

Tackling No-Show Rates in United States Healthcare: Analyzing Demographic Trends and Effective Strategies for Reducing Missed Appointments

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Abstract

This research project investigates the prevalence of no-show rates in United States (U.S.) medical facilities. The focus will be on identifying the demographic groups and factors most likely to miss appointments, as well as exploring successful methods for reducing missed appointments. Missed appointments place a significant burden on healthcare systems, leading to wasted resources, reduced care efficiency, and diminished patient outcomes. By examining existing studies and data on no-show rates, this paper will explore the patient perspective, socioeconomic, racial, and age-related factors contributing to this trend. Additionally, the research will analyze tactics that medical facilities have implemented to reduce no-shows, such as appointment reminders and flexible scheduling. This review of the literature will inform a plan for reducing no-show rates that is unique to the healthcare facilities. This project offers actionable insights that healthcare providers can use to improve patient attendance and overall system efficiency.

Introduction

Missed medical appointments cost the U.S. healthcare system over \$150 billion yearly, with no-show rates in some areas soaring as high as 80% (Artera, 2022). These absences not only cost practices extensive loss in revenue—consuming around 14% of a medical group's revenue—they decrease clinic productivity, preventing patients from accessing timely care, and leading to negative health outcomes (Health, 2024). No-show rates are defined as the percentage of missed appointment time lost because patients don't show up or cancel at the last minute. It can be calculated by dividing the number of no-shows, including cancellations, by the total number of weekly appointments. Previous studies have explored the various reasons patients miss appointments, the demographic factors that contribute to no-show rates, and potential solutions. However, the accuracy and reliability of this research can vary from practice to practice. Yet, due to the vast range of demographic groups, and types of facilities/areas in the United States, not all solutions are effective. This paper aims to study no-show rates in U.S. healthcare facilities to determine how to effectively reduce missed appointments. My research will analyze the common factors, patient perspectives, and demographic trends associated with no-show rates to target specific groups and develop a plan that any healthcare facility can implement to decrease these no-show rates. By addressing this gap, my research will provide more effective solutions and be more accurate for clinics trying to reduce their no-show rates.

Reasons for Missed Appointments

Demographic Factors

Many factors and demographic groups are contributing to the increasing no-show rates, it is important to identify them so we can determine the best solutions to target and decrease the number of missed appointments. Significant patient demographic groups that are influencing

no-show rates are age, race, and new patients. The research determined that the highest no-show rates were present in older patients and child visits (Samuels, 2015). However, further research determined no-show rates decline as patients reach their 70s but then increase as they reach their 80s (Davies et al., 2016). The decline in no-show rates among patients in their 70s may be attributed to increased health awareness and the prioritization of managing emerging health concerns. However, as these individuals progress into their 80s, their rise in no-show rates could be linked to the onset of more severe health issues, reduced mobility, and a decreased willingness to pursue surgery or other intense medical procedures. Another demographic group contributing to increased no-show rates is African Americans (Samuels, 2015). Studies have shown that patients of Black patients tend to have a higher no-show rate than Caucasian patients. Lastly, the most significant demographic group contributing to high no-show rates is new patients; one study determined new patient visits had a no-show rate of 24% (Samuels, 2015). The correlation between new patients and an increase in missed appointments could be due to uncertainties about unfamiliar clinics or treatment environments, whereas existing patients are more likely to attend appointments as they have a better understanding of what to expect and feel more comfortable with the setting. Lee and the authors' research determined there was no significant correlation between gender, appointment time, or month with no-show rates. Socioeconomic factors affecting no-shows include transportation, access to resources, and childcare; both older and younger patients may not be able to drive, as well as individuals in economically poor regions who may struggle to take time off work (Samuels, 2015).

Patient Perspectives

While research has identified several demographic groups that correlate with high no-show rates, studies focused on patients' perspectives and their reasons for missing appointments provide valuable insights. Common reasons patients have stated to miss appointments are the following: they forgot, transportation issues, time off work, miscommunication, scheduling difficulties, personal issues; and appointment age. One of the most significant factors patients mentioned was miscommunication; patients describe this as either feeling disrespected by staff, fear and exigency about procedures, not feeling connected to the staff, and not understanding the need for their appointment (Lacy, 2004). Another factor patients identified as a reason for not showing up is difficulties with the scheduling system; patients identified this as not receiving reminders through their preferred method of communication (phone call, email, text) as well as not understanding how to reschedule or cancel their appointments (Chloe, 2023). Lastly, The research determined a correlation between increased no-show rates with increased appointment age. Appointment age is defined as “the difference between the date of an appointment scheduled and the future pending appointment date,” and many patients have stated appointments booked too far in advance as a reason they missed their appointment (Davies et al., 2016). This may be connected to forgetfulness and patient reminders. When appointments are scheduled too far in advance, they become less of a priority, leading patients to either forget about them or place less importance on attending. Additional research supports this idea that patients stating immediate symptoms or a desire for self-care drive them to schedule or attend their appointments (Lacy et al., 2004).

Clinic No-Show Rates

Although no-show rates have been proven to significantly affect all parts of the healthcare—clinics having an average no-show rate between 18-20%—industry, studies have determined no-show rates vary based on the type of appointment/clinic (Artera, 2022). Healthcare facilities with the highest no-show rates are Pediatrics (30%), Dermatology (30%), Neurology (26%), Oncology (25%), and Sleep clinics (39%) (Health, 2023). Pediatrics having a high no-show rate of 30% can be attributed to my previously stated research that children typically have higher no-show rates compared to those for adults. Healthcare facilities such as Neurology and Oncology also experience high no-show rates, likely due to the nature of the conditions they treat, such as severe brain dysfunction and cancer. This aligns with my previous findings that increased patient anxiety and fear are associated with a lower likelihood of attending scheduled appointments. Lastly, sleep clinic appointments likely have a high no-show rate of 39% because of the “life-altering” implications of a sleep apnea diagnosis. This further reinforces the connection to patient fear and anxiety of receiving unfavorable news or diagnoses can cause individuals to miss their appointments. Overall, healthcare facilities with the lowest no-show rates were facial plastic surgery clinics (12.6%), primary care (19%), and OB/GYN (18%) (Clifford, 2024; Fiorillo et al., 2018). This is likely due to the familiarity and desirability of the services offered in these settings. For example, patients are generally more motivated to attend appointments at plastic surgery and OB/GYN clinics, as these services are often viewed positively rather than with fear, as is the case in other medical specialties. Overall, patients tend to attend more appointments when they actively seek specialized care.

Solutions to Reduce No-Shows

Many solutions have been used to reduce no-show rates such as automated messaging systems, improving patient communication, adjusting scheduling systems, implementing new front desk strategies, and utilizing telehealth. Among these, automated messaging systems are one of the most commonly implemented solutions in healthcare practices. Parikh (2010) studied types of messaging systems and their effect on no-show rates, categorizing the groups as STAFF, AUTO, and NONE. In the STAFF group, a clinic staff member personally called patients to remind them of their appointments; in the AUTO group, patients received automated reminder calls; and in the NONE group received no reminders. The study found that both STAFF and AUTO calls successfully reduced no-show rates and increased appointment cancellations, indicating that automated messaging systems can effectively reduce missed appointments. Other studies suggest expanding on the idea of automated messages and personalizing their approaches to the patients by using the patient's preferred method of contact (e.g., email, text, or phone call), proactively reaching out through text messages, offering digital check-ins through messages, sending multiple messages, and customizing messages (Artera 2022; Chloe, 2023). However, one study determined automated messages as ineffective in reducing no-show rates (Kheirhah et al., 2016). This could be attributed to a narrow application, such as sending a single reminder message without utilizing more strategies like those mentioned above.

Research also recommends improving patient communication as an effective way to reduce no-show rates. Fear and miscommunication can be major factors contributing to missed appointments. One study noted that "up to 31.5% of no-shows occur due to poor provider communication," emphasizing the importance of addressing this issue (Artera, 2022). By

alleviating patient concerns, developing strong relationships with your patients, and providing clear explanations of procedures, healthcare practices can significantly reduce the number of missed appointments (Wpadmin, 2023).

Additionally, adjusting scheduling systems and implementing new strategies for the front desk staff can have a significant impact on no-show rates. Streamlining scheduling processes—such as incorporating digital check-ins and reducing appointment wait times—saves time, minimizes delays, and enhances overall productivity for staff, clients, and patients (Chloe, 2023). Improving the front desk operations can also help reduce no-show rates in practices as well. Strategies such as tracking patients likely to miss appointments, minimizing wait times, overbooking when appropriate, encouraging walk-ins, and maintaining a waiting list for last-minute cancellations can significantly enhance patient experience and reduce missed appointments.

Furthermore, practices should regularly calculate their no-show rates to assess the severity of the issue (Wpadmin, 2023; Davies et al., 2016; Artera, 2022). Practices should also consider having patients confirm appointments at least 48 hours in advance and implementing a practice-patient agreement that requires mandatory deposits for patients who miss three or more appointments (Chloe, 2023). Lastly, due to the COVID-19 pandemic, offices that began to use telehealth, a video call system to meet with your healthcare provider instead of over the phone, had a lower no-show rate than practices that did not (Health, 2023).

Although the research presented various approaches to combat no-show rates in U.S. healthcare facilities, the main conclusion was that the most effective strategy is to implement solutions simultaneously. Rather than relying on a single approach, combining several strategies will maximize a practice's efficiency and significantly decrease the number of missed appointments. The research suggests that implementing a combination of the discussed methods can significantly benefit any medical facility. According to a study by Marbough (2020), "reducing the no-show rate to 5% could increase revenue by nearly \$51.8 million annually across the U.S. healthcare system." This would lead to financial benefits for clinics and improve patient experiences by reducing wait times and providing immediate care.

Solution Plan

U.S. Healthcare facilities are vast and unique meaning no single solution can universally reduce no-show rates across all practices. Each healthcare facility faces its own set of challenges contributing to these rates. This research aims to eliminate the guesswork and potential trial-and-error of choosing solutions that may not be a match for your practice. By providing a step-by-step plan directly for the issues your facility may be experiencing, this research will help identify the most effective strategies to give any healthcare facility the best chance of improving its no-show rates. Thus, increasing practice efficiency and wealth as well as providing faster, more timely care for patients.

Figure 1: 5-Step Plan to Reduce No-Shows

5-STEP PLAN TO REDUCE NO-SHOWS

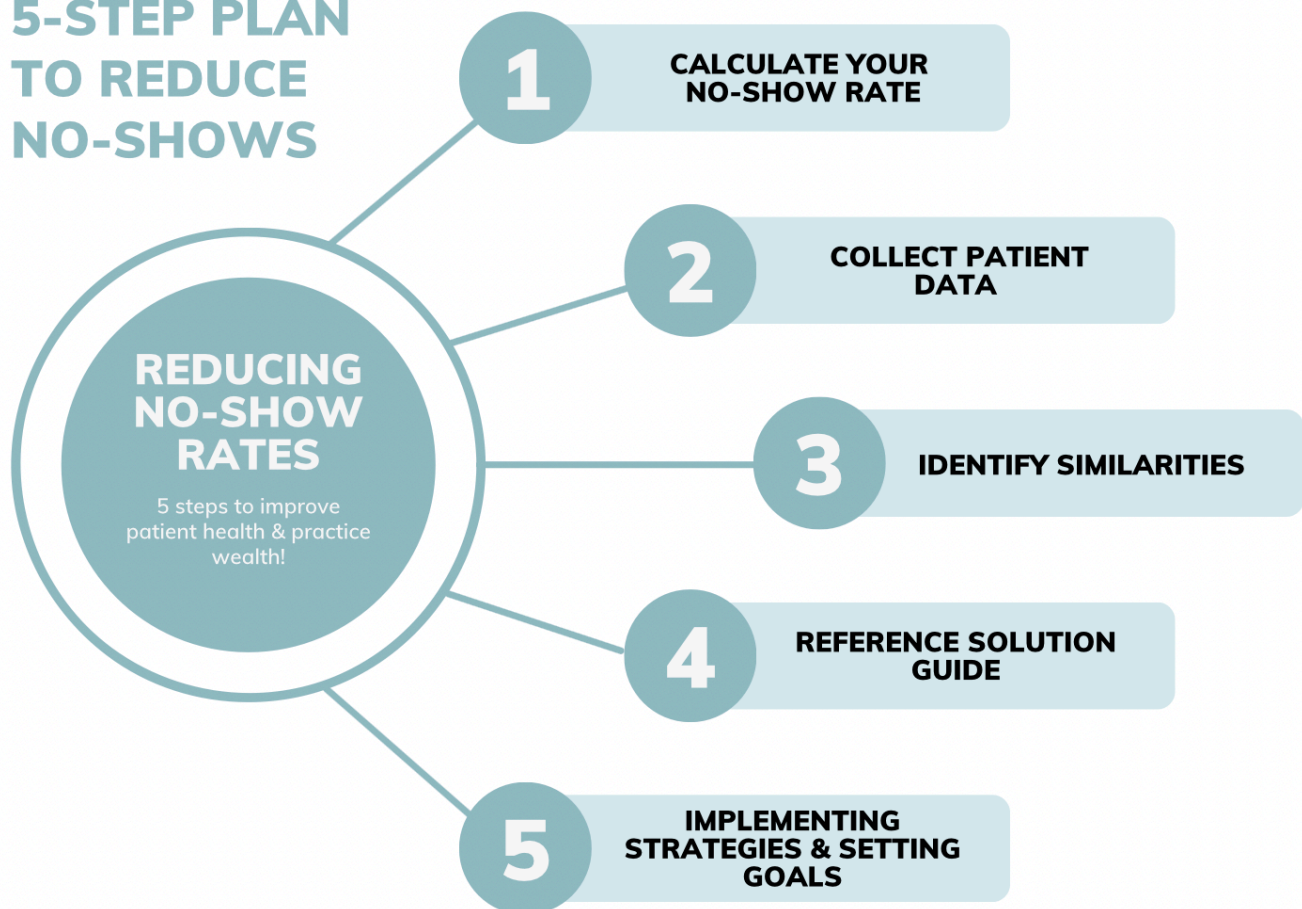
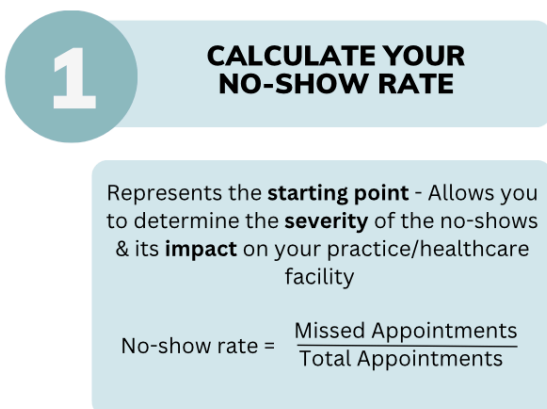


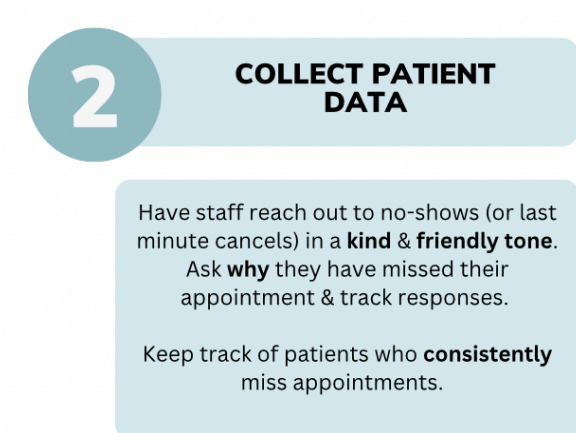
Figure 2: Calculate Your No-show Rate



Before implementing new methods into your practice, it's important to calculate your practice's no-show rate. This step will act as a starting point, allowing you to see the impact no-shows have on your healthcare facility. To calculate the no-show rate, divide the number of

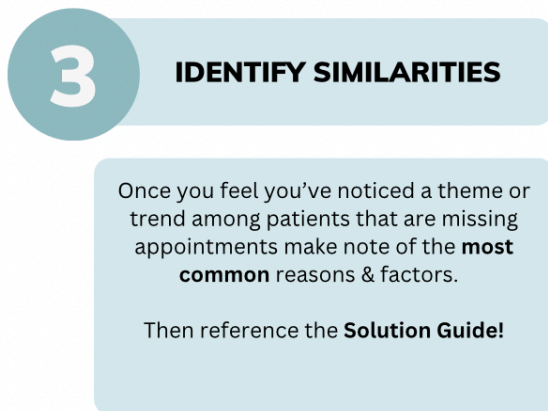
missed appointments by the total weekly, monthly, or yearly appointments. By looking at the differences throughout the months or years you can determine when they are the highest and lowest. The average no-show rate in U.S. healthcare facilities is approximately 17-20%, which can help you assess the severity of the issue in your practice (Kheirkhah et al, 2016; Chloe, 2023). Understanding the current no-show rate is crucial in selecting effective strategies to minimize missed appointments and improve overall patient attendance.

Figure 3: Collect Patient Data



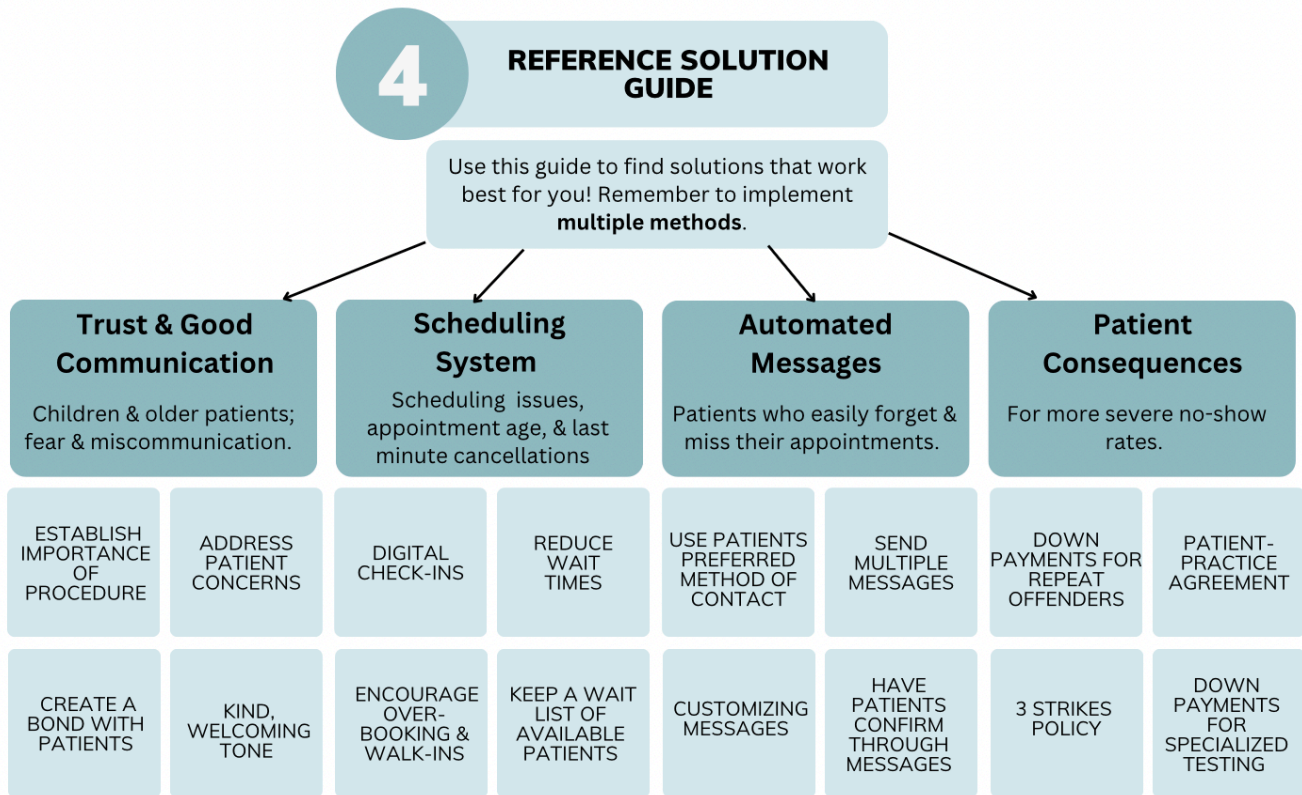
Once you have determined your practice's no-show rate, the next step is to begin gathering data. Instruct the front desk staff to contact patients who miss their appointments or cancellations last minute within 48 hours. They should approach patients in a kind, friendly, and understanding manner when asking why they missed their appointment. The staff should document patient responses along with the patient's provider, appointment day and time, whether the patient was new or existing, the appointment age, patient demographic, and reason for the visit. Keeping track of these factors and the patients contributing to the no-show rates will help you identify any common themes or issues within your practice, providing you with a better understanding of how to address the problem.

Figure 4: Identify Similarities



After gathering enough data, analyze the common reasons and factors contributing to missed appointments among patients in your practice. Look for themes or trends to identify the most common reasons for no-show rates. Then, reference to the solution guide in step 4. Understanding the common reasons for missed appointments will help you choose the most suitable solutions from the solution guide for your practice.

Figure 5: Reference Solution Guide



The purpose of the solution guide is to assist healthcare facilities in preventing the process of trial and error and help them determine the best solution for their practice. It is organized by my top four solutions, the factors they would work best to combat, and the solutions in four light blue boxes below.

One thing that is not mentioned in the demographic above but is useful to note is the correlation between demographic groups and no-show rates. Research has shown that certain demographic groups have higher no-show rates, but there isn't enough research on how to specifically target each group. Additionally, social and financial problems can contribute to why these demographic groups are not showing up for appointments. This means that there is no definite way to ensure that specific demographic groups attend appointments. Instead, a solution would be to establish trust and good communication. Healthcare providers should emphasize the importance of the procedure or appointment to every individual. Additionally, they should invest time in building a deep, trusting relationship with these patients and address any concerns they may have. By doing this, healthcare providers can eliminate one of the common reasons patients miss appointments: miscommunication and fear. This approach would work best for specific demographic groups such as children and older patients, which would be beneficial for clinics specializing in treating these groups, like pediatricians.

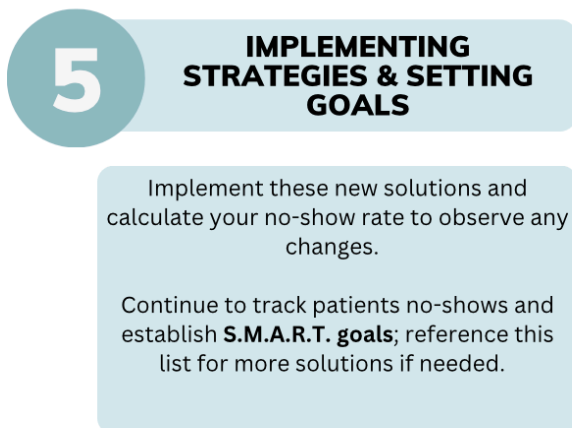
The second solution in the flowchart is updating the practice scheduling system. This is targeted for individuals who claimed missing their appointment due to scheduling issues and an increased appointment age. Scheduling systems can be enhanced by incorporating digital

check-ins, reducing wait times, allowing for overbooking and walk-ins, and maintaining a waitlist of patients ready to fill in for last-minute cancellations. These methods will make it easier for patients to schedule or reschedule appointments when necessary. Additionally, it will allow the practice to provide immediate care to patients in need when a slot becomes available, thereby increasing practice efficiency and revenue.

The third solution mentioned is using automated messages. This is targeted towards patients who easily forget about their appointments and miss appointments frequently. By implementing or adjusting automated messages, you can significantly reduce the number of missed appointments. Ways to improve automated messaging systems include personalizing messages to the patient's preferred method of contact (phone, email, or text), sending multiple messages, customizing the messages to be more personal and important, and finally, having the patients confirm their appointments through messages.

The fourth and final solution is to implement consequences for patients who don't show up for their appointments. This method is best for practices with high no-show rates that need a simple solution to impact all individuals. To do this, you can create a practice-patient agreement to require patients to show up and ask for down payments from patients who frequently miss their appointments or require specialized testing. Another option is to implement a less extreme version, the "3-strikes" policy, where patients are given three chances to improve their behavior, and if they don't, down payments, practice-patient agreements, or finding another provider can be implemented.

Figure 6: Implementing Solutions & Setting Goals



Finally, the last step is to continue with this process. Even though you have implemented new solutions into your practice, it's important to track progress and no-show rates weekly. This will help you see if there is any improvement over time, or if the issue is staying the same or getting worse. If your practice's no-show rate isn't improving, you can refer back to the solution guide to see if there is anything else you should implement. The most important aspect of this

solution guide is to remember that the best results come from practices that implement multiple methods from the ones mentioned above. Additionally, practices should make and implement their own S.M.A.R.T. Goals. This stands for Specific, Measurable, Achievable, Relevant, and Timely. For Specific, practices should find the common factors/reasons why their patients are missing appointments. For Measurable, you would decide whether you'd like to calculate your no-show rate weekly, monthly, or annually. For Achievable you should pick reasonable methods/goals your practice can stick to; decide what is a realistic workload for staff to take on. For Relevant, you should pick solutions that align with the factors contributing to no-show rates in your practice. Lastly, for Timely you should set a realistic timeline and goal to measure your no-show rates. By starting your practice in this way you can see drastic changes in the no-show rate.

Discussion

Existing literature on no-show rates in U.S. healthcare facilities introduces several reasons for missed appointments, such as the influence of demographic factors, patient perspectives, and clinic type. Older patients and new patients have the highest no-show rates, due to age-related issues such as health complications and reduced mobility playing significant roles. African American patients also have higher rates, though the literature lacks information regarding the correlation between missed appointments and race. Another reason is socioeconomic challenges, such as transportation and childcare, which can increase no-show rates among all demographic groups. Current studies on the patient's perspective reveal that forgetfulness, transportation issues, and miscommunication are the most common reasons for missed appointments. Feelings of disrespect or disconnection from staff are factors that, if improved, can decrease no-show rates. Additionally, the studies state that the longer the appointment age, the more likely it is for a patient not to show up, suggesting a need for more immediate scheduling practices. Lastly, clinic type significantly influences no-show rates, with pediatrics and sleep clinics facing the highest rates, most likely due to patients' fears associated with the type of care. However, primary care and cosmetic clinics see lower rates, most likely due to patient comfort and familiarity with services. Solutions like automated messaging systems and improved communication with patients can improve this issue, especially when combined with other methods.

The existing literature provided many useful solutions and reasons as to why no-show rates exist. However, there was a significant lack of peer-reviewed sources that address multiple solutions, research specific demographics and their attendance patterns, the impact of the COVID-19 pandemic on no-show rates, geographic influences on these rates, and the effectiveness of particular solutions. Existing literature provides many useful solutions and reasons as to why no-show rates exist. However, I observed several gaps related to demographic and geographic factors, as well as information regarding the COVID-19 pandemic. For instance, while the literature identifies certain demographic groups that contribute to high no-show rates, there is a lack of research exploring the correlation between specific races and their no-show behaviors, along with strategies for improvement. Moreover, while some evidence suggests that geographic factors play a role in no-show rates, there is not enough data differentiating between urban, rural, and impoverished areas and their impacts on missed appointments. Conducting more extensive studies across various regions and states in the U.S.

would be valuable. This research could help identify location-specific factors influencing patient behavior and inform targeted strategies to reduce high no-show rates. Another gap in the current literature is the lack of peer-reviewed sources evaluating the effectiveness of various proposed solutions. Future studies should focus on testing these solutions in diverse healthcare settings to validate their effectiveness. While my research identified patient preferences for communication methods—such as phone calls, text messages, or emails—additional research would be beneficial to determine which method is most effective in reducing no-show rates. Examining whether communication preferences correlate with patient age could provide deeper insights for utilizing appointment reminders. Lastly, one of the most notable gaps I found in this research project is the lack of recent sources, particularly regarding the impact of the COVID-19 pandemic. The pandemic has likely worsened no-show rates by introducing new factors that challenge attendance, which may not be reflected in existing studies. Most literature published after 2020 consists of either non-peer-reviewed sources or relies on data collected before the pandemic.

The current literature has significant implications for healthcare practices. By identifying the many factors contributing to no-show rates, my research developed a 5-step plan that healthcare facilities can adopt to address the causes of missed appointments, how to combat them, and how to track them. This plan enhances operational efficiency and allows practices to find specific solutions, thereby reducing trial and error. The flexible nature of these strategies means they can be adapted across various healthcare settings, helping future practices that would like to improve their no-show rates.

Future research should aim to address the gaps identified in this study. By studying the racial and geographical correlation to no-show rates we can propose more solutions and therefore decrease the amount of missed appointments in clinics. Additionally, more research on the impact of COVID-19 on clinics' no-show rates, comparing rates before and after the pandemic, is essential because it can give us insights into the severity of the issue today. Lastly, improving research by incorporating larger, more diverse sample sizes can increase the reliability and relevance of future findings. By focusing on these areas, researchers can develop more effective strategies for improving patient attendance in medical facilities; therefore increasing practice revenue and patients' accessibility to care.

Conclusion

In conclusion, my research investigated no-show rates in U.S. healthcare facilities by analyzing the common factors, demographic trends, and solutions associated with no-show rates. My findings revealed a range of strategies for improving no-show rates, emphasizing that implementing multiple solutions yields the best results. I formulated a 5-step plan that any practice can implement to reduce its no-show rate effectively. Improving attendance not only enhances revenue for healthcare practices but also significantly increases patient access to timely care, ultimately promoting better health outcomes. These findings address a significant issue in the healthcare industry as they impact both healthcare providers and patients. The strategies identified in my research can be replicated and expanded upon by conducting further research on the effectiveness of each strategy. As the healthcare industry continues to evolve,



my work highlights the importance of implementing targeted solutions to enhance patient engagement and accessibility.

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