

Non-attendance behavior at a general ophthalmic outpatient clinic in Hong Kong — the patient's perspective

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Abstract

Aim: Non-attendance at outpatient clinics is a universal phenomenon and an important obstacle to providing effective and efficient health care. The aim of the present study was to evaluate the reasons given by patients for failing to attend a scheduled appointment at a general ophthalmic outpatient clinic.

Patients and methods: All patients who failed to attend follow-up appointments in the general ophthalmic outpatient clinic at the Hong Kong Eye Hospital during 1 week were prospectively recruited for a standardized telephone interview. Logistic regression analyses were performed to identify factors associated with the most common reason for non-attendance.

Results: Of the 3265 patients scheduled to attend the outpatient clinic, 448 (15.2%) defaulted. The most common reasons for non-attendance were forgetfulness (49.3%), being busy (10.4%), or being unwell on the appointed day (9.4%). Logistic regression analysis showed that patients with a longer elapsed time since the last follow-up

were more likely to forget the appointment (adjusted odds ratio, 1.11 per month; 95% confidence interval, 1.04-1.19), while patients who were aware of impairment in independent activities of daily living were less likely to forget (adjusted odds ratio, 0.53; 95% confidence interval, 0.29-0.95). Most respondents felt that a follow-up reminder would have been useful, with more patients preferring telephone reminders to mail reminders.

Conclusion: Outpatient non-attendance is a common phenomenon in this tertiary-level eye center. Targeted strategies such as a telephone reminder system, health education, and clinic orientation videos may reduce patient default, especially for individuals with a long interval between follow-up appointments.

Key words: Hospital outpatient clinic, Ophthalmology, Patient acceptance of health care, Patient compliance

Introduction

Non-attendance at outpatient clinics is a universal phenomenon and an important obstacle to providing effective and

efficient health care services.¹ Non-attendance causes delay in diagnosis and management of clinical conditions. From the clinical point of view, non-attendance may result in unnecessary morbidity; from the administrative perspective, it contributes to inefficiency and increased health care costs.^{2,3} Researchers from various specialties have performed studies to explore the issue of non-attendance.⁴⁻¹⁰ In ophthalmology, the issue of non-attendance is especially important because the majority of patients are treated in the outpatient clinic. Conditions such as chronic glaucoma or diabetic retinopathy are asymptomatic in the early stages and non-attendance at outpatient clinics may affect the management of these conditions.

Potamitis et al conducted a prospective postal survey of ophthalmology clinic non-attenders in the UK and found a non-attendance rate of 9.9%, with new patients more likely to default than those being followed up.¹¹ Clerical errors and the failure of patients to remember their appointments were the most common reasons for defaulting. King et al retrospectively studied 43,004 scheduled ophthalmic outpatient appointments and noted a non-attendance rate of 12.6%.¹² There was no monthly or seasonal trend in non-attendance but review patients were more likely to default appointments. Patients from general ophthalmology clinics were also more likely to default than those attending subspecialty clinics. This discrepancy may represent the possible role of illness chronicity and severity in non-attendance. An audit of elderly patients at a hospital eye service in the UK found that common reasons given by non-attenders for missing their appointments included not receiving an appointment, not knowing that further attendance was necessary, and a previous unpleasant and upsetting clinical experience.¹³

Despite these studies, a significant gap in the literature remains for clinicians who want to adopt a patient-centered approach to understand non-attendance behavior. With the growth of consumerism and emphasis on quality health care, patient-centered care is becoming more important in all areas of medicine including ophthalmology.¹⁴⁻¹⁶ By incorporating patients' perspectives, continuous quality improvement can be more effectively implemented. The aim of this study was to investigate the reasons for non-attendance among defaulters who were scheduled for follow-up at a general ophthalmic outpatient clinic in Hong Kong. At a time when health care systems worldwide are reforming to increase cost effectiveness, such information could serve as a guide in the pursuit of a more efficient health care system.

Patients and methods

The study was a cross-sectional telephone survey carried out by the Hong Kong Eye Hospital in August 2004. The study protocol was approved by the ethics committee of the Kowloon Central cluster of the Hospital Authority. The study participants were review patients who failed to attend their appointments at the general ophthalmic outpatient

clinic during a period of 1 week. These patients, designated 'non-attenders', were recruited after they had failed to attend the clinic. They were not aware of the study prior to the telephone survey. Patients scheduled for attendance at subspecialty clinics were excluded from the study. Information was collected from 3 sources, namely, the hospital computerized administrative database, patients' medical records, and telephone interviews. The hospital database was searched to determine the numbers of non-attenders and attenders during the survey period, patients' demographics, and whether patients had cancelled and rescheduled their appointments. Clinical data were then obtained from review of medical records. The option of telephoning the participating hospital to reschedule the appointment was available to patients, and education about clinic attendance was offered to all patients at the initial consultation.

Telephone surveys were carried out by 4 of the investigators through a structured questionnaire after the patients had given verbal consent. The questionnaire was divided into 6 parts. The first part enquired about the reasons for non-attendance (an open-ended question to encourage a free response), the second part enquired about the patient's satisfaction with the clinical services (a yes or no response, with reasons if no), and the third part questioned patients' use of other medical services. The fourth and fifth sections enquired about patients' perceptions of their eye problems, associated effects on independent activities of daily living (IADL; with a choice of severely, moderately, mildly, or not affected), and details of their journey to the place of the appointment (starting point, traveling time, and mode of transportation). The final section consisted of socio-demographic details of the patients. All telephone contacts were made within 2 weeks of the scheduled appointment to minimize recall bias. Each non-attender was contacted up to 3 times by telephone on different dates and at different times of the day. For patients younger than 16 years, their parents were interviewed. For patients who could not participate in a telephone interview (due to dementia or deafness), their caretakers responded. Previous studies of non-attendance at specialist outpatient clinics carried out by the Department of Community Medicine, The University of Hong Kong,^{17,18} formed the basis for the development of the questionnaire. A pilot study of the questionnaire involving 40 patients indicated that it was applicable to the population of interest.

The main outcome measure of the study was the reported reason for non-attendance. Other variables studied included the spectrum of primary eye disorders, level of satisfaction, individual perceptions of the eye problems, and effects on IADL. The most frequent reason for non-attendance behavior was identified and variables that were found to be significantly associated with the reason for non-attendance behavior at the 5% level were included in multivariate logistic regression analysis to evaluate their independent effects on the reason for non-attendance. Statistical analyses were carried out using the Statistical Package for the Social Sciences version 10.0.

Results

3265 patients were booked to attend the general ophthalmic outpatient clinic within the study period. Of these, 2956 (90.5%) were attending for review and 309 (9.5%) were new patients. There were 448 non-attenders (15.2%) among the review patients and 43 non-attenders (13.9%) among the new patients, a non-significant difference. The new patients were excluded from the study as no ophthalmic diagnosis could be obtained. Of the 448 review patients who did not attend, 221 (49.3%) had not been seen for more than 6 months, 132 (29.4%) had their previous consultation between 1 and 6 months previously, 43 (9.6%) between 1 week and 1 month previously, and 52 (11.7%) were last seen within the previous week. Medical records were not available for review for 20 of the 448 non-attenders (4.5%). Patients whose medical records were not available were excluded, as were 49 patients who were asked to follow-up on an 'as needed' basis and 36 patients who had cancelled on the day of the consultation and rebooked an appointment. The remaining 343 non-attenders were included in the telephone survey (Figure 1).

Patient demographics

The mean age of the 343 non-attenders was 54.8 years (range, 3 to 91 years). There were 169 men (49.3%) and 174 women (50.7%). 288 patients (84.0%) responded to the telephone survey. The most frequent reasons for failure to obtain a response were no answer (28 patients) and wrong contact telephone number (24 patients). None of the 288 responders refused to participate in the telephone interview. There was no significant difference between the responders and the non-responders with respect to age and sex. The socioeconomic characteristics of the non-attenders are shown in Table 1.

Ophthalmic conditions among non-attenders

The 10 ophthalmic conditions most commonly encountered among non-attenders are shown in Table 2. Cataract, lid abnormality and mass, and diabetic retinopathy were the most prevalent conditions (Table 2). The most prevalent disease categories were vitreoretinal disease, corneal and external eye disease, and lens problems. Only 13 of the 343 non-attenders (3.8%) had undergone surgery during the previous year and only 69 patients (20.2%) were receiving medication.

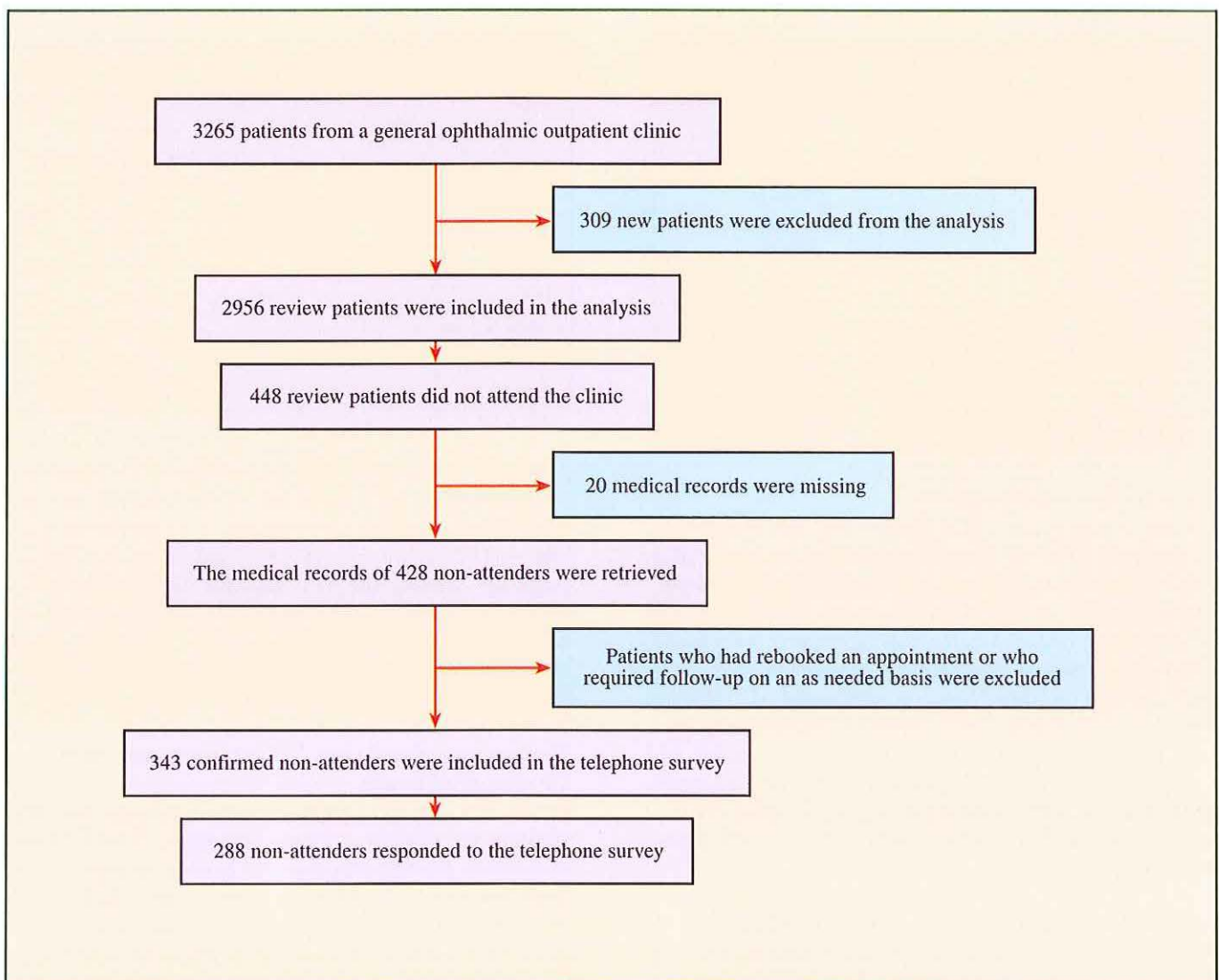


Figure 1. Flow diagram of the survey of non-attendance at a general ophthalmic outpatient clinic.

Table 1. Sociodemographic characteristics of outpatient clinic non-attenders.

Characteristic	Number (%)
Sex (n = 343)	
Men	169 (49.3)
Women	174 (50.7)
Marital status (n = 228)	
Single	56 (24.6)
Married	172 (75.4)
District of residence (n = 326)	
Kowloon Central	173 (53.1)
Other Kowloon areas	114 (35.0)
New Territories	27 (8.2)
Hong Kong Island	12 (3.7)
Occupation (n = 225)	
Professional	22 (9.8)
Clerical and labor	65 (28.9)
Housewife	38 (16.9)
Student	3 (1.3)
Retired	74 (32.9)
Unemployed	23 (10.2)
Education (n = 225)	
Kindergarten or below	50 (22.2)
Primary	71 (31.6)
Secondary	84 (37.3)
Tertiary or above	20 (8.9)
Average monthly household income (HK\$) [n = 179]	
0-9,999	97 (54.2)
10,000-19,999	51 (28.5)
20,000-29,999	10 (5.6)
30,000-39,999	9 (5.0)
40,000+	12 (6.7)
Social security allowances (n = 225)	
Yes	24 (10.7)
No	201 (89.3)
Average age (SD) [n = 343]	54.8 (22.6)

Reasons for non-attendance

The most commonly cited reasons for non-attendance are shown in **Table 3**. The main reason for non-attendance was forgetfulness, followed by being busy, for example, being unable to take time off work. Other reasons for defaulting included being unwell or away from Hong Kong on the day of appointment, resolution of the eye problem, and duplicate hospital appointments. 168 responders of 233 responders (72.1%) felt that a reminder would have been useful before the appointment. Among the latter group, 99 (61.9%) patients preferred telephone reminders, 38 (23.8%) favored mail reminders, and 21 (13.1%) patients would like to have both mail and telephone reminders.

Patients' satisfaction and health perception

When asked whether they were satisfied with the clinical services at the outpatient clinic, 197 of 235 responders (84.5%) claimed to be satisfied. With regard to the patients'

Table 2. The most common primary ophthalmic conditions of clinic non-attenders.

Condition	Number (%)
Cataract	60 (17.5)
Lid abnormality and mass	30 (8.7)
Diabetic retinopathy	27 (7.9)
Glaucoma	24 (7.0)
Ocular trauma	23 (6.7)
Myopic degeneration	15 (4.4)
Neuro-ophthalmology	15 (4.4)
Refractive errors	14 (4.1)
Squint	14 (4.1)
Dry eyes and blepharitis	14 (4.1)
Other	107 (31.2)
Total	343 (100)

Table 3. The most common self-reported reasons for non-attendance.

Reason for non-attendance	Number (%)
Forgot	142 (49.3)
Busy (at work or school)	30 (10.4)
Sick or unwell on day of appointment	27 (9.4)
Away	19 (6.6)
Problem insignificant	15 (5.2)
Problem improved	12 (4.2)
Clash with other medical appointment	9 (3.1)
Admitted to hospital	9 (3.1)
Went to another doctor	6 (2.1)
Late	6 (2.1)
Duplicated appointment	5 (1.7)
Other	8 (2.8)
Total	288 (100)

perception of their eye problems, 178 of 233 responders (76.4%) felt that their appointment was justified, and 187 (80.7%) believed that they knew what eye problems they had — 182 responders (97.3%) indicated the correct diagnosis. Among the 228 respondents who rated their eye problems, the majority considered them to be fair (89 patients, 39.0%) or not bad (76 patients, 33.3%), and were associated with no (115 patients, 50.2%) or mild limitation (69 patients, 30.1%) of their IADL.

Factors associated with forgetfulness as reasons for non-attendance

The results of multivariate logistic regression analyses are shown in **Table 4**. A longer time interval since the last consultation increased the risk of forgetting the appointment (adjusted odds ratio (OR), 1.11 per month). On the other hand, patients who reported mild, moderate, or severe impairment of IADL were less likely to forget the appointment compared with those who did not report any impairment (adjusted OR, 0.53).

Table 4. Multivariate logistic regression analysis of predictors associated with forgetfulness as the reason for non-attendance.

Predictor*	Adjusted odds ratio	95% Confidence interval	p Value
Age	1.01	0.99-1.03	0.30
Gender			
Female	1.66	0.89-3.08	0.11
Marital Status			
Single/divorced	0.85	0.36-1.97	0.70
Occupational status			
At work/school	1.21	0.53-2.77	0.65
Duration of follow-up			
Per month from last visit	1.11	1.04-1.19	0.002
Perception of impairment in independent activities of daily living			
Mild, moderate, severe impairment	0.53	0.29-0.95	0.033

* Factors adjusted included sex, age, marital status (single/divorced versus married/widowed), and occupational status (at work/school versus not at work).

Discussion

Provision of health care services in Hong Kong is divided between the public and private sectors. The Hong Kong Hospital Authority is responsible for the provision of specialist outpatient care in the public sector at a low cost. Hong Kong Eye Hospital is one of the major regional eye centers of the Hospital Authority and serves a population of approximately 1.6 million people. As is true for many other health care systems worldwide, the long-term financial sustainability of the current system is questionable, with the Hospital Authority recording a financial deficit since the year 2001 to 2002. Public health expenditure in Hong Kong as a share of GDP was 2.5% in 1996 and has been forecast to reach 4% by 2016, due to an increasing aging population, increasing specialization, rising public expectations, and the adoption of more expensive technology.¹⁹ It is important that wastage of medical resources such as non-attendance be minimized. By identifying the factors associated with non-attendance of patients at a specialist outpatient clinic in Hong Kong, this study has highlighted areas for improvement.

The non-attendance rate in this study was 15.2%. This is comparable to values obtained in previous studies of non-attendance in ophthalmological outpatient clinics, which ranged from 9.9% to 24.6%.¹¹⁻¹³ Although Potamitis et al found that new patients were more likely to be non-attenders than review patients,¹¹ the converse was true in another study by King et al.¹² It has been suggested that review patients have chronic but stable problems and are more inclined to miss appointments. In the present study, the non-attendance rates for new and review patients were not significantly different. Only 3.8% of non-attenders required surgery in the previous year and the majority (79.8%) were not receiving any topical medications. Moreover, nearly half of the non-attenders (49.3%) had not been reviewed for more than 6 months. These findings support the hypothesis that patients who miss their appointments tend to have non-acute eye problems.

Previous studies have shown that the causes of non-attendance are multifactorial. It has been found that patient

factors, including male sex, younger age, and lower socio-economic status, are associated with increased non-attendance.²⁰ Inefficient hospital administration has also been reported to account for one-third of non-attendance.²¹ Administrative problems were not a significant contributor in the present study; only 5 patients (1.7%) defaulted as a result of duplicate appointments. This finding might reflect the use of a computerized outpatient appointment booking system in this clinic at the Hong Kong Eye Hospital.

A longer interval between referral and appointment has also been demonstrated to increase non-attendance, the most likely reason being that patients forget their appointments.^{20,22} Forgetting appointments has been cited as a major reason for defaulting in several previous studies.^{7,11,20,22} This was confirmed in the present study, as forgetfulness was the most commonly cited reason for non-attendance. Logistic regression analysis showed an 11% increased risk of patients' forgetting their appointment for each month of increase in the follow-up interval. This finding has not previously been reported in the literature. Patients who reported no impairment in IADL were also more likely to forget their appointment compared with those who reported any impairment. Strategies for reminding patients with a long interval between follow-up visits or those with minimal symptoms who require regular monitoring, for example, during the early stages of glaucoma or diabetic retinopathy, should be considered to minimize non-attendance associated with forgetfulness.

Interventions have been developed to remind patients to attend appointments and to equip them with more details about their consultations. Appointment reminders have been shown to be effective in reducing patient non-attendance due to forgetfulness.²³⁻²⁵ Although telephone calls 1 week before the scheduled appointment have been found to reduce non-attendance to almost 1%, reminder letters were shown to be of limited benefit.^{23,26,27} As demonstrated in the present study, 72.1% of the non-attenders felt that a follow-up reminder would be useful, with more patients favoring telephone reminders over mail reminders. The timing of the reminder also appears to be critical; it has

been shown that the shorter the time interval between the reminder and the appointment, the lower the non-attendance rate.²⁸

Being busy was found to be the second most common reason given for non-attendance. Non-attendance for this reason can be avoided by reminding patients to cancel and reschedule an appointment, if necessary. Setting up a dedicated telephone line to handle appointment problems has been suggested previously.¹¹ This measure may be useful in the setting of the present study to improve the low cancellation and rebooking rate, which was less than 10%. Giving patients the option of choosing the appointment time may also help to reduce non-attendance.¹ Patient education should be strengthened and targeted to promote clinic attendances. A 10-minute session with a health educator before the consultation²⁹ and the use of clinic orientation videos emphasizing the importance of keeping appointments³⁰ have both been shown to be effective for reducing non-attendance.

Some interventions targeting clinic non-attendances reported as being effective in the literature require careful consideration in terms of their applicability. In a plastic surgery outpatient clinic, a self-referral clinic was set up to replace routine follow-up for high-risk non-attenders, resulting in a decrease in non-attendance rates.³ However, patients may not be in the best position to know when it is necessary to attend and self-referral may lead to an inappropriate number of consultations. Murdock et al believed that no strategy to improve attendance was likely to have a great impact and, instead of devising solutions, non-attendance should be taken into account when patients are booked.⁷ However, other researchers have opposed the idea of overbooking,

considering it counterproductive as it puts pressure on both patients and staff.¹

The response rate for this survey was more than 80%, which is much higher than the rate reported for a previous survey of non-attendance at an ophthalmic clinic conducted by mail.¹¹ However, as for other surveys, this study was subject to non-response bias. To minimize this source of error in the present study, up to 3 attempts were made to contact each patient. Also, information from other sources, namely, the hospital administrative database and the patients' medical records, were collected to allow verification. Other limitations included recall bias, patients' giving socially acceptable rather than truthful answers, and the cross-sectional nature of the survey, in which the causal relationships for non-attendance could not be precisely determined.

Recently, there has been an increased emphasis on patient-centered care, which recognizes the physicians obligation to understand and meet patients' expectations. However, there has been limited research into patients' wants, needs, and evaluation of their care in the field of ophthalmology.¹⁴⁻¹⁶ The present study provides information about reasons for outpatient non-attendance from the patients' perspective, which can serve as a foundation for future research into patients' expectations and a framework for the development of public health models. It also confirms that non-attendance in outpatient clinics is a common health care problem. Reducing non-attendance in outpatient clinics is an important management issue and this form of wastage of resources should be reduced. Identifying reasons for non-attendance allows the development and implementation of measures to reduce clinic waiting times and potentially reduce costs.

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