and treatment should be provided to patient population for hyperglycemia and diabetes management [9]. As cardiovascular diseases also include stroke and shock, so following of the counseling points are effective in the prevention and treatment of stroke and shock given by the pharmacist are mentioned below:

- Pharmacists are allowed to be elicited and respond to key issues from the patient's perspective by engaging themselves in patient-centered care.
- Recommended treatment should be clearly explained to the patient.
- Address the lack of confidence in patient and evaluate patient confidence with the treatment.

- About the importance of lifestyle modifications, should provide the supporting information to the patient.
- Even when the blood pressure is controlled, but pharmacist should be emphasizing the chronic nature of hypertension and its treatment. [10]

The objective of present study was to assess the role of community pharmacist for better care of patients in community with patient of serious cardiovascular disease threat & to compute that by which methods community pharmacists explore and adjust crucial conditions of cardiovascular disease (CVD) concerning patients like hypertension, hyperglycemia, angina, hyperlipidemia, congestive heart failure, myocardial infarction, bleeding disorders, stroke and shock etc.

Methodology

A total of 50 community pharmacists working near hospital areas were included in this study. This study was carried out for a period of year. These pharmacists dealt with all type of medication supply due to consistent OPD's conducted by consultant in those hospitals. Pharmacists were explained about the study and their consent was obtained for participation in the study. To evaluate effective role of pharmacist for better care of patients in community they were directed to pay additional attention to the patients with serious cardiovascular risks including hypertension, hyperglycemia, angina, hyperlipidemia, congestive heart failure, myocardial infarction, bleeding disorders, stroke, and shock. More than 1000 patients were attended by pharmacists during the study period. Ethics approval was obtained from the ethics committee prior to start this study. Data were analyzed by employing Mann-Whitney and Chi-square tests using SPSS version 20.

Result:

Sample wise distribution of cardiovascular patients attended by community pharmacists is given in figure 1.

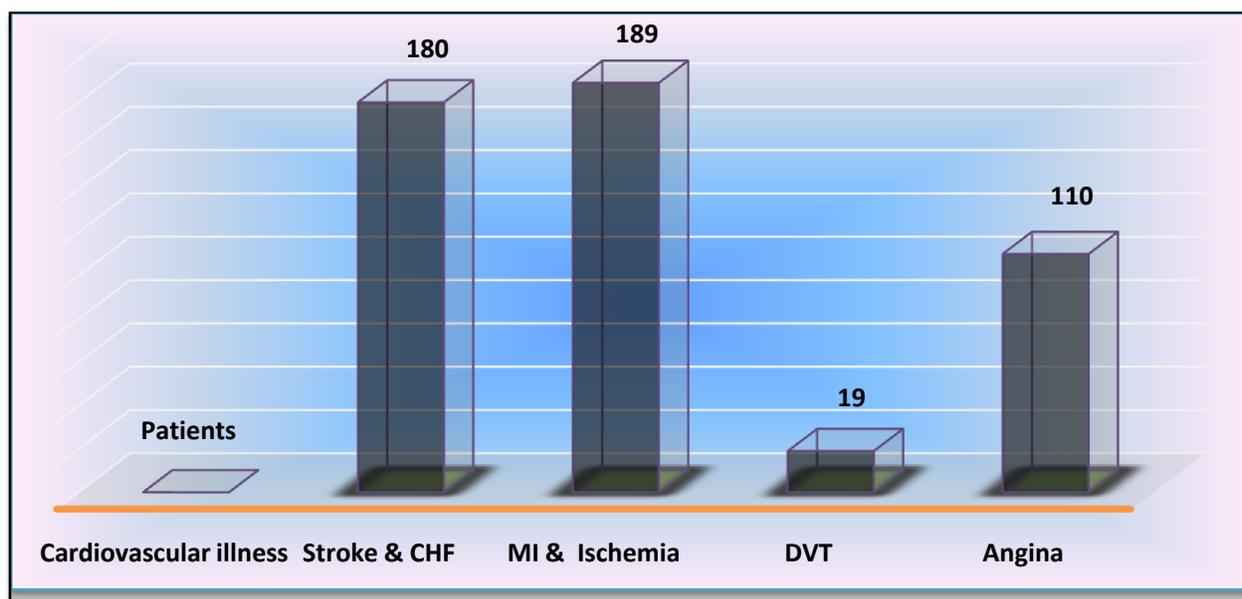


Figure 1: Sample size distribution of cardiovascular patients attended by community pharmacists

Measurement of Hypertension, Hyperglycemia and Hyperlipidemia negotiate by Glucometer, Blood pressure measuring device, Patient counseling on reduce cholesterol level, Stroke and congestive heart failure regard by effective anticoagulation service of dose adjustment, Myocardial infarction (MI) and Ischemia by

effective anticoagulation service by INR level measuring (i.e. between 2.0-3.0), [shown in Table 2]. Deep venous thrombosis (DVT) regard by monitoring anticoagulation therapy and blood thinner agent, Angina prevented by emergency treatment counseling by pharmacist because most diabetic patient did not diagnose properly angina attack.

Table 1: Effective service to reduce cardiovascular related events provided by community pharmacy [11]

CVS Disorder	Treated by Community Pharmacists
Hypertension, Hyperglycemia, Hyperlipidemia	Glucometer, Blood pressure measuring device, Patient counseling on reduce cholesterol level
Stroke and CHF	By effective anticoagulation service of dose adjustment
MI and Ischemia	By effective anticoagulation service by INR level measuring
DVT	By monitoring anticoagulation therapy and blood thinner agent
Angina	prevented by emergency treatment counselling by pharmacist because most diabetic patient did not diagnose properly angina attack

Table 2: Effective International Normalize Ratio monitoring by community pharmacist

INDICATION	Therapeutic range	monitoring	Dose Range
Transient ischemic risk factor	2.0-3.0		2.5-5 mg
unprovoked Second episode	2.0-3.0		2.5-5 mg
additional No risk factors	2.0-3.0		2.5-5 mg
Mitral bileaflet or tilting disk	2.5-3.5		2.5-5 mg
Aortic or mitral caged ball	2.5-3.5		2.5-5 mg
Any valve with additional risk factor	2.5-3.5		2.5-5 mg
Cardioembolic Ischemic Stroke	2.0-3.0		2.5-5 mg
Transient/reversible risk factor	2.0-3.0		2.5-5 mg
CHADS2 risk	2.0-3.0		2.5-5 mg
Open heart surgery Patients	2.0-3.0		2.5-5 mg
following cardioversion	2.0-3.0		2.5-5 mg
With DVT thrombus	2.0-3.0		2.5-5 mg

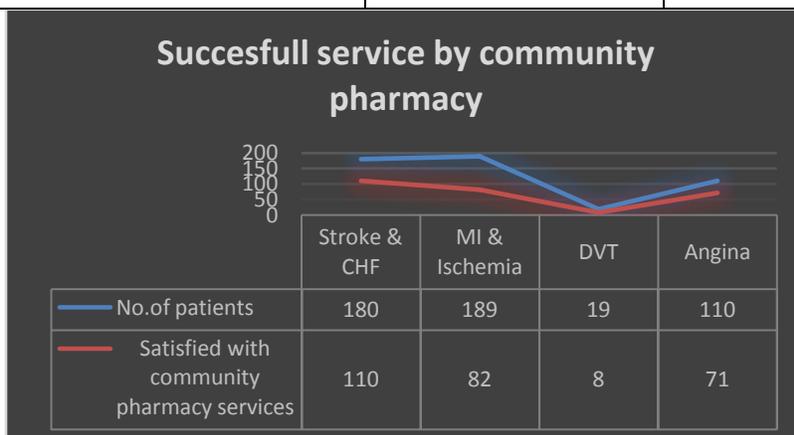


Figure 2: Degree of success by community pharmacy service in one year

Figure 2 showed about outcomes patients are being satisfied from various community pharmacy services provided by community pharmacists. Patients also provided with service of low calorie diet protocol and warfarin diet management to prevent life threatening drug interaction. Our study showed that community pharmacists have enough knowledge to identify risk factors, manage and advice about their medications and need of life style changes to manage their conditions.

Discussion

Community pharmacists maintain links with other health professionals in primary health care and are the health professionals most accessible to the public. In addition to ensuring an accurate supply of appropriate products, their professional activities also cover counseling of patients at the time of dispensing of prescription and non-prescription drugs, drug information to health professionals, patients and the general public, and participation in health-promotion programs.

Today, an increasingly wide range of new and analogous products are used in medicine, including high-technology biological products and radio-pharmaceuticals. There is also the heterogeneous group of medical devices, which includes some products analogous to medicines, some of which demand special knowledge with regard to their uses and risks (e.g. dressings, wound management products, etc.).

In the foregoing years, the community pharmacists were only acclaimed as a chemist. Community pharmacists are those expert professional people who monitor patients without appointment. They are the vital part of health care system. At this period of time, there are many community pharmacies are found substantially on main street locations, in vicinity centers, in supermarkets and in most of the poverty-stricken communities, showing the increasing value and demand of community pharmacy and pharmacist all over the world. And the most important benefit of the opening of community pharmacy everywhere is that it is opened 24 hours when other health care professionals are not available. For the conduction of basic introductory health evaluation of patients, community pharmacy is seem to be an better possibility. Community Pharmacists playing a major role in the patient health care system, they are demand to facilitate and upgrade the health care in our society. The community pharmacists are trained to raise the quality of care to patients and overcome or cause blockage of such diseases outcomes. In the primary care for the management of cardiovascular diseases depends on features that how to educate a patient, their life style adaptations and organize their medication therapy. Pharmacists examine all the details required for the prevention of thrombosis in hospitals until patients are discharged from hospital. Initial evaluation of crucial state, recommendation and administration information should be collected by a pharmacist. Thrombosis can be prevented by using low level cholesterol and LDL diet and daily exercise and to keep themselves in a mobile state most of the time and

cholesterol lowering or controlling medications. Community pharmacists work in a team and manage patient's acute and chronic illness condition. For the management of hypertension community pharmacist should monitor patient's blood pressure, counsel them about the risk factors to hypertension such as smoking, Diabetes, obesity, their stress full life and also counsel about their need to take anti-hypertensive drugs. But mostly Community pharmacists prefer less use of antihypertensive therapy. Hypertension is an independent risk factor for stroke. Community Pharmacists can help patients to reduce the crucial state of stroke by being aware the patients about the high blood pressure and stroke. Glycaemic control is improved by insulin by many ways, for example: by inhibiting the glucose production in liver and trigger the uptake of glucose in muscles. For the children and adults having a type 1 and type 2 diabetes and who are not attained Glycaemic control by exercise and proper dietary habits, a concentrated insulin (u-500) is formulated having a higher effectiveness than the regular formulation of insulin(u-100). Pharmacist can easily recognize the patients who will get benefit from the treatment of concentrated insulin because pharmacists have more knowledge for management of a disease. A community pharmacist can instruct a patient and health care professionals on dosing transformation and titrations to prevent the dosing in accuracy. Predominately in younger population, anaphylaxis or shock is becoming a most common concern in community setting. Patient history, adverse drug reactions, disease history should be investigate by the pharmacist, community pharmacists also done a look on diet chart and obsolete all that food stuff that cause shock, so he or she can easily recommend proper medication to patient to avoid the risk of anaphylaxis or shock. Role of community pharmacist in myocardial infarction pharmacist design manifestation of therapy, low risk factors and adverse effects associated with myocardial infarction which lead to decrease mortality rate.

The pharmacist verifies the legality, safety and appropriateness of the prescription order, checks the patient medication record before dispensing the prescription. The pharmacist can participate in arrangements for monitoring the utilization of drugs, such as practice research projects, and schemes to analyze prescriptions for the monitoring of adverse drug reactions. Pharmacists are also play a role in new developments in drugs and delivery systems may well extend the need for individually adapted medicines and thus increase the pharmacist's need to continue with pharmacy formulation. The pharmacist receives requests from members of the public for advice on a variety of symptoms and, when indicated, refers the inquiries to a medical practitioner. If the symptoms relate to a self-limiting minor ailment, the pharmacist can supply a non-prescription medicine, with advice to consult a medical practitioner if the symptoms persist for more than a few days. Alternatively, the pharmacist may give advice without supplying medicine. They may also take part in the education of local community groups in health promotion, and in campaigns on disease prevention, such as the: Expanded Program on Immunization, and malaria and blindness program. The pharmacist can take part in health

promotion campaigns, locally and nationally, on a wide range of health-related topics, and particularly on drug-related topics. They may also take part in the education of local community groups in health promotion, and in campaigns on disease prevention, such as the Expanded Program on Immunization, and malaria and blindness programmed.

Conclusion

These projects manifest that, through this programed with patients in crucial condition of cardiovascular disease held by community pharmacists, these pharmacists are in an ideal position to screen patients at risk for cardiovascular because Community Pharmacists are the big cheese for patients in health care system .Community pharmacist can improve disease condition and disability to prevention, which leads to less visits to physician, decreased the need for medical treatment, lower health care costs, and the most important tool to improve the quality of life for patients. Appropriateness of dose for the patient, dose adjustment, monitoring of divergent therapies among different conditions or via involve patient counseling about the risk factors for their health ,potential interaction with other prescribe and non-prescribe medications, similar medications , advice the patients about the risk and benefits ,adjusting their dosing schedule for good patient compliance and to minimize the adverse effects. Community pharmacists had already bestowed their positive role to the care for patients with the risk factors to patient health care. Community pharmacists should acquire the knowledge and skills to pursue this goal. Therefore, the outcomes of study shows that more than the half of the population among patients is gratify with community pharmacist involving character in regard for treating or compensating crucial stages of cardiovascular diseases.

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