

Nonattendance of adult otolaryngology patients for scheduled appointments

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Abstract

Background: Nonattendance for appointments is an impediment to otolaryngology patient care worldwide. In a previous study of children attending an otolaryngology clinic, we observed that attendance was determined by the waiting time for an appointment and the timing of the appointment within the day. However, the factors that affect nonattendance in adults have not been well studied.

Objective: We aimed to investigate factors associated with nonattendance in adults visiting an otolaryngology clinic.

Methods: Nonattendance was observed for a period of one year in adult patients visiting an ambulatory otolaryngology clinic. The following parameters were also noted: age, gender, treating physician, waiting time and timing of the appointment. The chi-square test was used to analyse differences between categorical variables. The *t*-test was used to analyse differences between continuous variables. Logistic regression was used for multivariate analyses.

Results: The study assessed 8071 visits to the otolaryngology clinic. The overall proportion of nonattendance was 27.7 per cent. A multivariate logistic regression model demonstrated that nonattendance was significantly associated with the following factors: female gender, younger age, long waiting time for an appointment, timing of the appointment within the day and the treating physician.

Conclusion: In adult otolaryngology patients, nonattendance was associated with patient-related factors and healthcare systems related factors alike. It is suggested that managed overbooking could be carefully introduced into otolaryngology patient scheduling.

Key words: Otolaryngology; Outpatients; Patient Compliance

Introduction

Nonattendance, i.e. failure to attend clinic appointments, is a widespread setback in the management of otolaryngology clinics and constitutes a common problem in every medical specialty, with proportions varying between 15 and 33 per cent. High nonattendance proportions disrupt patient care and waste medical resources. To improve the management of otolaryngology clinics, factors that determine nonattendance should be identified and addressed. These factors may include patient-related issues, such as forgetfulness or dissatisfaction with the health system, and health provider factors, such as the payer type or waiting time for an appointment.^{1–13} Surprisingly, a literature search revealed only five studies assessing nonattendance in otolaryngology clinics.^{4,9,14–16}

In a previous study of children visiting an otolaryngology clinic, we demonstrated that attendance was influenced by the waiting time for an appointment

and the timing of the appointment within the day.⁴ As only two previous studies have been published concerning nonattendance in adult otolaryngology clinics,^{16,17} we conducted a new study in order to investigate the factors affecting nonattendance in adults visiting an ambulatory otolaryngology clinic.

Methods

The study was performed in Clalit Health Services, which is the largest managed care organization in Israel. In the southern district of Israel, Clalit Health Services serves a population of 470 000 enrollees. The otolaryngology service includes 23 clinics in the district. The central ambulatory clinic is located in Beer-Sheva. Appointments were made by telephone, either by the patient or by the referring clinic. The physicians in the central ambulatory clinic were all general otolaryngologists. They occasionally referred patients to subspecialists (in the fields of

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otology, rhinology, head and neck surgery, and paediatrics) in the out-patient clinic of the tertiary care centre, Soroka University Medical Center, in Beer-Sheva.

Data on visits to the district central ambulatory clinic were obtained from a computer-generated listing of scheduled appointments from 1 January to 31 December 2003. The list contained patients' age, gender, appointment date and time, waiting time for an appointment, timing of the appointment within the day, and the treating otolaryngologist for all new appointments in the clinic. Inclusion criteria included all patients over the age of 18 years.

Statistical analysis

Results of continuous variables are shown as means \pm standard deviation (SD). Results of categorical variables are described as frequencies. The chi-square test was used to analyse differences between categorical variables. The *t*-test was used to analyse differences between continuous variables. Logistic regression was used for multivariate analyses. We considered *p* values of ≤ 0.05 as statistically significant.

Results

A total of 8071 visits were included in the study over the 12-month period. There were 4455 women (55.2 per cent) and 3616 men (44.8 per cent). The mean age was 51.1 years (SD 18.0 years range 18.0 to 99.2 years).

The overall proportion of nonattendance was 27.7 per cent. The nonattendance proportion was 28.9 per cent in women and 26.2 per cent in men ($p = 0.006$). The nonattendance proportion varied significantly according to the age of the patients (Figure 1), the waiting time for an appointment (Figure 2), the timing of the appointment within the day (Figure 3) and the treating otolaryngologist (Figure 4).

A multivariate logistic regression model verified that the age and gender of the patients, waiting time for an appointment, timing of the appointment within the day and the treating otolaryngologist were all significantly associated with nonattendance (Table I).

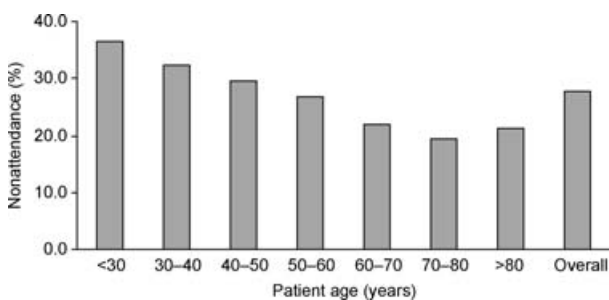


FIG. 1

Nonattendance in adult otolaryngology patients, according to patient age.

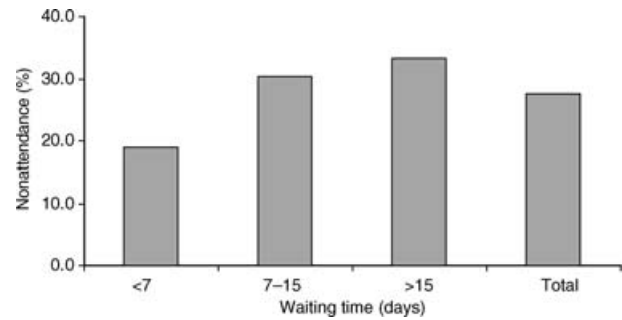


FIG. 2

Nonattendance in adult otolaryngology patients, according to waiting time for an appointment.

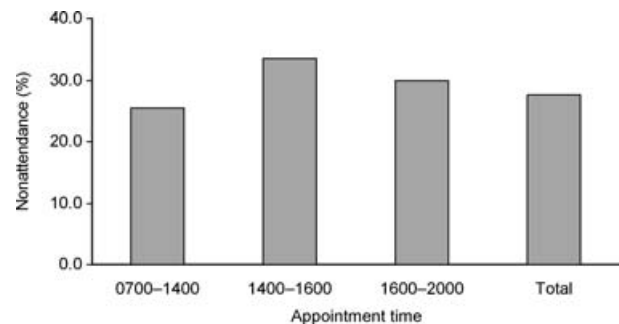


FIG. 3

Nonattendance in adult otolaryngology patients, according to timing of appointment within the day.

Discussion

Failure of patients to attend scheduled appointments is a major setback that affects all medical professions. Nonattendance disrupts routine medical care, wastes limited medical resources and prolongs waiting times for appointments.

Nonattendance in adult otolaryngology patients has been investigated in 1986 and 1993.^{16,17} The more recent study, published by Lloyd *et al.*, investigated the referral process within London and thus has limited external validity outside the United Kingdom.¹⁷

In our previous study on paediatric otolaryngology nonattendance, we observed that the waiting time for an appointment and the hour of the appointment within the day were key factors associated with nonattendance.⁴ However, we hypothesized that the

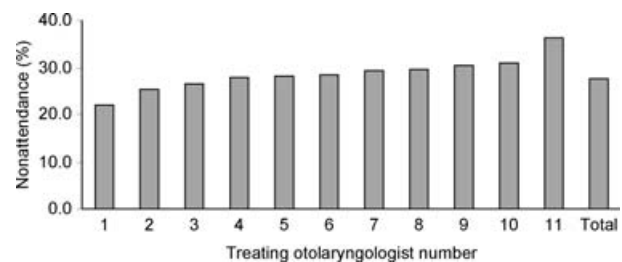


FIG. 4

Nonattendance in adult otolaryngology patients, according to treating otolaryngologist.

TABLE I
FACTORS ASSOCIATED WITH CLINIC NONATTENDANCE IN ADULT
OTOLARYNGOLOGY PATIENTS*

Factor	β	<i>p</i>
Age	0.017	<0.001
Gender	0.150	0.003
Waiting time for an appointment	0.041	<0.001
Hour of appointment	0.016	0.023
Treating otolaryngologist	0.000	<0.001

*Logistic regression model.

factors that determine nonattendance in adults may be different from those affecting children. In the current study, we investigated the effect of health provider related factors and patient-related factors on nonattendance proportions in adults visiting an ambulatory otolaryngology clinic. We observed an overall nonattendance proportion of 27.7 per cent. We also observed a significant association between nonattendance and young age, female gender, waiting time for an appointment, timing of the appointment within the day and the treating otolaryngologist.

Differences in nonattendance proportions between patients of different gender has been previously reported, with nonattendance being higher in men than women.^{6,19–21} Surprisingly, in our current study, nonattendance was higher in women. It is possible that, due to the fact that care of the family is traditionally the responsibility of women in our community, women have a higher tendency not to attend non-urgent appointments, resulting in increased nonattendance proportions.

In the current study, nonattendance was observed more in younger than in older patients. This finding has also been observed in previous studies.^{1,6,19–21} We assume that the lower attendance rate in younger patients reflects two factors: their increased family and work obligations, and their comparatively better health. On the other hand, older persons are in poorer general health and therefore have a greater need to seek medical assistance. Above the age of 80 years, nonattendance proportions rise again, possibly due to the reduced independence of these patients and their greater difficulty in obtaining transport to the clinic.

- **Patient nonattendance for appointments is an impediment to otolaryngology patient care worldwide. However, factors affecting nonattendance in adults have not been well studied**
- **In this study, nonattendance was observed over one year in adult patients visiting an ambulatory otolaryngology clinic**
- **Nonattendance was significantly associated with the following factors: female gender, younger age, long waiting time for an appointment, timing of the appointment within the day and the treating physician**

We found nonattendance to be associated with the waiting time for an appointment, as has been observed in previous studies.^{7,22,23} In addition, we observed that nonattendance proportions varied substantially between physicians. This difference could be attributed to the physician's reputation or to the previous patient–physician relationship. Nonattendance proportions were increased during the early afternoon hours, probably reflecting the fact that these hours were less convenient for patients attending the clinic for non-urgent reasons.

Several strategies may be used to reduce nonattendance proportions, such as reminder postcards, telephone calls and automated telephone reminders; however, these all result in additional costs.

Managed overbooking could be used to resolve the problem of nonattendance. Local nonattendance proportions for each clinic could be identified and suitable overbooking proportions could be applied. However, a policy of overbooking appointments may be counterproductive when a high attendance proportion unexpectedly occurs. In this situation, staff experience increased stress and the standard of service deteriorates.

Conclusion

In the current study, we observed that young age, female gender, waiting time for an appointment, timing of the appointment within the day and the treating otolaryngologist were associated with increased nonattendance in adult otolaryngology patients. We suggest that managed overbooking could be cautiously introduced into regular patient scheduling in otolaryngology clinics in order to overcome the problem of nonattendance.

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