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Lack of Medical Staff and Outpatient Clinic Performance During the Pandemic

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Abstract
Background: The Pandemics has severely impacted the healthcare sector, particularly outpatient clinics, which faced challenges in managing staff shortages while maintaining service delivery. Healthcare organizations, including small and medium-sized outpatient clinics, had to quickly adapt to pandemic-related demands, such as PANDEMIC testing, while managing a decline in non-urgent care. Staff management and resource allocation became particularly difficult during this period.
Methods: This study employed a multiple case study methodology to explore the impact of the Pandemics on the allocation of medical staff and clinic performance. The sample consisted of five outpatient clinics, including one medium-sized clinic actively involved in PANDEMIC -related services and four small clinics that continued regular operations.
Results: The study revealed contrasting approaches to the pandemic's challenges. Case 1, the clinic involved in pandemic-related services, saw a 39% increase in sales . The clinic's financial performance improved despite initial staffing challenges, including reluctance among some staff members to transition to new roles. In contrast, Case 2, which suspended most of its operations, saw a decline in revenue and profitability, despite receiving public financial support.
Conclusion: The pandemic underscored the critical role of staff allocation and flexible operational strategies in maintaining clinic performance. Clinics that adapted to the pandemic by diversifying services saw significant revenue increases, while those that limited operations faced financial difficulties. The findings highlight the importance of strategic workforce management and the potential benefits of diversifying services in responding to healthcare crises.

Introduction

The Pandemics has unleashed a profound global health and economic crisis, significantly disrupting the competitive landscape for many organizations (1,2). Companies worldwide have reported reduced sales (2,5), operational challenges (6), and increased difficulty in securing financial resources (7). Additionally, researchers have observed a rise in business closures and bankruptcies during this period (8). To mitigate these adverse effects, governments in numerous countries introduced various forms of public subsidies (9,10,11). Despite the widespread challenges, some businesses managed to enhance their performance by viewing the pandemic as an opportunity for transformation

(12). Scholars suggest that balancing strategic cost reductions with targeted investments yielding consistent returns can help businesses thrive under such conditions (13,14). Furthermore, companies that had already embraced advanced technologies demonstrated greater resilience to the crisis (15).

Similar to other sectors, the healthcare industry faced unprecedented challenges during the pandemic. Healthcare facilities implemented a variety of infection prevention and control (IPC) measures, which included acquiring personal protective equipment, improving hygiene protocols, and making infrastructure adjustments such as installing HEPA filtration systems, exhaust fans, and hand hygiene stations. In some cases, long-term solutions, such as enhanced ventilation systems and sustainable water and sanitation infrastructure, were also adopted (16). Hospitals expanded their intensive care units and adjusted operations to manage increased patient loads while safeguarding healthcare workers. Primary care providers modified their practices to minimize infection risks, utilizing additional protective equipment and adapting waiting areas to maintain physical distancing. Many facilities also undertook new responsibilities, such as conducting PANDEMIC testing (9,17). Additionally, the pandemic spurred rapid growth in telemedicine, which was adopted not only by large healthcare organizations but also by smaller clinics (18,19,20).

The healthcare sector was uniquely impacted by the pandemic in two conflicting ways. While the demand for PANDEMIC -related treatments surged, overwhelming acute care and infectious disease units, the demand for non-urgent medical services, such as dermatology and dentistry, significantly declined as patients deferred care. This duality suggests that some segments of the healthcare industry experienced similar revenue losses to other non-healthcare businesses, whereas others saw unexpected revenue growth. Meeting the demand for pandemic-related care required additional facilities, equipment, and staff, with staff management proving particularly challenging. Reallocating healthcare personnel across different specialties, while feasible, posed significant difficulties. Notably, healthcare staff shortages—defined here as the inability to hire sufficient personnel at prevailing market wages to achieve optimal staffing levels—were already a critical issue before the pandemic and are believed to have worsened during the crisis (21,22,23,24,25).

This study aims to examine the efficiency of healthcare staff allocation and the performance of small and medium-sized outpatient clinics during the Pandemics . To achieve this goal, a multiple case study methodology was used, incorporating in-depth interviews, administrative document reviews, and financial performance analysis over a three-year period from January 2019 to December 2021. The focus on small and medium-sized enterprises (SMEs) stems from several reasons. SMEs are more vulnerable to economic disruptions (26), possess fewer resources than larger organizations (27), and exhibit greater flexibility in responding to environmental threats and opportunities (28). Additionally, as SMEs represent around 95% of businesses globally, they play a critical role in national economies (29). This research contributes to understanding the decision-making processes and financial outcomes of outpatient clinics that faced declining services and were not directly involved in frontline pandemic care.

Materials and Methods

To investigate the impact of the pandemics on small and medium-sized outpatient clinics, along with changes in the allocation of medical personnel, this study utilized a multiple case study methodology. This approach is widely recognized for its effectiveness in examining intricate, real-world phenomena where limited theoretical frameworks or prior research exist (30). The inclusion of multiple cases allowed for comparisons between clinics that were heavily involved in pandemic-related healthcare activities and those that maintained their pre-pandemic service scope, enabling a deeper understanding of the pandemic's effects on these contrasting scenarios. Furthermore, adopting a multiple-case design enhances the reliability and robustness of findings (31, 32).

2.1. Sample

A purposive sampling strategy was employed (33) to select clinics that demonstrated distinct approaches to managing the pandemic. The first group consisted of one medium-sized outpatient clinic , while the second group included four small outpatient clinics that continued their regular operations without involvement in pandemic-specific activities. Given that most clinics did not participate in PANDEMIC -related activities, the first group had a single representative, while the second group comprised multiple clinics. Selection criteria included: (1) substantial experience in the healthcare industry; (2) small or medium organizational size; (3) operational history exceeding 10 years; and (4) a workforce of more than 10 employees, including at least 5 medical doctors. Clinics with fewer than 10 employees or less than 10 years of operational history were excluded to ensure the study focused on organizations with complex management structures unaffected by early-stage business challenges.

2.2. Case Descriptions

A summary of the key attributes of the five selected cases

Case 1:

This medium-sized clinic actively participated in several PANDEMIC -related activities, including testing, vaccinations, and dental care for infected patients. Before the pandemic, its primary focus was on dentistry, general

healthcare, and specialty services. Its annual revenue had grown by approximately 20% in the five years preceding the study. The clinic had also recently added mobile dental services to its offerings, targeting school-aged children.

Case 2:

Similar in scope to Case 1, this clinic provided primary care, dentistry, and specialized medical services. However, it did not engage in pandemic-related healthcare. The clinic employed a range of professionals, including general practitioners, dentists, and support staff, and was managed by one individual with minimal input from co-owners.

Case 3:

Specializing primarily in prosthodontics and dental surgery, this clinic was renowned for high-quality services delivered by expert practitioners. General dentistry contributed the least to its revenue. The organization did not undertake any pandemic-specific activities.

Case 4:

This clinic focused on dental surgery and specialized in advanced implantology. It was managed by its sole shareholder, who also served as the principal dental surgeon. The clinic introduced cutting-edge implants to its portfolio shortly before the pandemic but did not participate in any pandemic-related healthcare initiatives.

Case 5:

This dental clinic primarily provided general dentistry services, with 50% of its revenue funded by the National Health Fund. The clinic served both adults and children and offered limited specialized services. Managed by a relatively inexperienced professional, it received little oversight from its shareholder, who was more focused on other ventures. No pandemic-specific activities were undertaken.

2.3. Data Collection

2.3.1. In-Depth Interviews

Interviews were used as the primary method for collecting qualitative data, given their proven utility in exploring novel and complex research areas (34, 35). structured interviews were deemed unsuitable. Instead, in-depth interviews were conducted to facilitate open-ended discussions guided by the respondents' insights and experiences (36). The interviewer prepared extensively by reviewing publicly available information about each case prior to conducting interviews, as preparation is critical for ensuring meaningful and thorough data collection (37).

The interviews were conducted on-site or at administrative offices. Informed consent was obtained from all participants. Two rounds of interviews were carried out.

2.3.2. Financial and Non-Financial Documents

Financial records, converted from the local currency to euros using a consistent exchange rate , were analyzed to minimize the influence of currency fluctuations. Data included revenues from healthcare services, costs associated with medical personnel, and other operational expenses. Inflation rates for the study period were also reviewed. Additionally, administrative documents and healthcare industry presentations provided further context for each case.

2.4. Data Analysis

Data from in-depth interviews, financial records, and administrative documents were triangulated to enhance the validity of the findings (38, 39). Horizontal analysis was employed to examine changes in financial performance. Key financial metrics analyzed included revenue (from various services), medical personnel costs, and operational expenses. Percentage changes over the study period were calculated to identify trends.

The insights from the interviews were cross-referenced with financial and administrative data to corroborate patterns and strengthen the study's conclusions, following methods established in previous research (40).

Results

3.1 Case 1

Case 1 opted to leverage the business opportunities created by the pandemic within the healthcare sector. All six interview participants confirmed a significant shift in the clinic's focus from its usual services, primarily dentistry and general healthcare, to PANDEMIC -specific operations. Early in the pandemic, Case 1 received modest public financial support, including a partial loan under an anti-crisis program valued . Despite this aid, the assistance was insufficient to offset losses entirely.

The strategy and business development manager remarked that at the pandemic's onset, it became apparent that pivoting to PANDEMIC -related services was essential to avoid extensive staff layoffs. A sharp drop in patient visits and staff reluctance to work within clinic facilities underscored this necessity. In the first three months, authorities encouraged outpatient clinics to initiate pandemic-related services, such as testing and emergency dental care for quarantined individuals. Due to widespread fear of infection, competition for government healthcare contracts was minimal, enabling Case 1 to secure agreements relatively easily.

Case 1 adapted quickly, redirecting personnel, including nurses and dental hygienists, to tasks like PCR testing. External support from laboratory partners played a crucial role in facilitating this transition, including staff training

and resource provision. Enhanced hygiene protocols and adequate protective equipment enabled selected dentists to provide services to quarantined patients.

However, this strategy was not universally accepted among staff. Some employees, including a regional manager, departed due to differing views on the new approach. The company encountered challenges persuading certain staff members to engage in these activities. For example, a dentist initially unwilling to work revealed underlying health conditions that precluded participation. Despite these difficulties, some staff members willingly adapted to the new roles, viewing infection risk as part of their professional responsibilities.

The focus on pandemic-related services led to a 39% increase in sales .these services constituted 70% of total revenue, generating significant profits due to high margins on PANDEMIC testing and specialized dental care. These earnings were reinvested in acquiring three dental clinics and upgrading existing facilities through renovations and new medical equipment.

3.2 Case 2

Case 2 adopted a contrasting approach to the pandemic compared to Case 1. The clinic suspended its dental and specialist services when public fear of infection was at its peak. The clinic primarily relied on telemedicine for general healthcare services throughout the pandemic.

The manager cited two primary reasons for this decision: the scarcity of medical professionals and the clinic's aging workforce, which included a significant proportion of employees over 60 years old. Concern for their safety led the management to prioritize staff well-being over patient care. Although the manager acknowledged the clinic's responsibility to treat infected patients despite the risks, the decision to cease services was influenced by the potential health implications for older employees.

The clinic lost patients to competitors who remained operational during the pandemic.

3.3 Case 3

Case 3 invested in leased medical equipment, anticipating an increase in revenue. However, the pandemic significantly disrupted operations. During spring , the clinic limited its services to urgent care for patients experiencing pain. One shareholder noted that, given their personal health concerns, they prioritized safety over business interests.

The clinic did not explore pandemic-related opportunities, as the shareholders believed that the risks associated with dental procedures, such as aerosolized saliva, were too high.

Amid personal financial constraints, the shareholders sold the clinic to a larger healthcare provider by the end of 2020, marking the end of the business.

3.4 Case 4

Case 4 primarily focuses on high-margin dental implants and surgical services. In the clinic chose not to engage in pandemic-related activities, asserting that such services were outside their scope of expertise. The shareholders accepted the financial setbacks caused by this decision, as the clinic's specialized services faced minimal regional competition.

The management expressed confidence that their established reputation would ensure patient retention despite the temporary suspension of services. As anticipated, patients postponed procedures until the clinic resumed operations.

Discussion

The Pandemics had a profound effect on global economies, causing widespread economic downturns in most nations [2,5]. Numerous companies experienced significant reductions in revenue and profits [5], and some were forced into insolvency [8]. Various studies have highlighted large-scale job losses across multiple sectors as a result of the pandemic [41]. Researchers have identified three primary factors contributing to the economic deterioration during this period. Firstly, government-imposed restrictions, such as lockdowns, quarantines, and the suspension of events and office operations, led to reduced service provision, manufacturing, and consumer spending. Secondly, the uncertainty surrounding the pandemic's progression caused a marked decrease in consumer expenditures [2,42]. Lastly, shifts in consumer behavior and priorities further suppressed spending levels [43].

While many businesses experienced significant declines, some adapted to the challenges by identifying opportunities within the pandemic's unique circumstances. Previous studies suggest that companies able to demonstrate innovation, adaptability, and resilience succeeded in mitigating the negative effects of the pandemic [31,44]. In addition, effective leadership played a pivotal role in facilitating swift and successful transformations during this period [1,45].

This study analyzed the performance of five small to medium-sized outpatient clinics not specializing in infectious diseases during the pandemic (2019–2021). Among these clinics, four reported a sharp decline in performance in 2020, the first year of the pandemic. The only clinic to improve its results, identified as Case 1, modified its business model to address pandemic-related demands. The four clinics that did not adjust their business models significantly reduced their service provision, citing reasons similar to those in other industries—lockdowns, quarantine measures,

and concerns about employee safety. This approach resulted in poor financial outcomes, including the closure of one clinic. These findings are consistent with other studies documenting widespread financial difficulties among businesses during the pandemic [2,5].

In contrast, Case 1 adopted a proactive approach by offering PANDEMIC -related services, including testing, vaccinations, and specialized dental care for infected individuals. Implementing these services required substantial effort, including establishing new safety protocols, securing adequate testing supplies, and addressing employee concerns about potential exposure. The agility and strong leadership demonstrated by Case 1 allowed it to expand its operations and improve financial outcomes. These findings align with research suggesting that the pandemic presented both challenges and opportunities for agile businesses capable of adapting to the circumstances [12,13,14].

The issue of healthcare workforce shortages has been widely discussed in the literature, with many studies identifying this problem as pervasive [21,22,23]. During the pandemic, the additional burden of patient care exacerbated these shortages [24]. This study examined staffing allocations in small and medium-sized outpatient clinics during the pandemic, focusing on staff performance and the utilization of available resources.

Before the pandemic, all five clinics reported workforce shortages. During the pandemic's first year, four clinics reduced their operations and did not engage in pandemic-related tasks due to fears of infection among staff and patients. The study identified three categories of medical personnel based on their responses to the pandemic. The first group comprised staff unwilling to work during the pandemic, often due to personal financial stability or health vulnerabilities. The second group included individuals who volunteered to work in pandemic-related roles, such as hospitals or clinics dealing with PANDEMIC cases. This group primarily consisted of general practitioners and nurses. The third group involved staff willing to contribute but lacking the necessary expertise in infectious diseases. This group included professionals such as dentists, hygienists, radiology technicians, and physiotherapists, who could potentially be redeployed to pandemic-related roles with adequate training and support.

The findings highlight an untapped resource within the healthcare workforce. If additional training, incentives, or government initiatives had been provided, more staff could have been mobilized to address the pandemic. These results reinforce existing literature on workforce shortages during the pandemic [24] while adding new insights into the potential for reallocating medical staff in future crises.

To mitigate the economic challenges posed by the pandemic, many governments implemented public aid programs to support businesses and individuals. The primary objectives of these initiatives were to offset income losses and preserve employment. Public aid measures varied widely across countries, industries, and business sizes, and included non-refundable grants, loan guarantees, tax relief, and deferred payment deadlines [10].

In the healthcare sector, governments focused on compensating providers for lost revenue due to reduced activity and funding pandemic-related services, including PANDEMIC testing and enhanced hygiene measures [9,17]. The need for robust and flexible payment systems to ensure access to quality care during future pandemics has been widely emphasized [9].

In this study, all five clinics received public aid under a national program offering subsidies. Despite significant profits during the pandemic, Case 1 qualified for aid due to its increased staffing levels. Case 2 benefited from a subsidy that improved its financial position, though it could have contributed more significantly to pandemic-related services. Case 3’s subsidy was insufficient to prevent its closure. Case 4 declined public aid, relying on its financial reserves to weather the pandemic. Case 5 received aid but did not explore opportunities to shift its services to meet pandemic demands. These findings suggest that public aid was not always effectively allocated, with varying outcomes among the clinics studied. The results support previous claims that public aid programs may distort economic systems [11] and highlight the need for policymakers to improve the resilience of payment systems in future crises.

Conclusions

The Pandemics has caused severe disruptions not only to public health but also to global economies. While much research has focused on the effects of the pandemic across various sectors, the healthcare industry, particularly during the pandemic, has not been sufficiently explored in the literature. The healthcare sector presents an intriguing case, as it was simultaneously impacted in two contrasting ways. On one hand, certain medical specialties such as infectious diseases, internal medicine, and diagnostics were overwhelmed, while on the other, fields like dentistry and dermatology, especially in smaller outpatient clinics, experienced a sharp decline in patient demand. The aim of this study was to assess the allocation of medical personnel and the performance of smaller healthcare clinics during the pandemic. The findings show that many small and medium-sized outpatient clinics, despite facing significant declines in service delivery and resulting financial setbacks, did not transition into PANDEMIC care roles. Additionally, a significant number of healthcare workers, although not specialized in infectious diseases, were available to contribute their expertise but were largely underutilized. It was also found that four out of five cases showed minimal proactive involvement in addressing the pandemic and instead relied on donations, much like other

non-healthcare sectors. Looking forward to future health crises, we suggest establishing a dedicated public support system for the healthcare industry, designed to facilitate the redeployment of medical personnel from less affected sectors to those in urgent need of assistance.

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