

**ASSESSMENT OF COMMUNITY PHARMACIST'S KNOWLEDGE IN THE MANAGEMENT OF CONSTIPATION IN ADULT**Moorthi C^{*1}, Rachel Paul² and Thaha Hussain KP²¹Department of Pharmacy, Annamalai University, Annamalai Nagar, Chidambaram, Tamil Nadu India²J. K. K. Munirajah Medical Research Foundation, College of Pharmacy, Komarapalayam, Tamil Nadu, India***Corresponding author e-mail:** cmoorthitgodu@gmail.com**ABSTRACT**

The present study was aimed to evaluate the knowledge of community pharmacists in the management of constipation in adult. The study included 103 community pharmacists, who met the inclusion criteria. The study result revealed (a) Constipation was more prevalent in older adult with the age group of 50 - 60 years; (b) Deficiencies in obtaining basis information such as medication history, medical history, food & fluid intake, pregnancy & lactation, associated symptoms and previous treatment attempts; (c) Lack of knowledge in red flag symptoms which require expert medical intervention; (d) Lack of knowledge in non-pharmacological treatment such as increase fiber in diet, adequate fluid intake and exercise; (e) Lack of knowledge in counseling the patient about diet related modification, physical exercise and to seek medical expert in case of failure of OTC drug treatment. Regular refresher courses have to be conducted by pharmacy colleges to educate community pharmacists to upgrade the knowledge in the disease management.

Key words: Constipation, Community Pharmacist, Management of Constipation and Adult Constipation.**INTRODUCTION**

In general, constipation is described as decrease in the frequency of fecal elimination. In patient's perspective, constipation is straining to have a stool; the passage of hard and dry stools; the passage of small stools; feelings of incomplete bowel evacuation and bloating or decreased stool frequency. However, constipation is not a disease but a symptom of causal disease(s) which affects both men and women of all age groups throughout their life. The incidence of constipation ranges from 2% to 28% which may considerably higher in older adults¹⁻⁴.

More often public approach the Community Pharmacists (CPs) for their health related issues as CPs are easily accessible, knowledgeable and dispense drugs in accordance with legal and ethical

permission, either on prescription or as Over-The-Counter (OTC) drugs. To provide a quality service, CPs should have updated knowledge on the pathophysiology, diagnosis, treatment exclusion criteria, expert opinion criteria, non-pharmacological treatment, pharmacological treatment, product selection guideline, and patient counselling⁵.

The present study was aimed to evaluate the knowledge of CPs in the management of constipation in adult in and around Bhavani and Komarapalayam town.

MATERIALS AND METHODS

The study was carried out in community pharmacies in and around Bhavani and Komarapalayam town. A total of 103 CPs who met the inclusion criteria were included in the study.

Study Inclusion Criteria: Male or female pharmacy graduates (D. Pharm/ B. Pharm/ Higher degree in Pharmacy) with at least 1 year experience as pharmacist.

Study Exclusion Criteria: Helpers working in community pharmacies without a pharmacy qualification.

Data Collection: The data were collected using a well-designed 'Interview Questionnaire Form'. The questionnaire was organized under two sections. The first section focused on the general information about the CPs and the second section focused on prevalence of constipation and knowledge of CPs in the management of constipation in adult. A brief introduction about the study and participant written informed consent section were also included in the questionnaire.

Designed 'Interview Questionnaire Form' was subjected to review by the concerned physicians for the relevance of contents in the questionnaire. During interview, participants were briefed about the nature of the study by the study personnel and collected data were documented in 'Interview Questionnaire Form'. Written informed consent was obtained from the participants prior to start of study related interview. Question unanswered by the participants were left blank and participants denied to answer a question were scored off.

RESULTS AND DISCUSSION

All participants responded to all questions and collected data were compiled, analyzed and discussed below.

Participant's General Information: Study included 75 male and 28 female CPs (Table 1). Around 45.63 % of them were in the age group of 21 - 30 years. CPs in the study either had a D. Pharmacy (72.82 %) or B. Pharmacy (27.18 %) as qualification. About 54.36 % of CPs had 5 - 10 years experience as CP.

Prevalence of constipation: The study revealed the prevalence of constipation was more in the age group between 50 - 60 years than rest of the age group (Table 2). The major factors that are responsible for constipation in elders are prolonged colonic transit time; decreased renal function which inturn decreases the clearance of drug contributing to side effects of the drugs; change in diet; decrease in physical activity; side effects of medication such as anticonvulsants, antacids, tricyclic antidepressants, antihistamines, diuretics; and medical conditions such as haemorrhoids, Parkinson's, under active thyroid, hypercalcemia, loss of muscle tone, changes

in anorectal physiology, bowel diseases, mental health conditions such as depression⁶⁻¹⁰. About 22 - 25 % CPs reported that approximately 16 - 25 customers approach CPs for the treatment of constipation in adult every day (Table 3).

Knowledge of CPs in the management of constipation in adults: The conventional role of pharmacists from manufacture and supply medications have reached a next height i.e. patient oriented approach. Physicians are most comfortable with pharmacists' responsibilities of identifying prescription errors, providing patient education, suggesting non-prescription medications, and suggesting prescription medications to physicians, monitoring drug adherence, repeat dispensing, providing drug information service, and monitoring adverse drug reactions¹¹⁻¹³. To suggest non-prescription medications for minor ailments, CPs should have updated knowledge in the management of concern minor ailment.

Diagnosis: Collection of basic information about the patient and disease may help the CPs in identifying the cause of the disease/ symptoms, selection of right drug and right dose. The present study revealed that almost all CPs enquire some basic information about the patient and disease like age, gender, duration and severity of constipation (Table 4).

Medication history: Certain drugs (Table 5) induce constipation¹⁴⁻¹⁶. However, only 4.85 % CPs reported that they will enquire regarding medication history (Table 4).

Medical history: Diseases (Table 6) may also contribute to constipation^{14, 16}. However, only 3.88 % CPs reported that they will enquire regarding medical history (Table 4).

Food / Fluid taken: Diet that has low calorie, carbohydrate, fibers and inadequate intake of fluid may also contribute to constipation¹⁴⁻¹⁶. However, only 19.42 % CPs reported that they will enquire regarding food and fluid intake (Table 4).

Pregnancy and lactation: Most drugs taken by the pregnant and lactating women can expose and adversely affect the growing fetus and infants. Hence CPs should have the knowledge about the safety of drug while dispensing drugs to pregnant and lactating women and lack of knowledge will increase the risk of fetus or infants. It is utmost duty of CPs to enquire information regarding pregnancy and lactation prior to dispensing^{5, 15}. However, only 15.53 % of CPs

reported that they will enquire regarding pregnancy and lactation (Table 4).

Associated symptoms: Information regarding the associated symptoms such as abdominal pain, blood in stool, fever, anorexia, nausea and vomiting may help the CPs to identify the severity of constipation and suggest the patient for expert referral¹⁶. However, only 6.8 % of CPs reported that they will enquire regarding associated symptoms (Table 4).

Previous treatment attempts: As a first step public would try home remedies as a self care for the treatment of constipation and it would be rational to collect such information during diagnosing. None of the CP enquires the previous treatment attempts (Table 4).

Knowledge of treatment exclusion: Over-The-Counter (OTC) drug treatment may be inappropriate in case of red flag or alarm symptoms (Table 7) which require immediate medical referral¹⁴. However, the study revealed that only < 20 % CPs was aware of red flag symptoms.

Expert Opinion: Patient with red flag or alarm symptoms requires immediate treatment by medical expert¹⁴. However, 33 % of CPs reported that they will advice the patient to seek concern physician for red flag or alarm symptoms (Table 8).

Treatment: The prime objectives of treatment are (a) To reduce the constipation and restore normal bowel function, (b) To initiate dietary and exercise habits that assist in preventing recurrences and (c) To encourage safe and effective use of drugs and avoid overuse of drugs. However, constipation should be initially managed by modifying the diet to include

fiber rich foods and to increase the fluid intake, accompanied by some form of exercise (Table 9). Drug treatment can be used in conjunction with lifestyle modification¹⁴. However, study revealed that about 92 % CPs prefer treatment with only drugs and very few prefer increase fiber in diet, adequate fluid intake and exercise

Patient Counseling: Patient counseling regarding how and when to take drug, diet related modification, exercise and medical referral, if OTC drug treatment fails were questioned and the study results (Table 10) showed that almost all CPs counsel about when to take the drug, around 70 % CPs counsel the patient about how to take the drug, around 10 % CPs counsel about diet related modification and none of the CPs counsel about the physical exercise and to seek medical expert incase OTC drug treatment fails.

CONCLUSION

The study results have established that the community pharmacists in and around Bhavani and Komarapalayam town lacks knowledge in the management of constipation in adult. To provide a quality service, community pharmacists should updated their knowledge on the management of diseases. Pharmacy colleges and physician should conduct refresher courses regularly to educate the community pharmacists to upgrade their knowledge in the management of diseases.

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Table 1: Summary of participant's general information

General Information	Pharmacists
Gender	
Male	75 (72.82 %)
Female	28 (27.18 %)
Age Group (In Years)	
18 - 20	00 (00.00 %)
21 - 30	47 (45.63 %)
31 - 40	32 (31.07 %)
41 - 50	24 (23.30 %)
Qualification	
D. Pharm	75 (72.82 %)
B. Pharm	28 (27.18 %)
Experience (In Years)	
01 - 05	42 (40.77 %)
> 05 - 10	56 (54.36 %)
> 10 - 15	05 (04.85 %)

Table 2: Age wise distribution of patients

Age Group (In Years)	Pharmacists
01 - 10	02 (01.94 %)
11 - 20	05 (04.85 %)
21 - 30	09 (08.73 %)
31 - 40	17 (16.50 %)
41 - 50	20 (19.42 %)
50 - 60	37 (35.92 %)
> 60	13 (12.62 %)

Table 3: Prevalence of constipation in adult

Prevalence Range (Per Day)	Pharmacists
01 - 10	05 (04.85 %)
11 - 15	13 (12.62 %)
16 - 20	26 (25.24 %)
21 - 25	23 (22.33 %)
26 - 30	19 (18.45 %)
31 - 35	04 (03.88 %)
36 - 40	08 (07.77 %)
41 - 45	02 (01.94 %)
> 45	03 (02.91 %)

Table 4: Basic Information about Patients and Disease

Basic Information about Patients and Disease	Pharmacists
Age	103 (100.00 %)
Gender	103 (100.00 %)
Duration and severity of constipation	098 (095.15 %)
Medication history	005 (004.85 %)
Medical history	004 (003.88 %)
Food / fluid taken	020 (019.42 %)
Pregnancy and lactation	016 (015.53 %)
Associated symptoms	007 (006.80 %)
Previous treatment attempts	000 (000.00 %)

Table 5: Selected drugs causing constipation

Drugs Causing Constipation	Example
Drugs used in the treatment of hypercholesterolemia	Cholestyramine
Drugs used for gastrointestinal disorders	Loperamide Hcl
Drugs used for cough that contain opioid	Hydrocodone bitartrate
Supplements for iron-deficient patients	Ferrous gluconate
Drugs used for peptic ulcer disease	Sucralfate
Drugs used for Parkinson's disease	Bromocriptine
Drugs used against inflammation	Sulindac
Drugs used for hypertension	Calcium-channel blockers
Drugs used for pain relief	Morphine
Antiarrhythmic drugs	Verapamil
Herbal medicine	St. John's wort

Table 6: Selected disorders associated with constipation

Drugs Causing Constipation	Example
Disorder of large intestine, anus and rectum	Tumor, Anal fissure
Metabolic disorders	Diabetic ketoacidosis, Uremia
Endocrine disorders	Hypocalcaemia & Hypothyroidism
Neurologic disorder	Multiple sclerosis and Dementia
Muscular disorder	Dermatomyositis

Table 7: Selected disorders associated with constipation

Knowledge of Treatment Exclusion	Pharmacists
Marked abdominal pain or distention	011 (010.68 %)
Fever	016 (015.53 %)
Nausea and vomiting	009 (008.74 %)
Paraplegia or quadriplegia	000 (000.00 %)
Weight loss	002 (001.94 %)
Blood in stool or dark or tarry stool	020 (019.42 %)
Change in character of stool	000 (000.00 %)
History of IBD	000 (000.00 %)
Anorexia	000 (000.00 %)
Chronic constipation	013 (012.62 %)
Constipation > 7 days with no identifiable cause	005 (004.85 %)

Table 8: Expert opinion for the treatment of constipation

Expert opinion	Pharmacist
Yes	034 (033.00 %)
No	068 (067.00 %)
Blood in stool	015 (044.11 %)
Pregnancy and breast feeding	009 (026.47 %)
Nausea and vomiting	006 (017.64 %)
Chronic constipation	004 (011.76 %)

Table 9: Treatment options for constipation

Treatment	Pharmacist
Treatment with drugs	095 (092.23 %)
Increase fiber in diet	003 (002.91 %)
Adequate fluid intake	003 (002.91 %)
Exercise	000 (000.00 %)

Table 10: Patient counseling for the treatment of constipation

Patient Counseling	Pharmacist
When To Take The Drug	103 (100.00 %)
How To Take The Drug	072 (069.90 %)
Diet Related Information	006 (005.82 %)
Exercise	000 (000.00 %)
Medical Referral, If OTC Drug Treatment Fails	000 (000.00 %)

REFERENCES

1. Andromanacos N, Skandalakis P, Troupis T, Filippou D. Constipation of anorectal outlet obstruction: pathophysiology, evaluation and management. *J. Gastroenterol. Hepatol.*, 2006; 21(4): 638-646.
2. Anthony Lembo, Michael Camilleri. Chronic Constipation. *N. Engl. J. Med.*, 2003; 349 (14): 1360-1368.
3. Wells BG, Dipiro JT, Schwinghammer TL, Hamilton CW. *Pharmacotherapy Handbook*. 6th ed., New York; McGraw-Hill Companies: 2006.
4. Alan Nathan. *Managing Symptoms in the Pharmacy*. 1st ed., London, Pharmaceutical Press: 2008.
5. Moorthi C, Rachel Paul, Senthilkumar C. Knowledge of community pharmacist in the management of diarrhea in adults. *Der Pharmacia Lettre*, 2011; 3(1): 364-370.
6. Ranjit NR, Austin GM, Olimpia Nigro. Drug-Associated Diarrhoea and Constipation in Older People. *Constipation. Aust. J. Hosp. Pharm.*, 2000; 30(4): 165-169.
7. Christine Hsieh. Treatment of Constipation in Older Adults. *Am. Fam. Physician.*, 2005; 72(11): 2277-2284.
8. Paul Gallagher, Denis O'Mahony. Constipation in old age. *Best Practice & Research Clinical Gastroenterology*, 2009; 23(6): 875-887.

9. Mugie SM, Benninga MA, Di Lorenzo C. Epidemiology of constipation in children and adults: A systematic review. *Best Practice & Research Clinical Gastroenterology*, 2011; 25(1): 3-18.
10. Virginia Fleming, William E Wade. A Review of Laxative Therapies for Treatment of Chronic Constipation in Older Adults. *American Journal of Geriatric Pharmacotherapy*, 2010; 8(6): 514-550.
11. Ranelli PL, Biss J. Physicians' perceptions of communication with and responsibilities of pharmacists. *J. Am. Pharm. Assoc.*, 2000; 40(5): 625-630.
12. Edmunds J, Calnan MW. The reprofessionalisation of community pharmacy? An exploration of attitudes to extend roles for community pharmacists amongst pharmacists and general practitioners in the United Kingdom. *Soc. Sci. Med.*, 2001; 53(7): 943-955.
13. Fiona YY Wong, Frank WK Chan, Joyce HS You, Eliza LY Wong and EK Yeoh. Patient self-management and pharmacist-led patient self-management in Hong Kong: A focus group study from different healthcare professionals' perspectives. *BMC Health Services Research*, 2011; 11(121): 1-7.
14. Rosemary RB, Stefanie PF, Anne LH, Lisa AK, Gail DN, Nicholas GP, Tami LR, Carol JR, Lestie AS, Karen JT. *Handbook of nonprescription drugs: An interaction Approach to self-care*, 16th ed., Washington, American Pharmacists Association: 2009.
15. Das BP, Joshi M, Pant CR. An overview of over the counter drugs in pregnancy and lactation. *Kathmandu Univ. Med. J.*, 2006; 4(4): 545-551.
16. Alison Blenkinsopp, Paul Paxton, John Blenkinsopp. *Symptoms in the Pharmacy. A Guide to the Management of Common Illness*, 6th ed. UK, Wiley-Blackwell Publishing Ltd.: 2009.