

# Prescribing in primary care for the older people

Mohammed H. Al-Doghether, ABFM, SBFM, Tarek I. Al-Megbil, ABFM, SBFM.

---

## ABSTRACT

**Objectives:** To assess doctor's knowledge, attitude and practices, which influence their prescribing for older people.

**Methods:** This is a cross-sectional study conducted by the primary health care physicians working in the primary health care centers in Riyadh city, Kingdom of Saudi Arabia during April 2001 to July 2001. A hundred physicians in randomly selected primary health care centers in Riyadh were asked to fill a structured questionnaire to assess their knowledge, attitude and practices on prescribing for older people.

**Results:** The study showed 56% of the physicians thought that number of older people in PHC is increasing, 65% of physicians felt confident in dealing with older

people, 27% of physicians thought that patient's family influenced their decision in prescribing older people. Forty-seven percent of physicians considered that patient being older influenced their decision to prescribe and 50% of the participating physicians showed poor knowledge mainly in the area of drugs.

**Conclusion:** There is an evident defect in physician knowledge in prescribing for the older people. In depth, research is badly needed on various aspects of therapeutics to this age group. A robust prescribing strategy is required to address the issue of suitable prescribing for the older people in primary care.

Saudi Med J 2004; Vol. 25 (4): 488-492

---

The global increase in people aged  $\geq 60$  years has attracted the attention of the world to the magnitude of the problems of providing health care for the older people.<sup>1</sup> The proportion of geriatric population in developed countries reached between 12% and 18% of total population and is expected to increase in coming years.<sup>2,3</sup> A phenomenon known as the "baby boomers" in the west, yet received 45% of prescribed medication.<sup>4</sup> Similar changes noticed in developing countries, and Kingdom of Saudi Arabia (KSA) is no exception. The prescribing of drugs is an important part of an integrated approach to health care provision and continues to be one of the essential issues for health services. In KSA studies on general population in

primary health care showed an average of  $3.2 \pm 0.04$  drugs per prescription and an average of  $1.8 \pm 0.3$  drug per patient. Higher numbers are expected to be found in older people, which composes approximately 20.7% of patients attending the primary health center (PHC).<sup>5,6</sup> Traditional teaching suggests that a prescription should be safe, necessary, effective and economical. Widespread concern has been expressed on drug treatment in older people, the risk of excessive prescribing of inappropriate drugs and the under-prescribing of potentially beneficial drugs. In practice however, there is considerable variation in prescribing.<sup>7,8</sup> In PHC a prescription is given in almost 78% of consultations.<sup>9</sup> Poor knowledge or negative attitude

---

From the Center of Postgraduate Studies in Family Medicine (Al-Doghether) and the Department of Primary Health Care (Al-Megbil), Ministry of Health, Riyadh, Kingdom of Saudi Arabia.

Received 9th September 2003. Accepted for publication in final form 16th December 2004.

Address correspondence and reprint request to: Dr. Mohammed H. Al-Doghether, PO Box 90945, Riyadh 11623, Kingdom of Saudi Arabia. Tel. +966 (1) 4970468. Fax. +966 (1) 4970847. E-mail: doghether@hotmail.com

might lead doctors to prescribe harmful drugs too often, and too seldom prescribe beneficial drugs for older people. Subsequently, the increasing number of older patients, a group with special medical needs, will be seen in PHC. The objective of the present study is to evaluate the knowledge, attitude and practice of PHC doctors with regard to prescribing for older people.

**Methods.** This is a cross sectional study that was conducted in Riyadh, during April 2001 to July 2001. The study population was physicians working in primary health care centers in Riyadh city, KSA. A pilot study was conducted in King Fahad PHC center in Riyadh and relevant changes in questionnaire were made following this. The final questionnaire completed included the following 1) Demographic data such as age, gender, qualifications, years of experience in PHC. 2) Questions to survey their knowledge, attitude and practice which influence their prescribing for this age group. These inquire on their confidence when dealing with older people, role of family in decisions to prescribe or if the patient being an older person influences their decision to prescribe. There are also questions on reasons for adverse drug reaction in older people and knowledge of commonly used drugs, which are potentially inappropriate for older people.

Questions regarding knowledge covered 3 areas, these are: a) Knowledge on appropriateness of some medications for older people. b) Knowledge on reasons for adverse drug reactions in older people. c) Knowledge on age related physiological changes, which will have an effect on drug therapy in older people. Scoring system was as follow: <60% considered poor, 60-80% considered fair, while >80% considered good. Sample size was determined according to time and facilities available to the researcher. Riyadh city is divided into 5 areas (North, South, East, West and Central). Four centers were selected randomly from each area by choosing the first 4 centers with odd numbers. This made the total participating health centers to total 20 out of the 59 primary health care centers in Riyadh. All physicians working in these centers were included in the present study, there were 100 physicians (54 males and 46 females) accounting to 28.6% of total number of 350 physicians working in Riyadh primary health care centers. All questionnaires were distributed and collected by the researcher from each primary health care center to ensure 100% response rate. The data were entered and analyzed in a personal computer using "Data Star Software (version 9) for data entry and "Systat Software" for statistical analysis.

**Results.** Out of the 100 physicians who participated in the study, 54 (54%) were males and 46 (46%) were females. The youngest was 27-years-old and the eldest was 60-years-old. Overall mean age was  $40.3 \pm 7.5$  years. Forty-two (42%) physicians (14 males and 28 females) were <40 years of age and 58 (58%) physicians were >40 years of age. The years of experience in PHC were 67% of physicians had  $\geq 5$  years of experience. The qualifications were 77% of physicians Bachelor of Medicine (MBBS), while 18 (18%) physicians had diploma or equal in different branches of medicine and only 5 (5%) were physicians (**Table 1**).

**Knowledge, attitude and practice.** Doctors' opinion on the increasing number of older patients in PHC was shown in **Table 2**. It shows that more than half of the sample size (56%) thought that there is an increase in number of older patients in PHC. When doctors were asked on how confident they feel when dealing with an older patient in PHC (**Table 2**), 65 physicians felt confident when dealing with an older patient while 30 physicians feel confident only sometimes (Chi square = 0.48,  $p=0.78$ ). Cross tabulating the above question by doctor's experience showed that 54% of physicians below 5 years of experience feel confident when dealing with older patients in PHC, while 46% of physicians do not feel or feel confident only sometimes. For those with  $\geq 5$  years experience in PHC; 70% of them feel confident when dealing with older patients (**Table 3**). When doctors were asked if family had any influence on decision to prescribe for older patients; 27 physicians answered yes, while 41 physicians answered no and 32 physicians answered sometimes (**Table 2**). These results show that patient's family is not a strong factor influencing prescribing for older people with almost no difference among male and female doctors in practice. Same question by doctor's experience did not affect physician opinion as 27 physicians (6 [18%] below 5 years of experience and 21 [42%] with  $\geq 5$  years of experience) answered yes, while 73 physicians (27 [82%] <5 years of experience and 46 [69%] with  $\geq 5$  years of experience) answered no or sometimes, Chi square = 3.12,  $p=0.2$  (**Table 3**). When physicians were asked if patient being an older person had an influence on their decision to prescribe; 47 (47%) physicians answered yes, and 53 (53%) physicians answered no or sometimes, chi square = 0.38,  $p=0.8$ , meaning that patient being an older person did not strongly influence decision to prescribe with no significant difference in practice between male and female physicians (**Table 2**). **Table 3** shows that patient being an older person did not influence decision to prescribe and this decision is not influenced by doctor's experience. **Table 4** shows the knowledge questions and scoring system.

Table 1 - Characteristics of physicians involved in the study.

Characteristics	Male n (%)	Female n (%)	Total n (%)
<b>Age of gender distribution (years)</b>			
<40	14 (25.9)	28 (60.9)	<b>42 (42)</b>
≥40	40 (74)	18 (39.1)	<b>58 (58)</b>
<b>Doctors years of experience in PHC</b>			
<5	13 (24)	20 (43.5)	<b>33 (33)</b>
≥5	41 (75.9)	26 (56.5)	<b>67 (67)</b>
<b>Doctors' qualification</b>			
MBBS	42 (77.8)	35 (76.1)	<b>77 (77)</b>
Diploma or equal in different branches of medicine	10 (18.5)	8 (17.4)	<b>18 (18)</b>
Fellowship or equal in different branches of medicine	2 (3.7)	3 (6.5)	<b>5 (5)</b>
PHC - primary health care			

Table 2 - Doctor's practice by gender.

Doctor's opinion	Male n (%)	Female n (%)	Total n (%)
<b>Increasing number of older patients in PHC</b>			
Yes	28 (51.9)	28 (60.9)	<b>56 (56)</b>
No	11 (20.4)	13 (28.3)	<b>24 (24)</b>
I cannot say	15 (27.8)	5 (10.9)	<b>20 (20)</b>
<b>Confident in dealing with an older patient in PHC</b>			
Yes	35 (64.8)	30 (65.2)	<b>65 (65)</b>
No	2 (3.7)	3 (6.5)	<b>5 (5)</b>
Sometime	17 (31.5)	13 (28.3)	<b>30 (30)</b>
<b>Does family of older patients influence decision to prescribe for patient</b>			
Yes	14 (25.9)	13 (28.3)	<b>27 (27)</b>
No	22 (40.7)	19 (41.3)	<b>41 (41)</b>
Sometimes	18 (33.3)	14 (30.4)	<b>32 (32)</b>
<b>Does patient being elderly influence decision to prescribe</b>			
Yes	25 (46.3)	22 (47.8)	<b>47 (47)</b>
No	17 (31.5)	16 (34.7)	<b>33 (33)</b>
Sometime	12 (22.2)	8 (17.4)	<b>20 (20)</b>
PHC - primary health care			

Table 3 - Doctor's practice by experience (>5 years versus <5 years) in primary health care.

Doctor's opinion	<5 years n (%)	≥5 years n (%)	Total n (%)
<b>Doctor's opinion about increase in number of older patients</b>			
Yes	13 (39.3)	43 (64)	<b>56 (56)</b>
No	11 (33.3)	13 (19.5)	<b>24 (24)</b>
I cannot say	9 (27.3)	11 (16.5)	<b>20 (20)</b>
<b>Total</b>	<b>33 (100)</b>	<b>67 (100)</b>	<b>100 (100)</b>
<b>How confident doctor feels when dealing with an older patient in PHC</b>			
Yes	18 (54.5)	47 (70.1)	<b>65 (65)</b>
No	2 (6.1)	3 (4.5)	<b>5 (5)</b>
Sometimes	13 (39.4)	17 (25.4)	<b>30 (30)</b>
<b>Total</b>	<b>33 (100)</b>	<b>67 (100)</b>	<b>100 (100)</b>
<b>Does patient's family influence your decision to prescribe for older patients</b>			
Yes	6 (18.2)	21 (31.3)	<b>27 (27)</b>
No	13 (39.4)	28 (41.8)	<b>41 (41)</b>
Sometimes	14 (42.4)	18 (26.9)	<b>32 (32)</b>
<b>Total</b>	<b>33 (100)</b>	<b>67 (100)</b>	<b>100 (100)</b>
<b>Does the patient being elderly influence your decisions to prescribe</b>			
Yes	18 (54.5)	29 (43.3)	<b>47 (47)</b>
No	8 (24.2)	26 (38.8)	<b>34 (34)</b>
Sometimes	7 (21)	12 (17.9)	<b>19 (19)</b>
<b>Total</b>	<b>33 (100)</b>	<b>67 (100)</b>	<b>100 (100)</b>

Table 4 - Doctor's knowledge about prescribing for older people in PHC by gender.

Score (%)	Male n (%)	Female n (%)	Total n (%)
Poor (60)	25 (46.3)	25 (54.3)	<b>50 (50)</b>
Fair (60-80)	21 (38.9)	14 (30.4)	<b>35 (35)</b>
Good (>80)	8 (14.8)	7 (15.2)	<b>15 (15)</b>
<b>Total</b>	<b>54 (100)</b>	<b>46 (100)</b>	<b>100 (100)</b>
PHC - primary health care			

Table 5 - Doctor's knowledge about prescribing for older people in primary health care by experience.

Score (%)	≤5 years n (%)	≥5 years n (%)	Total n (%)
Poor (60)	15 (45.4)	35 (52.2)	<b>50 (50)</b>
Fair (60-80)	12 (36.4)	23 (34.3)	<b>35 (35)</b>
Good (>80)	6 (18.2)	9 (13.4)	<b>15 (15)</b>
<b>Total</b>	<b>33 (100)</b>	<b>67 (100)</b>	<b>100 (100)</b>

Table 6 - Doctor's knowledge on drugs which are potentially inappropriate for older people.

Score (%)	Physicians n (%)
Poor (60)	62 (62)
Fair (60-80)	18 (18)
Good (>80)	20 (20)
<b>Total</b>	<b>100 (100)</b>

**Table 4** shows doctor's knowledge by gender where 50 (50%) physicians (25 male and 25 females) had poor score and 35 (35%) physicians (21 males and 14 females) had scored fair and only 15 (15%) physicians scored good. This reflect poor knowledge among both male and female physicians, which will be reflected badly on prescribing for these patients. Doctor's knowledge on medications for older people was also cross tabulated by doctor's experience in PHC, which shows that 50 physicians (15 with <5 years of experience, 35 with ≥5 years of experience) had poor score, 35 physicians (12 with <5 years of experience, 23 with ≥5 years of experience) had fair score, while 15 physicians scored good (**Table 5**). The area with the poorest score was an answering questions on doctor's knowledge on drugs which are potentially inappropriate for older people; 62 physicians had poor score, 18 had fair score and 20 had good score (**Table 6**).

**Discussion.** Major factors, which affect prescribing for older people, are doctors' knowledge, attitude and practice. Questions on knowledge, attitude and practice showed that the majority of doctors, most of which have 5 or more years of experience in PHC, think that there is an increase in number of older patients which can be explained by the fact that experienced doctors have been in practice for longer period and observe the change more easily. Approximately two thirds of physicians felt confident when dealing with older people. Confidence was slightly more among experienced doctors compared to doctors with less than 5 years experience in PHC. Experience in general practice and exposure to large number may explain differences in both groups but the overall number is considered low and shows a defect in this area. This may be due to the fact that most of them did not take geriatrics as undergraduates. Patients'

family did not have a strong influence on the decision of physicians to prescribe for older people, as most of patients are independent and most of the time come alone or enter the clinic alone while the accompanied relatives wait outside the clinic. The patient being an older person did not influence the physicians' decision to prescribe as shown by the results neither among male nor female doctors. Most physicians do not consider this factor when prescribing for older people, which is not true and indicates a major defect in this area.

Questions on knowledge covered 3 areas, which are a) knowledge on appropriateness of some medications for older people, b) knowledge on reasons for adverse drug reactions in older people and c) knowledge on age related physiological changes, which will have an effect on drug therapy in older people. Half of the studied sample had a score of <60% which is considered poor with almost no difference either among male or female and among experienced or less experienced physicians. This can also explain why some of the physicians did not feel confident when dealing with an older patient. The above figure also can lead to large number of errors in prescribing for older patients by PHC physician. This is seen in the area where doctor's knowledge was most poor. Which was in the answering of question on doctor's knowledge on appropriateness of some medications for older people where the number of physicians having a poor score (<60%) was 62% of physicians. Despite the value of the essential drugs list,<sup>10</sup> a good model does not guarantee correct use.<sup>11</sup> This is demonstrated by essential drug list covering 95% of medications for older people compared to poor knowledge on medications by physicians. Inappropriate prescriptions represent one type of explicit quality indicator related to drug utilization.<sup>12,13</sup> Prescribing expenditure and cost-effective prescribing in primary care has

become a top priority within many health systems worldwide as the cost and number of prescriptions written continue to rise. There are a number of causes of this including demographic changes mainly towards geriatric group, a shift in treatment to primary care setting, and greater screening and preventive medicine in general practice.<sup>14</sup> Therefore a robust prescribing strategy is required to address the issues on prescribing, to ensure that prescribing is clinically appropriate and adequate to meet the needs of this population, and to facilitate high quality, cost effective prescribing by the clinicians of the primary care team. Lead GPs, senior managers, community pharmacists and other key stockholders need to attend a strategy development workshop, aimed to identify the key areas of strategic development, barriers to progress and potential solutions to overcome those barriers. Among the objectives for action are to develop a GP formulary, improve practice prescribing, increase the amount of time available to GPs, implement continuing medical education system in primary care, and monitor prescribing habit trends according to evidence based medicines guidelines. Systematic review of drug utilization and regular scheduled monitoring of drugs regimens may be warranted in PHC setting. We believe that there is an urgent need for research in the field of knowledge of drugs and sources of information; hence, decisions can be made regarding suitable educational models for doctors in PHC at different stages in their professional carriers. Until that has been carried out educators must continue identifying specific needs; one of these is prescribing for older people.

## References

1. Kinsella KG, Velkoff VA. Bureau of the census. An aging world: 2001. Washington (DC): Dept. of Commerce Economics and Statistics Administration; 2001.
2. Burton JR, Solomon DH. Geriatric Medicine: A true primary care discipline. *J Am Geriatric Soc* 1993; 41: 459-62.
3. Wilcock GK, Gray JA, Longmore JM. Geriatric Problems in general practice. London (UK): Oxford University Press; 1991.
4. Krska J, Jamieson D. Medication review in older people. *Pharmacy Magazine* 2000; VI: CE1-CE7.
5. Khoja TAI, Shammari S, Farag MK, Al-Mazrou Y. Quality of prescribing at primary care centers in Saudi Arabia. *J Pharma Tech* 1996; 12: 284-288.
6. Al-Shammari S, Nass M, Al-Maatouq M, Al-Quaiz J. Family Practice in Saudi Arabia: Chronic Morbidity and quality of care. *Int J Qual Health Care* 1996; 8: 383-387.
7. Bateman DN, Eccles M, Compel M, Soutter J, Roberts SJ, Smith JM. Setting standards of prescribing performance in primary care: use of a consensus group of general practitioners and application of standards to practices in the North of England. *Br J Gen Practice* 1996; 46: 20-25.
8. Morton-Jones T, Pringle M. Explaining variations in prescribing costs across England. *Br Med J* 1993; 306: 1731-1734.
9. Gilleham JD. Prescribing in general practice. London (UK): Royal College of General Practice; 1991.
10. Ministry of Health. Drug formulary for Health Centers. Kingdom of Saudi Arabia: Ministry of Health; 1994.
11. Howrd NJ, Laing RO. Changes in the world health organization drug list. *Lancet* 1991; 338: 743-745.
12. Spore DL, Mor MV, Larrat P, Howes C, Hiris J. Inappropriate drug prescriptions for elderly residents of board and care facilities. *Am J Public Health* 1997; 87: 404-409.
13. Fahey T, Montgomery AA, Baqnes J, Protheroe JO. Quality of care for elderly residents in nursing homes and elderly people living at home: controlled observational study. *Br Med J* 2003; 326: 580-583.
14. Tendering Primary Care Trust. Prescribing strategy. Draft 4. NHS 2000-2001. Available from URL: <http://www.tenderingpct.co.uk/prestrat2.pdf>