

**Study on ‘Clinical No-Show Rates: Who, Why, When and What
Could Be Done’**

**Internship Training
at
Burjeel Hospital, Abu Dhabi, UAE**

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**Under the guidance of
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**Post Graduate Diploma in Hospital & Health Management
2012–14**


**Institute of Health Management Research
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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr. Kirandeep Kaur Tiwana, a student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone internship training at Burjeel Hospital, Abu Dhabi, UAE from 8th February 2014 to 22nd May 2014.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical. The internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



Dr Ashok Kaushik

Dean, Academics and Student Affairs

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Monika Chaudhary

Associate Professor

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TO WHOMSOEVER CONCERNED

This is to certify that Dr. Kirandeep Kaur Tiwana has completed her dissertation at Burjeel Hospital, Abu Dhabi from 8th February, 2014 to 18th May 2014. She has undertaken the project on 'Clinical No Show Rates: Who, Why, When and What can be done'.

During the tenure of her project, she was found to be punctual, diligent and reliable. We wish her well and look forward to her continuing association with our organization.

For Burjeel Hospital

Nidhi Mathur

Nidhi Mathur
Head of Human Resources



Accredited by JCI, USA



Institute of Health Management Research, Jaipur

Certificate by Scholar

This is to certify that the dissertation titled 'Clinical No-Show Rates: Who, Why, When and What Could Be Done' and submitted by Dr Kirandeep Kaur Tiwana, Enrollment No. IIHMR/PGDHM/2012-14/17-1326 under the supervision of Ms Monika Chaudhary for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 8th February to 18th May embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Kirandeep Kaur Tiwana

Dr Kirandeep Kaur Tiwana

Abstract:

Title of the study: ‘Clinical No-Show Rates: Who, Why, When and What Could Be Done’

Author’s name: Dr. Kirandeep Kaur Tiwana

Background: A missed appointment affects the healthcare provider, staff, system and the patient. There is health risk of the patient that doesn’t show up and of the patient seeking an appointment who couldn’t get a free slot. It leads to loss of revenue (staff underutilization, provider productivity)

Objectives: To assess the current rate of no show cases in Burjeel hospital and their characteristics and to suggest the solutions and methods that could be adopted to enhance the level of utilization of the cardiology clinic.

Methodology: The study was done in 2 parts, the retrospective study and the prospective study .The research design used was Descriptive Research. The method of data collection was through the SAP software of Burjeel hospital. The study was done on all the pre appointment guests in the cardiology clinic in Burjeel hospital.

Intervention: Personal reminder calls were made a day prior to the appointment to all the pre appointment guests in Burjeel hospital’s cardiology clinic; education to the guests about the importance of follow up appointments by the doctors and nurses was provided and scheduling of appointments was made as per the requirements of the guests.

Results: 29.2% of the appointments were no shows in the retrospective study. Out of these 60%were male and only 33% were females and highest no shows

were during the afternoon. In the prospective study after the intervention, it was found that the no show rate decreased to 22.5% with 62% of the no shows as females and 36% as males. But still the maximum no shows were in the afternoon. Out of the no shows 35% had confirmed a day prior that they will have the consultation. By applying the intervention 59 prospective no shows were averted by rescheduling and cancellation and many more were reminded of their appointments. The no shows were because of the time gap between the day of booking of appointment and the actual appointment day. Another reason that was found was that the guest had already visited the clinic as walk in without appointment a few days prior to the actual appointment

Conclusion: Personalized reminder calls a day prior to the appointment coupled with guest education about the importance of keeping the appointments can help lower the No-Show rate and increase the utilization of the cardiology clinic in Burjeel hospital.

Acknowledgement

It has been my proud privilege to be attached to Burjeel Hospital, Abu Dhabi, UAE.

I take this opportunity to express my profound gratitude and deep regards to **Mr. Clancey Po (Chief Executive Officer)** for giving me an opportunity to work with the organization. I also express my profound gratitude and deep regards **Mr Vinay Lazarus(Operations-Manager)**and **Mr. Raouf Riad(Manager- Hospitality)**for their exemplary guidance, monitoring and constant encouragement throughout the internship. The blessing, help and guidance given by them time to time shall carry me a long way in the journey of life on which I am about to embark.

I am obliged to staff members of Burjeel Hospital for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of my assignment.

I am deeply grateful to **Dr. S.D Gupta** (Director IHMR) and **Dr.(Col.)Ashok Kaushik** (Dean, Academic and students affairs) and finally my mentor **Dr. Nutan P. Jain**(Professor, IIHMR) for her guidance and timely monitoring my work, because of which I am able to perform my task so well.

Lastly, I thank my family and friends for supporting me and encouraging me throughout the project.

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Introduction

Outpatient clinics are the important link between primary care and the hospital practice. They offer the greatest opportunity for effective and efficient utilization of resources. The outpatient clinic suffers from the no show patients.

A missed appointment or no show is defined as one when patient makes a pre booking for consulting a doctor in a healthcare setting but did not keep the appointment and did not give notice to the practice(calling to cancel or cancelling when the reminder message was received are not considered to be missed appointments).

The patients who take appointments and do not show up have a negative impact on the working of any clinic. This affects not only the healthcare provider, staff, system but affects the patient also. The effects are:

- Health risk of the patient that doesn't show up
- Health risk of the patient seeking an appointment who couldn't get a free slot
- Delayed care for both the no- show patient as well as the one who was unable to book an appointment
- Improper staff utilization
- Poor continuity of care
- Loss of revenue(staff underutilization, provider productivity)

The no show patient not only causes the immediate loss in revenue but also have a significant impact on the clinical practice in the long run.

One of the responsibilities of the patients at Burjeel hospital is to keep appointments and inform the staff if they are unable to attend so that the time can be used by other patients. But still the no show rate in the hospital is high.

1. Research Question

Are the personal reminders to guests effective in controlling no show rates?

2. Hypothesis

The rate of no shows can be checked by personal reminders.

3. Objectives

1. To assess the current rate of no show cases in Burjeel hospital.
2. To assess the characteristics of no show cases.
3. To suggest the solutions and methods that could be adopted to enhance increase the level of utilization of the cardiology clinic.
4. To test the hypothesis that the rate of no shows can be checked by personal reminders.

4. Literature review

No shows have a disruptive impact on the clinic in terms of care of patients, its productivity and its efficiency. A study in a family and Preventive Medicine department, University of South Carolina School of Medicine, Columbia 29203, USA by Moore CG clearly pointed that the negative impact of a no show in terms of finances is not relieved by the same day walk in patients. The study related time of the clinician and the support staff with money. The study found that Walk-in patients replaced 61.0% of no show appointments but just 42.4% in terms of time booked for these appointments. Walk-in visits generated 89.5% of the charges associated with scheduled visits. But for the year as a whole, the loss in revenue was about 3% to 14% of the total revenue generated in the clinic.

A study conducted in an outpatient cocaine treatment clinic by Festinger DS, Lamb RJ, Marlowe DB indicated the correlation of no shows with the time gap between the day of taking the appointment and the actual day of appointment. The study included patients calling for appointments on the same day, 1 day, 3 day and 7days later. The interesting results showed that the patients who took appointments on the same day are 72% likely to show up for consultation as compared to 41% for 3 day and 38% for 7 days later appointments.

Health belief model is an important theoretical concept to understand the appointment keeping behavior. Mirotznik J, Ginzler E, Zagon G, and Baptiste A conducted a study for understanding the importance of HBM model in appointment keeping for Systemic Lupus Erythematosus (SLE). A questionnaire was used to measure the intention to keep appointments and also data was collected for each patient 12 months prior to and 6 months

after filling the questionnaire. The sample studied was 153 SLE patients. It was found out that general health motivation and perceived severity of the disease was associated with appointment keeping.

A randomized clinical trial was conducted by O'Brien G, Lazebnik R. at the Adolescent Clinic, a part of the Ambulatory Pediatric Practice Clinic in Cleveland, Ohio, from December 1995 to November 1996. The intervention done was a telephonic call a day prior to the appointment. It was found that the attendance rate was 26.1% higher in the intervention group as compared to the control group. The study highlighted that telephone reminders are highly effective in reducing the no shows in a hospital based adolescent clinic.

In a study done by Hardy KJ titled Information given to patients before appointments and its effect on non-attendance rate, proposed a strategy to counter the no show rates. The study focused on the new patients and these patients were sent detailed information about when to come and where to come, what is to be brought and what they should expect. This was done two weeks prior to their appointment. Moreover, one week prior to the appointment they would receive a phone call reminding about the appointment and solving any query of the patient. In the study it reduced the non-attendance rate from 15% to 4.6%.

5. Research Design

a. Descriptive Research:

These are a type of observational studies where in the investigator observes the events occurring in the population without doing any interruption or manipulation. This is the observation of a defined population at a single point in time or time interval.

- a. Method of data collection : Through the SAP software of Burjeel hospital.
- b. Location of study: Burjeel hospital, Abu Dhabi (UAE)
- c. Definition of subject: All the pre appointment guests in the cardiology clinic in Burjeel hospital.

b. Intervention (Applied in the month of April and May):

- a. Personal reminder calls a day prior to the appointment to all the pre appointment guests in Burjeel hospital's cardiology clinic
- b. Education to the guests about the importance of follow up appointments by the doctors and nurses.
- c. Scheduling of appointments made as per the requirements of the guests

c. **Relevance:**

The results of this study will be helpful in identifying the loopholes leading to the Non-attendance in the cardiology clinic and thus help in reducing it and enhancing the rate of conversion of appointments into registrations.

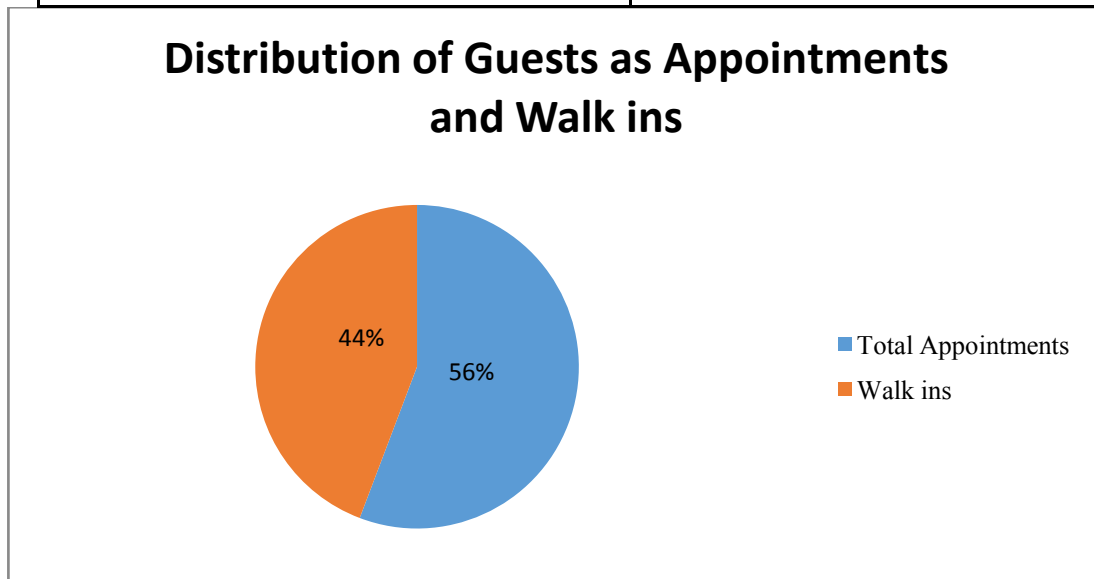
6. Results:

a. Retrospective Study (1ST March to 31st March)

A retrospective study was carried out in the Cardiology clinic in Burjeel hospital. The data for the total appointments, walk in guests and registered guests for consultation was taken from the SAP system for the month of March, 2014 and analyzed.

1. Distribution of guests as Appointment guests and as walk in guests:

Total Appointments	Walk ins
1383	1097
56%	44%

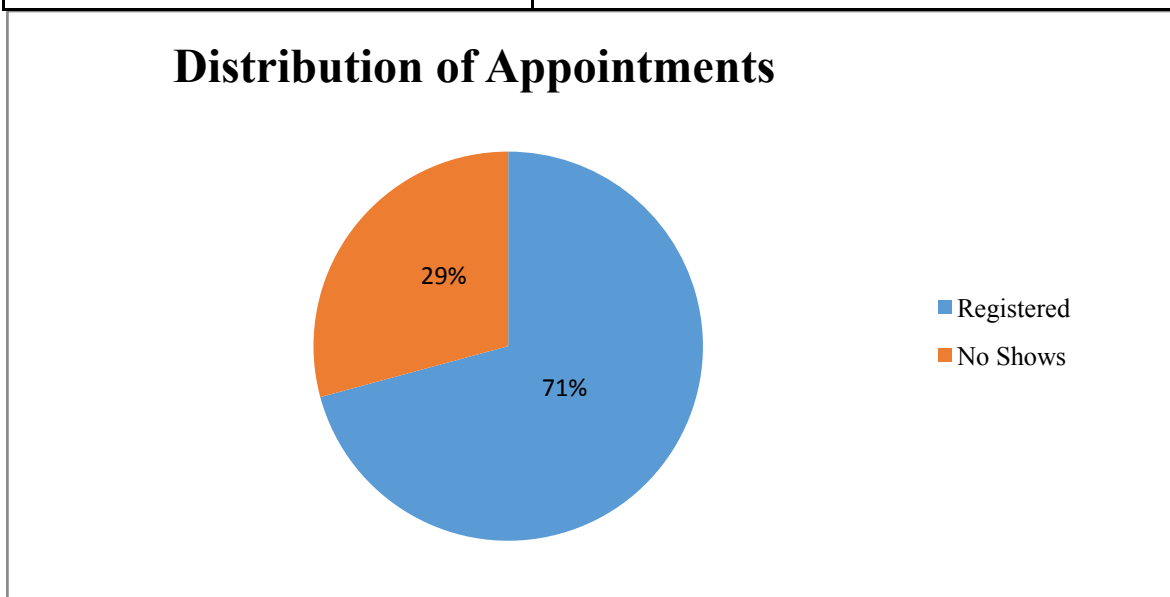


The above graph shows the distribution of guests in the cardiology clinic for the month of March, 2014. 1383 i.e. 56% of the guests had taken prior appointment to see the

cardiologist and 1097 i.e. 44% of the guests came as walk-ins for the cardiologist without any prior appointment.

2. The distribution of Appointment guests:

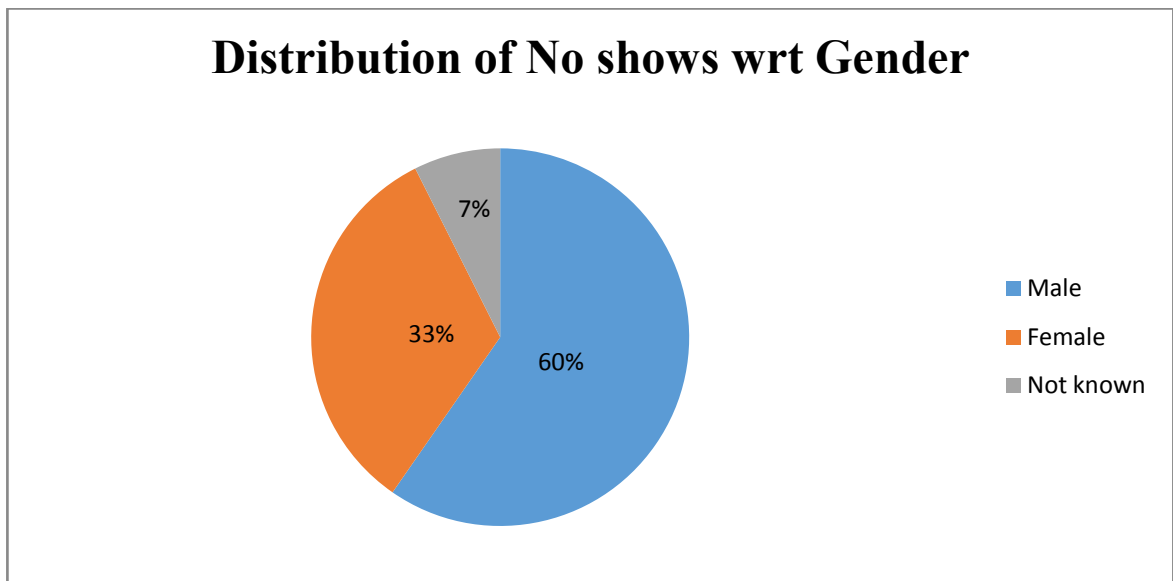
Registered guests	No shows
979	404
70.80%	29.20%



The above graph shows the distribution of the Appointment guests as Registered guests i.e. who were registered in the SAP system for consultation with the cardiologist and as No shows i.e. those guests who did not show up in the clinic for consultation with the cardiologist. 979 guests out of 1383 total appointments i.e. 71% of the total appointments were registered and 404 i.e. 29% of the total appointments missed the appointment and were regarded as No show case.

3. Characteristics of No shows:

Male	Female	Not known
241	133	30
60%	33%	7%

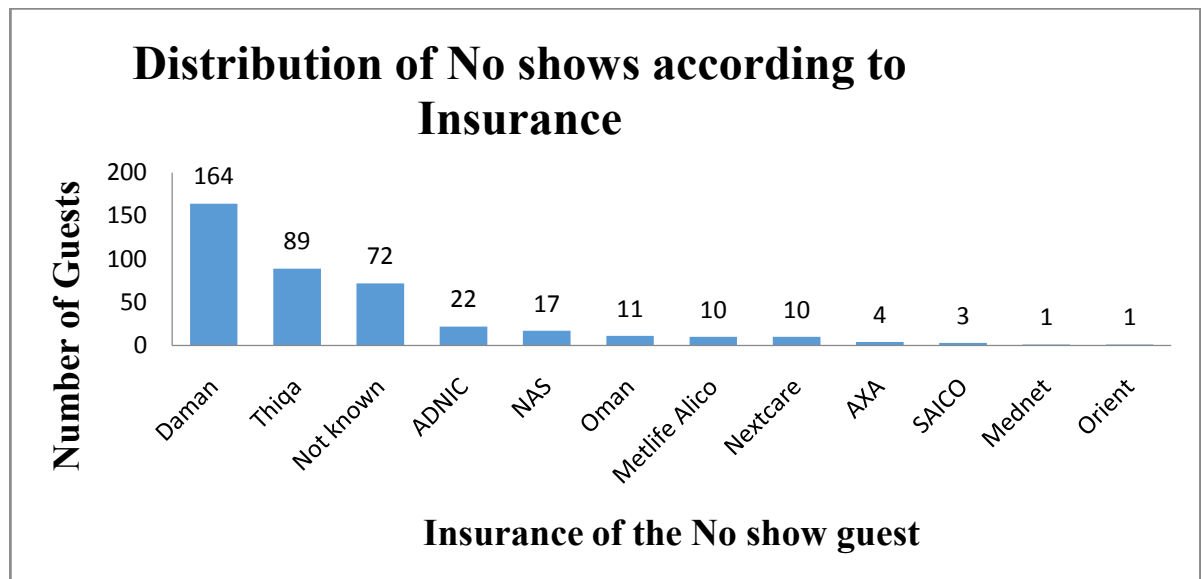


The above graph shows the distribution of No show cases w.r.t. gender. 241 i.e. 60% out of the total No shows were male and 133 i.e. 33% out of the total No shows were females. 30 i.e. 7% of the total No shows were new patients for the hospital and the gender was not known.

4. The insurance of the No show guests:

Insurance	No. Of Guests
Daman	164
Thiqa	89

Not known	72
ADNIC	22
NAS	17
Oman	11
MetlifeAlico	10
Nextcare	10
AXA	4
SAICO	3
Mednet	1
Orient	1

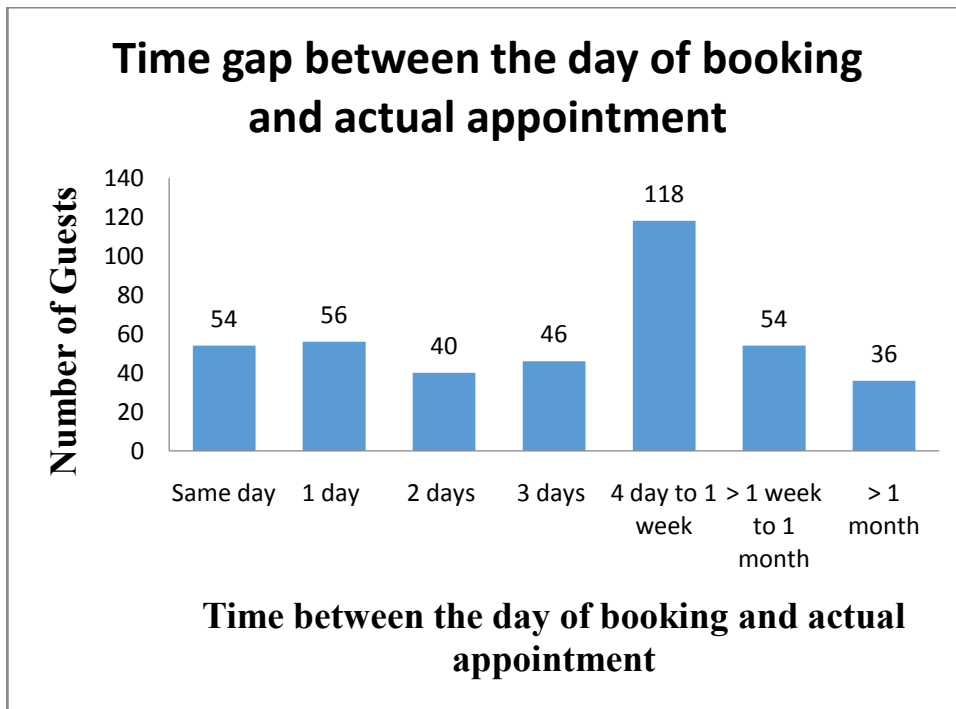


The above chart depicts the Insurance of the No shows. 164 out of 404 No shows i.e. about 40.5% guests had Daman insurance and 89 i.e. 22% of the guests were Thiqa card holders. Thiqa is the insurance for UAE nationals. For 72 i.e. 17.8% guests the insurance is not known as these were the new guests who requested for an appointment. 22 guests who did

not show up for the appointment had ADNIC insurance and less significant number of No shows for NAS, Oman, Metlifealico, Nextcare, AXA, SAICO, Mednet and Orient.

5. The relation of the No show to the day of booking of the appointment:

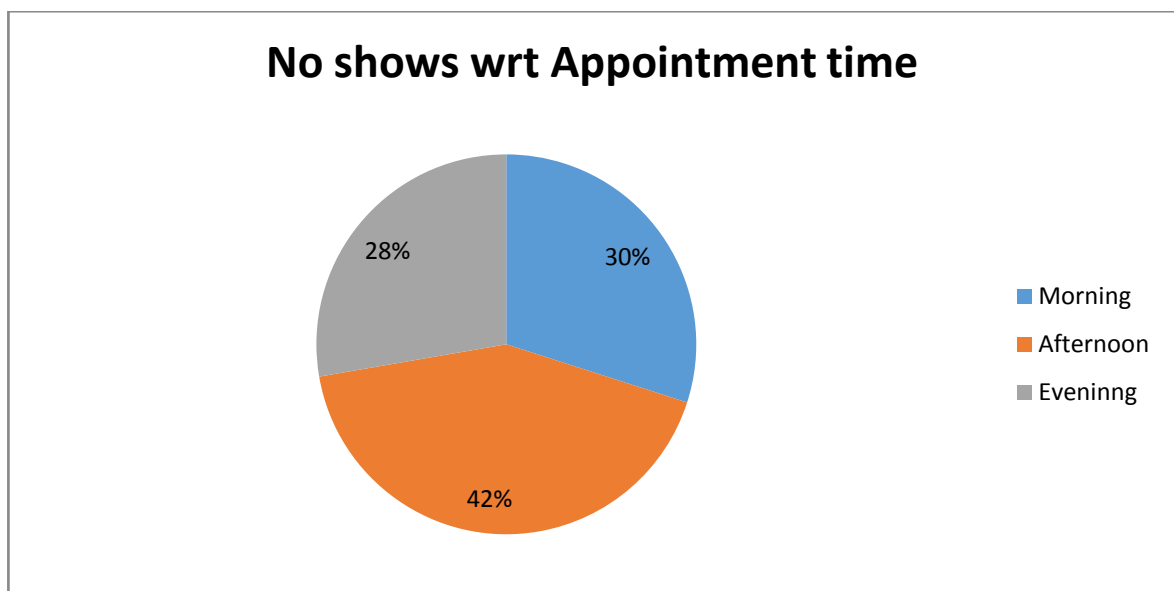
Booking	No of guests	Percentage
Same day	54	13.36%
1 day	56	13.86%
2 days	40	9.90%
3 days	46	11.38%
4 day to 1 week	118	29.20%
> 1 week to 1 month	54	13.36%
> 1 month	36	8.90%



The above graph shows the correlation between the day of booking the appointment and the actual day of appointment. In the month of March, it was observed that as the days between the actual appointment and the day of booking increases, the chances of No show cases also increases.

6. The relation of No show w.r.t. the time of the appointment:

Appointment Time		
Morning	Afternoon	Evening
121	171	112



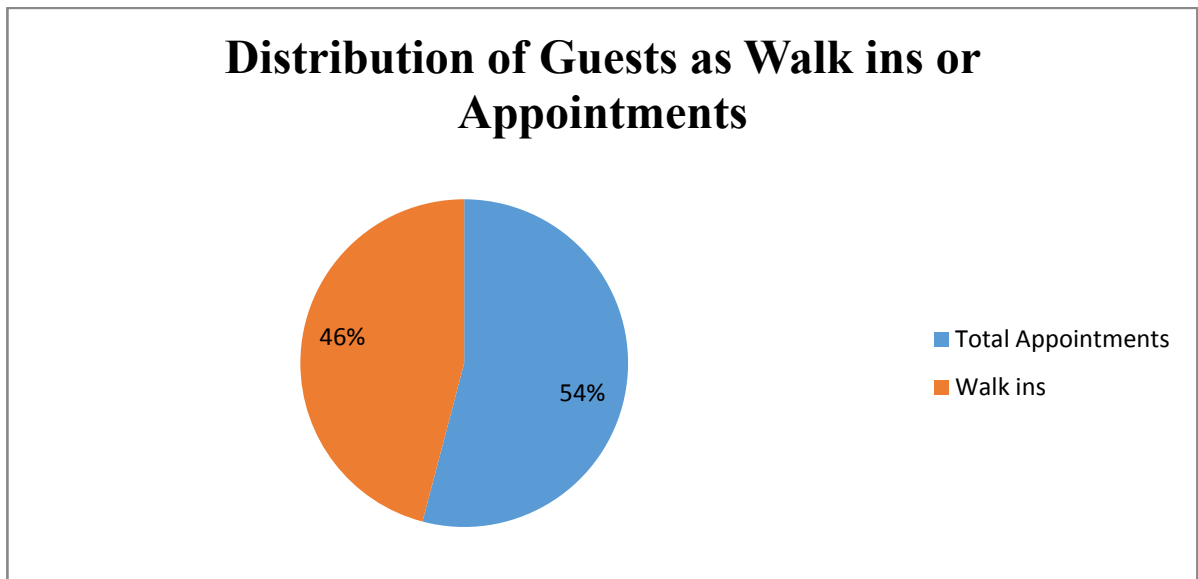
The above graph shows the number of No show cases at different times of the day. The maximum number of No shows were in the afternoon (12 pm to 4:49pm) with 171 no shows i.e. 42% of the total no shows in the cardiology clinic. The no show cases in the morning (8 am to 11:59 am) and evening (5pm to 9pm) were 30% and 28% of the total no shows respectively.

b. Prospective Study (1st April- 30th April)

A prospective study was carried out on all the Appointment guests and walk in guests for the month of April, 2014 in the Cardiology clinic in Burjeel hospital.

1. The Appointment guests and the Walk-ins:

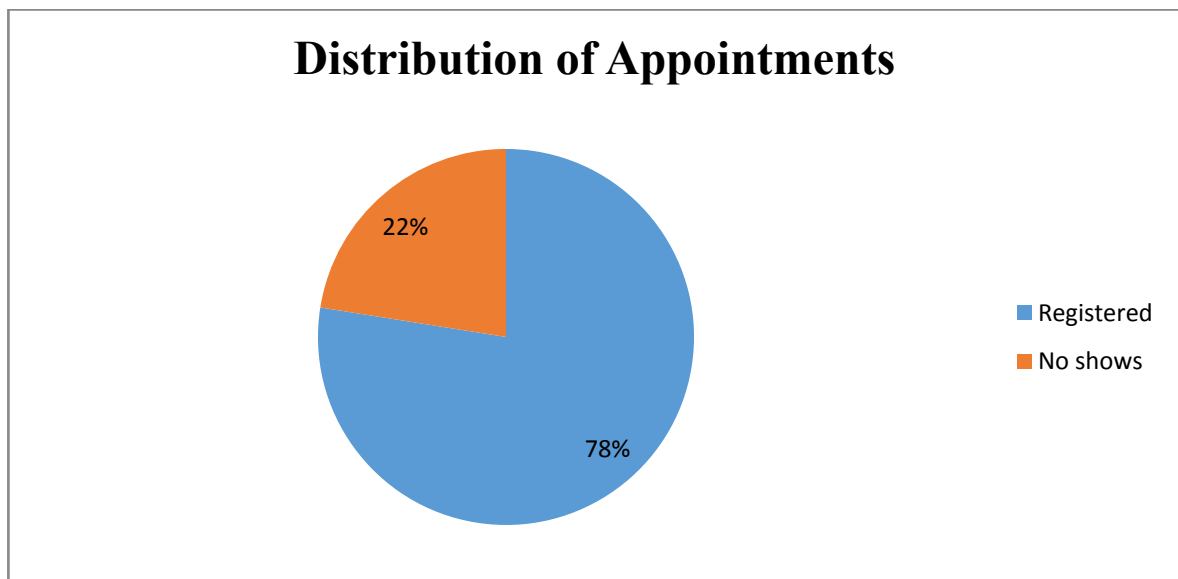
Total Appointments	Walk ins
1036	879
54%	46%



The above graph shows the distribution of guests in the cardiology clinic for the month of April, 2014. 1036 i.e. 54% of the guests had taken prior appointment to see the cardiologist and 879 i.e. 46% of the guests came as walk-ins for the cardiologist without any prior appointment.

2. The distribution of Appointment guests:

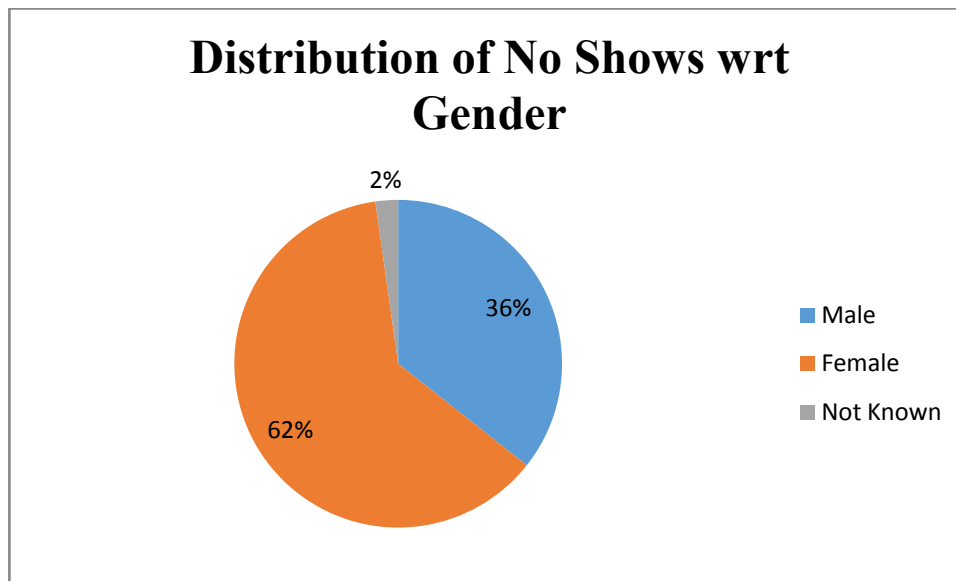
Registered	No shows
803	233
77.50%	22.50%



The above graph shows the distribution of the Appointment guests as Registered guests i.e. who were registered in the SAP system for consultation with the cardiologist and as No shows i.e. those guests who did not show up in the clinic for consultation with the cardiologist. 803 guests out of 1036 total appointments i.e. 78% of the total appointments were registered and 233 i.e. 22% of the total appointments missed the appointment and were regarded as No show case. As compared to March, the No show rate significantly decreased from 29% to 22%.

3. Characteristics of No shows:

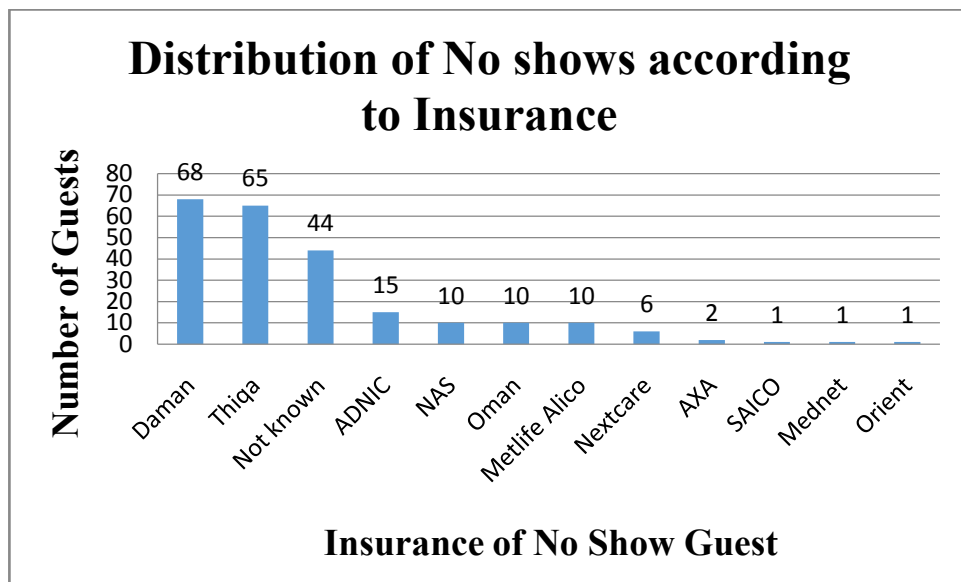
Male	Female	Not Known
144	251	9
36%	62%	2%



The above graph shows the distribution of No show cases w.r.t. gender. 144 i.e. 36% out of the total No shows were male and 251 i.e. 62% out of the total No shows were females. 9 i.e. 2% of the total No shows were new patients for the hospital and the gender was not known. The observation was in contrast to the March data wherein the male no show rate was 60% and female no show rate was 33%.

4. The insurance of the No show guests:

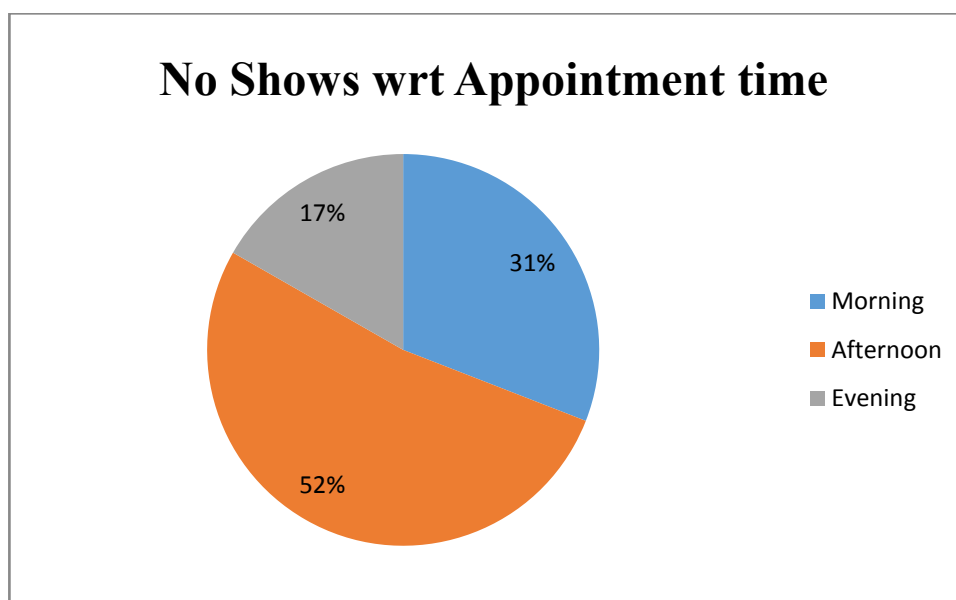
Insurance	No. Of Guests
Daman	68
Thiqa	65
Not known	44
ADNIC	15
NAS	10
Oman	10
MetlifeAlico	10
Nextcare	6
AXA	2
SAICO	1
Mednet	1
Orient	1



The above chart depicts the Insurance of the No shows. 68 out of 233 No shows i.e. about 29% guests had Daman insurance and 65 i.e. 27.8% of the guests were Thiqa card holders. Thiqa is the insurance for UAE nationals. For 44 i.e. 18.8% guests the insurance is not known as these were the new guests who requested for an appointment. 56 guests who did not show up for the appointment had ADNIC ,NAS, Oman, Metlifealico, Nextcare, AXA, SAICO, Mednet and Orient insurance.

5. The relation of No show w.r.t. the time of the appointment:

Morning	Afternoon	Evening
72	122	39

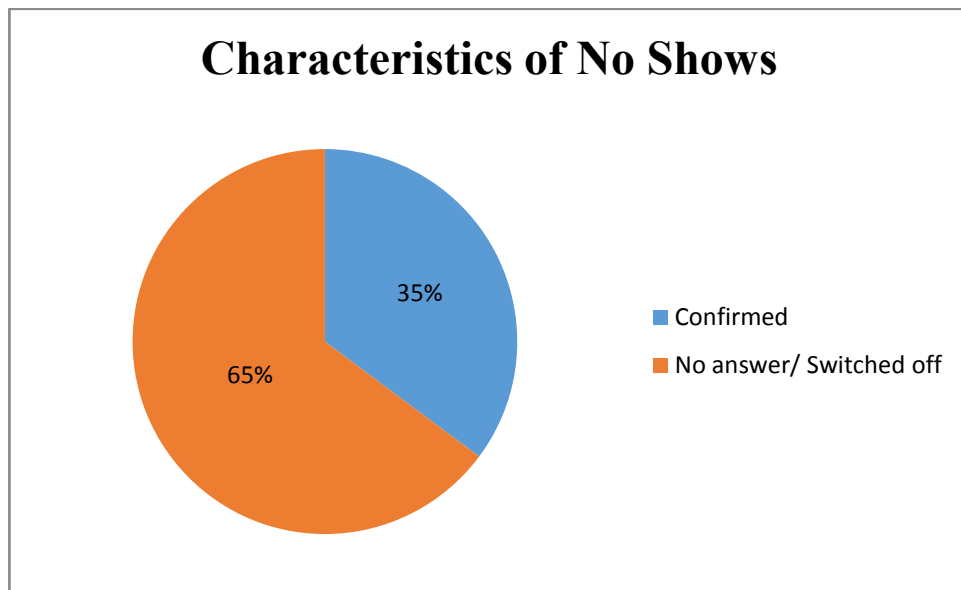


The above graph shows the number of No show cases at different times of the day. The maximum number of No shows were in the afternoon (12 pm to 4:49pm) with 122 no shows i.e. 52% of the total no shows in the cardiology clinic. The no show cases in the

morning (8 am to 11:59 am) and evening (5pm to 9pm) were 31% and 17% of the total no shows respectively.

6. The No show cases: Confirmed the appointment a day prior or did not answer the call

Characteristics of No Show	
Confirmed	No answer/ Switched off
82	151



The above chart shows the percentage of guests who confirmed the appointment but did not show up for the appointment and the guests who did not answer the calls made to remind them about the appointment. 82 guests i.e. 35% of the no show guests confirmed their appointment yet did not show up. 151 guests i.e. 65% of the no shows are those guests who did not answer the reminder calls or their number was switched off.

7. The averted No Shows after the Intervention:

After Interventions		
Cancellations	Rescheduling	Total No show averted
28	31	59

In the month of April by calling the guests a day prior to their appointment, the clinic was able to find out 28 guests who couldn't come for their allotted appointment time and were not sure when they could come, so the clinic cancelled the appointment so that other guests could be accommodated. 31 guests were rescheduled to some other day. Therefore, in total the clinic was able to avoid 59 prospective No Show cases. In the process of calling the guests, many guests were reminded for the appointment and were able to make to the appointment on time as the nature of the clinic is such that many follow up appointments are given for 2 months and even 3 months later.

8. The No Show rate in March and April:

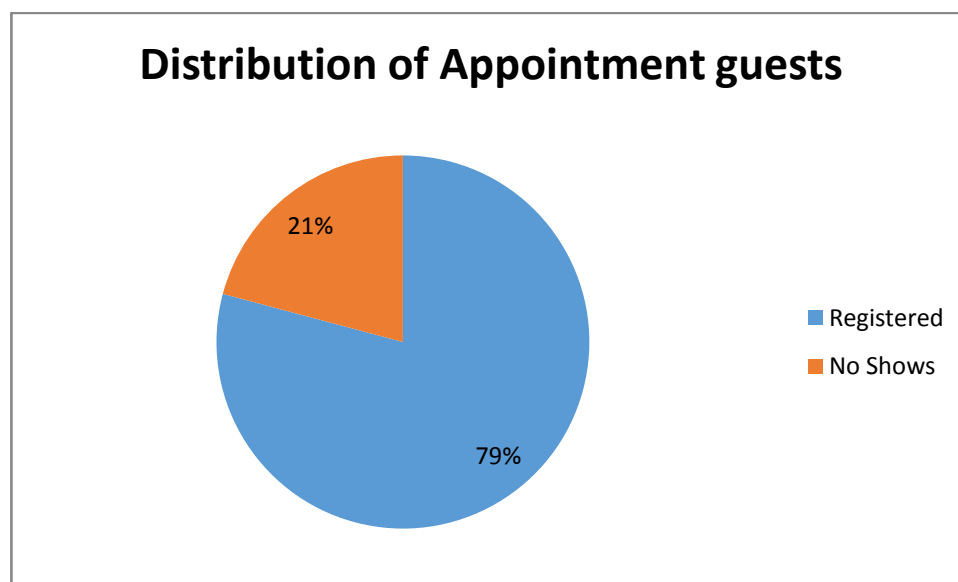
No Show rate		
March(Without Intervention)	April(With Intervention)	April(Had there been no intervention)
404 out of 1383 Appointments	233 out of 1036 Appointments	> 292 out of 1036 Appointments
29.20%	22.50%	> 28.18%

The above table shows the No show rate in March which was 29.2% without any intervention. In April after the intervention the No show rate significantly decreased to 22.5%. But had there been no intervention in April i.e. if the averted no shows are added to the actual no shows the rate of no shows would have been greater than 28.18%.

c. Prospective Study (May 1- 13)

1. Distribution of Appointments as Registered and No shows:

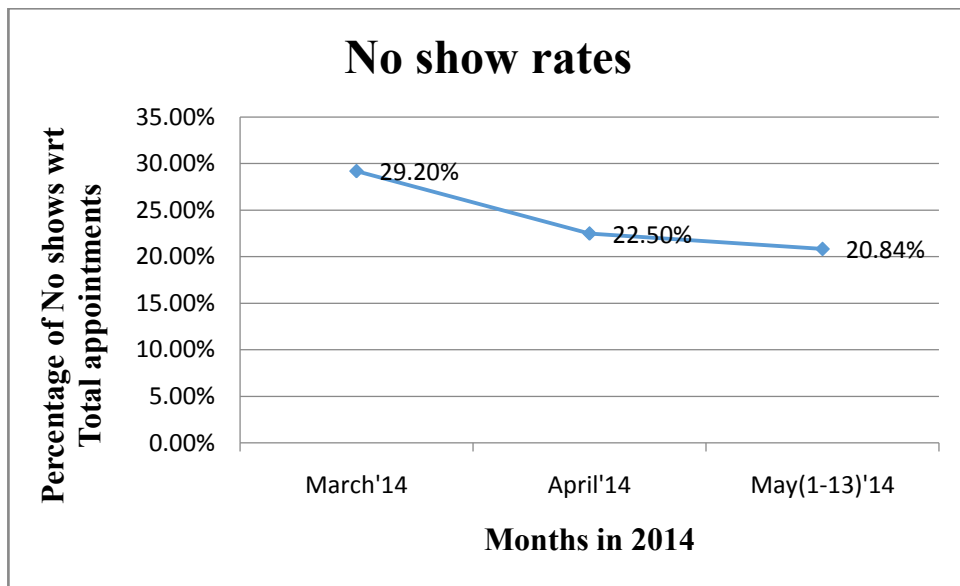
Total Appointments	Registered	No Shows
499	395	104



In the month of May (1st to 12th), 395 out of 499 appointments were registered in the SAP i.e. about 79%. 104 appointment guests i.e. about 21% did not show up for the consultation with the cardiologist.

2. Comparison of the No Show rates in the months of March, April and May(1st to 13th):

Month	No Show rate
March'14	29.20%
April'14	22.50%
May(1-13)'14	20.84%



As shown in the above graph, the No shows clearly declined from the month of March to April and May when the intervention was in progress in the cardiology clinic.

7. Statistical test to know whether the intervention was significant or not

A z test for two different proportions was applied to find out if the intervention applied was statistically significant.

This test is used to know whether two populations or groups differ significantly on some single characteristics.

Null Hypothesis:

$H_0: p_1 = p_2$

$H_a: p_1 \neq p_2$

P_1 = Proportion from 1st population

P_2 = Proportion from 2nd population

By applying the two tailed z test with a significance level of 0.05, the z score obtained is 3.7141. The p value is 0.0002. The result is significant at $p < 0.05$.

8. Discussion

As the study was carried out in two phases, in the retrospective study it was found that the No show rate was very high in the cardiology clinic. Then from the month of April, the intervention was applied to all the pre appointment guests. While the guests were given follow up appointments from the clinic, the doctor and the nurse emphasized the importance of follow up appointments. Later a day prior to the appointment the guests were reminded of the appointment by personalized reminder calls. The no shows for each day were called after their appointment time to reschedule them if possible.

9. Conclusion

So the effective strategy for the management of No show cases is

1. To track all the no show cases and record this in patient's files so that the doctor can understand the behavior and explain to the guest the importance of follow up appointments.
2. Personalized reminder call to the guests a day prior to the appointment.
3. Reschedule the guests who do not show up for the consultation.

10. References

1. Moore CG, Wilson-Witherspoon P, Probst JC. Time and money: effects of no-shows at a family practice residency clinic. *Fam Med*.2001;**33**:522–527.
2. Festinger DS, Lamb RJ, Marlowe DB, Kirby KC. From telephone to office: intake attendance as a function of appointment delay. *Addict Behav*.2002;**27**:131–137.
3. Mirotznik J, Ginzler E, Zagon G, Baptiste A. Using the health belief model to explain clinic appointment-keeping for the management of a chronic disease condition. *J Community Health*. 1998;**23**:195–210.
4. O'Brien G, Lazebnik R. Telephone call reminders and attendance in an adolescent clinic. *Pediatrics*. 1998;**101**:e6.
5. Hardy KJ, O'Brien SV, Furlong NJ. Information given to patients before appointments and its effect on non-attendance rate. *BMJ*.2001;**323**:1298–1300.