

Missed appointments at public hospitals in Riyadh, Saudi Arabia

Badreldin A. Mohamed, MSc, PhD, Abdallah H. Al-Doghather, MSc, PhD.

ABSTRACT

Objectives: Failure to keep appointments poses many problems for patients, physicians and health personnel. The objective of the study is to identify factors influencing appointment failure in Riyadh Central Hospital, Riyadh, Kingdom of Saudi Arabia.

Methods: The study sample consisted of 500 Saudi patients selected randomly from Riyadh Central Hospital's records. Two hundred and fifty were selected from patients who broke at least one appointment and another 250 were selected from patients who have a history of keeping records. Interviews were carried out by telephone using a structured questionnaire, only 426 patients consented to participate in the study.

Results: The study showed that appointment failure rate is 30%. The data revealed no associations between missed

appointment, behavior and age, income, travel time and method of transportation. None of the health related variables investigated were associated with missed appointments. The breakers stated waiting time before seeing a doctor, time from scheduling to appointments, transportation (particularly for women) and forgetfulness as the main reasons for missing appointments.

Conclusion: Broken appointments can be reduced by continuous health education for patients, improving efficiency of health administrators, telephone reminders and by physicians negotiating a follow-up schedule for their patients.

Keywords: Missed appointments, breakers, keepers.

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It has long been recognized that application of the appointment system to patient scheduling has provided advantages for both patient and physician.^{1,2} Keeping a health service appointment can be defined as attending a prescheduled appointment at a health care facility for a health service that is administered directly at the visit. Failure to attend appointments is a common occurrence in outpatient medical health settings.²⁻⁵ Studies have documented that up to 30% of patients do not keep an initial outpatient appointment and 20% to 40% of follow-up appointments are missed in medical health clinics.⁵⁻⁷ The patient failing to keep an appointment disrupts the health system at various points. By missing appointments, individuals deprive themselves of

receiving necessary care, impairing clinician-patient relationship, reduce the opportunity for other patients to receive timely care, have adverse effect on learning and research in ambulatory care settings and indirectly contribute to rising health care costs.⁸⁻¹¹

Earlier studies on factors influencing appointment-keeping behaviors, identify nearly similar factors but often are inconsistent and unenlightening. In developing countries such studies are scarce and of a general nature.^{5,9,12} In traditional societies of the developing world, the set of determinant variables for the utilization of health services seems to be more complex than in the developed countries. Additional factors are involved due to the cultural differences,

From the Department of Community Health Sciences, College of Applied Medical Sciences, King Saud University, Riyadh, Kingdom of Saudi Arabia.

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Address correspondence and reprint request to: Dr. Badreldin A. Mohamed, Associate Professor, Community Health Sciences, College of Applied Medical Sciences, King Saud University, PO Box 10219, Riyadh 11433, Kingdom of Saudi Arabia. Tel. +966 (1) 4358522 Fax. +966 (1) 4355883. E-mail: badreldin1952@hotmail.com

which include the change of illness concepts and health behavior and the different sociodemographic conditions.¹³ The aim of the present study is to determine factors influencing appointment failure in public hospitals in Riyadh, Kingdom of Saudi Arabia (KSA).

Methods. This study was conducted at Riyadh Central Hospital, KSA, the largest governmental hospital in Riyadh. Breakers are defined as those who either did not show up for their appointments or those who cancelled their appointments with less than 12 hours notice. It should be noted that late cancellations (less than 12 hours notice) were counted as no shows, as the ensuing consequences were considered to be equivalent. A random sample of Saudi patients was drawn from the records of the hospital. All patients 18 years or greater were included in the study. From the records, 2867 met this criteria. A sample of 224 were selected from patients who broke at least one appointment and another 202 patients who have a history of keeping appointments were also selected from the records. A questionnaire was designed to collect the patients' sociodemographic data and reasons for not attending appointments. The list for reasons was developed from the literature, from previous reasons verbalized by patients and from suggestions made by nurses and physicians in the hospital. Content validity was rated to be appropriate. A coefficient alpha =0.88 was calculated for, the reasons for non attendance questionnaire. The questionnaire was tested with 20 participants. Interviews were carried out by telephone due to difficulty of visiting the selected households. Due to cultural considerations, female students from the College of Applied Medical Sciences, King Saud University, Riyadh, KSA, interviewed females after being trained. Among families who did not participate, 3% couldn't be reached. Another 4% told the interviewer "time is not suitable and call back at another time" and gave similar response upon subsequent phone calls, even when the calls were made at a prearranged time. Six percent stated that they are not interested in the study. Two percent were either out of town, too sick, their telephone was not in service or the number was incorrect. All patients were told that participation or non participation would not affect the care received in the hospital and would not benefit them, but would help the hospital to examine the issue of missed appointments. Significant testing for the association between different factors contributing to missed appointments was performed using chi-square statistic.

Results. Data was obtained for 426 respondents (202 keepers, 224 breakers), giving a response rate of 85%. Most of the respondents were male (53%). The majority of the respondents were married (60%) and

Table 1 - Comparison between keepers and breakers according to sociodemographic variables.

Variables	Breakers N (%)	Keepers N (%)	p-value
Gender			
Male	107 (48)	122 (60)	<0.005
Female	117 (52)	80 (40)	
Marital Status			
Married	157 (70)	98 (48)	<0.001
Single	67 (30)	104 (52)	
Education			
Illiterate	29 (13)	6 (3)	<0.001
Primary	56 (25)	46 (23)	
Intermediate and secondary	76 (34)	57 (28)	
University and above	63 (28)	93 (46)	
Income			
1000<3000	48 (22)	55 (27)	0.358
3000<5000	66 (29)	64 (32)	
5000<8000	67 (30)	49 (24)	
> 8000	43 (19)	34 (17)	
Age			
18-29	67 (30)	43 (21)	<0.001
30-39	67 (30)	40 (20)	
40-50	40 (18)	51 (25)	
>50	50 (22)	69 (34)	
N - number			

most of the respondents were young (less than 40), 51%. For education, 5% reported they did not have a formal education, 25% were primary school graduates, 29% intermediate and high school graduates and 41% university and above graduates. For income, the distribution was uniform across different categories ranging from less than 3000SR (24%) to greater than 8000 (28%) per month.

Table 1 shows the sociodemographic characteristics of the respondents in relation to compliance with clinical appointments. Keepers and breakers did not differ significantly on the basis of income. Gender of respondents, marital status, age and education were significantly related to appointment breaking behavior. For gender, the percentage of breakers was higher among females (61%) compared to males. Married reported a higher percentage of appointment breaking (62%) than single. For age, the older aged group (>40) tended to keep their appointment significantly more than the younger age group, while highly educated patients are more likely to keep their appointments.

The relationship between clinical variables and compliance to medical appointments is shown in **Table 2**. A significant difference was found between

Table 2 - Comparison between keepers and breakers according to clinical and personal variables.

Variables	Breakers N (%)	Keepers N (%)	p-value
Travel time			
<20 minutes	48 (21)	40 (20)	0.682
20<40	49 (22)	53 (26)	
<60	51 (23)	48 (24)	
>60	76 (34)	61 (30)	
Waiting time before seeing doctor			
<20 minutes	21 (9)	51 (25)	<0.001
20<40	24 (11)	29 (14)	
40-60	47 (21)	52 (26)	
>60	132 (59)	70 (35)	
Method of transportation			
Own vehicle	70 (31)	61 (30)	0.753
Get a ride	107 (48)	80 (50)	
Taxi	47 (21)	41 (20)	
Time from scheduling to appointment			
≤2 weeks	93 (37)	103 (51)	<0.005
>2 weeks	131 (63)	99 (49)	
Time of day appointment			
Morning	143 (64)	90 (45)	<0.001
Afternoon	81 (36)	112 (55)	
N - number			

Table 3 - Comparison between keepers and breakers according to psychological variables.

Variables	Breakers N (%)	Keepers N (%)	p-value
Duration of disease			
<12 month	81 (36)	73 (36)	0.691
12-24	78 (35)	66 (33)	
>24	85 (39)	63 (31)	
Perceived improvement of medical problems			
Same	42 (19)	68 (34)	<0.001
Better	182 (81)	134 (66)	
Perception of seriousness of medical problem			
Serious	148 (66)	129 (64)	0.627
Not serious	76 (34)	73 (36)	
Knowledge of medical problem			
Yes	166 (74)	160 (79)	0.241
No	58 (26)	42 (21)	
N - number			

Table 4 - Reasons given by breakers for missing appointments.

Variables	%
Time not convenient	48
Waiting time before seeing a doctor	55
Time from scheduling to appointment	51
Satisfaction with medical care	39
Transportation	51
Felt better	7
Work conflict	23
Weather	2
Family commitment	16
Forgot the appointment	44
Travel time	13
Shift to another hospital	14

keepers and breakers with respect to time of day appointment, time from scheduling to appointment and waiting time before seeing a doctor. Respondents with a scheduling time of more than 2 weeks, with appointment in the afternoon and wait more than 40 minutes are more likely to miss their appointments. No significant difference between keepers and breakers was found in travel time and method of transport to the hospital. The relationship between breakers and psychosocial factors is shown in **Table 3**. No significant differences were observed in terms of seriousness and knowledge of medical problem and duration of disease. The majority of respondents (68%) felt their medical problem to be serious. The percentage of breaker and keepers among this group is the same. Those with medical problems for more than 24 months had the highest number of breakers (59%). For knowledge of medical problem, the majority of the respondents (80%) were

informed regarding the nature of their medical problem, indicating that the rate of interface between physicians and patients was high. Eighty five percent of those not informed were breakers. A significant difference between breakers and keepers was observed for improvement of medical problem. Patients who revealed they still had the same symptoms had the highest percentage of breakers (62%). Major reasons given by breakers for not keeping appointments is shown in **Table 4**. The main reasons were waiting time before seeing a doctor, time not convenient, transport, time from scheduling to appointment, work conflict and forgetting the appointment.

Discussion. The overall rate of missed appointments in this study was 30%. Based on previously published studies of appointment breaking, this seems high enough to be of concern to

both health personnel and physicians. Previous studies showed that breakers have a variety of features in common, such as low socioeconomic status, more psychosocial problems and fewer chronic medical problems.^{8,12,13} The characteristics of breakers in this study corroborated some of these previous studies; though not all. For sociodemographic variables; in contrast with actual findings, we had anticipated that males would have more difficulty attending hospital appointments than females due to complications associated with getting time off from work. The noncompliance of females may be due to cultural behavior, due to the restriction on Saudi females for leaving their home alone.¹³ Surprisingly 33% stated that they don't have conflict and this may be attributed to the fact that many families depend on foreign hired drivers for their movement. For marital status, singles are more compliant than married. The average number of children per family is high. There is also a shortage of kindergarten houses even though this problem is partially offset by the housemaids. Higher percentage (24%) of married women stated that they did not find someone to take care of their children or they face appointment conflict with their husband's work. Previous studies showed that patients who have to arrange for childcare in order to attend the clinic are more likely to miss their appointments and this is mainly among large families with younger children.^{7,14,15} The level of education plays a significant role in contradiction to other studies.^{9,11} The higher educated are more likely to keep their appointments than those of lower educational status. This is because according to Humphreys,⁷ patients with higher educational level have greater access to health related information found in scientific journals and books and they may have greater job flexibility and contacts, thus have less difficulty for arranging and attending their clinical appointments. Income is not considered to be an important factor since patients receive free medical services. For age, older patients are less likely to break their appointments compared with younger age groups. Older age patients are generally more conservative and less demanding than younger subjects. They have more experience regarding health care services and probably they are able to make a comparison between the health care services they received in the past and that which is available at present.^{16,17}

Our data clearly indicated that the longer the delay between initial contact and appointment, the higher the percentage of broken appointment. Appointments 2 or more weeks in advance were broken by 49% of the cases. When long time intervals are necessary, appointment reminders become more important. William¹⁸ found telephone reminders to be effective when the interval between appointments was greater than 2 weeks, this resulted in 40% reduction in missed appointment. Patients stated that these

reminders made them feel important. The risk of forgetting an appointment increases with longer interval between appointments. Gatrad⁵ stated that longer waiting list would result in a patient being better when the appointment was due. The issue of appointment scheduling to minimize the occurrence of missed appointment is important. During the fasting month (Ramadan), the time for pilgrimage to Mecca (Haj) and when schools are closed for summer holidays, there was a peak in failure to keep appointments. Gatrad¹⁴ found that among Muslims in Britain, more than 30% failed to attend their appointments due to religious seasons. Sulaiman found poor clinic attendance toward the weekend as many Saudis go to Mecca for Umra. Contrary to previous research, method of transportation and travel time was not related to the rate of failed appointment.^{2,3} This may be due to the fact that the vast majority (75%) either drove their own car or are able to obtain a ride. More than 20% indicated that it took them more than one hour to get to the hospital. Smith and Yawn¹² stated that once the patient had made an assessment that the appointment is important, travel time might be irrelevant. The decrease in the afternoon attendance may be attributed to the fact that 12 noon is the time for parents to pick up their children from school, beside the average temperature is very hot in the afternoon and 2 pm is the hottest hour of the day.¹³ Waiting time is a function of the scheduling system, of patient lateness of appointments and physician lateness.^{15,19,20} The type of appointment system applied at Riyadh Central Hospital, KSA is an individual appointment system. This type of appointment system is known for reducing clinic-waiting time. Thus it is either physicians or patients who were not punctual. Many breakers cited the lateness of physicians as a major reason for breaking appointment. Another interpretation is attributed to the hospital policy allowing walk-in patients to be seen at specialty clinics where services are provided in accordance with individual appointment system.²¹ Some suggestions to decrease no show rate due to waiting time include: 1. Telling patients the approximate waiting time that can be expected. 2. Making waiting rooms more conducive and comfortable for patients whom require longer stays. Patient satisfaction with the visit does correlate with lower failure rates.²² Studies have shown that physicians' communication skills (the length of time spent talking, explaining and responding to patients' queries, offering reassurance and support, involving patients in decision making and discussing tests results and findings from physical examinations) were strong and important correlates of patients' satisfaction.^{23,24} Thus physicians may be advised to establish a closer rapport/personal relationship with patients in order to increase compliance with appointment. Possible

measures for solving this communication problem are training of physicians in communication skills in on-going post graduate training.

This study provided no evidence that health factors influence appointment-keeping behavior. We had anticipated that patients with serious medical problems would seek medical attention whereas those who perceived themselves to be in good health would not be motivated to return. Duration and knowledge of medical problem was found to be unimportant by some;²⁵ but patience with chronic illness may be more likely than those with acute problems to regard their illness as serious to keep their appointments. Barbara et al³ found that patients with diabetes mellitus are more likely to keep a positive relationship with their care providers. Clinical improvement may be associated with higher appointment breaking and patients as a reason for breaking appointments²⁶ often cite spontaneous improvement.

Results of this study suggested a number of factors for improving attendance rate 1. Better education of patient's 2. Improved communication between patient and physicians 3. Reduced intervals between appointments 4. Mailed appointment reminders. Our study addressed very limited Health Belief Model predictors. We hope that other studies would be carried out in private hospitals.

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