

Patients' reasons for missing scheduled clinic appointments and their solutions at a major urban-based academic medical center

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ABSTRACT

Objective: Patients that do not show up for scheduled clinic appointments affect the quality of healthcare provided. This study aimed to recognize the reasons behind missing scheduled appointments and understand possible solutions from the patient's perspective.

Method: We included 100 patients that attended the outpatient Medicine clinic in January 2020. Selection criteria were based on missing one or more of the scheduled clinic appointments in the last year. The participants answered a questionnaire to clarify the reasons for missing a scheduled clinic appointment and offer suggestions for a solution. The recruiter, in turn, answered several demographical questions

Results: The study showed a statistically significant difference between the no-show rate in females at 60% compared to males at 40% ($P = 0.0023$). The no show rate was not significantly affected by the day of the week, time of appointment, or the weather. Forgetting about the appointment was the most common cause (36 subjects). Work-related issues were reported in 17 participants, making it the 2nd most common cause. Not notified about the appointment, Lack of transportation, childcare-related issues, along with other reasons, were less likely reported (Table 2). 11 out of 36 (30%) subjects suggested a reminder text message in their preferred language; meanwhile, 4 others suggested a weekend clinic.

Conclusion: The patients should be aware of different appointment reminders options and have the freedom to choose a suitable reminder. Patients should be educated about the importance of calling to cancel the appointment since some of the reasons for no show are unpreventable.

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1. Introduction

Patients that do not attend a scheduled clinic appointment (Termed: No-shows) cause administrative issues to the resident's practice, negatively impact the workflow, and affect the financial status of the facility, continuity of patient care, resident education, and clinic efficiency [1,2].

Previous studies that focused on the reasoning behind missed scheduled appointments suggest a variety of causes, such as forgetting about the appointment, means of transportation, interfering family or work commitment, long waiting time, and failure to understand the scheduling systems [3–5]. Variable interventions were implemented to prevent or limit No-shows, including: reminders via mail, phone call, or physician reminders [6,7]. However, even with the broadly detailed utilization of reminder systems, residency programs continue to have high no-show rates [8].

The literature has explored different reasons for missing clinic appointments [3–5,9]. However, it has not clarified the reasons behind the ongoing missing appointments even after the current interventions

have been established. Furthermore, the literature has not clarified the patient's suggested solutions on how to improve the no show rate [6]. This study was intended to answer two main questions: one, 'What are the patient's reasons for not keeping a scheduled clinic appointment?'; two, 'What are the patient's suggestions to improve the no show rate?'

2. Methods

2.1. Study design

The participants were patients of the Internal Medicine clinic at a major academic medical center. We included participants that missed one or more of the scheduled primary care clinic appointment in the last year. The participants were required to answer a questionnaire regarding the reasons for missing a scheduled clinic appointment, which included questions concerning their suggestions for solutions. All the interviews were conducted in the facility's examination rooms. The Institutional Review Board provided human subjects approval.

3. Subjects

Participants were selected sequentially from the patients attending the Internal Medicine clinic in January 2020. All adults who missed one or more scheduled clinic appointments in the last year were eligible to participate in the study. Each subject was given a full explanation of the research, provided with the freedom of not participating, and given a number. The baseline characteristics of the study population were as follows (Table 1); A total of 100 patients were included in the study, from which 40 patients were males (40%) and 60 were females (60%) with a statistically significant difference ($P = 0.0023$). The mean age of the included subjects was 56 ± 10 and 50 ± 11 years old, respectively ($p = 0.0046$). In terms of demographics, 82% of the included patients were Hispanic, 6% African American, 5% caucasian, 4% Bengali, and 3% Middle Eastern. Of the included individuals, 74% were employed.

4. Instrument

A mixed open and closed-ended questionnaire was used in the study. The questionnaire consisted of two parts. The first part included basic information about the participant, such as age, sex, ethnicity, number of missed appointments in the last year, and the type of missed appointment. The second part consisted of five questions, including the potential reasons for missing the clinic appointment, suggested solutions, the difficulty level in scheduling a clinic appointment, whether the patient was notified about the appointment, and if the same physician examined the patient in the last visit (Figure 1). The hospital provided CYRACOM interpretation services for translation.

5. Data analysis

The data analyses consisted of mean ratings and a description of the questionnaire answers. Demographic information about the participants, the number, the type of the missed clinic appointment, the reasons for the missed appointment, and their suggested solutions were collected and plotted into a Microsoft Excel 2007 (Microsoft Corp., Redmond, WA, USA). At least two team members were present during the interviews and interpreted the data for each patient.

6. Results

Out of 100 patient included in the study, 36 patient reported forgetting about the clinic appointment, 17 subjects reported work-related issues out of 74 total employed subjects, 9 subjects reported not being

Table 1. Baseline characteristics of the 100 included participant.

Age in years (mean \pm SD)	
Female	50 \pm 11
Male	56 \pm 10
	$p = 0.0046$
Gender (n)	
Female	60
Male	40
	$p = 0.0023$
Ethnicity (n)	
Hispanic	82
African American	6
Caucasian	5
Bengali	4
Middle Eastern	3
Employment (n)	
Number of participants with an established job	74

notified about the appointment, 6 subjects reported lack of transportation, 5 subjects reported a problem with the insurance (likely related to a scheduling error), 2 subjects reported feeling better and not needing an appointment, and 2 subjects reported childcare-related issue as a cause for missing the clinic appointments (Table 2) (Figure 2). Twenty-three subjects reported other reasons, such as traveling outside the state (4 subjects), feeling too sick to come (4 subjects), confusion between different clinic appointments (4 subjects), family emergencies (3 subjects), early appointment time (3 subjects), and hospitalization at the time of the appointment (3 subjects). Additionally, 2 subjects reported misreading the appointment date (Table 2) (Figure 3). Out of the 17 subjects that missed clinic appointments due to work, 9 were male and 8 were female, with a mean age of 53 and 47, respectively.

Less than 1/3 of the total number of included subjects offered solutions for the current problem. Out of the 36 subjects who forgot about the clinic appointment, 11 subjects (30%) suggested a reminder text message 1–2 days before the appointment in their preferred language. Four subjects out of the 17 (24%) who had a work-related issue recommended a weekend clinic, and 2 subjects recommended decreasing the waiting time before seeing a physician in order not to miss work.

The following results were also observed: 90% of the patients mentioned that it is not difficult to schedule an appointment, 95% of the patients did not see the same physician from their last visit, 96% had only one missed clinic appointment in the last year, and 94% of the missed appointments were regular follow-up appointments.

Although October and September represented the highest rate of missed clinic appointments (Figure 4), neither the day, timing (morning Vs. afternoon), nor the weather affected the attendance rate. The weekday did not affect the no show rate (Table 3(a, b)). Eighteen patients out of 38 (48%) missed the appointment in the morning, and 20 (52%) patients missed the appointment in the afternoon (No significant difference). The number of no shows on a rainy day, windy/cloudy day,

We are conducting this survey in-order to make your experience better,
Your input will be appreciated.

Patient's study Number: _____

Age: _____ Sex: _____ Ethnicity: Hispanic, African American, Arabic, Bengali, white, Asian, other

The Interviewer will fill this part of the questionnaire:

- When did the patient miss a clinic appointment in the last year?
- What was the type of each missed appointment?
 - New Visit
 - ED follow up visit
 - Regular follow up visit
 - Sick visit

The patient will fill this part of the questionnaire.

We are conducting a study to find out the reason for not showing up for a clinic appointment.

- What is the reason for not being able to come to not one or more of your clinic appointment in the last year? (please specify a reason for each missed appointment)
 - Transportation
 - Work
 - Childcare
 - Forgetting about the appointment
 - Felt better
 - Problem with the insurance
 - Not notified about the appointment
 - Other:
- Is there anything that we can do to solve this problem?
 - No
 - Yes, please explain:
- How difficult is it for you to schedule a clinic appointment?
 - Not difficult - Somehow difficult - Very difficult
- Were you notified about the appointment/s? - yes -No
- Did you see the same doctor last time? - yes -No

Figure 1. The questionnaire (English version).

Table 2. Causes for missing a scheduled clinic appointment.

Causes for missing scheduled clinic appointment	Number of subjects (Total number is 100)
Forgetting about the appointment	36
Work-related issues	17
Not notified about the appointment	9
Transportation	6
Problem with the insurance	5
Childcare	2
Felt better	2
Other causes:	23
• Travel outside the country	4
• Felt sick	4
• Confused between the appointments	4
• Family emergency	3
• Inpatient hospitalization	3
• Appointment too early	2
• Misread the appointment date	2

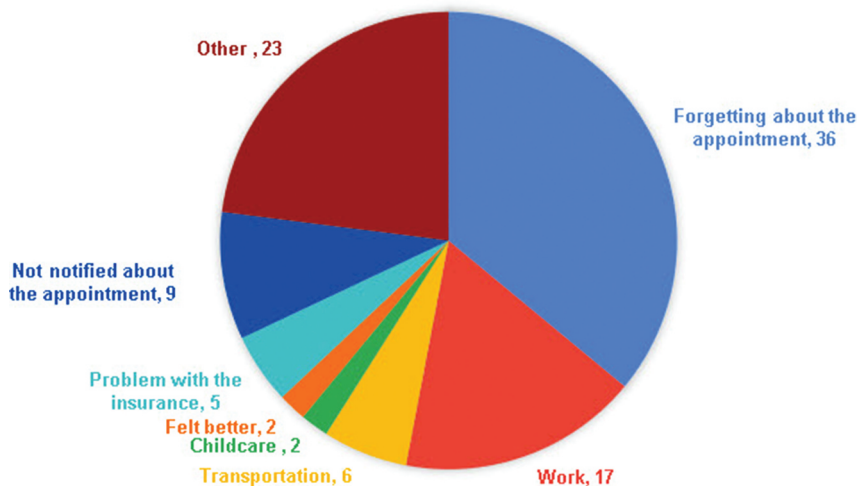


Figure 2. Reasons for missing scheduled clinic appointments.

sunny/cloudy, and hot/sunny day was 8, 11,7, and 12 respectively (Table 3(c)); the difference was not statistically significant ($P = 0.922$, chi-squared test).

7. Discussion

The study showed a statistically significant difference in the no-show rate of 60% in females compared to 40% in males ($P = 0.0023$). The no show rate was not significantly affected by the day of the week, time of appointment, or by the weather ($P = 0.922$, chi-squared test).

Forgetting about clinic appointments was the most common reason (36%) provided for missing scheduled clinic appointments, a reason consistent with other studies [2,3,10]. This is the most common cause despite the structure in the current clinic system, where patients are called initially to schedule the appointments, receive a mailed letter 2 weeks before the appointment, and also get an automatic reminder phone call 2 days before the appointment. Thirty percent of the patients who forgot the scheduled clinic appointments requested to be reminded by SMS in their original language, even though this option was already available. Still, the patients were not aware of it. Consequently, the patients should be aware of the different reminder options and allowed to choose which reminder method works best for them, so as to improve the no show rate. Although the study by Wegrzyniak [11] does not show a statistically significant difference between SMS, phone calls, and E-mail reminders, other literature studies revealed a variable response to different interventions [12,13].

Although the patients were called initially and reminded by a letter two weeks prior to the appointment, giving them enough time to reschedule other commitments [9], 17 subjects reported work-related issues, making it the second most common cause of missing scheduled clinic appointments. Only 4 subjects of those patients who reported work-related issues suggested a weekend clinic as a solution.

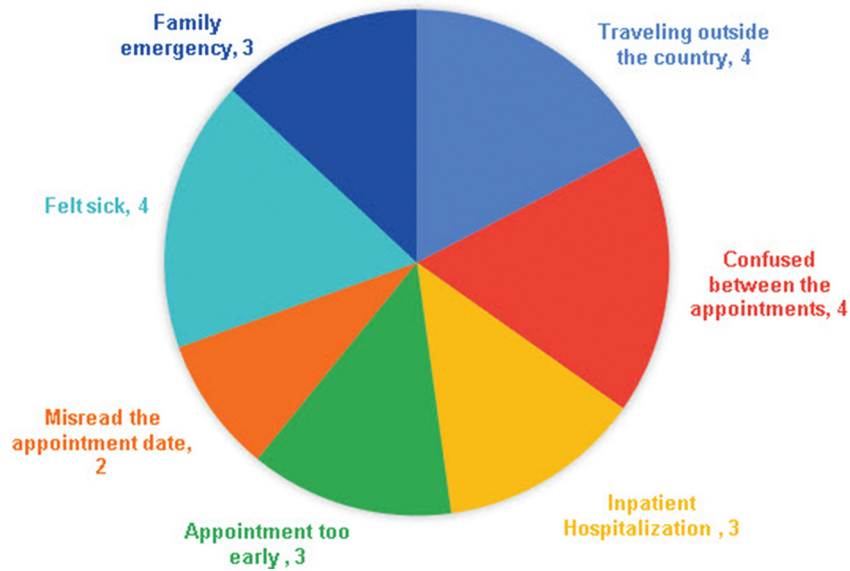


Figure 3. Other causes for missing scheduled clinic appointments.

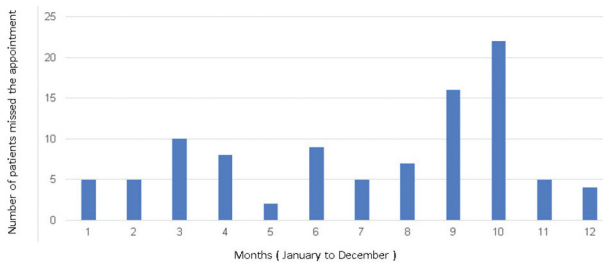


Figure 4. Missed clinic appointment timeline (Months).

However, the cost-effectiveness of this method should be assessed, especially since 74 subjects are employed, and only 17 reported work-related problems (23%).

Transportation barriers continue to be an important obstacle to access healthcare, especially for those with lower incomes [14] as in this population of patients; however, we believe it was less observed in this study

(6%) due to easy access to public transportation around the hospital.

Finally, some of the causes for No-show were unpreventable, such as insurance problems, feeling better or too sick to come, being outside the state, confusion between different clinic appointments, family emergencies, hospitalization at the time of appointment, and misread appointment dates or a belief that the regular follow up appointment was too early. Although certain aspects cannot be controlled, patients should be educated about calling to cancel the appointments and fully engaged in how the system of scheduling and canceling works, as some patients might not fully understand [5]. Patients should also understand how missing an appointment and not canceling on time not only affects their general health but also deepens the gap of inequality, as the appointment time would have been utilized to help someone else.

Table 3. A. Number and rate of no show in september. B. Number and rate of no show in october. C. Number and rate of no show according to the weather in september and october combined.

	Number of no show	Total appointments	No show rate
Monday	5	42	12%
Tuesday	4	43	9%
Wednesday	4	40	10%
Thursday	3	40	7.5%
Total number 16			
	Number of no show	Total appointments	No show rate
Monday	4	39	10%
Tuesday	6	41	15%
Wednesday	5	43	11.6%
Thursday	7	42	16.7%
Total number 22			
	Number of no show	Total appointments	No show rate
Raining	8	73	11%
Windy/cloudy	11	85	13%
Sunny/cloudy	7	58	12%
Hot and sunny	12	120	10%

8. Limitations

First, the small sample size of 100 patients is a great limitation. Secondly, there is recall bias, since the study assessed the missed appointments over the previous year. Thirdly, the study has limited generalizability to the USA health care system due to the majority of the included patients coming from a single ethnicity (Hispanic). Finally, in assessing solutions for improving the system, patients were not offered options, and, thus, some might not have known the possibilities available.

9. Conclusions

The patients should be educated and have the freedom to choose between different clinic reminder options. Since a portion of the reasons behind no show is inevitable, the patients ought to be instructed about the importance of calling to cancel the appointment. Education continues to be the answer to most of our questions.

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Author's contributions

All authors contributed to the study conception and design. Mina Fransawy Alkomos, Dianelys Mendez, Diana Mazzie-Pifano, Carla Rodriguez, Fady Shafeek, and Farisa Ali conducted the interviews. Data collection and analysis were performed by Mina Fransawy Alkomos, Dianelys Mendez. Mina Fransawy Alkomos wrote the first draft of the manuscript, and all authors participated in editing previous versions of the manuscript. All authors revised and approved the final manuscript.

Disclosure statement

No potential conflict of interest was reported by the authors.

Ethical standards

All authors gave their informed consent before their inclusion in the study.

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References

- [1] George A, Rubin G. Non-attendance in general practice: a systematic review and its implications for access to primary health care. *Fam Pract*. 2003;20(2):178–184.
- [2] Kaplan-Lewis E, Percac-Lima S. No-show to primary care appointments. *J Prim Care Community Health*. 2013;4(4):251–255.
- [3] Ullah S, Rajan S, Liu T, et al. Why do patients miss their appointments at primary care clinics? *J Family Med Dis Prev*. 2018;4(3):90–95.
- [4] Sharp DJ, Hamilton W. Non-attendance at general practices and outpatient clinics. Local syst needed address local prob. 2001;323(7321):1081–1082.
- [5] Lacy NL, Paulman A, Reuter MD, et al. Why we don't come: patient perceptions on no-shows. *Ann Fam Med*. 2004;2(6):541–545.
- [6] Macharia WM, Leon G, Rowe BH, et al. An overview of interventions to improve compliance with appointment keeping for medical services. *JAMA*. 1992;267(13):1813–1817.
- [7] Junod Perron N, Dominicé Dao M, Kossovsky MP, et al. Reduction of missed appointments at an urban primary care clinic: a randomised controlled study. *BMC Fam Pract*. 2010;11(1):79.
- [8] Murdock A, Rodgers C, Lindsay H, et al. Why do patients not keep their appointments? Prospective study in a gastroenterology outpatient clinic. *J R Soc Med*. 2002;95(6):284–286.
- [9] Frankel S, Farrow A, West R. Non-attendance or non-invitation? A case-control study of failed outpatient appointments. *BMJ (Clin Res Ed)*. 1989;298(6684):1343–1345.
- [10] Ofei-Dodoo S, Kellerman R, Hartpence C, et al. Why patients miss scheduled outpatient appointments at urban academic residency clinics: a qualitative evaluation. *Kans J Med*. 2019;12(3):57–61.
- [11] Wegrzyniak LM, Hedderly D, Chaudry K, et al. Measuring the effectiveness of patient-chosen reminder methods in a private orthodontic practice. *Angle Orthod*. 2018;88(3):314–318.
- [12] Softwareadvice. 2015. Dental software patient scheduling preferences. Available from: <https://www.softwareadvice.com/dental/industryview/patient-scheduling-report-2015/>.
- [13] Chen Z-W, Fang L-Z, Chen L-Y, et al. Comparison of an SMS text messaging and phone reminder to improve attendance at a health promotion center: A randomized controlled trial. *J Zhejiang Univ SCI B*. 2008;9(1):34–38.
- [14] Syed ST, Gerber BS, Sharp LK. Traveling towards disease: transportation barriers to health care access. *J Community Health*. 2013;38(5):976–993.