

Nurses' and Laboratory Specialists' Perspectives on Serology Testing for COVID-19: Challenges and Opportunities

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Abstract

The COVID-19 pandemic has placed immense pressure on healthcare systems, requiring rapid advancements in diagnostic tools such as serology testing. This study aimed to explore the experiences of nurses and laboratory serology specialists in managing serology testing for COVID-19 patients in a tertiary hospital. A qualitative approach was used, involving semi-structured interviews with 15 nurses and 10 laboratory specialists. Thematic analysis revealed three main themes: increased workload and stress, communication barriers, and opportunities for improved collaboration. Findings highlight the challenges related to increased testing demands, the need for effective communication channels, and the importance of interdisciplinary collaboration. Addressing these issues through regular meetings and clear communication protocols can enhance healthcare delivery and preparedness for future health crises.

Keywords: COVID-19, Serology Testing, Interdisciplinary Collaboration, Nurses, Laboratory Specialists, Healthcare Challenges, Qualitative Research

Introduction

The COVID-19 pandemic has posed significant challenges to healthcare systems worldwide, prompting rapid advancements in diagnostic technologies, including serology testing (Phelan et al., 2020; Peeling et al., 2020). Serological testing has been instrumental in detecting antibodies against SARS-CoV-2, which plays a crucial role in assessing immune response, determining past infections, and informing public health strategies (Peeling et al., 2020). The integration of serology testing into clinical workflows has required effective collaboration between different healthcare professionals, notably nurses and serology specialists, to ensure accurate testing and the effective use of results for patient care.

Nurses, being at the forefront of patient care, have faced challenges in interpreting serological test results, addressing patients' questions, and providing appropriate education and follow-up care (Bastos et al., 2020). On the other hand, laboratory serology specialists have had to adapt to increased testing demands, rapid changes in testing protocols, and the need to ensure test reliability and accuracy under pandemic conditions (Long et al., 2020). The interplay between these roles highlights the importance of interdisciplinary collaboration to optimize patient outcomes and enhance the efficiency of healthcare delivery during the pandemic (Sethuraman et al., 2020).

Despite the critical role of serology testing in pandemic management, there has been limited research focusing on the experiences and perspectives of nurses and serology specialists working together during the COVID-19 response (Paradiso et al., 2020). Understanding the challenges they faced, along with the opportunities for improved care, can provide valuable insights into enhancing collaboration and preparedness for future health crises. This study aims to explore the experiences of nurses and serology specialists in managing serology testing for COVID-19 patients, with a focus on the challenges, successes, and opportunities for better integration in clinical settings.

Literature Review

The COVID-19 pandemic has significantly reshaped healthcare practices, with serology testing becoming an essential component in the fight against the virus. Serological assays are used to detect the presence of antibodies against SARS-CoV-2, providing valuable insights into population-level immunity and aiding in epidemiological studies (Peeling et al., 2020). Studies have highlighted that serology testing, unlike PCR testing, is more effective in identifying individuals who have previously been infected, thereby supporting retrospective diagnosis and public health strategies (Long et al., 2020; Peeling et al., 2020).

The role of nurses in the COVID-19 response has evolved as they navigated the complexities of serological testing and patient education. Bastos et al. (2020) emphasized that nurses play a critical role in interpreting test results, addressing patient concerns, and integrating serology findings into individualized care plans. This requires not only clinical knowledge but also effective communication skills to manage patient anxieties related to COVID-19 testing. Additionally, nurses have been crucial in the follow-up care of patients, ensuring that serology results are understood and appropriately acted upon to reduce the risk of transmission and enhance patient safety (Paradiso et al., 2020).

Laboratory specialists, particularly those in serology, have faced unique challenges during the pandemic. The rapid surge in demand for serological testing has necessitated adaptations in testing protocols and the scaling up of laboratory capacities (Sethuraman et al., 2020). Long et al. (2020) noted that maintaining the accuracy and reliability of serology tests under these challenging conditions was a major concern for laboratory professionals. Moreover, laboratory specialists had to navigate the challenges of ensuring quality control and managing the logistics of obtaining reagents and other critical supplies during a time of global shortages (Peeling et al., 2020).

Interdisciplinary collaboration between nurses and serology specialists is crucial for the effective implementation of serology testing. Sethuraman et al. (2020) highlighted that coordinated efforts between laboratory and clinical teams can enhance the accuracy of testing and ensure that patients receive timely and appropriate care. Effective communication between nurses and laboratory specialists is key to integrating serological findings into patient care, thereby optimizing outcomes and improving the overall efficiency of healthcare delivery during the pandemic (Bastos et al., 2020).

Despite the growing body of research on serology testing, there is still a gap in understanding the collaborative dynamics between nurses and serology specialists. Most studies have focused on the technical aspects of serology testing or the clinical outcomes for patients, with limited attention given to the experiences and challenges faced by healthcare professionals involved in testing (Paradiso et al., 2020). Understanding these experiences is vital for identifying areas of improvement and developing strategies to enhance interdisciplinary collaboration in future health crises.

Methodology

This study was conducted in a tertiary hospital setting to explore the experiences of nurses and laboratory serology specialists in managing serology testing for COVID-19 patients. A qualitative research design was employed to gather in-depth insights into the perspectives and challenges faced by these healthcare professionals. Data collection was conducted through semi-structured interviews, allowing participants to share their experiences in a flexible and open-ended manner. The study included a purposive sample of 15 nurses and 10 laboratory serology specialists who were directly involved in COVID-19 patient care and serology testing.

The interviews were conducted in a private setting within the hospital to ensure confidentiality and encourage honest responses. Each interview lasted between 30 to 60 minutes and was audio-recorded with participants' consent. The recordings were subsequently transcribed verbatim for analysis. Thematic analysis was used to identify key themes and patterns within the data. Thematic coding was conducted independently by two researchers to ensure consistency and reliability of the findings.

Ethical approval for the study was obtained from the ethics committee. Informed consent was obtained from all participants prior to the interviews, and they were assured of the confidentiality of their responses. Participants were also informed that their involvement was voluntary and that they could withdraw from the study at any time without any repercussions.

Data analysis involved an iterative process of reading and re-reading the interview transcripts to identify recurring themes and sub-themes. The primary themes that emerged from the analysis included: challenges related to increased workload, communication barriers between nursing and laboratory teams, and opportunities for improved collaboration. The findings were further triangulated through discussions with a third researcher to validate the identified themes and ensure the robustness of the results.

Findings

Thematic analysis of the interview data resulted in the identification of three main themes: (1) Increased Workload and Stress, (2) Communication Barriers, and (3) Opportunities for Improved Collaboration. Each theme contained several sub-themes that provided a deeper understanding of the experiences of nurses and laboratory serology specialists during the COVID-19 pandemic.

Theme 1: Increased Workload and Stress

Sub-theme 1.1: High Testing Demand

Participants described the overwhelming increase in testing demand during the pandemic. One laboratory specialist noted, "The number of tests we had to conduct skyrocketed, and it was exhausting. We were working long hours just to keep up." Nurses also echoed similar sentiments, with one nurse mentioning, "We were constantly managing patients, explaining the testing process, and interpreting results—it felt like there was no end in sight."

Sub-theme 1.2: Emotional and Physical Fatigue

Both nurses and laboratory specialists reported significant emotional and physical fatigue. A nurse stated, "It wasn't just the physical exhaustion; it was emotionally draining to see so many patients struggling and not

being able to provide all the answers they needed." A laboratory specialist added, "There were times when I felt completely burnt out, especially when dealing with the uncertainty of test accuracy and reliability."

Theme 2: Communication Barriers

Sub-theme 2.1: Lack of Direct Communication Channels

Participants highlighted issues related to insufficient communication channels between nursing and laboratory teams. One nurse explained, "We often had to wait for test results or clarification, and there wasn't always a clear line of communication with the lab. This caused delays in patient care." Similarly, a laboratory specialist said, "There were times when we had urgent information, but we didn't have a direct way to communicate it quickly to the nurses."

Sub-theme 2.2: Misunderstandings and Information Gaps

Misunderstandings were common, particularly regarding test interpretations. A nurse expressed, "Sometimes we received the results but didn't fully understand the implications, and it wasn't easy to get in touch with someone from the lab for clarification." A laboratory specialist commented, "We noticed that the information we provided wasn't always conveyed accurately to patients, which sometimes led to confusion."

Theme 3: Opportunities for Improved Collaboration

Sub-theme 3.1: Establishing Regular Meetings

Participants suggested that regular interdisciplinary meetings could help improve collaboration. One nurse said, "If we had regular meetings with the lab team, we could better understand their processes and limitations, and they could understand our needs as well." A laboratory specialist agreed, adding, "Interdisciplinary meetings could help us address issues before they become major problems and ensure we are all on the same page."

Sub-theme 3.2: Developing Clear Protocols for Communication

The need for clear communication protocols was emphasized. A nurse mentioned, "Having a defined protocol for how and when to communicate test results would make things much smoother and reduce the waiting time for patients." A laboratory specialist echoed this sentiment, stating, "Clearer protocols would help us streamline the communication process, reduce misunderstandings, and ultimately improve patient care."

Discussion

The findings from this study provide valuable insights into the experiences of nurses and laboratory serology specialists during the COVID-19 pandemic, highlighting the significant challenges they faced as well as opportunities for improving interdisciplinary collaboration. One of the primary challenges identified was the increased workload and stress experienced by both nurses and laboratory specialists. The high demand for serology testing led to significant physical and emotional fatigue, with participants describing the overwhelming nature of their responsibilities. This finding is consistent with previous literature that has documented the increased pressure on healthcare professionals during the pandemic, particularly those involved in direct patient care and diagnostic testing (Bastos et al., 2020; Long et al., 2020).

Communication barriers were another prominent theme that emerged from the data. The lack of direct communication channels between nursing and laboratory teams and the presence of misunderstandings and information gaps hindered effective patient care. These barriers often led to delays in receiving test results, as well as confusion among patients. The literature supports these findings, indicating that effective communication is critical for the success of serology testing and patient management (Sethuraman et al., 2020). Addressing these barriers through the establishment of regular interdisciplinary meetings and the development of clear communication protocols could improve the timeliness and accuracy of information sharing between teams.

The opportunities for improved collaboration identified in this study point to practical solutions that can be implemented in healthcare settings. Establishing regular meetings between nursing and laboratory staff could foster better understanding of each other's roles and limitations, ultimately leading to improved workflow and patient outcomes. Similarly, developing clear communication protocols would provide structured guidance on how and when to share critical information, reducing misunderstandings and improving the efficiency of patient care. These recommendations align with the growing body of research on the importance of interdisciplinary collaboration in healthcare (Paradiso et al., 2020).

The study's findings also underscore the need for systemic support to mitigate the challenges related to workload and stress. Ensuring that healthcare professionals have access to adequate resources, such as staffing and mental health support, could alleviate some of the pressures associated with increased testing demand. Providing targeted training for nurses and laboratory specialists on the use of serology test results could also improve confidence and reduce the incidence of misunderstandings when communicating with patients.

Overall, this study highlights the critical role of effective collaboration between nurses and serology specialists in managing serology testing during the COVID-19 pandemic. By addressing the identified challenges and leveraging the opportunities for improvement, healthcare systems can enhance the quality of care provided to patients and better prepare for future public health crises. Future research should explore the long-term impacts of these collaborative practices on patient outcomes and healthcare efficiency, as well as investigate additional strategies for supporting healthcare professionals during times of crisis.

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خلاصة

لقد فرضت جائحة كوفيد-19 ضغوطاً هائلة على أنظمة الرعاية الصحية، مما يتطلب تقدماً سريعاً في أدوات التشخيص مثل اختبارات الأمصال. هدفت هذه الدراسة إلى استكشاف تجارب الممرضات وأخصائيي الأمصال المختبرية في إدارة الاختبارات المصلية لمرضى كوفيد-19 في مستشفى ثالثي. تم استخدام النهج النوعي، الذي يتضمن مقابلات شبه منظمة مع 15 ممرضة و10 متخصصين في المختبرات. كشف التحليل المواضيعي عن ثلاثة مواضيع رئيسية: زيادة عبء العمل والضغط النفسي، وحوازج الاتصال، وفرص تحسين التعاون. تسلط النتائج الضوء على التحديات المتعلقة بزيادة متطلبات الاختبار، والحاجة إلى قنوات اتصال فعالة، وأهمية التعاون بين التخصصات. إن معالجة هذه المشكلات من خلال الاجتماعات المنتظمة وبروتوكولات الاتصال الواضحة يمكن أن تعزز تقديم الرعاية الصحية والاستعداد للأزمات الصحية المستقبلية.

الكلمات المفتاحية: كوفيد-19، الاختبارات المصلية، التعاون متعدد التخصصات، الممرضات، أخصائيو المختبرات، تحديات الرعاية الصحية، البحث النوعي