

Why outpatients fail to attend their scheduled appointments: a prospective comparison of differences between attenders and non-attenders

JACINTA COLLINS, NICK SANTAMARIA AND LEXIE CLAYTON

Jacinta Collins is Project Officer, Patient Education Materials, Austin & Repatriation Medical Centre.

Nick Santamaria is Principal Research Scientist, Ambulatory & Community Services, The Alfred and Associate Professor, School of Postgraduate Nursing, University of Melbourne. Lexie Clayton is Director of Ambulatory & Community Services, The Alfred and Associate Professor, School of Postgraduate Nursing, University of Melbourne.

Abstract

Outpatient departments lie at a critical interface between primary care and acute services. Increasing pressure to ensure efficient and effective health care delivery has resulted in outpatient departments investigating ways to minimise the number of patients failing to attend their scheduled clinic appointments. Failure to attend (FTA) is an expensive and persistent problem worldwide with rates of between 5 - 39 % reported in the literature. Similar FTA rates have also been detected in the Australian context. This study was undertaken to further investigate the reasons for FTA by conducting a prospective comparison of 100 patients who attended their outpatient appointment with 100 patients who did not attend. Discriminant function analysis revealed that the major reason for non-attendance was the patients' opinion about the difficulty in getting to the hospital. Previous non-attendance was found to be the strongest predictor of future FTA behaviour. A number of operational and system recommendations are made that based on the results, which may assist management to develop interventions to improve attendance rates.

Significance of failure to attend

Failure to attend outpatient appointments is a complex problem. In investigating the causes of failure to attend (FTA) it is recognised that there are layers of confounding variables: health-care organisations have networks of administrative processes that may falter or fail, and patients have a host of potential reasons for not attending. High FTA rates can lead to inefficient use of facilities and result in unnecessary costs and delays in the waiting lists to assess or review other patients. Stone et al. (1999) reported that in 1996/97 in the United Kingdom, 12% of outpatient appointments were not kept. At an average cost of £61 per appointment, this translated to £360 million wasted per annum. Mason (1992) noted that outpatient departments are increasing in importance as centres of care, particularly following the trend towards earlier discharge of patients from hospital. Hence as the demands on outpatient departments increase, the problem of non-attendance assumes greater significance. Australian acute care organisations have followed this early discharge trend and, given the concern expressed by United Kingdom's managers, politicians and planners regarding the consequences of non-attendance, it is surprising that few Australian studies have investigated this problem.

Background to the study

The introduction of the Victorian Ambulatory Classification and Funding System (VACS) in 1997 has brought a greater focus on the efficiency and effectiveness of ambulatory services, and outpatient services in particular. This system involved casemix funding principles and reimburses hospitals based on patient encounters. An encounter is defined as the clinic visit, plus all ancillary services (pathology, radiology and pharmacy) provided within 30 days either side of a clinic visit. In 1998/1999, the case payment for non-admitted patient throughput up to target was \$104 per weighted public encounter (Dept. of Human Services, 1998). Targets are set annually and capped and payment is made according to the number of patient encounters. If the targets are exceeded no payment is made to the hospital for its excess provision of service. Conversely, if targets are not met due to the rate of FTA or other factors, reimbursement will fall below anticipated levels. This situation has the potential for negative budgetary outcomes due to fixed infrastructure and staffing costs. It is therefore imperative that hospitals and outpatient departments strive to meet established targets. From a clinical perspective, FTA also has the potential to contribute to negative clinical outcomes for patients due to deterioration not being detected at an early stage as well as reducing the relative availability of outpatient services to other patients.

Literature review

The FTA literature can be categorised into three broad groups: (a) studies investigating patient characteristics said to be typical of non-attenders, (b) studies investigating organisational factors seemingly influencing attendance rates and (c) studies examining interventions designed to reduce the non-attendance rates.

Studies describing patient characteristics associated with FTA

Studies have attempted to isolate individual patient characteristics relevant to FTA. They include demographic variables such as age, gender, marital status and family responsibilities, ethnicity and religion. Other patient characteristics that have been explored include health status, health beliefs, appointment type (new or review), previous non-attendance behaviour and health insurance status. Extrinsic factors such as the weather and transport options have also been examined as potential influences on the patients' attend rates.

Youthfulness appeared to be the only demographic feature consistently positively related to non-attendance (Carpenter et al. 1981; Dyer et al. 1998; Dockerty 1992; Frankel et al. 1989; Goldman et al. 1982; Grover et al. 1983; Hertz and Stamps 1977; Majeroni et al. 1996; Roland et al. 1991; Sanders et al. 1992; Simmons et al. 1997; Weingarten et al. 1997). Interestingly, Goldman et al. (1982) noted it was the very young or those over the age of 80 years who had a high FTA rate.

Gender was extensively examined as a potential predictor of FTA however the evidence appears inconclusive. In some studies, men have been identified as more likely to default than women (Dickey and Morrow 1991; Dockerty 1992; Frankel et al. 1989; Simmons et al. 1997). Other studies have found the opposite (Carpenter et al. 1981; Cawley and Stevens 1987; Penneys and Glaser 1999). Finally, Dyer et al. (1998), Hertz and Stamps (1977) and Lloyd et al. (1993) found no gender differences.

Some studies have found social disorganisation of families and work commitments to be related to high FTA rates (Sanders et al. 1992; Dyer et al. 1998s; Cawley and Stevens 1987; Bigby et al. 1984) but Kavanagh and Simpson (1996) did not. Ethnic and religious minority groups were reputedly more likely to default than their counterparts (Dockerty 1992; Gatrad 1977; Goldman et al. 1982 and Majeroni et al. 1996).

Consumer perceptions that their appointment was unnecessary were frequently noted as contributing to high rates of non-attendance (Andrews et al. 1990; Donaldson et al. 1992; Bigby et al. 1984; McGlade et al. 1988; Stone et al. 1999). Fear or mistrust of hospitals, fear of serious illness being discovered and embarrassment were explanations provided for non-attendance (Andrews et al. 1990; Dockerty 1992; McGlade et al. 1988; Nielson and Jones 1998; Sanders et al. 1992). Providing clear information to patients was seen to be important as many patients stated lack of understanding as the reason for not attending (Dockerty 1992; Frankel et al. 1989; Sanders et al. 1992).

The appointment type (new or review) has been tested as a predictor of FTA. Results were mixed. Stone et al. (1999), Kavanagh and Simpson (1996) and Potamitis et al. (1994) found new appointments were more likely

to default however, King et al. (1995) found the reverse. In summary, it would appear other features might be more important in attempting to predict FTA.

The literature repeatedly reinforced the premise that if a patient failed to attend an appointment once, it increased the likelihood of further non-attendance (Dyer et al. 1998; Frankel et al. 1989; Goldman et al. 1982; McClure et al. 1996; Simmons et al. 1997). However, Nazarian et al. (1974) tested this hypothesis and found prior FTA had only a minor relationship to non-attendance in their FTA study.

Extrinsic factors

FTA has also been investigated in terms of an individual's type of insurance. In the main, this question was mostly of interest to North American researchers. Hertz and Stamp (1977) found no relationship evident between the two. However, Majeroni et al. (1996) and Weingarten et al. (1997) concluded Medicaid managed care populations scheduled more visits and missed more visits than did patients in other insurance groups. Similarly, in Australia, Kavanagh and Simpson (1996) found women without private health insurance were 50% more likely to FTA.

There have been mixed results from studies examining the weather's influence on non-attendance. Pieper and DiNardo (1998) concluded that only inclement weather had an impact, and Stone et al. (1999) reported defaulters nominated bad weather as a contributing factor to their non-attendance. In contrast, Jonas (1973) and Gatrad (1997) found the weather had no effect whatsoever upon failure to attend rates.

Transport difficulties have been frequently associated with non-attendance (Cawley and Stephens 1987; Bigby et al. 1984; Gleeson et al. 1991; Kavanagh and Simpson 1996; Leese et al. 1986; McLure et al. 1996; Pieper and DiNardo 1998; Samanta et al. 1991). Conversely Goldman et al. (1982) and Carpenter et al. (1981) did not find transport issues to be a significant factor.

Organisational features

Studies have been conducted to investigate the impact of organisational factors on FTA rates. Results have suggested that lengthy delay from referral to appointment were significantly and positively related to non-attendance irrespective of the nature of the clinic (Carpenter et al. 1981; Cawley and Stevens 1987; Dickey and Morrow 1991; Dockerty 1992; McGlade et al. 1988; Mason 1992; Ross et al. 1983; Stone et al. 1999). Frankel et al. (1989) reported the opposite, however upon closer scrutiny it was evident that 14% of the non-attenders were given less than three days notice.

Inappropriate or unnecessary referrals were frequently cited as a contributing factor to lengthy waiting lists and subsequent FTA (Emmanuel and Walter 1989; Lowry et al. 1991; McGlade et al. 1988; Mason 1992; Roland et al. 1991; Ross et al. 1983; Samanta et al. 1991; West and McKibbin 1982).

Institutional weaknesses were identified as a key factor influencing FTA. Administrative errors had a strong correlation with high levels of non-attendance (Bottomley and Cotterill 1994; Dockerty 1992; Emmanuel & Walter 1989; Frankel et al. 1989; Gatrad 1997; Grover et al. 1983; Hertz & Stamps 1977; McClure et al. 1996; McGlade et al. 1988; Mason 1992; Potamitis et al. 1994; Roland et al. 1991; Ross et al. 1983; Simmons et al. 1997; Stone et al. 1999; Verbov 1992). Administrative errors included poor communication where there had been failure of the hospital to inform the patient, or the appointment was cancelled by either the patient or the hospital and not formally logged with appropriate action taken. Incorrect addresses were identified as another source of error.

Absence of bilingual staff, underlying tensions between general practitioners and hospital physicians, other allied health professionals and nurses were also mentioned as factors influencing FTA rates. Moreover, the presence of professional, friendly and familiar caring staff has been found to be positively correlated with lower rates of FTA (Dockerty 1992; Gleeson et al. 1991; Griffin 1998; Jackson 1991; Leese et al. 1986; Sanders et al. 1992).

Stewart and McHardy (1984) reported that 24% of patients considered they attended clinics too often, 31% of doctors thought patients attended too often and 16% of patients stated they attended out of habit. High users tended to be more likely to fail to attend and the literature generally revealed a positive correlation between the number of appointments made and a higher rate of FTA (Dyer et al. 1998; McClure et al. 1996; Majeroni et al. 1996; Stone et al. 1999; Wilkinson 1994).

Strategies to reduce FTA

The FTA literature relating to interventions to improve attendance rates suggests a general acceptance of the proposition that forgetting an appointment was the single most common reason for patients failing to attend their outpatient appointments (Bottomley and Cotterill, 1994, 23%; Gleeson et al. 1991, 28%; Mann, 1991, 40%; Martin 1995, 12%; Pal et al. 1998, 38%; Pieper and DiNardo, 1998, 33%; Potamitis et al. 1994, 18%; Simmons et al. 1997, 21%; Stone et al. 1999, 35%; Verbov 1992, 9%). Associated with forgetfulness appeared to be the length of waiting time from referral (from a general practitioner, acute care sector, accident and emergency or from another consultant) to outpatient appointment. Based on these findings, managers and researchers have attempted to develop a range of interventions to ameliorate FTA rates. The strategies have usually included improving communication between hospital staff and patients. The practice of introducing improved reminder systems has largely been successful (Bigby et al. 1983; Grover et al. 1983; Potamitis et al. 1994; Wilkinson 1994).

Via media and hospital publicity campaigns there has been a shift of accountability in terms of appointment making and attendance onto the patient rather than the organisation (Lancaster et al. 1996; Turner and Cooke 1991). The overall outcomes of attempts to improve attendance rates have varied and results have been inconsistent. Results have been further confounded owing to the nature and number of the specialty clinics within the studies.

Summary

FTA has been investigated extensively and the studies have explored a wide range of potential patient factors in an effort to determine a definitive predictor of behaviour. It could be concluded that researchers have not reached consensus. Many studies in this area have relied on univariate analyses; hence, it is difficult to be confident that the associations that have been identified were not confounded by multiple variables.

Methods

Design

A prospective cross-sectional random stratified sample survey design was employed to determine the differences in demographic characteristics, attitudes and beliefs (predictor variables) between two groups of outpatients.

The subjects and setting

Data were collected from two groups of subjects stratified by gender. The first group comprised 100 patients (50 female and 50 male) who were randomly selected from those attending their Neurology or Orthopaedic outpatient appointment in March 2000. Demographic data collected from these participants indicated that the mean age was 53.45 years, with a median of 56.00 years and a standard deviation of 17.83 years.

The second group consisted of 100 patients (52 female and 48 male) who had not kept their scheduled appointment at either an Orthopaedic or Neurology clinic. Their mean age was 56.00 years, with a median of 52.00 years and a standard deviation of 17.73 years.

The study was conducted within one Neurology and two Orthopaedic clinics at a metropolitan university teaching hospital Outpatient Department between March and May 2000. The department sees more than 250,000 outpatients annually and a review of FTA by clinic revealed rates of 24% for Neurology and 18% and 17% respectively for the two Orthopaedic clinics. The total number of patients scheduled to attend these clinics during the study period was 1491. Therefore the sample size of 200 patients represented 13% of potential study subjects.

We calculated that to detect a ten percent difference in the predictor variable values between groups at a significance level of 0.05 and with a power of 80%, two groups of 95 persons each would be required.

The measures

A survey questionnaire was developed by the authors based on FTA factors identified in the literature as influential to patient attendance. The survey recorded subject's demographic details, history regarding recent outpatient appointment attendance at hospital, self-reported health status, and opinion concerning the degree of difficulty encountered in attending hospital. The questionnaire also asked the non-attenders the reason for their non-attendance.

The questionnaire contained 14 predictor variables (i.e. the potential predictors of patient FTA). The predictor variables were; gender, age, ethnicity, religion, marital status, highest education level, employment status, the number of appointments missed previously, distance and mode of travel, the waiting time in the outpatient clinic, the length of time the presenting problem was apparent, health status and an opinion regarding how easy it was to attend the hospital clinics.

Eight of these predictor variables could be treated as continuous (age, the number of outpatient appointments missed in the last six months, the length of time from referral to appointment, the waiting time in the outpatient clinic, the distance to travel, the length of time the presenting problem was apparent, the perceived health status and an opinion regarding how easy it was to attend hospital outpatient clinics). Eight were categorical (gender, ethnicity, religion, marital status, highest education level, employment status, appointment type and mode of travel).

The procedure

Following institutional Human Research Ethics Committee approval, people waiting for their scheduled appointment were randomly selected using a table of random numbers applied to the final three digits of their UR number and invited to take part in the study. A questionnaire was then administered by one of the authors (JC) that took approximately ten minutes to complete.

Any patient failing to attend their scheduled Orthopaedic or Neurology appointment from March to May 2000 was sent an explanatory letter, the survey questionnaire including a list of 30 potential reasons explaining their non-attendance and an informed consent form, inviting them to participate in the study. A reply-paid envelope was included to facilitate return of the questionnaire. The order of potential reasons for non-attendance was varied for every third patient in an attempt to minimise any order effect in responding to this section of the survey. 237 letters were mailed. Five weeks after distribution of the survey package to non-attenders 64 letters with completed questionnaires and consent forms had been returned. Two questionnaires were incomplete and were therefore discarded. 19 letters (8%) were returned to the researcher owing to errors in addresses. A follow up reminder phone call was made at 21 days resulting in a further 38 responses.

Data analysis

All statistical procedures were carried out using SPSS V9 (1998). Procedures included calculation of basic descriptive statistics for each group. A Discriminant Function Analysis (DFA) was used to explore whether predictor variables could be combined to reliably predict group membership. In standard (direct) discriminate function analysis all predictors enter the equations at once and each predictor is assigned only the unique association it has with groups. A direct DFA was used to identify variables that most contributed to a separation of the two groups.

To avoid over fitting in the discriminant function due to the large number of predictor variables, a relatively large number of participants were recruited. Employing methods defined by Tabachnick and Fidell (1989) relating to the ratio of subjects to variables (at least 5:1) 200 subjects were required. However, there were only eight (three attenders and five non-attenders) new patients included in the study. Consequently, the variables of 'new appointment versus review appointment' and 'length of time from referral to appointment' were omitted from the Discriminant Function Analysis.

Results

The study's population was compared with that of the total number of patients scheduled to have an Orthopaedic or Neurology appointment at the hospital outpatient clinics during the study period. It was interesting to note they were similar in terms of type of clinic, gender, age, and marital status. Differences were

evident in new versus review appointments, religion and ethnicity. Of most interest was that the smaller percentage (44.5%) of the study population reported waiting for more than one hour at their previous appointment compared to all patients (67.02) attending the hospital's Neurology or Orthopaedic Units 1 and 2. This would seem to suggest prolonged waiting time is an issue that may warrant further investigation.

Descriptive statistics of the continuous variables of participants indicated that the survey respondents were typically over 50 years of age. Most were attending review appointments and stated they had not missed any previous appointments in the last six months. They had waited for more than one hour in the outpatient clinic at their last appointment. The health problem for which they were attending the hospital was of more than one year standing. The most frequently self-assessed health status was fair and generally they agreed that the hospital was easily accessible.

Table 1: Standardised coefficients and pooled within-groups correlations with the discriminating function

Variable	Pooled within-groups correlations	Standardized coefficients
Opinion	.588	.520
Previous FTA	-.457	-.338
Employment	.333	.456
Health	.326	.349
Distance	.297	.429
Marital	-.294	-.180
Age	.228	.189
Education	.215	.189
Problem Time	-.067	-.170
Gender	-.065	.073
Ethnicity	-.064	.095
Clinic Waiting Time	.048	-.120
Religion	.036	.164
Transport	.000	.075

Analysis of the categorical variables indicated that survey respondents were almost invariably attending the hospital for a review appointment (92%). They consisted of slightly more females than males (51% Vs. 49%), and were most commonly married or in a defacto relationship (46.5%). They were predominantly from an Australian background (63%) and almost one third held no religious beliefs (30%). Most participants were not employed (61%) (retired or otherwise not working). Over half traveled to the hospital in their own or a friend's car (52%).

In terms of continuous variables, the two groups differed significantly with respect to the number of times they had not attended appointments in the previous six months ($p=.049$) and in their opinion concerning the level of difficulty in attending their outpatient appointment ($p=.012$). Interestingly, the non-attenders tended to be younger, had less distance to travel and a slightly longer period of symptom duration and waiting time in the clinic compared with the attending group.

In terms of the eight categorical variables, the only statistically significant difference between the two populations was in ethnicity ($p=.016$). The relatively high numbers of European patients attending the clinic (28%) can largely account for this difference. Non-attenders were more likely to be in full time employment than were those from the attending group.

Discriminant function analysis

The standardized coefficients presented in Table 1 indicate that in terms of relative influence, patient opinion was clearly the most influential factor. The pooled within group correlations suggest that the variables that most correlated with the discriminating function were patient opinion, previous failure to attend and employment. Using an eligibility criterion for correlations of 0.33 or greater, only one other variable was close to being

interpreted as making a useful contribution (self-reported health status).

The discriminant function analysis was not able to reliably separate the two groups (Wilks' Lambda = .913, $\chi^2 = 17.306$, df 14, $p > .246$). The canonical correlation was .240. The Predicted Group Membership indicated 66.0% of original grouped cases were correctly classified.

Table 2: Descriptive statistics for attenders and non-attenders

Variable	Group 1 = Attenders		Group 2 = Non-attenders		Univariate F	Significance
	Mean	Std. Deviation	Mean	Std. Deviation		
Gender	1.5000	.5025	1.4800	.5021	.079	.779
Age	53.4500	17.8384	50.9600	17.7360	.980	.323
Ethnicity	1.5200	.7032	1.5500	.8211	.077	.782
Religion	1.7200	.8998	1.7400	.9279	.024	.877
Marital	1.4900	.5024	1.5800	.4960	1.625	.204
Education	1.9600	.7375	1.8600	.7788	.869	.352
Employment	3.4800	1.3888	3.1900	1.4543	2.080	.151
Previous FTA	1.2800	.6526	1.4900	.8348	3.928	.049 *
Clinic Waiting Time	3.8000	1.3853	3.8400	1.3388	.043	.836
Distance	2.0400	.9941	1.8600	.9849	1.654	.200
Transport	1.4500	.5000	1.4500	.5000	.000	1.000
Problem Time	4.4800	1.7493	4.5500	1.6720	.084	.773
Health	3.6400	1.1936	3.4000	1.2060	2.001	.159
Opinion	4.4000	1.4142	3.9000	1.3596	6.496	.012 *

Table 2 presents the univariate analysis, taking no account of the influence of other variables; there were statistically significant differences between the groups on only two variables; "previous failure to attend" and "patient opinion".

Table 3: Reasons given for non-attendance at the neurology and orthopaedic outpatient clinics

Reason	No. of Responses	Cumulative Number	Cumulative Percentage
I forgot	21	21	11.05%
I was unaware of the appointment	15	36	18.95%
I was too sick on the day	13	49	25.79%
I cancelled my appointment	12	61	32.11%
Parking unavailable at the hospital	11	72	37.89%
Too long to see a doctor	9	81	42.63%
I was in hospital	8	89	46.84%
I mixed up the date of the appointment	8	97	51.05%
The appointment appeared to have no benefit to me	6	103	54.21%
High cost of transport	6	109	57.37%
Administration staff are unprofessional or unfriendly	5	114	60.00%
Medical staff are unprofessional/unfriendly	5	119	62.63%
Inconvenient time or day	5	124	65.26%
I was waiting for test results	5	129	67.89%
My condition improved	5	134	70.53%
I went privately	5	139	73.16%
The hospital cancelled my appointment	5	144	75.79%
I was too busy at work	4	148	77.89%
I had to care for a sick relative	4	152	80.00%
No transport was available	4	156	82.11%
I had a previous engagement	4	160	84.21%
I tried to cancel but the phone was engaged for hours	3	163	85.79%
No doctor continuity	3	166	87.37%
The doctor should have cancelled my appointment	3	169	88.95%
I was away on holidays	3	172	90.53%
I lost my appointment card	3	175	92.11%
The doctor was away, so the appointment should have never been made	2	177	93.16%
I was too tired	2	179	94.21%
I could not be bothered	2	181	95.26%
It was raining	2	183	96.32%
Transport made an error	1	184	96.84%
Doctor left	1	185	97.37%
Rehabilitation error	1	186	97.89%
Nursing staff are unprofessional or unfriendly	1	187	98.42%
I moved away	1	188	98.95%
Family funeral	1	189	99.47%
Urgent dental appointment	1	190	100.00%

The data in Table 3 reveal that eight reasons explain more than 50% of the non-attendance. Some of the reasons given include factors that it is very difficult for an organisation or other party to do anything about such as the weather or a family funeral. Of the most frequently listed reasons, there are at least four that offer good opportunity for hospitals to minimize FTA (“I forgot”, “I was unaware of my appointment”, “I cancelled my appointment” and “I was in hospital”).

A correlation matrix was calculated among the set of predictor variables. There were 26 significant correlations, ranging from $r = .139$ to $r = .924$. As expected, an extremely high correlation ($r = .924$, $p = 0.05$) was obtained between the type of appointment (review or new) and the time from referral to appointment. Among the other correlations, it was interesting to note that age correlated with ethnicity, religion, marital status, employment, transport, the length of the problem, self-reported health status and patient opinion. In interpreting the correlations, it is important to note that because of the relative large number of degrees of freedom, statistical significance was achieved with relatively small correlations. Thus, the correlation between the study criterion and previous failure to attend ($r = .139$, $p = 0.05$) was statistically significant yet involved less than 2% of shared variance. The other predictor that correlated significantly with the study criterion was patient opinion.

Discussion

If attendance rates at outpatient appointments are to be improved, it is imperative to identify the factors associated with attendance as well as FTA. The aim of this study was to compare 100 patients who attended their outpatient appointment with 100 patients who did not attend, and thus better understand the reasons for non-attendance. The study revealed the two groups ("attenders" versus "non-attenders") differed on only two of the fourteen-predictor variables; their previous non-attendance behaviour and their opinion concerning how easy it was to attend their appointment at hospital. The non-attenders had higher previous rates of FTA and, not surprisingly, the attenders considered it was easier to attend their appointment than did the non-attenders. The other main finding was that the set of predictor variables was not able to discriminate between attenders and non-attenders. While this was disappointing, it may reflect that the prediction of non-attenders using largely individual variables is difficult to achieve.

Limitations of the study

The study had two major limitations. The first was the use of variables that were self-reported, (i.e. number of missed appointments in the previous six months, the highest level of education, the opinion about the degree of ease at which the patient was able to attend the outpatient appointment and the rating of their health status). It was not possible to check the accuracy of this information. However, we were able to detect a discrepancy in the waiting time experienced by the entire clinic population and that of the study population. Of most interest and unexpectedly, the entire population was found to have longer waiting times in the outpatient clinics than that reported by study participants.

We noted two participants had reported no missed appointments in the previous six months. However, both the patients had been sent two letters within the study period, informing them of missed appointments. Consequently, the degree of inaccuracy of information given (by both the attenders and non-attenders) is unknown. Thus, the extent to which the validity of results is threatened cannot be reliably established.

The second limitation of the study involved question 11: "From your referral, how long did you have to wait for your appointment? (New patients only)". This question was unfortunately erroneously answered by a large number of participants. In fact, there were only eight (three attenders and five non-attenders) new patients in the study. The study was weakened due to the low number of new patients, because in the Discriminant Function Analysis, the two potential predictors (new versus review patients; and time from referral to appointment) were unable to be included in the set of variables.

Implications for management

The study revealed that the most common reason (11%) for not attending was forgetting the appointment. We suggest that a reminder system for those patients whose appointment is scheduled more than two months in advance could be considered. Furthermore, respondents frequently commented that it was difficult for them to remember their appointment when the calendar year changed; therefore, reminders could also be sent to those affected patients.

Fifteen respondents explained their FTA was due to them being unaware of their appointment. A further seven respondents noted that their appointment booklet had appointments that were not chronologically ordered and this was the reason for their non-attendance. Other respondents commented it was difficult to read the small

writing on the card. We believe that the patient appointment card system may benefit from review.

According to Peterson and Stunkard (1992), one of psychology's few truisms is that current or past behaviour is the best predictor of future behaviour. The findings of the study reinforce this in that the attenders had fewer previous missed appointments compared with the non-attenders. It is therefore appropriate that managers develop and improve their information systems. It is suggested that previous non-attenders are identified within the outpatient database and issued reminders (either in writing or verbally) of their upcoming outpatient appointment.

Stewart and McHardy (1984) reported that 24% of patients considered they attended clinics too often, 31% of doctors thought patients attended too often and 16% of patients stated they attended out of habit. High users tended to be more likely to fail to attend and the literature generally revealed a positive correlation between the number of appointments made and a higher rate of FTA. It is suggested the medical staff check all the "long term and frequent attenders" and verify that they do require specialist treatment at the hospital.

In the UK, some hospitals have changed their outpatient policy and offer only one appointment to new patients. If the patient does not attend, the general practitioner is contacted and asked if another appointment is required. All review patients who do not attend are analysed at the end of the clinic by the consultant, and a decision is made whether another appointment is required or a discharge letter is sent to the general practitioner (Simmons et al. 1997). It is suggested the hospital review its discharge policy and implement appropriate measures.

Conclusion

FTA is a persistent and expensive problem for outpatient departments worldwide. Whilst there have been many studies conducted into the possible factors associated with the problem of FTA, there appears to be little consensus.

This study has highlighted the complexity of unravelling the multiplicity of possible contributing factors and their potential interactions. The results have in a small way, contributed to our understanding of the phenomenon of non-attendance at the hospital outpatient departments in the Australian setting. However, a possible valuable outcome of this study may be that it highlights directions for future research in this area.

References

- Andrews R, Morgan JD, Addy DP & McNeish AS 1990, 'Understanding non-attendance in outpatient paediatric clinics', *Archives of Disease in Childhood*, vol 65, pp 192-195.
- Bigby JA, Giblin J, Pappius EM & Goldman L 1983, 'Appointment reminders to reduce no-show rates', *Journal of American Medical Association*, vol 250, no 13, pp 1742-1745.
- Bigby JA, Pappius E, Cook F & Goldman L 1984, 'Medical consequences of missed appointments' *Archives of International Medicine*, vol 144, pp 1163-1166.
- Bottomley WW & Cotterill JA 1994, 'An audit of the factors involved in new patient non-attendance in a dermatology out-patient department', *Clinical and Experimental Dermatology*, vol 19, pp 399-400.
- Carpenter PJ, Morrow GR, Del Gaudio AC & Ritzler B 1981, 'Who keeps the first outpatient appointment', *American Journal of Psychiatry*, vol 13, no 81, pp 102-105.
- Cawley ME & Stevens FM 1987, 'Non-attendance at outpatient clinics at the regional hospital Galway Ireland', *Social Science and Medicine*, vol 25, no 11, pp 1189-1196.
- Dickey W & Morrow JI 1991, 'Can outpatient non-attendance be predicted from the referral letter? An audit of default at neurology clinics', *Journal of the Royal Society of Medicine*, vol 84, pp 662-663.
- Dockerty J 1992, 'Outpatient clinic nonarrivals and cancellations', *New Zealand Medical Journal*, vol 105, no 932, pp 147-149.

- Donaldson LJ, Thomson RG, Cook A & Raymakers R 1992, 'Eight years' experience of clinical activity in an outpatient fracture clinic', *Injury*, vol 236, pp 363-367.
- Dyer PH, Lloyd CE, Lancashire RJ, Bain SC & Barnett AH 1998, 'Factors associated with clinical non-attendance in adults with type 1 diabetes mellitus', *Diabetic Medicine*, vol 15, pp 339-343.
- Emmanuel J & Walter N 1989, 'Referrals from general practice to hospital outpatient departments: a strategy for improvement', *British Medical Journal*, vol 299, pp 722-724.
- Frankel S, Farrow A & West R 1989, 'Non-attendance or non-invitation? A case-control study of failed outpatient appointments', *British Medical Journal*, vol 298, pp 1343-1345.
- Gatrad AR 1997, 'Comparison of Asian and English non-attenders at a hospital outpatient department', *Archives of Disease in Childhood*, vol 775, November, pp 423-426.
- Gleson R, Chant A, Cusick A, Dickson N & Hodggers E 1991, 'Non-compliance with occupational therapy outpatient attendance: a quality assurance study', *The Australian Occupational Therapy Journal*, vol 382, pp 55-61.
- Goldman L, Freidin R, Cook EF, Einger J & Grich P 1982, 'A multivariate approach to the prediction of no-show behaviour in a primary care centre', *Archives of International Medicine*, vol 142, pp 563-567.
- Griffin SJ 1998, 'Lost to follow-up: the problem of defaulters from diabetes clinics', *Diabetic Medicine*, vol 15, suppl 3, S14-S24.
- Grover S, Cagnon G, Flegel KM & Hoey JR 1983, 'Improving appointment keeping by patients new to a hospital medical clinic with telephone or mailed reminders', *Canadian Medical Association Journal*, vol 129, pp 1101-1103.
- Hertz P & Stamps PL 1977, 'Appointment keeping behaviour re-evaluated', *American Journal of Public Health*, vol 67, pp 1033-1036.
- Human Services 1998, Victorian Ambulatory Classification and Funding System, Melbourne.
- Jonas S 1973, 'Influence of the weather on appointment-breaking in a general medical clinic', *Medical Care*, vol XI1, pp 72-74.
- Kavanagh JM & Simpson JM 1996, 'Predicting nonattendance for colposcopy clinic follow-up after referral for an abnormal Pap smear', *Australian and New Zealand Journal of Public Health*, vol 203, pp 266-271.
- King A, David D, Jones HS & O'Brien C 1995, 'Factors affecting non-attendance in an ophthalmic outpatient department', *Journal of the Royal Society of Medicine*, vol 88, pp 88-90.
- Lancaster J, Faugier J, Holding G & Spencer C 1996, 'A turn up for the books', *Health Service Journal*, vol June 20, pp 32-33.
- Leese AM, Wilson JA & Murray AM 1986, 'A survey of the non-attendance rate at the ENT clinic of a district general hospital', *Clinical Otolaryngology*, vol 11, pp 37-40.
- Lloyd M, Bradford C & Webb S 1993, 'Non-attendance at outpatient clinics: is it related to the referral process?', *Family Practice*, vol 102, pp 111-117.
- Lowry RJ, Donaldson LJ & Gregg PJ 1991, 'Variations in clinical decisions: a study of orthopaedic patients', *Public Health*, vol 105, pp 351-355.
- McClure RJ, Newell SJ & Edwards S 1996, 'Patient characteristics affecting attendance at general outpatient clinics', *Archives of Disease in Childhood*, vol 74, no 2, pp 121-124.
- McGlade KJ, Bradley T, Murphy GJJ & Lundy GJJ 1988, 'Referrals to hospital by general practitioners: a study of compliance and communication', *British Medical Journal*, vol 297, pp 1246-1248.
- Majeroni BA, Cowan T, Osborne J & Graham RP 1996, 'Missed appointments and Medicaid managed care', *Archives of Family Medicine*, vol 59, pp 507-511.
- Mann DV 1991, 'Appointment reminders', *British Medical Journal*, vol 303, p 1526.

- Martin AI 1995, 'Risk factors for appointment failures in a geriatric outpatient clinic', *Journal of American Geriatric Society*, vol 43, no 12, pp 1446-1447.
- Mason C 1992, 'Non-attendance at outpatient clinics: a case study' *Journal of Advanced Nursing*, vol 17, pp 554-560.
- Pal B, Taberner D, Readman LP & Jones P 1998, 'Why do outpatients fail to keep their clinic appointments? Results from a survey and recommended remedial actions', *International Journal of Clinical Practice*, vol 526, pp 436-437.
- Penneys NS & Glaser DA 1999, 'The incidence of cancellation and nonattendance at a dermatology clinic', *Journal of the American Academy of Dermatology*, vol 405, pp 714-718.
- Peterson C & Stunkard AJ 1992, 'Cognates of personal control: locus of control self-efficacy and explanatory style', *Applied and Preventative Psychology*, vol 1, pp 111-117.
- Pieper B & DiNardo E 1998, 'Reasons for nonattendance for the treatment of venous ulcers in an inner city clinic', *Journal of Wound Ostomy and Continence Nurses*, vol 25, pp 180-186.
- Potamitis T, Chell PB, Jones HS & Murray PI 1994, 'Non-attendance at ophthalmology outpatient clinics', *Journal of the Royal Society of Medicine*, vol 87, no 10, pp 591-593.
- Roland MO, Porter RW, Redden JF, Simonds GW & Bewley B 1991, 'Improving care: a study of Orthopaedic outpatient referrals', *British Medical Journal*, vol 302, pp 1124-1128.
- Ross AK, Davis WA, Horn G & Williams R 1983, 'General practice Orthopaedic outpatient referrals in North Staffordshire' *British Medical Journal*, vol 287, pp 1439-1441.
- Samanta A, Haider Y & Roffe C 1991, 'An audit of patients attending a general medical follow-up clinic', *Journal of the Royal College of Physicians of London*, vol 251, pp 33-35.
- Sanders G, Craddock C & Wagstaff I 1992, 'Factors influencing default at a hospital colposcopy clinic' *Quality in Health Care*, vol 1, pp 236-240.
- Simmons AV, Atkinson K, Atkinson P & Crosse B 1997, 'Failure of patients to attend a medical outpatient clinic', *Journal of the Royal College of Physicians of London*, vol 311, pp 70-73.
- Stewart IC & McHardy GJR 1984, 'Audit in a chest clinic', *Health Bulletin*, vol 42, pp 45-50.
- Stone CA, Palmer JH, Saxby PJ & Devaraj VS 1999, 'Reducing non-attendance at outpatients clinics', *Journal of the Royal Society of Medicine*, vol 923, pp 114-118.
- Tabachnick BG & Fidell LS 1989, *Using multivariate statistics, 2nd edition*, Harper Collins, New York.
- Turner AG & Cooke H 1991, 'Are patients' attitudes the cause of long waiting lists?', *British Journal of General Practice*, vol 452, pp 97-98.
- Verbov J 1992, 'Why 100 patients failed to keep an outpatient appointment- audit in a dermatology department', *Journal of the Royal Society of Medicine*, vol 855, pp 277-278.
- Weingarten N, Meyer DL & Schneid JA 1997, 'Failed appointments in residency practices: who misses them and what providers are most affected', *The Journal of the American Board of Family Practice*, vol 106 pp 407-411.
- West RR & McKibbin 1982, 'Shortening waiting lists in orthopaedic surgery outpatient clinics'. *British Medical Journal*, vol 28, no 46, pp 728-730.
- Wilkinson MJB 1994, 'Effecting change in frequent non-attenders', *British Journal of General Practice*, vol 44, no 382 p 233.