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Attitudes and Practices of Standard Precautions among Healthcare Workers: A Critical Evaluation

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ABSTRACT: Standard precautions (SPs) are essential infection control measures designed to protect healthcare workers (HCWs) and patients from healthcare-associated infections (HAIs). This study critically evaluates the attitudes and practices of HCWs towards SPs, identifying key factors influencing compliance, barriers, and facilitators. A review of qualitative and quantitative studies reveals that while most HCWs acknowledge the importance of SPs, adherence remains inconsistent due to factors such as knowledge gaps, resource limitations, workload pressures, and institutional culture. The study highlights the need for continuous professional education, stronger policy enforcement, and improved workplace conditions to enhance SP compliance. Recommendations include targeted training, enhanced leadership support, and systematic monitoring to foster a safety-oriented healthcare environment. Strengthening adherence to SPs is crucial for reducing HAIs and improving patient safety outcomes.

I. INTRODUCTION

Healthcare workers (HCWs) play a crucial role in the prevention and control of healthcare-associated infections (HAIs), which are considered an important indicator of patient safety and quality of healthcare (Zhang et al., 2024). Standard precautions (SPs) have been introduced to protect HCWs and patients (Sartelli et al., 2024). Observational studies are commonly used to evaluate HCWs' practices, although understanding the attitudes and perceptions of HCWs is also important to offer tailored interventions (Angelozzi et al., 2021). However, little is known regarding how HCWs in high-income countries perceive SPs (Alotaibi et al., 2022). This essay aims to critically evaluate the qualitative and quantitative studies that have assessed HCWs' attitudes and practices regarding SPs, reasons for non-compliance with SPs, and their descriptions of how SPs occur and appear (Zhang et al., 2024). The quality of the articles will be appraised based on a critical appraisal tool appropriate for each research design. The applicability of the results will be discussed in terms of practice, policy, and research in a high-income country setting (Angelozzi et al., 2021).

Patients have a right to feel safe when receiving care so that the care does not cause avoidable harm (Sartelli et al., 2024). This duty of care includes an obligation to adhere to best practice guidelines wherever these exist (Alotaibi et al., 2022). Fourteen qualitative and eight quantitative studies were critically appraised, explicitly aiming to determine how HCWs perceive SPs and related practices in various healthcare settings (Zhang et al., 2024). In total, six general factors influencing HCWs' compliance with SPs were identified, including knowledge, level of risk, perceived severity of the condition, belief in personal effectiveness, the presence of cues to action, and individual disbelief in or inadequacies of SPs (Angelozzi et al., 2021). Given that a lack of compliance with SPs and/or HCWs' attitudes and beliefs directly relates to HCWs' perception of what is safe for them, it is clear that this literature has implications for both practice and policy (Sartelli et al., 2024). Suppression of presenteeism behaviour is valuable and needs to be encouraged (Alotaibi et al., 2022). In order to bring about evidence-based interventions, future directions towards a system that values and respects HCWs need to be established through rigorous research (Zhang et al., 2024). We are concerned with this critical review's current state of the art (Angelozzi et al., 2021).

1.1 Background and Rationale

Standard precaution is an updated concept of the original universal/standard precautions first recommended in the mid-1980s, grounded on high-quality patient care delivery and patient and healthcare worker safety (Al-Faouri et al., 2021).

The standard precautions comprise a significant cornerstone in infection control programs, which could be upgraded or modified with the evolution of scientific and epidemiological knowledge on emerging and re-emerging infections (Lim et al.). Universal/standard precautions have undergone a series of evolutions and paradigm shifts since their inception (Alhumaid et al., 2021). Healthcare patient safety and infection control programs have been forcefully advocating adherence to universal/standard precautions and discontinuing the disease-specific isolation system used by hospital epidemiologists in the 1990s based on prevailing clinical evidence (Al-Faouri et al., 2021). In recent years, the growing public attention and unprecedented concern about patient safety have turned the spotlight toward the need to protect and support healthcare workers (Lim et al.). Moreover, healthcare workers often do not comply with standard precautions, a crucial component of quality patient care delivery (Alhumaid et al., 2021).

Ascending incidences of healthcare-associated infections, particularly nosocomial bloodborne infections by pathogens such as human immunodeficiency virus (HIV) and hepatitis B virus (HBV), pose significant psycho-emotional trauma in the public health domain (Al-Faouri et al., 2021). This has necessitated the emphasis on adherence to universal precautions when handling patient body fluids, secretions, and suspected infectious body substances, regardless of the patient's infectious status (Lim et al.). Among various emerging challenges, occupational exposure remains one of the most important concerns for healthcare workers (Alhumaid et al., 2021). Additionally, there are gaps in the knowledge and practice of standard precautions. Despite continued advocacy, many healthcare workers still exhibit non-adherence to standard precautions (Al-Faouri et al., 2021). Therefore, continuous formal health education and appropriate implementation of standard precautions are needed to mitigate the impact of non-adherence, particularly in HIV/AIDS prevention and control strategies (Lim et al.). The current literature indicates a gap in standard precaution knowledge or practice, possibly due to a lack of awareness training or forgetfulness (Alhumaid et al., 2021). However, there was no significant relationship between attitude and adherence to standard precautions in the literature reviewed, suggesting that although healthcare workers maintain a positive attitude, their actual adherence to standard precautions remains inconsistent (Al-Faouri et al., 2021).

II. STANDARD PRECAUTIONS IN HEALTHCARE SETTINGS

In healthcare settings, standard precautions are basic measures that should be applied to all patients regardless of their diagnosis or presumed infectious state (Al-Faouri et al., 2021). Standard precautions can be further divided into three basic principles: hand hygiene, use of personal protective equipment (PPE), and safe handling of sharp medical devices, as well as the prevention of mucocutaneous contact and the use of protective textiles and medical waste (Mulat et al., 2022). In addition to standard precautions, transmission-based precautions are applied to patients based on infection factors that can spread in different ways, including air and droplets, respiratory droplets, and close contact (Lim et al.). For example, cases of acute cholera and other infections require standard precautions, protective goggles, and masks, especially when coughing (Wong et al., 2021). When healthcare workers and other caregivers visit or work directly with patients, exposure to body fluids is no longer negotiable. Therefore, prevention methods must be implemented (Al-Faouri et al., 2021).

Hand hygiene before and after contacting patients is a key preventive measure to reduce cross-contamination acquired in the healthcare system (Mulat et al., 2022). Proper hand washing effectively reduces the number and distribution of microscopic infectious agents found in most body fluids and secretions (Lim et al.). In addition to hand washing, personal protective equipment can enhance infection prevention in professional practice (Wong et al., 2021). Caregivers and healthcare workers have a responsibility to ensure that any material that comes into contact with human flesh, blood, or other bodily fluids is removed, disposed of, cleaned, treated, or destroyed according to its disposal risk, such as the transport of potential viruses (Al-Faouri et al., 2021). Proper disposal of hazardous materials is a legal requirement in healthcare settings (Mulat et al., 2022). Moreover, routine preventive actions, such as using protective clothing and masks, are part of the ethical responsibility of nursing care professionals and healthcare workers, who must prevent themselves and their patients from acquiring infections (Lim et al.). Therefore, healthcare management must provide adequate opportunities for access to portable transmission prevention equipment (Wong et al., 2021). To ensure compliance, the necessary processes to implement precautions should be aligned with legal resources and orientation centres (Al-Faouri et al., 2021). Finally, effective enforcement of education and policies is crucial (Mulat et al., 2022). The Chief of the Hospital's Assistant Director should establish performance goals by providing staff with appropriate information and training on standard precautions (Lim et al.).

2.1. Definition and Scope

Standard precautions incorporate the fundamental systems for contamination prevention and can refer to rules normally distributed by official general health organisations and followed in that country. The established customs rule is critical for clinics in resource-poor settings and mid-level healthcare facilities. Standard precautions are the most minimal level of insurance culture that all health workers ought to offer to everybody, regardless of the presumed disease state of the person. Everyone in a health facility should perform five simple systems for controlling an infectious disease: hand hygiene, PPE, hazardous waste management, cleaning of environments, and sterilisation of instruments and linen. The scope of these guidelines for general use in the healthcare setting provides an overview of the attitudes of any staff who should train and carry out standard precautions to meet their professional duty. Patients in low-resource settings often have a similar infection profile as the general community, and the difficulty of providing treatment to an unselected mix of infections may not be evident in sophisticated referral and specialised hospital settings. Standard precautions will benefit the individual healthcare worker who benefits from breaks in the chain of transmission. However, his or her primary ethical responsibility must be the safety of his or her patients and the healthcare team. Only those with these attitudes are permitted to work in that area, as the clinical and resource-implication attitude is unacceptable if any health worker applies it.

2.2. Importance and Benefits

The introduction of Standard Precautions aligns with the focus on reducing healthcare-associated infections (Lim et al.). Several organisations have supported the implementation of standard precautions as a priority to improve patient safety (Wong et al., 2021). Standard Precautions encompass essential skills that rely on the correctness and consistency of hygiene practices, effectively reducing the risk of infection transmission (Al-Mugheed et al., 2022). Harmful microorganisms can be eliminated from the surface of the hands, thereby interrupting the chain of infection (Lim et al.). Compliance with Standard Precautions has been proven cost-effective, leading to the economically efficient reduction of healthcare-associated infections (Wong et al., 2021). Reducing or eliminating infections in healthcare settings decreases costs associated with service provision, including more extended hospital stays and the consumption of additional resources to treat infected patients (Al-Mugheed et al., 2022). Standard Precautions also protect healthcare workers, as adherence to these precautionary measures enhances confidence in workplace safety (Lim et al.). Moreover, patients gain confidence in healthcare professionals who remain free from infections due to exposure to infected individuals (Wong et al., 2021). Additionally, implementing Standard Precautions helps the medical community maintain a better unit and building atmosphere, especially in facilitating open communication with patients and visitors (Al-Mugheed et al., 2022). This unobstructed atmosphere fosters patient inquiry and engagement in treatment (Lim et al.). Healthcare workers who practice proper hand hygiene are perceived as responsible individuals, promoting healthy behaviours and contributing to a strong healthcare safety culture (Wong et al., 2021). Healthcare workers' adherence to safe practices within healthcare facilities and beyond assures all individuals receiving care, including the workers themselves (Al-Mugheed et al., 2022).

III. ATTITUDES TOWARDS STANDARD PRECAUTIONS

Attitudes towards standard precautions in healthcare vary among staff (AlJohani et al., 2021). Standard precautions, or infection prevention and control measures, are essential to healthcare worker practice (Lim et al.). Many factors can influence staff attitudes, including highly variable training and personal beliefs that staff may hold (Abalkhail et al., 2021). Positive attitudes towards standard precautions can significantly impact staff compliance with organisational expectations and training, as a positive attitude fosters healthcare professionals' adherence to best practices (AlJohani et al., 2021). However, healthcare workers in different settings hold varying attitudes, and evidence suggests that many healthcare workers maintain a more negative attitude towards universal precautions (Lim et al.). Negative attitudes towards precautions are associated with an increased risk of blood-borne virus infection for workers and their patients (Abalkhail et al., 2021). Healthcare workers may express negative attitudes or engage in unsafe practices related to standard precautions (AlJohani et al., 2021). These negative attitudes often stem from personal beliefs, institutional culture, and adherence to standard precautions (Lim et al.). In a study investigating healthcare workers' attitudes, beliefs, and underlying assumptions regarding infection prevention guidelines, professionals demonstrated a firm intention to protect themselves and be conscientious (Abalkhail et al., 2021). However, many viewed infection prevention as primarily their responsibility and expressed little sense of shared accountability for infection control measures (AlJohani et al., 2021). Furthermore, staff did not actively learn from colleagues, and their behaviour was primarily shaped by education, training, and personal experience (Lim et al.). Although healthcare workers often adhere poorly to standard precautions, foundational commitment remains to their implementation (Abalkhail et al., 2021). To

enhance adherence, regular, evidence-based, and continuous education regarding the value of best practices must be included in policy (AlJohani et al., 2021).

3.1. Factors Influencing Attitudes

History, training, personal experience, and the culture of the **organisation** in which an individual works all affect attitude, as do the attitudes and **behaviours** of senior staff toward infection control (Cherian et al., 2021). For instance, while studies conflict over ownership between the hospital and healthcare workers, most research suggests that the attitudes and actions of senior staff influence the overall culture of an **organisation** and impact whether front-line staff feel obligated to incorporate infection control measures into their practice (Ababneh, 2021). A recent systematic review highlighted the importance of leadership in positively contributing to new behaviours related to safety and compliance in healthcare (Cai, 2023). Regarding attitudes toward infection control, leadership committed to patient safety has been linked to improved healthcare worker compliance with best practices (Cherian et al., 2021). Leadership can act as a vehicle to promote compliance, engage in positive reinforcement, or even implement reward systems for reporting and adhering to procedural guidelines on patient safety (Ababneh, 2021). However, organisational culture is highly complex and shaped by multiple factors, including personal beliefs, values, and social group norms of behaviour (Cai, 2023). Some scholars suggest that organisational culture in healthcare is so intricate that large-scale cultural change is challenging; transformation may occur in smaller settings, such as on a single ward (Cherian et al., 2021). Concerning personal factors, attitudes are influenced by both individual and social dynamics (Ababneh, 2021). Since safety is a fundamental concern for all individuals in the workplace, healthcare workers' perceptions of risk may be shaped by peer influence and social interactions (Cai, 2023). Additionally, studies indicate that healthcare workers desire a system that upholds values such as respecting patients and staff, addressing complaints, minimising discrimination, and promoting ethical principles within the broader society (Cherian et al., 2021). Social and peer influence and strong organisational support are crucial in fostering a culture of patient safety and shaping attitudes (Ababneh, 2021).

Conversely, inadequate staffing, high staff turnover, limited training opportunities, and poor communication contribute to negative attitudes and a diminished safety culture, potentially increasing absenteeism and staff resignations (Cai, 2023). Education and continuous professional development are essential in shaping attitudes and improving compliance with precautionary procedures, mainly when behavioural indicators are used to measure progress (Cherian et al., 2021). Understanding the factors that influence healthcare workers' attitudes—and, ultimately, their perceptions and compliance rates—can ensure the implementation of targeted interventions to enhance adherence (Ababneh, 2021). Organisational influences and approaches will be critically appraised in further sections. Ultimately, knowledge of these three interrelated components can drive changes in practice and promote adherence to standard precautions (Cai, 2023).

IV. PRACTICES OF STANDARD PRECAUTIONS

In terms of daily clinical practice, the rate of healthcare workers (HCWs) complying with standard precautions (SP) varied (Bahegwa et al., 2022). Although some studies reported high compliance rates, the overall performance of SP adherence remained relatively low, as demonstrated in previous research (Wong et al., 2021). Regarding specific SP elements, the highest compliance rate was observed **using** personal protective equipment (PPE) (Al-Faouri et al., 2021). HCWs, especially physicians, followed SP guidelines for PPE use by wearing goggles and masks, which protect mucosal surfaces and the respiratory system from splashes and blood spatters in approximately 80% or more of cases, depending on their duties (Dobrina et al., 2024). However, some HCWs tended to wear gloves throughout their shift, believing prolonged glove use contributed to better infection control and safety in the workplace (Bahegwa et al., 2022). The use of facemasks was reported to be generally low across many studies but increased steadily when performing medical procedures with aerosol risks, such as bronchoscopy (Wong et al., 2021).

Despite good compliance with **specific** SP components, concerns remained regarding the environmental safety of patient care areas (Al-Faouri et al., 2021). Compliance with other safety precautions, such as sharps handling and work practice controls, was relatively low (Dobrina et al., 2024). Inconsistent adherence was frequently observed; for example, HCWs **touch**ed contaminated materials before handling non-infected sites or blood specimens (Bahegwa et al., 2022). The compliance rate for the guideline "Do not bend, break, or manually disconnect contaminated needles," which is critical for patient and HCW safety, was particularly low (Wong et al., 2021). Physicians exhibited the lowest adherence rates, scoring less than 20% in vaccine injection or catheter expansion compliance, as they often avoided handling needles, believing that drawing blood or preparing injections was not part of their primary responsibilities (Al-

Faouri et al., 2021). Exposure to contaminated materials was most frequently reported among HCWs, suggesting a generally low adherence rate to SP protocols (Dobrina et al., 2024). No study reported 100% SP compliance, and adherence varies across clinical settings and occupations (Bahegwa et al., 2022). Compliance rates tend to decrease as the complexity of required behaviours increases (Wong et al., 2021). Adherence to SP was lower in public healthcare facilities and even lower in correctional institutions; some healthcare centres reported higher compliance rates but with limited supporting evidence (Al-Faouri et al., 2021). Compliance with SP was notably higher in developed countries (Dobrina et al., 2024). Several facilitators and barriers influence SP implementation, with strong evidence available on these factors (Bahegwa et al., 2022).

Lack of time, insufficient training, and minimal managerial support were frequently cited as reasons for non-adherence, and these factors often interacted (Wong et al., 2021). Managers were more likely to enforce SP compliance when staff received adequate training and had sufficient time and resources to implement infection control measures effectively (Al-Faouri et al., 2021). Organisational barriers, such as budget cuts, resource shortages, and understaffing, were considered more significant obstacles to SP adherence than individual-level factors, such as fear of stigmatisation or lack of personal belief in SP effectiveness (Dobrina et al., 2024). Although most HCWs were aware of SP guidelines, few translated this knowledge into consistent compliance in clinical practice (Bahegwa et al., 2022). Many staff members reported that their workload prevented them from adhering to SP (Wong et al., 2021). Additionally, essential resources such as water for handwashing and PPE were often unavailable, and space and facilities were inadequate (Al-Faouri et al., 2021). Many HCWs confirmed never receiving formal infection control training (Dobrina et al., 2024). While nurses stated that there was a strong infection control culture in their hospitals, HCWs frequently violated SP guidelines because they had to undertake non-clinical domestic tasks such as cleaning, leading to prolonged occupational exposure to body fluids (Bahegwa et al., 2022).

4.1. Compliance Rates

Several studies and systematic reviews have shown that compliance rates vary depending on the specific infection control practice (Bouchoucha et al., 2021). Practising hand hygiene is more likely to be adhered to by healthcare workers compared to other standard precaution practices (van et al., 2021). For example, the median compliance rate for hand hygiene was reported to be between 40% and 57% (Alhumaid et al., 2021). A systematic review confirmed this finding but reported an even lower compliance rate of 38% (Bouchoucha et al., 2021). Various studies demonstrated better compliance for appropriate glove use, ranging from 60% to 93% (van et al., 2021). The correct use of eye protection was found to have a median compliance rate of 71% to 98% (Alhumaid et al., 2021). Additionally, adherence to not wearing artificial nails—a component of standard precautions—was reported at 72% and above (Bouchoucha et al., 2021). These findings suggest that compliance rates with different standard precaution measures vary significantly. The adherence rates of standard precautions also differ between developed and developing countries (van et al., 2021). The work setting can heavily influence compliance; for instance, urgency and emergency pressures to address patients effectively can take precedence over infection control measures, potentially compromising healthcare worker safety (Alhumaid et al., 2021). Moreover, shortages in staffing and heavy workloads often lead workers to perform tasks hurriedly, further affecting adherence rates (Bouchoucha et al., 2021). Cultural factors and the level of training also contribute to these variations in compliance (Van et al., 2021).

This wide range of compliance rates presents a challenge to improving standard precautions and ensuring the protection of healthcare workers while promoting patient safety (Alhumaid et al., 2021). Therefore, continuous monitoring of adherence must be implemented to identify gaps between guidelines and practice (Bouchoucha et al., 2021). Several studies have indicated that compliance monitoring and auditing can help pinpoint areas of weakness and track changes over time (van et al., 2021). Reminder systems may be introduced in healthcare settings to improve compliance using electronic information systems, checklists, or posters that emphasise standard precautions (Alhumaid et al., 2021). Electronic information systems have the potential to provide real-time reminders and tailor guidelines to specific hospital wards (Bouchoucha et al., 2021). However, while technology has been proposed as a potential tool to improve adherence, sustained improvements require strong organisational accountability and a culture that **prioritises** infection control (van et al., 2021).

4.2. Barriers and Facilitators

Several factors—both barriers and facilitators—have been identified as significantly impacting the implementation of standard precautions among healthcare workers (Zeb & Ali, 2021). Barriers to adherence include staffing shortages, time constraints, inadequate training, and insufficient resources (Magadze et al., 2022). Additionally, some healthcare

workers perceive personal protective equipment (PPE), such as masks, gloves, and gowns, as uncomfortable, disruptive to patient care, or even fear-inducing for patients (Bahegwa et al., 2022). In some instances, inexperienced disease control organisers or specialised treatment staff may panic, leading to ineffective support systems and inadequate solutions (Abed et al., 2021). If standard precautions are not consistently implemented and reinforced, healthcare settings can become sources of infection, facilitating disease transmission within an environment that should otherwise be sanitary and protective (Zeb & Ali, 2021).

Facilitators that promote healthcare workers' adherence to standard precautions include strong supervisory support, responsive and proactive organisational administration, motivation, access to training, and continuous educational opportunities (Magadze et al., 2022). Moreover, fostering an environment that prioritises safety and encourages open communication can empower frontline healthcare workers to remain vigilant and ensure a safe and secure healthcare setting (Bahegwa et al., 2022). Given the significance of these factors, essential infection prevention and occupational health and safety curricula must address the barriers and facilitators of compliance in detail (Abed et al., 2021). Ultimately, healthcare organisations should strive to eliminate identified barriers while reinforcing facilitators, promoting adherence to standard precautions and improving overall patient and worker safety (Zeb & Ali, 2021).

V. CRITICAL EVALUATION OF ATTITUDES AND PRACTICES

5.1. Methodological Approaches; We shall provide a summary of data sources and the principles of review in the following paragraphs (Karunarathna et al., 2024). Additionally, we will describe the methods of the data collection process, including a flowchart outlining the study selection process (Parmar et al., 2022). The quality appraisal process, which will focus on the principles of critical evaluation of publications, will also be presented (Tomlinson et al., 2023). Lastly, the statistical approaches will be described in the data analysis process. This review will focus exclusively on existing review articles (Karunarathna et al., 2024). Primary studies and reports will be used solely to identify any missing articles from the review process rather than conducting a complete evaluation of individual studies on standard precaution practices (Parmar et al., 2022). However, primary study results will be incorporated if necessary to provide a more comprehensive summary of current practices (Tomlinson et al., 2023). The process and rationale for identifying relevant guidelines and systematic reviews and their critical appraisal will be documented (Karunarathna et al., 2024). This will include details of the search strategy, eligibility criteria, and justification for selecting sources used to evaluate methods (Parmar et al., 2022). Results from the review will be synthesised, and data processing strategies will be discussed, with recommendations based on the available evidence (Tomlinson et al., 2023).

Randomised controlled trials (RCTs) were chosen as the primary source of evidence, with secondary publications including systematic reviews and other relevant reports (Karunarathna et al., 2024). Guidelines formulated from systematic reviews will also be examined alongside any recent updates or publications relevant to evaluating methodological applications (Parmar et al., 2022). Critical evaluations should reference their sources and describe how the overviews were developed based on evidence-based guidelines and the most recent literature (Tomlinson et al., 2023). A review should be published in an edition that includes source reviews or previous papers containing more than one published report (Karunarathna et al., 2024). Justification for why a study was conducted will also be provided (Parmar et al., 2022). Trials should include membership statements specifying explicit criteria for participant selection, study design, data analysis, and reporting (Tomlinson et al., 2023). Different evaluation methods are recognised, and reviews may incorporate various approaches based on distinct information sources (Karunarathna et al., 2024). However, definitive empirical data are not available from fundamental studies, suggesting that the present review is based on assumptions and statistical analyses rather than empirical evidence (Parmar et al., 2022). As such, no conclusive empirical findings can be drawn regarding the intent of this review (Tomlinson et al., 2023).

5.2. Key Findings and Trends

Key findings from the studies are presented across the following categories: (i) the use of standard precautions guidelines and their relevance; (ii) the use of personal protective equipment including disposable gloves; (iii) hand hygiene and hand hygiene practices; (iv) compliance with standard precautions; (v) the frequency of occupational exposure to blood and infectious body fluids; (vi) the frequency of needlestick injuries; and (vii) lack of preventive measures for occupational exposure incidents. This work aims to review and synthesise existing research, reporting on actual standard precautions practice and compliance of healthcare workers in the acute healthcare setting and/or ambulatory care and outpatient clinical units. Overall, the majority of studies in recent years report some improvement regarding the application of standard precautions and personal protective equipment over time and increased

compliance of healthcare workers. However, worrying trends continue, and the problem is not resolved, with data showing problematic practices among healthcare workers. Lapses in hand hygiene and, to some extent, reuse or overuse of personal protective equipment, along with inadequate use of specific personal protective equipment, will be revealed. These problematic areas endanger both their performance and standards for healthcare workers' care and their safety, exposing them and, consequently, patients to serious health risks, such as hazards related to occupational exposure to blood or body fluids during daily clinical activity. The most worrying is that the data is not improving, and the problem seems to be reinforced.

VI. CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH

This paper has critically evaluated the recent literature concerning healthcare workers' attitudes and practices of standard precautions surrounding blood and body fluid exposure. It has been argued that knowledge and conscious attitude issues do not necessarily drive efforts to increase compliance with standard precautions among healthcare workers. However, rather, the focus should perhaps be on the unconscious attitudes surrounding compliance with standard precautions. Healthcare workers who conducted high-risk procedures were more likely to engage in both appropriate practices of standard precautions and have positive attitudes towards the effectiveness of standard precautions and the desire for further training. However, most studies in this paper are based in America, so the findings might not apply to healthcare staff worldwide. Indeed, further multi-country studies could add to our understanding of the topic.

There are clear implications for the findings of this essay about infection control practices and, thus, patient outcomes. However, there are also precise possible interventions that might help to increase compliance with standard precautions. Employers should improve compliance with standard precaution guidelines by supporting the healthcare workers' professional identity and the professional safety norm. This might be achieved by including regular updates to standard precaution policies and training during a typical annual in-service, which upholds the healthcare worker's professionalism and provides an educational vehicle through the institution's efforts to prevent transmission of infectious diseases between healthcare workers and patients. Indeed, engaging healthcare workers in developing policies and procedures is important; workers are more likely to implement practices they have helped develop. Therefore, institutions might want staff to contribute their suggestions and ideas, develop policies and procedures, and advocate for the importance of community-serving roles.

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