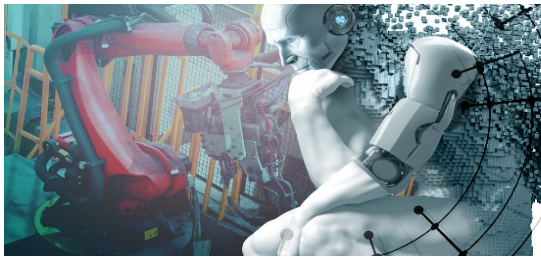

De 11 a 14 - NOVEMBRO DE 2024
Inteligência Artificial na Gestão de Operações: Limitações e possibilidades
XXXI SIMPEP
www.simpep.feb.unesp.br

FACTORS ASSOCIATED WITH NO-SHOW BEHAVIOR IN MEDICAL APPOINTMENTS USING LOGISTIC REGRESSION ANALYSIS

LUIS MARCANTH - luis.marcanth@gmail.com
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO – COPPEAD/UFRJ

CLAUDIA ARAUJO – claraujo@coppead.ufrj.br
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO – COPPEAD/UFRJ

ÁREA: *1. ENGENHARIA DE OPERAÇÕES E PROCESSOS DA PRODUÇÃO*
SUBÁREA: *1.1 - GESTÃO DE SISTEMAS DE PRODUÇÃO E OPERAÇÕES*

PALAVRAS-CHAVES: *NO-SHOW, MEDICAL APPOINTMENT, LOGISTIC REGRESSION*

1. INTRODUCTION

The phenomenon of no-shows in medical appointments leads to significant negative impacts on patients, healthcare providers, and medical service quality. No-show behavior has been associated with higher costs (MACHARIA et al., 1992; WEINGER et al., 2005; BERG et al., 2013) and reduced revenue (WEINGARTEN; MEYER; SCHNEID, 1997; BERG et al., 2013) in medical care. Also, no-shows in medical appointments have also been repeatedly associated with a decrease in medical care quality (HIXON; CHAPMAN; NUOVO, 1999; GONZÁLEZ-ARÉVALO et al., 2009; HUANG, 2012). Various efforts are currently being made to understand the no-show phenomenon and mitigate its harmful effects, but academic research regarding this issue is still incipient, as much of the literature is still very far away from reaching consensus or from having a broad understanding of both the phenomenon and its possible countermeasures. Therefore, the main objectives of the study are: (1) to identify factors associated with no-show behavior in medical appointments, and (2) to suggest strategies for reducing no-show rates.

2. METHOD

The authors applied logistic regression analysis to investigate data from medical appointments across five specialties (Dermatology, Gynecology, Neurology, Endocrinology, and Pediatrics) at four clinics located in Brazil over one year. Variables were categorized into patient-related (age, gender, health insurance type, etc.) and appointment-related (lead time, time of day, day of the week, etc.) factors.

3. RESULTS

Regarding the factors associated with no-show behavior in medical appointment, this study revealed that *older patients* are less likely to miss appointments, *longer lead times* between scheduling and the appointment date increase the likelihood of no-shows, *patients with a history of previous no-shows* are more likely to miss future appointments, *appointments scheduled later in the day* have higher no-show rates. In turn, *gender* and *type of health insurance* did not show a clear correlation with no-show behavior.

In terms of strategies for reducing no-show rates, it can be suggested: (1) Dynamic **Overbooking Systems**: Implementing dynamic overbooking systems can help mitigate the

impact of no-shows. This involves scheduling more patients than available slots, based on the predicted probability of no-shows. (2) **Optimized Scheduling**: Schedule high-risk patients (those with higher probabilities of no-show) at times less critical for the clinic's operations. This helps in managing the clinic's workflow more efficiently and reduces the impact of missed appointments. (3) **Reminder Systems**: Utilize reminder systems to encourage patients to attend their appointments (e.g., phone calls, SMS reminders). (4) **Targeted Interventions**: Develop targeted interventions based on patient profiles (e.g., strategies can be tailored to specific demographics or patient behaviors identified as being at higher risk of no-shows). (5) **Short Booking Window**: Implement a "short booking window" policy, which allows patients to schedule appointments only a few days in advance. This can help reduce the likelihood of patients forgetting or deprioritizing their appointments. (6) **Urgent Care Policy**: Introduce an "urgent care" policy that allows for the scheduling of urgent appointments on top of an already full schedule. This policy assumes some scheduled patients will not show up, allowing for better utilization of resources. (7) **Patient Education**: Educate patients on the importance of attending their appointments and the negative impacts of no-shows on their health and the healthcare system. Increased awareness can lead to better adherence to scheduled appointments.

4. CONCLUSIONS

By understanding the factors associated with no-shows, healthcare providers can better manage appointment schedules and implement strategies to reduce the negative impacts of no-shows. This study provides insights and practical suggestions that can help improve the efficiency and quality of healthcare services.

REFERENCES

BERG, B. P. et al. Estimating the Cost of No-Shows and Evaluating the Effects of Mitigation Strategies. **Medical Decision Making**, v. 33, n. 8, p. 976-985, nov. 2013.

GONZÁLEZ-ARÉVALO, A. et al. Causes for cancellation of elective surgical procedures in a Spanish general hospital, **Anaesthesia**, v.64, p. 487-493, 2009.

HIXON A. L.; CHAPMAN R. W.; NUOVO J. Failure to keep clinic appointments: implications for residency education and productivity. **Fam Med**, v.31, n. 9, p. 627-630, 1999.

HUANG, Y. L. Dynamic overbooking scheduling system to improve patient access. **Journal of the Operational Research Society**, v. 63, n. 6, p. 810-820, jun. 2012.

MACHARIA, W. M. et al. An overview of interventions to improve compliance with appointment keeping for medical services. **JAMA**, v. 267, n. 13, p. 1813-1817, 1992.

WEINGARTEN, N.; MEYER, D. L.; SCHNEID, J.A. Failed appointments in residency practices: who misses them and what providers are most affected? **J Am Board Fam Pract**, v. 10, n. 6, p. 407-411, 1997.

WEINGER, K. et al. Psychological characteristics of frequent short-notice cancellers of diabetes medical and education appointments, **Diabetes Care**, v. 28, n.7, p. 1791-1793, jul. 2005.

APÊNDICE A - Instruções Complementares

Os anexos ou apêndices devem estar localizados no final do resumo expandido e identificados por letras maiúsculas consecutivas, travessão e pelos seus títulos correspondentes. Eles devem ser citados no corpo do texto.

Novamente advertindo que o arquivo em formato .DOCX ou .DOC não deve exceder 5 (cinco) páginas, e não deve conter as informações dos autores, sendo que estes dados devem estar apenas no arquivo .PDF.