

A Comparative Study of Clinical Trial Recruitment Strategies: Pre-COVID-19 vs. COVID-19 Era

Saba Siddiqui^{*1}, Ravi M D², Shalini N¹, Joseph Richards³

^{*1}Department of Health System Management Studies, JSS Academy of Higher Education & Research, Mysuru, India

²Chief Convenor Centre for Clinical Research Excellence, Mysuru, India

³California State University, California, USA

ARTICLE INFO

Article History:

Accepted : 26 May 2025

Published: 03 June 2025

Publication Issue :

Volume 12, Issue 3

May-June-2025

Page Number :

1007-1011

ABSTRACT

This study investigates the transformation of clinical trial recruitment strategies due to the COVID-19 pandemic. Participant recruitment is a persistent challenge in clinical trials, and the pandemic introduced unprecedented disruptions, necessitating changes to traditional methods. An anonymous online survey was conducted from February to December 2024 with 70 physicians (Principal Investigators, Sub-Investigators, or Clinical Research Coordinators) experienced in clinical trials both before and during COVID-19. The survey assessed recruitment practices across five domains: in-person visits, healthcare provider referrals, physical advertisements, online platforms, and virtual advertisements. Data were analyzed using a chi-square test. Results indicated a significant shift in recruitment practices during the pandemic. There was a notable decrease in in-person recruitment efforts (48.5% pre-COVID vs. 28.5% COVID) and referrals from healthcare providers (41.4% pre-COVID vs. 31.4% COVID). Conversely, the use of online platforms (11.4% pre-COVID vs. 20.0% COVID) and virtual advertisements (5.7% pre-COVID vs. 12.8% COVID) increased. Advertisements in physical locations remained unchanged (15.7%). The chi-square analysis confirmed a statistically significant difference between pre-pandemic and pandemic-era recruitment methods ($\chi^2 = 10.805$, d.f. = 4, p value = 0.02884).

The study concludes that the COVID-19 pandemic significantly altered clinical trial recruitment strategies, with a marked move from traditional in-person methods to digital approaches like online platforms and virtual advertisements. These adaptations addressed logistical challenges and highlighted the potential for more efficient and inclusive participant engagement, underscoring the need for ongoing innovation in

recruitment, particularly through technology.

Keywords: Covid-19, Pre-Covid, Recruitment, Clinical Trials

I. INTRODUCTION

Participant recruitment remains one of the most persistent and complex challenges in the conduct of clinical trials[1]. The development and implementation of evidence-based recruitment strategies are therefore critical to enhancing enrollment efficiency and advancing the broader objectives of health research[2]. It is estimated that only about 50% of randomized trials meet their recruitment goals. Traditional methods of recruiting individuals for community-based trials include physician referrals, local media, and other community outreach attempts. Many of these studies relied on social ties and community connections, including well-positioned community-based organizations, for successful recruitment.

All of this changed in March 2020 when the COVID-19 pandemic became widespread in the United States. Across the country, in-person businesses, educational settings, and parks and recreation facilities were closed. Although stay at home orders were lifted in many states by May 2020, there have been many lingering social and behavioral effects of the pandemic. The pandemic changed how people interact socially, how comfortable they are gathering in groups, polarized people's trust in research and science, and changed movement patterns (e.g., working or studying remotely). However, the pandemic also opened more time for some, shifted focus and values, and increased abilities to use new technologies (i.e., Zoom). These likely had implications for where, how, and the ease of

recruitment for research in public health studies during this time.

Several papers across a variety of disciplines describe the impact of COVID-19 lockdowns on recruitment and enrollment into trials and interventions in Spring 2020, and report that initially, enrollment of new participants was halted or continued at reduced rates[3],[4]

The objective of this study was to examine whether participant recruitment strategies employed prior to the COVID-19 pandemic differed significantly from those utilized during the pandemic. We hypothesized that the recruitment strategies adopted during the COVID-19 period would demonstrate notable deviations from pre-pandemic approaches, reflecting adaptations to pandemic-related constraints and evolving research priorities.

II. METHODS

An anonymous online survey was conducted between February 2024 through December 2024. The survey platform used was Qualtricsxm. The survey was emailed to over 600 physicians, with approximately 92 responding. Of those, 70 had experience with clinical trials both before and during the COVID-19 pandemic, thus meeting the eligibility criteria to complete the full survey. The average time required to complete the survey was approximately 20 minutes. Among these 70 participants, 61 served as Investigators, either as Principal Investigators or Sub-Investigators, while the remaining 9 were Clinical Research Coordinators.

The majority of respondents reported experience across multiple therapeutic areas. Specifically, 18 had experience in Metabolism and Endocrinology, 14 in Infectious Diseases and Vaccinology, 8 in Respiriology, 7 in Cardiology, and 5 each in Central Nervous System/Neurology and Immunology. Additionally, 4 respondents had experience in Gastroenterology; 3 each in Rheumatology and Oncology; 2 each in Orthopedics and Psychiatry; and 1 each in Hematology and Urology.

The survey instrument was structured in two distinct sections: (a) participant recruitment practices prior to the COVID-19 pandemic and (b) recruitment strategies employed during the COVID-19 pandemic. The survey was designed to evaluate recruitment strategies across five key domains: (1) in-person visits, (2) referrals from healthcare providers, (3) advertisements in physical settings such as hospitals or clinics, (4) utilization of online platforms, and (5) deployment of virtual advertisements. These domains were selected based on their prevalence in the literature as commonly employed methods for participant recruitment in clinical research.

The collected data were subjected to statistical analysis using the chi-square test to assess differences in recruitment approaches across the two time periods.

III.RESULTS

Fig. 1 summarizes the recruitment strategies utilized and visually depicts the survey findings, revealing a marked shift in recruitment practices during the COVID-19 pandemic. The figure illustrates a reduction in in-person recruitment efforts alongside a notable increase in the use of online and virtual advertisements. This transition reflects a broader movement toward digital engagement, driven by the constraints imposed by public health measures during the pandemic.

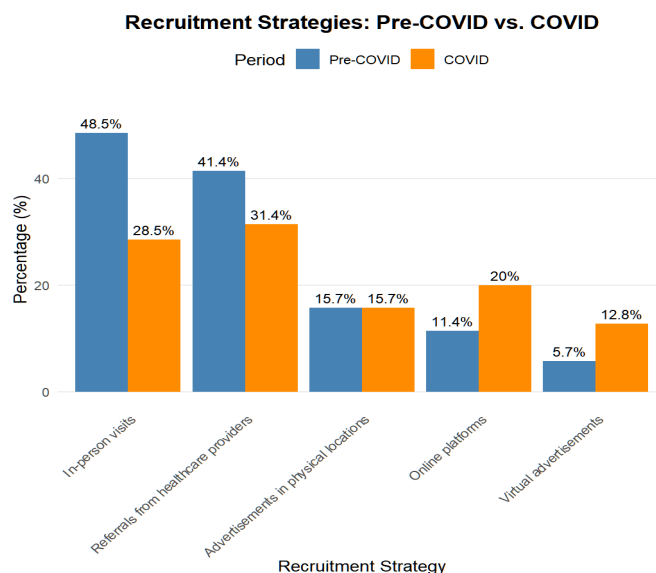


Figure 1: visually depicts a shift in recruitment strategies during the COVID-19 pandemic, marked by a decline in in-person methods and a rise in online and virtual advertisements.

To further investigate these patterns, a Chi-square test was conducted to assess the statistical significance of differences in recruitment strategies across the two time periods. The analysis provides evidence of meaningful variation in recruitment approaches before and during the COVID-19 pandemic. Table 1 presents the relative percentages of various recruitment strategies employed prior to the pandemic and during the Covid pandemic timeframes. A Chi square test was conducted to test the difference in recruitment strategies between the two timeframes. The test result (Chi-square = 10.805, d.f. = 4, p-value = .02884) showed significant statistical difference at .05 significant level. This means that the pre-Covid recruitment strategy differs from the Covid period, and the differences are unlikely to be due to random chance. In conclusion, we have statistical evidence to support the pre Covid recruitment strategy is different from Covid recruitment strategy.

Table 1: Comparison of Recruitment Strategies Pre-COVID vs. During COVID

Recruitment Strategy Category	Pre-COVID (%)*	During COVID (%)*
In-person visits	34 (48.5%)	20 (28.5%)
Referrals from healthcare providers	29 (41.4%)	22 (31.4%)
Advertisements in physical locations (e.g., hospitals, clinics)	11 (15.7%)	11 (15.7%)
Online platforms	8 (11.4%)	14 (20.0%)
Virtual advertisements	4 (5.7%)	9 (12.8%)

Note: Percentages are based on the 70 respondents who had experience with clinical trials both prior to and during the COVID-19 pandemic.

IV. DISCUSSION

The findings of this study highlight a significant shift in clinical trial recruitment strategies as a result of the COVID-19 pandemic. Survey respondents reported that recruitment efforts in 2022 were perceived as more challenging compared to the pre-pandemic period. This increased difficulty can be attributed to the disruption of traditional recruitment methods, particularly those dependent on face-to-face interactions in clinical settings such as hospitals and outpatient clinics. Public health restrictions, including limitations on travel and in-person gatherings, directly impeded the feasibility of these approaches.

Despite these constraints, many investigators continued to utilize in-person recruitment and referrals from healthcare providers, reliance on these approaches declined. Instead, digital strategies such as social media outreach, targeted emails, and online platforms gained prominence, offering safer and more adaptable alternatives.

In recent years, social media has become an increasingly popular tool for survey recruitment, a trend that accelerated during the COVID-19 pandemic when traditional methods, such as in-person recruitment, became less practical. Social media offers a cost-effective way to reach diverse populations across geographic regions. Recruitment campaigns on these platforms vary by study but often include visual elements, relevant keywords, and brief descriptions of the study's purpose. These materials

are typically customized to appeal to the target population [5],[6].

These results highlight the increasing necessity for recruitment models that are efficient, scalable, and technology-enabled. As clinical settings face mounting operational pressures, digital approaches present a viable solution to broaden participant access, enhance diversity, and improve trial efficiency.

V. CONCLUSION

This study provides empirical evidence of a significant shift in clinical trial recruitment strategies during the COVID-19 pandemic. The chi-square analysis revealed a statistically significant difference between pre-pandemic (expected) and pandemic-era (observed) recruitment methods ($\chi^2 = 10.805$, d.f. = 4, p value = 0.02884), indicating that the changes observed are unlikely to be due to chance.

Traditional recruitment approaches, particularly those reliant on in-person interactions, were substantially disrupted by public health restrictions. In response, investigators increasingly adopted digital strategies such as online platforms, social media outreach, and virtual advertisements. These adaptations not only addressed immediate logistical challenges but also demonstrated potential for broader, more inclusive, and efficient participant engagement.

The findings underscore the need for continued innovation in recruitment practices, particularly in leveraging technology to enhance trial accessibility and resilience. Future research should further evaluate

the effectiveness, equity, and sustainability of these emerging methods to inform best practices in clinical trial design and implementation.

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