

ASSESSMENT AND EVALUATION ON KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARDS MEDICATION THERAPY MANAGEMENT AMONG COMMUNITY OF DAVANGERE CITY**BLESSY ACHANKUNJU, JOBIN THOMAS, RIYA ALEXANDER, SHEEN ANN VARUGHESE, GLORIA K SAM***

Department of Pharmacy Practice, Bapuji Pharmacy College, Davanagere, Karnataka, India. Email: gloria_sam52@yahoo.com

*Received: 02 January 2017, Revised and Accepted: 27 January 2017***ABSTRACT****Objectives:** The prime objective of this study is to assess knowledge, attitude, and practice (KAP) toward medications in a community of Davangere city.**Methods:** This community-based study was conducted for 6 months using medication therapy management aspects. Ethical clearance was obtained from the Institutional Ethical Committee. Patients above 18 years of age who were willing to participate were included in the study. The data were collected using specific data collection forms, and KAP toward medications of each patient was assessed using KAP questionnaire. Medication adherence was analyzed using Morisky Medication Adherence Scale 4. Patient counseling about disease, medication, and lifestyle modification was given, and the orally taking household drugs were segregated according to class and specific clinical uses.**Results:** Out of 129 patients, 58.1% were male. Out of 19 diseases encountered during the study, diabetes mellitus (32.56%) and hypertension (25.58%) were most prevalent. Majority of patients (63.57%) were prescribed with cardiovascular agents. Paracetamol was found as a common household drug. Sixty-nine percent of patients were procuring medication directly from the pharmacy and the remaining 31% were procuring their medication after consulting the physician. Mean scores of KAP in basal and endpoint assessment were compared using Student's t-test. p value was found to be <0.000.**Conclusion:** The study tried to entitle the name of pharmacist as a patient educator who gives proper guidance to the patient and family members about the disease, domestic drug management, lifestyle modification, etc. The result of efficient patient counseling will be reflected on the proper adherence of patient toward the medication and improved quality of life.**Keywords:** Knowledge, attitude and practice (KAP), Medication therapy management (MTM), Morisky medication adherence Scale - 4 (MMAS-4), patient education.© 2017 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>) DOI: <http://dx.doi.org/10.22159/ajpcr.2017.v10i4.16889>**INTRODUCTION**

Knowledge, attitude, and practice (KAP) assessment is one of the integral components of patient assessment of their actual knowledge of a given subject, attitude toward the established norms in their disease, and the actual practice. This assessment not only helps the health-care provider to evaluate the quality of an education program but also, in general, will quantitatively assess the impact of such programs with KAP scores. KAP assessment was accepted by many researchers in studying the impact of educational intervention. The KAP questionnaire is a comprehensive, easily understandable, and easy to interpret questionnaire that allows clinicians, clinical pharmacists, and other health-care professionals to measure the changes in patients experience as a result of a behavioral intervention or patient education [1]. Imparting adequate knowledge regarding the signs and symptoms of the diseases, necessary information about the diet and other lifestyle modification empowers the patients to gain the confidence in the therapy and helps in achieving the desired therapeutic outcomes. Findings of various KAP studies have strengthened and improved the therapeutic outcomes in patients who have received the structured education. Adequate medication-related information to patients helps them understand the importance of medication and improves their adherence behavior which helps in achieving the desired therapeutic goals. Variables such as treatment-seeking behavior, personality type, and barriers to action comply well with the compliance of the patient. The KAP study explores changes in KAP of the target group with respect to predetermined domain. The KAP study serves as an assessment tool to measure information, perspective, and performance of any desired task of the community. It enables the efficient process of evaluation which allows the procedure to be tailored appropriately to the needs of the society. It can help

improve their service and enhance rapport with the patients [2]. It was also found that educated patients have a better social functioning and have better overall quality of life [3].

Adherence relates to the extent to which the patient follows a prescribed regimen. Those patients who adhere to their prescribed medical regimen 80% of the time may be considered to show high compliance, whereas those patients who demonstrate 50% adherence may demonstrate moderate or low compliance. The level of compliance may vary between patients depending on the type of medicine prescribed, type of illness, and accompanying level of symptoms.

Patient education as to the correct use of medications relies primarily on health-care providers. Even when patients have received proper instruction, it may be difficult to remember to take medications as prescribed. In these situations, we can work with the patient to incorporate the individual drug regimen into a daily schedule [4]. Pharmacists are in an ideal position to provide patient education and optimize patient care. Greater understanding about the illness and a change of attitude and practice would in turn result in a better therapeutic outcome [5].

Hence, this project is proposed to review the knowledge and attitude toward medication therapy along with the drug management practice among the selected population of Davangere city.

METHODS

The present study was an observational, interventional, community-based study conducted in Davangere city. Individuals above 18 years

of age who were willing to participate in the study were enrolled. Pregnant women and residence of health professionals were excluded from the study. The ethical clearance of the study was obtained from the Institutional Ethical Committee of Bapuji Pharmacy College, Davangere. For the ease of data collection, we have divided the study into three phases: Phase 1, Phase 2, and Phase 3. Suitably designed patient's data collection forms were developed. The information included patient's demographic details, chief complaints, drugs prescribed with their dose and frequency, list of common household drugs.

In Phase 1, we distributed the informed consent form along with leaflet (May I help you) and the consent form from the willing households was collected. The data about the patient as well as the list of drugs they consume were collected and listed. The data were collected based on the KAP questionnaire. The questionnaire was divided into three parts to assess knowledge of drug safety, attitude toward medication consultation, and medication use practices and consultation with pharmacists. Three section of questionnaire were developed including 13 true/false questions to measure knowledge, 5 questions for attitude in a 5-point scale, and 10 questions for medication practice in a point scale ranging 10-30.

In Phase 2, a visit schedule was prepared and the household was informed before the visit. The data were collected based on Morisky Medication Adherence Scale 4 (MMAS 4). We helped them discard the expired ones and preserve the usable ones. Best storage container was collected and arranged the drugs, labeled them, and distributed them. Identified all medication-related problems found during a comprehensive medication review and communicated efficiently, appropriately, and professionally with the project participants. Patient counseling was done about their disease, medications, and lifestyle modifications and provided an information leaflet about general medication consumption. A sample weekly medication chart was provided for better patient compliance.

In Phase 3, an assessment of impact of counseling was done using KAP questionnaire and medication adherence was assessed using MMAS 4.

Statistical analysis was carried out using Statistical Package for Social Sciences version 2.0. Student's t-test was used to compare baseline and endpoint assessment of KAP scores. A $p < 0.05$ was considered as statistically significant.

RESULTS

A total of 129 patients were enrolled in the study, of which 75 (58.1%) were male and 54 (41.9%) were female (Table 1). Majority of the patients were under the age group of 41-50 years ($n=41$, 31.8%), followed by 51-60 years ($n=39$, 30.2%), 31-40 years ($n=23$, 17.8%), 61-70 years ($n=18$, 14%), 21-30 years ($n=6$, 4.7%), and above 71 years ($n=2$, 1.6%) (Table 2). Table 3 shows the lists of diseases encountered during study. Majority of patients were suffering from diabetes mellitus ($n=42$, 32.56%), followed by hypertension ($n=33$, 25.58%), hyperlipidemia ($n=14$, 10.85%), and respiratory diseases ($n=14$, 10.85%).

Table 4 enlists the common household drugs. Out of 76 houses, paracetamol was found as a common household drug in 55 houses (72.37%). Loperamide was found as common household drug in 18 houses (23.68%), followed by 15 houses (19.74%), who had ranitidine and pantoprazole as common household drugs. Table 5 shows the approach of patients toward medication procurement. Among 129 patients, 89 (69%) were procuring medication directly from the pharmacy and 40 (31%) were procuring their medication after consulting the physician.

Table 6 shows the assessment of KAP. In basal assessment, the KAP scores were found to be 7.95 ± 1.87 , 2.34 ± 1.10 , and 17.72 ± 1.54 . In endpoint assessment, the KAP scores were 10.69 ± 1.04 , 3.85 ± 0.72 , and 20.80 ± 2.20 . Mean scores of KAP in basal and endpoint assessment were

Table 1: Gender-wise distribution

Sex	Frequency n (%)
Male	75 (58.1)
Female	54 (41.9)
Total	129 (100.0)

Table 2: Distribution of age group

Age (years)	Frequency n (%)
21-30	6 (4.7)
31-40	23 (17.8)
41-50	41 (31.8)
51-60	39 (30.2)
61-70	18 (14.0)
≥ 71	2 (1.6)
Total	129 (100.0)

Table 3: List of diseases encountered during study

Diseases	Frequency n (%)
Diabetes mellitus	42 (32.56)
Hypertension	33 (25.58)
Hyperlipidemia	14 (10.85)
Respiratory disease	14 (10.85)
Heart disease	12 (9.30)
Migraine	11 (8.53)
Arthritis	6 (4.65)
Kidney disease	6 (4.65)
Hypothyroidism	5 (3.88)
UTI	4 (3.10)
Hepatitis	4 (3.10)
Hyperthyroidism	3 (2.32)
Malaria	3 (2.32)
Tuberculosis	3 (2.32)
Stroke	2 (1.55)
Osteoporosis	2 (1.55)
Anemia	1 (0.78)
Hepatic encephalopathy	1 (0.78)
Alcoholic liver disease	1 (0.78)

UTI: Urinary tract infection

Table 4: Common household drugs

Commonly used drugs	Number of houses (%)
Paracetamol	55 (72.37)
Loperamide	18 (23.68)
Ranitidine	15 (19.74)
Pantoprazole	15 (19.74)
Cough syrup	14 (18.42)
Vitamin supplements	14 (18.42)
Iron supplements	12 (15.79)
Betadine	10 (13.16)
Diclofenac	7 (9.21)
Antibiotics	7 (9.21)
Pheniramine maleate	7 (9.21)
Ondansetron	6 (7.89)
Calamine lotion	4 (5.26)
Calcium supplements	3 (3.94)
Cetirizine	3 (3.94)
Lactulose	2 (2.63)
Sporlac-B	2 (2.63)

compared using Student's t-test. $p < 0.000$ shows that the study was highly significant.

Table 7 gives medication adherence assessment. In basal assessment, 56.6% of patients had medium adherence, followed by 28.7% of patients with low adherence, and only 14.7% of patients had high adherence

Table 5: Approach of patients towards medication procurement

Pharmacy	Physician	Total number of subjects
89 (69%)	40 (31%)	129

Table 6: Assessment of KAP

Assessment	Knowledge	Attitude	Practice
Basal (n=129)			
Mean±standard deviation	7.95±1.87	2.34±1.10	17.72±1.54
Endpoint (n=123)			
Mean±standard deviation	10.69±1.04	3.85±0.72	20.80±2.20
Paired t-test			
t value	-21.7	-17.2	-16.4
p value	<0.000	<0.000	<0.000

KAP: Knowledge, attitude, and practice

Table 7: Assessment of adherence

Assessment	High	Medium	Low
Basal			
Frequency (%)	19 (14.7)	73 (56.6)	37 (28.7)
Endpoint			
Frequency (%)	53 (43.1)	67 (54.5)	3 (2.4)

toward their prescribed medications. In endpoint, 67 (54.5%) patients had medium adherence. 53 patients (43.1%) show high adherence and a least of 3 patients (2.4%) show low adherence.

DISCUSSION

In our study, out of 129 patients, 75 patients (58.1%) were male and 54 patients (41.9%) were female. This study also revealed male predominance over female as similar to a study conducted by Kanaka and Hema, in which 54.3% were male and 45.7% were female [6]. The most prevailing age group was seen to be 41-50 years (31.8%), followed by 51-60 years (30.2%). This correlates with the study conducted by Prabhu *et al.* where 31.43% of patients were from age group 41-50 years, followed by 28.57% of patients in an age group of 51-60 years [7].

A total of 19 common diseases were found in Davangere city, in that the most commonly found diseases were diabetes mellitus (32.56%) and hypertension (25.58%), followed by hyperlipidemia (10.85%) and respiratory diseases (10.85%).

Surprisingly it was found that, out of 76 houses, individuals from 55 houses were using paracetamol as the first-line choice of drug for any type of fever and pain. Our finding shows that without proper prescription from a physician, many of the individuals were taking pantoprazole or ranitidine for heartburn or acidity. Use of cough syrup varied among 14 houses where, once used cough syrup was used again or with the self-knowledge of the medicine, the syrup was recommended to another person in the absence of physician's opinion.

Sixty-nine percent of patients were procuring their medication directly from the pharmacy without consulting the physician. Through an effective patient education, we tried to educate the patient awareness on the importance of consulting the physician rather than self-medication.

By excluding the dropouts, 123 patients answered in the endpoint assessment for the KAP questions, with maximum possible scores for KAP being 13, 5, and 30, respectively.

In our study, KAP scores of the patients were found to be high on knowledge score 10.69±1.04 (mean±standard deviation), which was

similar to the result seen in a study conducted by Saadia *et al.* where the knowledge score was increased to 12.42±3.034 [8].

Attitude toward the pharmacist was increased to a score of 3.85±0.72. Similarly, practice toward medication therapy was increased to a score of 20.8±2.20. In contrast to our result, there was a study conducted by Dinesh *et al.*, which revealed a low level of KAP. The difference in findings may be due to difference in literacy of subjects, availability of information about the diseases and medications [9].

By comparing basal and endpoint adherence scores, it was found that there was a remarkable increase in individuals who are at high adherence. The frequency of patient toward low adherence was decreased from 37 (28.7%) to 3 (2.4%).

CONCLUSION

Patient education is considered as an essential component in improving KAP toward disease management and improved medication adherence behavior and treatment outcomes. The KAP study serves as an assessment tool to measure information, perspective, and performance of any desired task of the community. It enables the efficient process of evaluation, which allows the procedure to be tailored appropriately to the needs of the society.

By conducting this study, we came to know the present scenario about the medication therapy management of society. Result of our study shows that 72.37% of houses had paracetamol as a common household drug. By achieving the objective, approach of patient toward medication procurement, we found that only 31% of enrolled patients were procuring medications after consulting the physicians. As a result of an effective patient counseling, there was a remarkable increase in KAP scores of enrolled patients as well as there was a decrease in number of patients who had low adherence to medication.

Role of pharmacist as a patient educator in chronic diseases is not well recognized in our society. Through this study, we tried to entitle the name of pharmacist as a patient educator who gives proper guidance to the patient and also the family members about the disease, domestic drug management, lifestyle modification, etc. The result of efficient patient counseling will be reflected on the proper adherence of patient toward the medication and improved quality of life.

Hence, our study concludes that improving patient's KAP about their medications and diseases can improve the medication adherence behavior, which in turn improves the overall quality of life.

REFERENCES

1. Rajanandh MG, Nageswari AD, Ilango K. Development and validation of knowledge, attitude, practice questionnaire for asthma and assessment of impact of patient education on asthma patients. *Int J Pharm Pharm Sci* 2014;6(2):309-11.
2. Rabindra MS, Prakash B, Jyoti D, Sujita S. Knowledge, attitude and practice of patients towards orthodontic treatment: A multi-centric study. *Orthod J Nepal* 2014;4(1):6-11.
3. Rejitha T, Ramesh A, Keshava BS, Harsha S, Parthasarathi G, Juny S. Impact of patient education on health related quality of life in migraine patients. *World J Pharm Res* 2014;3(8):982-97.
4. Mehta S, Moore RD, Graham NM. Potential factors affecting adherence with HIV therapy. *AIDS* 1997;11:1665-70.
5. Thomas R, Ramesh A, Thomas S. Impact of clinical pharmacist intervention on knowledge, attitude and practice of patients with chronic obstructive pulmonary disease. *Int J Pharm Pharm Sci* 2010;2(4):54-7.
6. Kanaka ND, Hema VS. Study of asthma quality of life questionnaire, an instrument for reviewing asthma health education and promotion. *J Pharm Sci Innov* 2012;1(6):18-22.
7. Prabhu M, Srinivasan N, Radha R, Sasikala C, Mohammad A, Syed AG. Assessment of the influence of patient counseling on

- knowledge, attitude and practice in Type II diabetes mellitus patients in Kolar district of South India. *Int J Pharm Res Bio Sci* 2014;3(6):269-82.
8. Saadia Z, Rushdi S, Alsheha M, Saeed H, Rajab M. A study of knowledge attitude and practices of Saudi women towards diabetes mellitus. A (KAP) study in Al-Qassim region. *Internet J Health* 2009;11(2):1-7.
9. Dinesh KU, Subish P, Ravi PS, Pranaya M. Knowledge, attitude and practice about diabetes among diabetes patients in Western Nepal. *Rawal Med J* 2008;33(1):8-11.