

SELF-MEDICATION PRACTICES WITH OVER THE COUNTER (OTC) DRUGS AMONG ELDERLY IN RURAL VILLAGES: SUGGESTED NURSING GUIDELINES FOR SAFE USE

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ABSTRACT

Self-medication with over-the-counter (OTC) drugs is a serious social-health and economic problem in Egypt. It involves the consumption of one or several OTC medications such as pain relievers, cough remedies, anti-allergies, laxatives, antacids, vitamins as well as antibiotics without physician prescription. Age-related changes occur in the elderly, predispose this vulnerable population to greater risks of adverse events, drug-drug interactions, therapeutic errors, and misuse. Therefore, the **aim** of this study is to explore self-medication practices with OTC drugs among elderly in rural villages and to suggest nursing guidelines for safe medication use. Using descriptive exploratory **research design**, a convenience sample of 100 elderly was selected from five villages. **Tools:** Data were collected using 2 developed tools 1-structured interviewing questionnaire to assess a- personal and medical data, b- elderly satisfaction with quality of medication system and source of knowledge about OTC drugs. c- Practices of self-medication with OTC drugs (reasons, pattern, types and symptoms), and 2-A 3 point likert scale to measure attitude toward self-medications with OTC drugs. **Results** revealed that the mean age of elderly was 65.5 ± 7.98 , moreover, 72 % of elderly practiced self-medication with OTC drugs and without physician prescription

due to financial constraints (55%), or previous past experience of treating similar ailment (44%). Additionally, 55% of elderly mentioned that sources of information about self- medication were pharmacy personnel followed by family member (36%). Commonly used medications were antibiotics (63%) followed by cold medication (48%) and analgesics (46%). There was a significant statistical correlation between frequency of self- medication with OTC drugs practice and age of elderly at $\chi^2 (p) = 34.61 (.004^*)$. There were also significant statistical correlations between practice of self-medication with OTC drugs and level of elderly education at $\chi^2 (p) = 7.50 (.004^*)$, and with self- rated health at $\chi^2 (p) = 7.30(.005^*)$, and with attitude level at $\chi^2 (p) = 7.09(.000^*)$. **Conclusion:** self-medication practice was found to be an alarmingly frequent health problem which may predispose the studied elderly to many untoward effects. **Recommendations:** The study recommends raising awareness among elderly regarding the importance of professional consultation before medication use, the potential side effects and complications of irresponsible self-medication use and the importance of vigilant medication use.

Key Words: *Self-medication, practices, over the counter drugs, elderly, nursing guidelines*

INTRODUCTION

Self-medication can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms WHO, (2000) and Esan DT, Fasoro AA, Odesanya OE, Esan TO, Ojo EF, Faeji CO, (2018). It involves taking medication without a prescription, resubmitting an old prescription to procure medication, sharing medications with others, or utilizing a medication

that is already available (Zafar, 2008). Globally, self-medication with OTC drugs has been reported as being on the rise. Unfortunately, in developing countries including Egypt, elderly are not only using non-prescription drugs but also prescription drugs, as self-medication products, without supervision (Zafar, 2008).

According to, Pushpa R Wijesinghea, Ravindra L Jayakodyb, Rohini de A Seneviratnec, (2012), self-medication with OTC drugs is widely practiced in many developing countries like Egypt and the same authors added that; determinants of self-medication need to be understood in order to design adequate medicine information policies, patient-dispenser education strategies (public information, communication and education packages) to enable elderly to practice appropriate, safe and effective self-medication. Furthermore, a systematic review of twenty-two studies (from 2000 to 2016) done by Alhomouda F, Aljameaa Z, Reem Almahasnaha R, Alkhalifaha, K Basalelaha L, Kais F Alhomoudb., (2017) has also documented an alarmingly high prevalence (ranged from 19% to 82%) of self-medication with antibiotics in Middle East countries and concluded that this practice was increased with age and lower levels of education and income. In addition, the use of self-medication with OTC drugs is highly prevalent in both urban and rural community varying from 32.5% to 81.5%. In this respect Jafari F, Khatony A & Rahmani E, (2015) has recommended designing and performing educational programs for the elderly people.

Sarahroodi et al, (2012) also mentioned that, elderly tend to use higher amounts of non-prescribed medicine because they suffer more from chronic diseases. Moreover, Age- related changes in metabolism and repelling medication (pharmacokinetic) as well as the effect of medicine on body (pharmacodynamic) lead to changes in body reaction to medicine among the elderly Sarahroodi et al., (2012); Vali et al., (2011). Self-medication with OTC drugs could cause allergy, habituation, and addiction. For example, excessive use of vitamins can cause hypervitaminosis, or vitamin poisoning. Antimicrobial resistance is a worldwide problem, particularly in countries like Egypt where antibiotics are often available without a prescription. The growing number of OTC drugs and the abuse of medications have been cited as major obstacles to the effective safe medications use Kayalvizhi, (2010). Despite associated problems, self-medication with OTC drugs did not receive the attention it deserves as a research topic. Data on the prevalence of, and factors associated with, self-medication in Egypt are necessary to help in the planning of interventions to improve the safe self-use of OTC drugs in the country. It will further enable gerontological health nurses to raise elderly awareness about this area.

SIGNIFICANCE OF THE STUDY

Trends of self-medication with OTC drugs in elderly are a disturbing problem that needs to be carefully addressed. According to Central Agency for Public Mobilization and Statistics (CAPMAS), the number of elderly people in Egypt is estimated to be 6 million elderly and is expected to rise to 12% in 2030 CAPMAS, (2017). Among the elderly, adverse reaction to drugs are characteristically more frequent and severe, because they are vulnerable group suffering from multiple disease ailments Locquet M, Honvo G, Rabenda V, Van Hees T, Petermans J, Reginster JY, et al. (2017). In this group, poly-pharmacy is common including multiple OTC preparations and prescription drugs. Inappropriate self-medication use in the

rural community that could result in irrational use of drugs, wastage of resources, and increased drug resistance, which entails serious health hazards such as adverse reactions and prolonged suffering and even death Balbuena FR, Aranda AB, Figueras A. (2009). It is worth saying that easy access to a wide range of drugs without prescription at various sale points in Egypt's rural communities coupled with inadequate health care services and low socioeconomic status in rural villages could result in increased proportions of drugs used as self-medication as compared to prescribed drugs. However, there are scarce published data on this health problem in Egypt.

Moreover, Sandip, SJogdan, and Jayshree, (2013) recommended awareness among elderly people about safe and judicious use of OTC drugs. Thus, the rational use of medicines is very important to prevent drug resistance among elderly. Furthermore, Gerontological health nurses can play an essential role in raising awareness of elderly regarding self-medication problem by planning and implementation of nursing guidelines for safe medication use. So, given the increasing number of the elderly in Egypt, along with the associated side effects of using non-prescribed drugs in this age group, cultural patterns and lack of related studies in Egypt, the present study was conducted to explore self-medication practices with over the counter (OTC) drugs among elderly in rural villages and to suggest nursing guidelines for safe use.

AIM OF THE STUDY

1. To explore self-medication practices with over the counter drugs among elderly in rural villages.
2. To suggest nursing guidelines for safe medication use.

RESEARCH QUESTIONS

1. How elderly in rural villages practice self-medication with OTC drugs?
2. What are the factors associated with elderly practices of self-medication with OTC drugs in rural villages?

SUBJECTS AND METHODS

Research Design

A descriptive exploratory design was used to collect data pertinent to study.

Study Setting

Five villages were selected randomly using two stage cluster random sampling technique to represent the 5 geographical areas of Fayoum governorate (north, east, south, west and center). Villages were Mansheet Al-Gazaer, Manshet Elwi, Elka'aby Elkadeema, Albarany and Gab Allah Meraz.

Sample

A convenience sample of 100 elderly was selected using sample size calculator website available at: (<http://www.calculator.net/sample-size-calculator.html>).

Inclusion Criteria

Elderly who are aged 60 years of age or more irrespective of gender and who are permanently residing in the selected village over a period of one year and able to communicate.

Tools of Data Collection

Two tools were developed by researcher:

1. Structured interviewing questionnaire which consisted of 28 multiple-choice questions. Some of the questions may tolerate more than 1 answer (example: reasons for self-medication). Questions were related to the period of the previous 2 months. The questionnaire consisted of 5 sections: **Section I:** includes 6 questions on personal data (age, sex, marital status and educational level); **Section II:** collects information on self-reported health rating, occupational and medical history (previous job, chronic diseases, chronic pain, prescribed medications, need for long-term use of analgesics and self-rated health); **Section III:** includes 5 questions about sources of medication used for self-treatment and sources of information about such medication, access to health care services and satisfaction with the health care and quality of medication system, medication storage); **Section IV:** consisted of 4 questions such as reasons for self-medication with OTC drugs, whether they had practiced self-medication with OTC drugs during the 2 months preceding the study; and, **Section V:** composed of 6 questions about practices of self-medication with OTC drugs such as patterns and frequency of self-medication, types of OTC medications used complains/symptoms.
2. 3 point likert scale which was used to measure attitude level toward self- medication with OTC drugs (13 questions about perception of elderly about self-medication with OCT drugs). Scoring system of study tools was calculated by giving 1 score for "Yes" questions and zero for "No" questions. Attitude questions were scored on a likert scale ranged from agree to disagree. The scores of items were summed- up and the totals were divided by the number of the items and multiplied by 100, then was estimated on a continuum to be either negative (for values less than 60 %) or positive attitude level (for values less than 60 %).The greater the score the more positive the attitude of elderly toward self- medication.

Validity, Reliability and Scoring System of Study Tools

Tools were submitted to 5 experts in the field of gerontological nursing and pharmacology to test content validity. Content validity index was calculated to be 84%. Cronbach's α for the study tools was 0.76. Modifications were carried out according to the experts' judgment on clarity of sentences and the appropriateness of contents. Content of the nursing guidelines booklet was also revised by a professor in pharmacology and a professor in gerontological nursing; it included content such as definition of self- medication with OTC drugs, and rational medication use, examples, myths about aging process and self- medication use, and factors underlying irrational medication use, its adverse health impact, consequences and

complications of unsafe self-medication use strategies to improve safe medication use, role of an elderly in safe self-medication use.

Procedure

Data were collected through out a period of 3 months from March 2019 till May 2019. An interview schedule technique was carried out by researcher through home visit to fill in the study tools from elderly who is present in house at the time of data collection. The elderly was asked to respond to the questionnaire; the interview took 20 to 30 minutes. Every elderly was interviewed once at the morning. After completion of data collection from each participant, an Arabic copy of a safe medication use booklet was given to each participant.

Protection of Ethical and Human Rights

Each participant has been informed about the purpose and nature of the study. A written consent was granted from each elderly who agreed to participate in the study. Voluntary participation, anonymity and confidentiality were assured through coding the data. Elderly were assured that data will not be reused in another research without their permission and that it will be used in the purpose for the research only.

Pilot Study

A pilot study was conducted on 10% (10 elderly) of the sample to assess the feasibility, clarity & objectivity of the tools. Elderly who participated in the pilot study were included in the actual study sample.

Statistical Data Analysis

The collected data was scored, tabulated and analyzed by personal computer using the recent statistical package for the social sciences (SPSS) program version 16. Descriptive (e.g. mean and standard deviation) as well as correlation statistics (chi square test) were utilized to analyze data pertinent to the study. Level of significant will be set at $P < 0.05$.

RESULTS AND DATA ANALYSIS

Presentation and analysis of data is divided into the following four sections: Section I: Frequency distribution of elderly personal characteristics, occupational and medical history; Section II: Frequency distribution of elderly satisfaction with quality of medication system and source of knowledge about OTC drugs; Section III: Frequency distribution of elderly practices and attitude of self- medication of OTC drugs; and, Section IV: Statistical relations between variables under study.

Frequency Distribution of Elderly Personal Characteristics, Occupational and Medical History

Figure 1 reveals that 54% of elderly aged from 60 to less than 65 years old with mean = 65.5 ± 7.98 , moreover, 64% of elderly couldn't read or write, furthermore 58% of elderly were married.

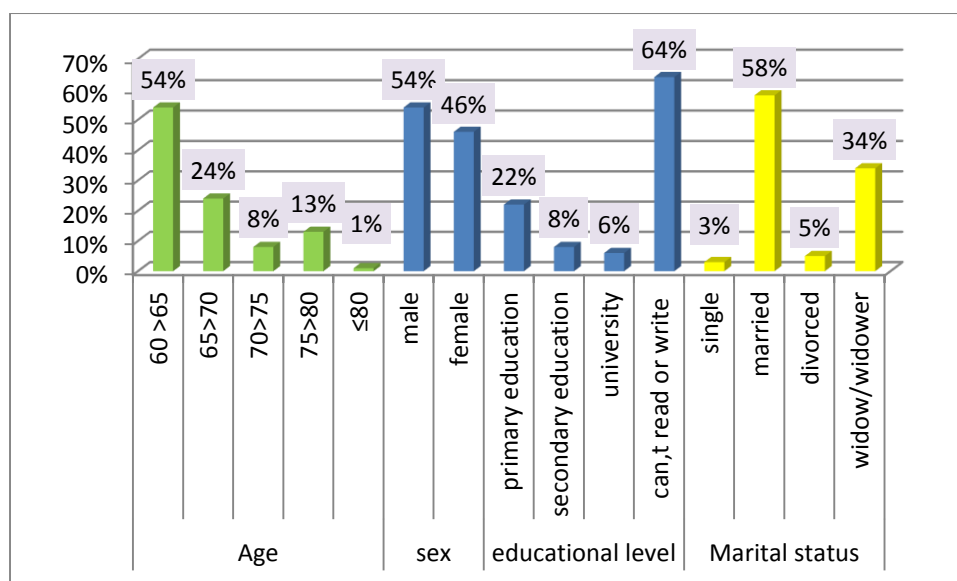


Figure 1: Percentage Distribution of elderly personal data of (n= 100)

Table 1 shows that 52% of elderly complain of chronic pain, while 59% of elderly rated their health status as fair, whereas a 10 % of elderly rate their health as fair. The table also reveals that 40 % of elderly mentioned that they suffer from health conditions that require long-term use of analgesics.

Table 1: Frequency distribution of occupational and medical history among elderly (n= 100)

Variable	No (%)
Previous occupation	
• Retired	30
• Housewives	28
• Farmers	29
• Craft workers	13
Chronic pain	
• Yes	52
• No	48
Do you have any health condition that required long –term use of analgesics	
• Yes	40
• No	60
Do you use prescribed medication for your health condition	
• Yes	82
• No	18
Self- rated health	
• Excellent	8
• Good	23
• Fair	10
• Poor	59

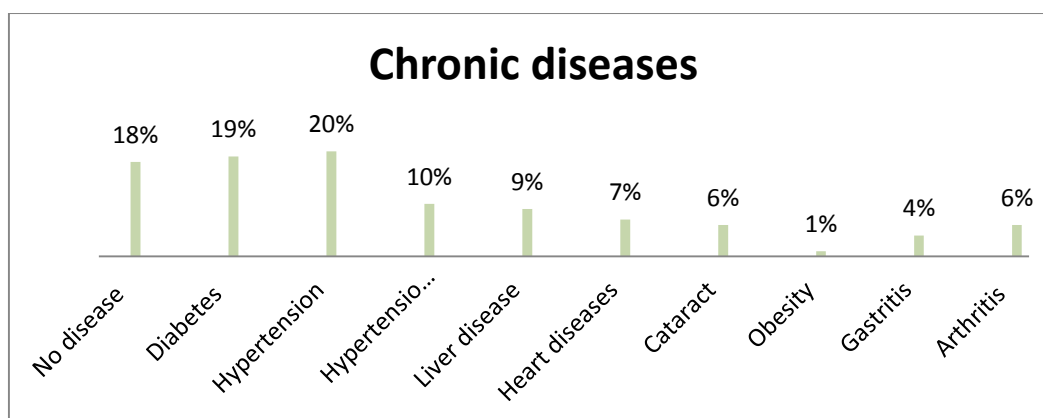


Figure 2: Percentage distribution of chronic disease among elderly (n= 100)

Figure 2 illustrates that hypertension, diabetes, diabetes and hypertension, liver diseases, heart diseases, cataract, obesity, gastritis, and arthritis were reported by 20%,19%, 10%, 9%, 7%, 6%, 1%, 4%, and 6% of elderly respectively. Regarding occupational history, 30% of elderly were retired whereas 28% were housewives, while 29% were farmers and 13% were craft workers.

Frequency Distribution of Elderly Satisfaction with Quality of Medication System and Source of Knowledge about OTC Drugs

Table 2: Frequency distribution of satisfaction with quality of medication system and source of medication knowledge (n= 100)

Variable	No (%)
Do you have health insurance	
• Yes	20
• No	80
Satisfaction with quality of medication system	
• Governmental hospitals	15
• Private hospitals	50
• Health insurance hospitals	20
• Health centers	15
* Source of information about OTC drugs	
• Pharmacy personnel	55
• Family member/Relative	36
• Neighbors	5
• Media advertisement	22
• Drug leaflets	26
• Internet	3
Do you read pamphlets when you buy medications for use	
• Yes	29
• No	71
Do you specify the dose by yourself when you by medication for use	
• Yes	56
• No	44

*All responses are not mutually exclusive

Table 2 reveals that sources of elderly information about OTC were pharmacy personnel (55%), Family member/Relative (36%), drug leaflets (26%), and Media advertisement (22%). It is also clear that 50% of elderly reported their satisfaction with the quality of medication system in private hospitals, moreover 100% all elderly reported that they bought medications from pharmacies and that they store medication in their houses. Furthermore, 80% of elderly had no health insurance, whereas, 71 % of elderly didn't read pamphlets when they buy medications, and, 56% of elderly mentioned that they can specify medication dose for self-treatment by their own when purchasing medication for use.

Frequency Distribution of Elderly Practices and Attitude of Self-medication of OTC Drugs

Table 3: Frequency distribution elderly regarding patterns and reasons of self-medication use with OTC drugs (n= 100)

Variable	No (%)
Do you use medication without physician prescription	
• Yes	72
• No	28
How often u use drugs without description	
• Always	20
• most of time	20
• sometimes	30
• once	2
• never	28
Do you have a regular health facility or physician you visit?	
• Yes	39
• No	61
* Reasons for self-medications with OTC drugs without physician prescription	
• I had a previous experience of treating similar ailment	44
• Getting quick relief	14
• It was a minor ailment	34
• Ease of accessibility	20
• The ailment required rapid emergency care	12
• It was for the purpose of prevention	17
• I had no time to go to doctor (time saving)	18
• Financial constraints	55
• I don't trust medical services	35
• Fear of hospitalization	15

*All responses are not mutually exclusive

As regards to patterns of self-medication with OTC drugs among elderly table (3) illustrates that 72% of elderly use OTC drugs without physician prescription, moreover, 61% of elderly reported that they don't have a health facility or physician to regularly visit, furthermore, reasons of self-medication as mentioned by elderly were previous experience (44%), getting quick relief (14%), having a minor ailment (34%), ease of accessibility (20%), need of rapid

emergency care (12%), for prevention (17%), time saving (18%), financial constraints (55%), mistrust of medical services (35%), and fear of hospitalization (15%).

Table 4: Frequency distribution of types and symptoms/conditions of self-medication with OTC drugs as reported by elderly (n= 100)

Variable	No (%)
*Have you used any of these medications without a physician prescription in the last 2 months (preferences)	
• Antibiotics	63
• Antipyretics	39
• Analgesics (paracetamol)	46
• Aspirin	48
• Cold medication	48
• Epiophirin	11
• Cough medications (antitussives)	22
• Anti-fungal (Flagyl)	28
• Antacids	44
• Laxatives	29
• Vitamins	19
• Oral health medication	28
• Hypnotics	13
* For which of these complains/symptoms have you used drugs without physician prescription in the last 2 months	
• Constipation	27
• Headache	64
• Fever	43
• Abdominal discomfort/colic	17
• Digestive problems	25
• Nausea	12
• Vomiting	9
• Diarrhea	27
• Common cold	76
• Respiratory problems	40
• Musculoskeletal pain	41
• Oral /Dental problems	23
• Skin conditions	6
• Urinary tract infections	10
• Insomnia	12

*All responses are not mutually exclusive

Table 4 reveals that antibiotics were the most commonly medication used by 63% of elderly followed by aspirin and cold medications (48%), analgesics (46%) and antacids (44%). Regarding complains/symptoms for which elderly used self-medication with OTC drugs, elderly reported that they used self-medication for headache (64%), common cold (76%), fever (43%), cough (40%), diarrhea or constipation (27%), vomiting (9%) and colic (17%).

Table 5: Frequency distribution of level of attitude among elderly toward self- medication with OTC drugs n=(100)

Variable	Agree No (%)	Not sure No (%)	Disagree No (%)
An elder can use OTC drugs without physician prescription	53	10	37
-It is normal for older adults to suffer from health symptoms secondary to aging process.	65	10	25
Self-medication with OTC drugs should be encouraged	33	Zero	67
-If ill, would you rather treat yourself than pay a visit to the nearest health facility	44	10	56
-Why would you treat yourself rather than visiting a health facility			
• Unfriendly hospital staff	26	Zero	5
• Long delays in governmental hospitals	25	1	3
• Private hospital exploit	10	2	3
• Cheap	19	Zero	4
• Fear of hospitalization	2	Zero	Zero
-OTC has no side effects	53	8	39
-Antibiotics are has no side effects	29	9	62
-Do you think that the “over the counter “drug sellers are well equipped to prescribe OTC drugs and give correct information to consumers who purchase self-medication products	42	8	50
-An elder can specify self- medication dose	56	13	31

Table 5 shows that 65% of older adults believe that suffering from health symptoms is normal with aging process and that an older adult can use medication with OTC drugs without physician prescription (53%), moreover, 53% of elderly believe that OTC has no side effects, whereas, 42% of older adults believe that OTC sellers are well equipped to prescribe medications, while, 56 % of elderly believe that older adults can specify self- medication dose, moreover, 33% of elderly reported that attitude toward self-medication with OTC drugs should be encouraged.it is worth saying that, elder would prefer to treat themselves rather than visiting a health facility because of unfriendly hospital staff (26%), Long delays in governmental hospitals (25%), Private hospital exploit (10%), cheap (19%), fear of hospitalization (2%).

Statistical Relations between Variables under Study

It is clear from table 6 that, there is a significant statistical correlation between frequency of practice of self- medication with OTC drugs and elderly age at $\chi^2 (p) = 34.61 (.004^*)$.

Table 7 shows that there is significant statistical correlations between practice of self-medication with OTC drugs and level of elderly education at $\chi^2 (p) = 7.50 (.004^*)$, furthermore, a significant statistical correlation was found between self- medication practice and self- rated health at $\chi^2 (p) = 7.30(.005^*)$, moreover a highly significant statistical correlations was found between self- medication practice and level of attitude toward self-medication with OTC drugs at $\chi^2 (p) =7.09(.000^*)$.

Table 6: relationship between frequency of practices self-medication with OTC drugs and elderly personal data (n=100)

Variable	Frequency of self- medication practice				χ^2 test & P Value
	Always	Sometimes	Once	Never	
Sex					12.90 p< 0.012*
Male	27	14	6	7	
Female	18	21	6	1	
Age					34.61 , p<0.004**
60-65	32	17	6	1	
65-70	10	11	1	6	
70-75	2	3	1	1	
75-80	0	3	4	0	
Over 80	1	1	0	0	

* Significant at p<0.05

** Significant at p<0.005

NS: Not significant

Table 7: Relations between self-medication with OTC and antibiotic practice, educational level self-rated health and level of attitude toward self- medication with OTC drugs (n = 100)

Variable	Self-medication practice		χ^2 test & P Value
	Yes	No	
Education			
Can't read or write	48	16	
Primary education	18	4	7.50, p<0.004**
Secondary education	3	5	
University education	3	3	
Self- rated health			
Excellent	4	4	7.30 p<005**
Good	13	10	
Fair	9	1	
Poor	46	13	
Attitude level			
Positive	32	68	7.09 p<0.000**
Negative	68	32	

* Significant at p<0.05

** Significant at p<0.005

NS: Not significant

DISCUSSION

Clearly, self- medication with OTC drugs among elderly is a prevalent health problem that needs more attention from gerontological nurses. Findings of the current study revealed that more than half of elderly aged from sixty to less than sixty five, moreover, more than one third of elderly couldn't read or write, this goes with Jafari, Khatony, and Rahmani, (2015) who reported similar findings. In the same line, Santosh Kumar Banjara and Kavitha Devi Bhukya ,(2014) and Tesfamariam S et al, (2019) also found that low educated respondents reported higher self-medication practice than highly educated respondents. This finding is incongruence with another study by Paul, (2016) who found an opposite results. In the current study, around

half of elderly suffered from chronic pain and rated their health status as poor. Furthermore, less than half of elderly complain of health conditions that required long-term use of analgesics. Additionally, majority of elderly also consumed prescribed medication to treat their chronic diseases as well as OTC drugs. From research investigator point of view, suffering from chronic diseases and self-rating of poor health together with reporting the need of long-term use of analgesics among the studied sample of elderly are contributing risk factors for use of self-medication with OTC drugs. As regards sources of elderly information about OTC drugs, more than half of elderly reported that pharmacy personnel were the primary source of information about OTC, while family member, media advertisement, and drug leaflets were reported by less than half of elderly as sources of information about OTC drugs. It is also clear that majority of retired elderly reported their dissatisfaction with the quality of medication system in health insurance hospitals.

Regarding patterns of self-medication with OTC drugs among elderly, it was noted in the current study that, majority of elderly practiced self-medication with OTC drugs without physician prescription, This finding is in line with similar studies carried out by Upadhyay, (2011), Santosh K Banjara and Kavitha D Bhukya, (2014), Jafari F, Khatony A & Rahmani E, (2015), Paul, (2016), Oliveira, Barroso, Bicalho, and Reis, 2018, and Tesfamariam et al, 2019, moreover, more than half of elderly reported that they don't have any health facility or physician to visit regularly. From research investigator point of view a comprehensive insurance system should cover all elderly not only those who are retired. Quality of medication system in health insurance hospital should also be improved as well in order to limit the practice of self-medication with OTC drugs. As regards to reasons of self-medication with OTC drugs, more than half of elderly mentioned that financial constraint as the main reason for self-medication with OTC drugs, whereas less than half of elderly reported that reasons included previous experience, having a minor ailment (two thirds), or mistrust of medical staff (two thirds), furthermore, around one third of elderly mentioned that the reason was ease of accessibility and that OTC drugs was used for disease prevention reasons or for time saving. These findings were supported by findings of a systematic review of 70 published studies by Abdolreza S, marzieh A, Hamid, (2014) in which self-medication with OTC drugs was reported by elderly in almost all studies because of having a minor illness (15 studies), high health care costs (9 studies), lack of adequate time to visit a physician (11 studies), prior experience (7 studies) in using a drug and long waiting time to visit a qualified practitioner (5 studies). From researcher point of view, health education and awareness campaigns, endorsement of laws for purchasing OTC drugs from pharmacies and increasing the quality of and access to health care especially health insurance hospitals are crucial to change elderly attitude.

Regarding common complains/symptoms for which elderly used self-medication with OTC drugs, majority of elderly reported that the practice self-medication with OTC drugs was to treat colds, whereas, more than half of elderly in the current study reported that they used self-medication for headache, and less than half of them reported fever, cough, diarrhea or constipation, and around one third of them reported vomiting and colic. In this respect, Mateusz C, Lukasz C, Krajewska-Kulak E, Orzechowska, Urszula C, (2018), also reported colds, muscle and joint pain, as well as headaches as the most frequent reasons the elderly gave for buying OTC medications. Findings of the current study also revealed that antibiotics were the most

commonly consumed medication by more than half of older adults which is in the same line with Jafari F , Khatony A & Rahmani E,, (2015) who reported similar results and who also added that self-medication, even for minor ailments, could lead to medical complications. From research investigator point of view, consequence of self-medication especially with antibiotics is very dangerous among older adults because the increased resistance from the inadequate use of antimicrobials. From researcher clinical observation with elderly, antimicrobial resistance (especially to antibiotics) is very common among elderly.

In relation to level of attitude toward self-medication with OTC drugs, more than half of elderly believe that complaining of health symptoms is normal for aging process and that it is safe to be self-medicated to treat these symptoms without physician prescription and that OTC has no side effects while less than half of elderly believe that OTC sellers are well equipped to prescribe such medications. Elderly also believe that self-medication attitude should be encouraged, while, more than half of elderly believe that a person can specify the dose of self-medication with OTC drugs for themselves. This finding is supported with Mortazavi et al, (2017) and Mateusz Cybulski, (2018) who mentioned in their study that many OTC drug consumers did not demonstrate responsible attitudes toward using self-medication. From research investigator point of view, elderly perceptions and believes should be changed in order to adopt a safe medication use attitude. Correction of myths about aging and self-medication should be integrated into health education programs targeting safe-medication use among elderly.

Results of current study also revealed a significant statistical correlation between frequency of self- medication with OTC drugs practice and age of elderly. There was also significant statistical correlations between practice of self-medication with OTC drugs and level of elderly education, self- rated health, and attitude level. These findings are also supported by Jafari F, Khatony A & Rahmani E, (2015). In this same respect, Papakosta M, D Zavras, D Niakas, (2014) have found in a similar study that individuals who practiced self-medication had a reported lower self-rated health status.

Findings of the current study has many strengths and implications for practice such as shedding the light on self-medication practices with OTC drugs among elderly and highlighting the need for health education and awareness campaign about rational self-medication use among this vulnerable group in rural villages. Meanwhile, current study also had certain limitation such as recall bias (2months recall period). 2- Self-reporting of data with the possibility of over and under-reporting 3- Restriction to small sample size of elderly in rural villages, so generalization of findings couldn't be gained.

CONCLUSION

The present study has shown that trends of self-medication with OTC drugs are certainly prevalent among elderly in the selected rural villages. Majority of elderly in the present study used OTC drugs without physician prescription due to financial constraints, time saving, previous experience, getting quick relief, having a minor ailment, ease of accessibility, need of rapid emergency care, for prevention, mistrust of medical service, and fear of hospitalization. There was a significant statistical correlation between frequency of self- medication with OTC

drugs practice and age of elderly. The findings of the study strengthen the assumption that there are correlations between practice of self-medication with OTC drugs and level of elderly attitude, education, and self-rated health.

RECOMMENDATIONS

1. Raise awareness among elderly regarding the importance of professional consultation before self-medication with OTC drugs, consequences of self-medication and the importance of responsible self-medication.
2. Replication of study on a large scale nation-wide large scale project.
3. Conducting of further researches about self-medication with antibiotics among elderly.

REFERENCES

- Alhomouda F, Aljameaa Z, Reem Almahasnaha R, Alkhalifaha, K Basalelaha L, Kais F Alhomoudb, (2017), Self-medication and self-prescription with antibiotics in the Middle East—do they really happen? A systematic review of the prevalence, possible reasons, and outcomes, *International Journal of Infectious Diseases*, 57 (23–12, journal home page: www.elsevier.com/locate/ijid)
- Abdolreza S, marzieh A, Hamid A, (2014), Predictors of Self-Medication Behavior: A Systematic Review, *Iranian J Publ Health*, Vol. 43, No.2, Feb, pp. 136-146, Available at: <http://ijph.tums.ac.ir>
- Balbuena FR, Aranda AB, Figueras A. (2009), Self-medication in older urban Mexicans: an observational, descriptive, cross-sectional study. *Drugs Aging*. 26(1):51-60.
- CAPMAS, (2017). Central Agency for Public Mobilization and Statistics located at: <http://www.msrintranet.capmas.gov.eg/pls/fdl/fmnl2?lname>.
- Esan DT, Fasoro AA, Odesanya OE, Esan TO, Ojo EF, Faeji CO, (2018), Assessment of self-medication practices and its associated factors among undergraduates of a private University in Nigeria. *J Environ Public Health*.2018:1–7. doi:10.1155/2018/5439079
- Jafari F , Khatony A & Rahmani E, (2015), Prevalence of Self-Medication Among the Elderly in Kermanshah-Iran *Global Journal of Health Science*; Vol. 7, No. 2; ISSN 1916-9736 E-ISSN 1916-9744
- Kayalvizhi S, and Senapathi R. (2010), Evaluation of the perception, attitude and practice of self medication among business students in 3 select cities, south India. *Int J Enterprise Innov Manage Stud*; 1(3), 40-44.
- Locquet M, Honvo G, Rabenda V, Van Hees T, Petermans J, Reginster JY, et al. (2017), Adverse health events related to self-medication practices among elderly: a systematic review. *Drugs Aging*.;34(5):359-65. Review.
- Mateusz C, Lukasz C, Krajewska-Kulak E, Orzechowska, Urszula C, (2018), Preferences and attitudes of older adults of Bialystok, Poland toward the use of over-the-counter drugs, *Clinical Interventions in Aging* 2018:13 623–632
- Mortazavi S Salehe, Mohsen S, Hamid R Khankeh, Fazlollah A, Shiva M, and Seyed K Malakouti, (2017) , Self-medication among the elderly in Iran: a content analysis study, *BMC Geriatrics* ,17:198 DOI 10.1186/s12877-017-0596-z
- Oliveira SB, Barroso SC, Bicalho MA, Reis AM. (2018), Profile of drugs used for self-medication by elderly attended at a referral center. *Einstein (São Paulo)*.16(4):eAO4372. http://dx.doi.org/10.31744/einstein_journal/2018AO4372

- Paul, S, Marconi S, Gohain MJ, Bhatt AN. (2016), Senior citizens and over the counter drugs: challenges in rural India. *Int J Res Med Sci*;4:1446-9.
- Pushpa R Wijesinghea, Ravindra L Jayakodyb, Rohini de A Seneviratnec, (2012), Prevalence and predictors of self-medication in a selected urban and rural district of Sri Lanka, *WHO South-East Asia Journal of Public Health* ;1(1):28-41
- Papakosta M , D Zavras, D Niakas, (2014), Investigating factors of self-care orientation and self- medication use in a Greek rural area, the international electronic journal of Rural and Remote Health research, education, practice and policy, ISSN:1445-6354. 14: 2349. (Online), Available: <http://www.rrh.org.au>
- Santosh K Banjara and Kavitha D Bhukya , 2014, To estimate the prevalence of self-medication in rural areas of Medak District of Telangana, *INDIAN JOURNAL OF APPLIED RESEARCH* Volume : 4 | Issue : 11 | November 2014 | ISSN - 2249-555X
- Sandip S Jogdand, Jayshree D Naik, (2013), Knowledge and pattern about medicine use amongst rural people of maharashtra, *national journal of medical research*, Volume 3, Issue 4, print ISSN: 2249 4995, ISSN: 2277 8810,
- Sarahroodi, S., Maleki-Jamshid, A., Sawalha, A. F., Mikaili, P., & Safaeian, L. (2012). Pattern of self-medication with analgesics among Iranian University students in central Iran. *J Family Community Med.*, 19(2), 125-129. <http://dx.doi.org/10.4103/2230-8229.98302>
- Tesfamariam S, Indermeet Singh Anand, Ghide Kaleab, Samson Berhane, Biruck Woldai, Eyasu Habte and Mulugeta Russom, , (2019), Self-medication with over the counter drugs, prevalence of risky practice and its associated factors in pharmacy outlets of Asmara, Eritrea, *BMC Public Health* (19):159 <https://doi.org/10.1186/s12889-019-6470-5>
- Upadhyay J, Joshi Y. (2011), Observation of Drug utilization pattern and Prevalence of Diseases in Elderly Patients through Home Medication Review. , *Asian J Pharm Clin Res*;4(1):143-5.
- Vali, L., Pourreza, A., Ahmadi, B., & Rahimi, A. F. (2011). Assessment of relation between inappropriate medication and health status among elderly discharged from hospitals affiliated with Tehran University. *Iran elderly Journal*, 6(21), 56-65 (in Persian).
- World Health Organization; (2000). [Last accessed on 2011 Sep 30]. Guidelines for the regulatory assessment of medicinal products for use in self-medication. WHO/EDM/QSM/00.1. Available from: <http://www.apps.who.int/medicinedocs/en/d/Js2218e/>
- Zafar SN, Syed R, Waqar S, Zubairi AJ, Waqar T, Shaikh M, et al. (2008), Self-medication, ZAmongst university students of Karachi: Prevalence, knowledge and attitudes. *J Pak Med Assoc*;58:214-7.