



# The Prevalence and Characteristics of Frequent Attenders in Primary Health Care in A'Dakhiliyah Governorate of Oman

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## ABSTRACT

**Objectives:** Frequent attenders (FAs) in general practice receive significant attention in primary care research due to the financial costs associated with the higher utilization of health care services. The main objective of this study was to determine the prevalence of FAs in Oman by studying the overall rates of adult patient visits to primary health care centers (PHCs) and identify the characteristics of this group of patients. **Methods:** We conducted a retrospective longitudinal study including all adults aged 18 years and above who visited general practitioner clinics at four selected PHCs in the A'Dakhiliyah governorate of Oman. Sociodemographic data and number of visits were extracted from the electronic medical records system. **Results:** A total number of 12 902 adult patients contributed to 42 425 patient visits, with the number of visits made by individual patients ranging from 1 to 62. FAs constituted 2.4% (n = 313) of the total subjects and made 5449 (12.8%) visits. The mean rate of visits per patient per year was 3.2, while the median was two visits. The overall rate of visits per day was more than two-times higher in females (79.6 per day) compared to males (36.6 per day) and was about five-times higher in female FA (12.3 vs. 2.6). **Conclusions:** FAs represent a small proportion of patients attending PHCs in Oman. The proportion of females was higher among FAs and they also contributed to a higher number of visits to PHCs.

Frequent attenders (FAs) represent a subgroup of patients who account for a relatively large proportion of contacts with general practitioners (GPs) and also a large number of referrals and prescriptions.<sup>1</sup> Studies have revealed that FAs have high rates of physical disease, psychiatric illness, social difficulties, and emotional distress. They were first described in 1954 by Backett et al, who documented that most of the workload of a doctor could be attributed to a small proportion of patients.<sup>2,3</sup>

It is crucial to determine the extent of this issue and the characteristics of FAs to formulate an appropriate strategy to deal with this group of patients; however, there are no clear recommendations for researching this topic.<sup>1</sup> The interpretation of studies on FAs is hampered by differences in the organization of

health care, the settings, the definitions utilized, and the population studied.<sup>2,4</sup>

Oman, an Arab Gulf country, is facing a major challenge regarding the management of escalating health care costs, with one of the reasons being overutilization.<sup>5</sup> In Oman, primary health care is considered one of the main pillars of the health care system, which is funded by the government through the Ministry of Health (MOH), with care provided through a network of primary health care centers (PHCs) distributed throughout the country. In 2005, approximately 10.6 million outpatient visits were made to government health institutions in Oman, with 3.27 million visits made to PHCs; visits by Omani nationals accounted for 96% of these visits.<sup>6</sup>

Since the phenomenon of FAs has not previously been explored in Oman, a pilot study was undertaken

to determine the overall rates of adult patient visits to PHCs and to identify the sociodemographic variables associated with a higher number of visits.

## METHODS

This retrospective longitudinal study was conducted in four selected local PHCs in the A'Dakhliyah governorate of Oman in 2008. This governorate has 21 PHCs, which are distributed into several districts; the selection of the four PHCs chosen for inclusion in the study was based on convenience. The study population comprised all adults aged 18 years and above who attended four general clinics as walk-in patients; patients who attended appointment-based specialty clinics (e.g., hypertension, diabetes and antenatal clinics) were excluded. Sociodemographic data and number of visits were extracted from the electronic medical records system, and FAs were defined as those patients who made more than 12 visits per year.

The distribution was studied across gender for the total number of visits for both FA and non-FA categories, and a chi-square test was used to test the significance between gender and number of visits. The dispersion statistics divided by the degrees of freedom exceeded one, which suggested overdispersion. Since the number of visits does not have a zero count by design, a zero-truncated negative binomial regression was performed using STATA software (StataCorp, College Station, Texas) to study the sociodemographic factors which were associated with a higher number of visits.

Ethical approval for the study was obtained from the Directorate General of Health Services in the A'Dakhliyah governorate, MOH.

## RESULTS

In 2008, 12 902 adult patients visited GP clinics in the four selected PHCs resulting in 42 425 visits. The mean age of the study population was  $34.0 \pm 16.0$  years, and the majority were females (61.0% vs. 39.0%) [Table 1].

The number of visits made by individual patients ranged from 1 to 62; over one-third of patients made a single visit, while approximately 78.0% of patients made up to four visits. A proportionately higher number of males visited the PHCs for two or fewer visits compared to females (65.5% vs. 51.5%), but

**Table 1:** Sociodemographic characteristics of the study population (n = 12 902).

Variable	Category	n (%)
Age, years	≤ 24	5904 (45.8)
	25–44	5045 (39.1)
	45–59	1291 (10.0)
	≥ 60	658 (5.1)
Gender	Male	5028 (39.0)
	Female	7874 (61.0)
Marital status	Single	6160 (47.7)
	Married	6425 (49.8)
	Divorced	127 (1.0)
	Widowed	190 (1.5)
Education	Illiterate	1818 (15.7)
	Primary	4714 (40.7)
	Secondary	4699 (40.6)
	Advanced	354 (3.1)
Employment	Student	5435 (42.1)
	Housewife	4525 (35.1)
	Employee	2716 (21.1)
	Retired/not working	226 (1.8)

as the number of visits increased, a clear trend of an increased proportion of females compared to males was seen [Table 2].

Only 2.4% (n = 313) of subjects made more than 12 visits, representing 12.8% of total visits (n = 5449), and gender-wise analysis of FAs showed a predominance of females (3.3% vs. 1.1%). Out of the total number of visits, females and males contributed to 4505 (15.5%) and 944 visits (7.1%), respectively [Table 3]. The overall mean rate of visits per patient per year was  $3.2 \pm 3.3$ , while the overall median number was two visits. The mean number of visits for both male and female FAs was 17.4 visits, while the median number of visits was 15 and 16 for males and females, respectively. The overall rate of visits per day was more than two-times higher for females (79.6 per day) compared to males (36.6 per day), with a nearly similar trend noted in the non-FA subgroup. However, in the FA category this was about five-times higher among females compared to males (12.3 vs. 2.6) [Table 3].

The overall and gender-wise mean and median ages were higher in the FAs group compared to the non-FAs group. Males were found to be younger (mean and median age) compared to females in both the FAs and non-FAs groups, respectively [Table 4].

**Table 2:** Total number of visits according to patient gender (n = 12 902).

Total visits, n	Gender		Total (n = 12 902) n (%)	Cumulative percentages, %
	Male (n = 5028) n (%)	Female (n = 7874) n (%)		
1	2152 (42.8)	2518 (32.0)	4670 (36.2)	36.2
2	1143 (22.7)	1541 (19.6)	2684 (20.8)	57.0
3–4	1009 (20.1)	1696 (21.5)	2705 (21.0)	78.0
5–12	670 (13.3)	1860 (23.6)	2530 (19.6)	97.6
≥ 13	54 (1.1)	259 (3.3)	313 (2.4)	100

$p < 0.001$  at all levels of visits.

**Table 3:** Mean and median number of visits and rate of visits per day according to gender for frequent attenders (FAs) (n = 313) and non-frequent attenders (n = 12 589).

Gender	Category	Patients, n	Visits, n	Mean	SD	Median	Visits rate per day
Female	non-FAs	7615	24 558	3.2	2.5	2	67.3
	FAs	259	4505	17.3	5.7	16	12.3
	Total	7874	29 063	3.6	3.7	2	79.6
Male	non-FAs	4974	12 418	2.5	2.0	2	34.0
	FAs	54	944	17.4	6.0	15	2.6
	Total	5028	13 362	2.6	2.6	2	36.6
Total	non-FAs	12 589	36 976	2.9	2.4	2	101.3
	FAs	313	5449	17.4	5.8	15	14.9
	Total	12 902	42 425	3.2	3.3	2	116.2

SD: standard deviation.

**Table 4:** Distribution according to gender and age for frequent attenders (FAs) (n = 313) and non-frequent attenders (non-FAs) (n = 12 589).

Category	Age, years					
	Males		Females		Overall	
	Mean ± SD	Median	Mean ± SD	Median	Mean ± SD	Median
FAs	37.6 ± 17.3	37	44.7 ± 16.9	43	43.4 ± 17.2	43
Non-FAs	27.7 ± 13.9	22	34.6 ± 15.0	31	32.4 ± 15.0	28

SD: standard deviation.

Being a female significantly increased the risk of attending PHC facilities compared to being a male (relative risk (RR) 1.13; 95% confidence interval (CI): 1.10–1.20). There was a significant increase in the risk of visiting when a patient was married, divorced or widowed, compared to being single. Students were found to have a significantly lower risk of attending compared to the other three employment categories, and an illiterate patient had a nearly 1.5-times greater risk compared to a patient who had received an advanced education ( $p < 0.001$ ). As age increased, the risk of making a higher

number of visits per year increased significantly, especially among those aged 45 years and above ( $p < 0.001$ ) [Table 5].

## DISCUSSION

Based on the mean annual consultation rates, countries are considered either low- or high-use countries. The findings of our study place Oman as a low-use country in view of the low mean rate of visits per patient per year. Large cross-country differences in mean annual consultation rates have

**Table 5:** Relationship between the sociodemographic variables of the study population, mean and median rate of visits, and the adjusted relative risk (n = 12 902).

Variables	Visits per year, mean $\pm$ SD	Median (IQR)	Adjusted		p-value
			RR	95% CI	
<b>Marital Status</b>					
Single	2.5 $\pm$ 2.4	2 (1,3)	1.00		
Married	3.8 $\pm$ 3.8	3 (1,5)	1.25	1.15–1.37	< 0.001
Divorced	5.6 $\pm$ 6.2	3 (1,8)	1.40	1.08–1.80	0.010
Widowed	5.5 $\pm$ 4.7	4 (2,8)	1.27	1.02–1.58	0.031
<b>Gender</b>					
Male	2.6 $\pm$ 2.6	2 (1,3)	1.00		< 0.001
Female	3.6 $\pm$ 3.7	2 (1,5)	1.13	1.10–1.20	
<b>Employment</b>					
Student	2.5 $\pm$ 2.3	2 (1,3)	1.00		
House wife	4.3 $\pm$ 4.2	3 (1,6)	1.39	1.23–1.56	< 0.001
Employee	2.9 $\pm$ 2.9	2 (1,4)	1.15	1.02–1.30	0.020
Retired/not working	4.0 $\pm$ 4.1	2 (1,5)	1.45	1.17–1.81	0.001
<b>Education</b>					
Illiterate	5.4 $\pm$ 4.9	4 (2,7)	1.48	1.23–1.79	< 0.001
Primary	2.8 $\pm$ 2.8	2 (1,4)	1.14	0.98–1.34	0.096
Secondary	2.8 $\pm$ 2.8	2 (1,4)	0.99	0.84–1.17	0.952
Advanced	2.6 $\pm$ 2.4	2 (1,3)	1.00		
<b>Age, years</b>					
$\leq$ 24	2.6 $\pm$ 2.4	2 (1,3)	1.00		
25–44	3.3 $\pm$ 3.3	2 (1,4)	1.01	0.92–1.11	0.869
45–59	4.9 $\pm$ 4.5	3 (2,7)	1.31	1.14–1.51	< 0.001
$\geq$ 60	5.3 $\pm$ 5.4	4 (2,7)	1.43	1.22–1.68	< 0.001

SD: standard deviation; IQR: interquartile range; RR: relative risk; CI: confidence interval.

been reported, and in high-use countries, such as Germany, Hungary, France, Belgium, and Austria, visit frequency is around 7–8 visits per year, which is twice that in low-use countries, such as Finland, Switzerland, Denmark, and the United States.<sup>7</sup> The overall median annual consultation rates per patient in Croatia, the Netherlands, and Japan were 4.1, 5.7, and 5.6, respectively, while in Kuwait a much higher number of 16 visits has been reported.<sup>8–10</sup> These differences could be attributed to the differences in settings and populations studied.

The finding that 2.4% of patients contributed to 12.8% of the total number of visits is consistent with previous studies that have shown that a small proportion of patients are responsible for a disproportionate number of consultations.<sup>4</sup> In Kuwait, 5.8% of patients were classed as FAs who contributed to 19.2% of visits, while a study from Saudi Arabia noted that 27.5% of patients made 10 or more visits per year.<sup>10</sup> Studies from Europe have

reported that 4.7% of patients were responsible for 21% of consultations in the UK, 23% of patients were responsible for 60% of visits in Croatia, 24% of patients were responsible for 54.8% of visits in Slovenia, and 25% of patients were responsible for 55% of visits in Finland.<sup>10</sup> In Oman, medical services are provided for free to all citizens, which would be expected to lead to higher utilization of health services; however, our study reveals a comparatively lower prevalence rate of FAs compared to that in other countries. Potential reasons for this finding could be the fact that our study was confined to a specific geographical region, meaning that the results are not generalizable to the whole country. There may also be an overrepresentation of young subjects in our study population (45.8%  $\leq$  24 years) since previous studies have shown that FAs are typically older patients.<sup>4,11,12</sup>

Being female, divorced or widowed, illiterate, and older age are significantly associated with a

higher number of visits. The following reasons can explain the predominance of females: females have been found to report symptoms more frequently than males, and are more likely to be affected with illnesses because of their traditional role in caring for children.<sup>10,13,14</sup> Females also outnumbered males by nearly five-times in our FAs group. This finding is consistent with the findings from other studies, although no significant differences between FAs and non-FAs regarding gender and marital status were noted in a Saudi Arabian study.<sup>4,15</sup>

Our study revealed that the proportion of males who visited the PHCs for one or two consultations was higher than females, and in addition, these were younger aged males. This could be attributed to the outdoor lifestyle of males, which may potentially lead to a higher prevalence of injuries in this group, thus accounting for the higher number of visits. Similar to previous studies, our patients with a low educational level utilized health services more frequently than better educated patients, which could be attributed to a lack of awareness on how to self-manage minor illnesses or injuries, and possibly a delay in seeking medical care.<sup>14</sup> Consequently, such patients would require a higher number of visits until their medical condition resolved or improved.<sup>14</sup>

The direct relationship between number of visits and older age in our study was expected since it is recognized that as a person becomes older they are more likely to suffer from an increased number of medical conditions as part of the aging process.<sup>16</sup> Kronfol,<sup>17</sup> reported age to be the least important factor associated with FAs, but the associations with gender and education noted are consistent with our findings.

Our study has several limitations, the first being that the selected PHCs were in one particular region of Oman, and may not be representative of the whole country. Indeed the possibility that the A'Dhakhilyah governorate itself could be a low-use region compared to other regions cannot be ruled out. The existing health care system does not facilitate or encourage continuity of care by the same physician, as different doctors usually run general clinics and patients are seen as walk-ins rather than appointments. Therefore, it is possible that many patients were seeking continuity of care, which has been identified as an important aspect of care by Omani patients attending a private healthcare facility, and this would not have been identified in

our study.<sup>18</sup> Although previous studies have used a similar definition of FAs, this definition is still considered arbitrary since it is solely based on the number of visits.

## CONCLUSIONS

The proportion of Omani FAs in primary health care is low, but the proportion of females is higher than males. The study findings have established baseline statistics, and these are vital for future studies which are required to enhance our understanding of this phenomenon and help monitor it.

### Disclosure

The authors declared no conflicts of interest. No funding was received for this study.

### REFERENCES

1. Vedsted P, Christensen MB. Frequent attenders in general practice care: a literature review with special reference to methodological considerations. *Public Health* 2005 Feb;119(2):118-137.
2. Smits FT, Mohrs JJ, Beem EE, Bindels PJ, van Weert HC. Defining frequent attendance in general practice. *BMC Fam Pract* 2008 Apr;9:21.
3. Backett EM, Heady JA, Evans JC. Studies of a general practice. II. The doctor's job in an urban area. *Br Med J* 1954 Jan;1(4854):109-115.
4. Al Ghanim SA. Frequent attendance in primary health care centers: prevalence, patient characteristics and associated factors. 2005 [cited 2017 June 16]. Available from: [https://cba.ksu.edu.sa/sites/cba.ksu.edu.sa/files/imce\\_images/public\\_management\\_32.pdf](https://cba.ksu.edu.sa/sites/cba.ksu.edu.sa/files/imce_images/public_management_32.pdf).
5. Abri SM, West DJ Jr, Spinelli RJ. Managing overutilization, quality of care, and sustainable health care outcomes in Oman. *Health Care Manag (Frederick)* 2006 Oct-Dec;25(4):348-355.
6. Ministry of Health (Oman). Annual Health Report 2007. Utilization of health services, Chapter Seven. 2007 [cited 2017 July 12]. Available from: <https://www.moh.gov.om/documents/274609/275070/CH7Y05.pdf/9acc1716-d0cb-466e-9495-5a8b6c9d6292>.
7. van Doorslaer E, Masseria C, Koolman X; OECD Health Equity Research Group. Inequalities in access to medical care by income in developed countries. *CMAJ* 2006 Jan;174(2):177-183.
8. Ward AM, Underwood P, Fatovich B, Wood A. Stability of attendance in general practice. *Fam Pract* 1994 Dec;11(4):431-437.
9. Okkes IM, Polderman GO, Fryer GE, Yamada T, Bujak M, Oskam SK, et al. The role of family practice in different health care systems: a comparison of reasons for encounter, diagnoses, and interventions in primary care populations in the Netherlands, Japan, Poland, and the United States. *J Fam Pract* 2002 Jan;51(1):72-73.
10. Al-Kandari A, Al-Assomi F, Al-Saqabi A, El-Shazly M. Frequent attenders at a primary health care center in Kuwait. *Kuwait Med J* 2008;40(1):18-24.
11. Howe A, Parry G, Pickvance D, Hockley B. Defining frequent attendance: evidence for routine age and sex correction in studies from primary care settings. *Br J Gen Pract* 2002 Jul;52(480):561-562.
12. Scaife B, Gill P, Heywood P, Neal R. Socio-economic

- characteristics of adult frequent attenders in general practice: secondary analysis of data. *Fam Pract* 2000 Aug;17(4):298-304.
13. Hartigan P. The importance of gender in defining and improving quality of care: some conceptual issues. *Health Policy Plan* 2001;16(Suppl 1):7-12.
  14. Andersson SO, Mattsson B, Lynoe N. Patients frequently consulting general practitioners at a primary health care centre in Sweden—a comparative study. *Scand J Soc Med* 1995 Dec;23(4):251-257.
  15. Browne GB, Humphrey B, Pallister R, Browne JA, Shetzer L. Prevalence and characteristics of frequent attenders in a prepaid Canadian family practice. *J Fam Pract* 1982 Jan;14(1):63-71.
  16. Gill D, Sharpe M. Frequent consulters in general practice: a systematic review of studies of prevalence, associations and outcome. *J Psychosom Res* 1999 Aug;47(2):115-130.
  17. Kronfol NM. Delivery of health services in Arab countries: a review. *East Mediterr Health J* 2012 Dec;18(12):1229-1238.
  18. Al-Azri M, Al-Ramadhani R, Al-Rawahi N, Al-Shafee K, Al-Hinai M, Al-Maniri A. Patients' attitudes and experiences of relational continuity in semi-urban general practices in Oman. *Fam Pract* 2014 Jun;31(3):303-310.