

BARRIERS IN PERFORMING HAND HYGIENE AMONG CLINICAL PHYSIOTHERAPISTS OF LAHORE AFTER THE COVID-19 PANDEMIC

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DOI: <https://doi.org/>

Keywords

Barriers, COVID-19, Hand hygiene, Physiotherapists

Article History

Received: 12 February 2026

Accepted: 18 April 2026

Published: 22 June 2026

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Abstract

Introduction: Hand hygiene is the most commonly recognized method of preventing healthcare-associated infections (HAIs) and enhancing patient safety globally. The physiotherapists find that although a large number of them are well-informed in terms of the meaning of hand hygiene, they do face considerable obstacles that interfere with their overall adherence.

Objective: To determine the barriers in performing hand hygiene among clinical physiotherapists of Lahore after the COVID-19 pandemic.

Methodology: This study is a descriptive cross sectional. The data was collected from the Combined Military Hospital (CMH) Lahore, Mayo Hospital Lahore, General Hospital Lahore, and National Hospital Lahore. The study population was clinical physiotherapists. The sample size of this study is 206.

Results: A total of 206 participants participated in this study. 123 were male participants, and 83 participants were female physiotherapists. The mean age of participants was 27.17 years. The participants faced barriers in performing hand hygiene.

Conclusion: Participants in the study of physiotherapists identified hard workloads and product dissatisfaction as the main obstacles to hand hygiene. Environmental variables such as material shortages and inconvenient items also severely hinder compliance. The respondents still struggle with amnesia, even though many physiotherapists are aware of its importance. Therefore, institutional initiatives to improve resources and lessened workload constraints are necessary to improve compliance in this clinical context.

Introduction:

Hand hygiene is the most commonly recognized method of preventing healthcare-associated infections (HAIs) and

enhancing patient safety globally [1]. In the case of clinical physical therapists, it is especially crucial to adhere to the best practices of hand hygiene since their practice

as professional physiotherapists require close and direct physical contact with their patients, which in turn contributes to the increase in the risk of spreading pathogens [2]. Although the significance of these practices is recognized, compliance rates among medical professionals, including physiotherapists, remain below optimal levels [3].

A study finds that although a large number of them are well-informed in terms of the meaning of hand hygiene, they do face considerable obstacles that interfere with their overall adherence [4]. These barriers are usually complicated and can be divided into individual, organizational, and physical or environmental topics. On an individual level, the most common reasons are forgetfulness due to the routine nature of the work, lack of regular training, and underestimating the risk of infection when dealing with patients who do not appear visibly unclean [5].

Some of the organizational barriers are often due to high workloads and demanding clinical schedules that do not leave therapists perceived to have enough time to perform hand hygiene between every patient interaction [6]. Moreover, physical and environmental obstacles (such as the lack of access to hand hygiene products (such as alcohol-based rubs or soap) and the very inconvenient location of sinks in relation to areas of treatment) are significant contributors to the lack of compliance [7]. These interconnected obstacles point to the necessity of multifaceted interventions that

are specific to the particular clinical setting of physiotherapy [3]. Learning about these profession-specific barriers is an important initial step towards the development of specific interventions, such as enhancing the accessibility of resources and promoting a positive, supportive workplace culture, so that hand hygiene can continue to be a priority in clinical practice [8]. The purpose of the study is to assess the barriers to performing hand hygiene among clinical physiotherapists of Lahore after the COVID-19 pandemic.

Operational Definition(s):

Hand Hygiene:

Hand hygiene is the practice of washing your hands with soap and water or sanitizing them with a gel. The best strategy to stop the transmission of diseases and germs is to practice good hand hygiene. After the COVID-19 pandemic, hand hygiene has great importance for healthcare workers, and they try to clean their hands with sanitizers after examining the patients.

Hand Hygiene Staff Survey Questionnaire:

The “hand hygiene staff survey” questionnaire was used, which was adapted from WHO. This questionnaire consists of 13 questions [9].

Materials and Methods

Study Design:

This study is a descriptive cross sectional. The data was collected from the Combined Military Hospital (CMH) Lahore, Mayo

Hospital Lahore, General Hospital Lahore, and National Hospital Lahore. The study population was clinical physiotherapists.

Sample Size:

The sample size is 206.

$$n = \frac{z^2_{1-\alpha/2} P(1-P)}{d^2}$$

By putting the following values: $1-\alpha=95$; $P=0.648$; $d=0.07$ [10].

Sampling Technique:

Non-probability convenience-based sampling was used for participant selection.

Eligibility Criteria:

Inclusion Criteria: Both male and female physiotherapists; age between 23 to 45 years; all the clinical physiotherapists (working as clinicians only) who were working in different clinical setups.

Exclusion Criteria: All physiotherapists who were working as teachers in different academic institutes and were not working in clinical or hospital based setups: the physiotherapists who were working outside of Lahore were also excluded.

Data collection:

Informed consent was taken, and data were collected from those participants who fulfilled the inclusion criteria. Data were collected with a questionnaire named Hand Hygiene Staff Survey, adapted from the WHO. The data were collected from those participants who were willing to take part in this study.

Data analysis:

SPSS 26.0 was used for statistical analysis. Qualitative variables were presented in the form of frequency tables and percentages. All quantitative variables were presented in the form of mean $\pm$ SD.

Results:

Age	Number
Mean	27.17
Std. deviation (SD)	3.59

Table 1: Mean Age of Participants

The total number of participants is 206. This table shows the age of the participants. The mean age is 27.17 with a 3.59 SD.

Gender	Frequency	Percent
Male	123	59.7
Female	83	40.3
Total	100.0	100.0

Table 2: Gender of Participants

Among 206 participants, male participants were 123 and female participants were 83, whereas the percentage of male participants is 59.7%, and for females, it is 40.3%.

Barrier	Not at all	A little	Mode rate	Much	Very much	Total
Not a convenient product	52 (25.2%)	37 (18.0%)	44 (21.4%)	45 (21.8%)	28 (13.6%)	206

Barrier	Not at all	A little	Moderate	Much	Very much	Total
Out of product (lack of materials)	42 (20.4%)	26 (12.6%)	63 (30.6%)	34 (16.5%)	41 (19.5%)	206
Do not like the product	32 (15.5%)	38 (18.4%)	54 (26.2%)	42 (20.4%)	39 (18.9%)	206
Too busy at work	29 (14.1%)	45 (21.8%)	50 (24.3%)	44 (21.4%)	38 (18.4%)	206
Forget hand hygiene	37 (18.0%)	50 (24.3%)	47 (22.8%)	45 (21.8%)	27 (13.1%)	206
Unsure of need	68 (33.0%)	41 (19.9%)	35 (17.0%)	39 (18.9%)	23 (11.2%)	206

Table 3: Barriers in Performing Hand Hygiene

Discussion:

The findings of the current study on clinical physiotherapists in Lahore are in line with current global literature and show that, although the awareness of the significance of hand hygiene (HH) is rather high, there are still significant individual, organizational, and physical barriers that remain present in the post-COVID-19 environment.

One important finding that was made in the present study was the effect of forgetfulness and the fact that it was a significant variable in over 34% of therapists. It is also in line with a

systematic review that identifies forgetfulness as one of the key behavioral barriers, often fueled by the routine and repetitive nature of the five critical moments of hand hygiene. Interestingly, the proportion of respondents who were not sure about the necessity of hand hygiene was 33% in the current study, which means that the level of theoretical awareness is high. This is similar to the results of Amin et al. (2025), who found that although nurses in Lahore have enough knowledge, it does not necessarily lead to better behavior because of a perceived low risk of infection or overconfidence [11].

The lack of materials and inconvenient products were major obstacles in the current study, with 36% of therapists reporting lack of materials as a “much” or “very much” significant barrier. This aligns with the results of Worku and Melaku (2025), who found inappropriate infrastructure and a shortage of resources, including soap and alcohol-based hand rub (ABHR), as significant barriers in resource-limited environments [12].

Additionally, the present study revealed that more than 39 percent of the respondents had a moderate dislike to high dislike of the hand hygiene products offered. This is a crucial observation that is shared by Kim et al. (2023), who found that skin irritation and painful dryness were cited by other healthcare workers as the most significant barrier to compliance [13].

Heavy workload has been identified as a significant impediment in the present study,

with approximately 40% of therapists mentioning it as a major or very much a factor. This is a universal theme throughout the literature; Ahmadipour et al. (2022) reported that the high workload in ICUs, especially when nursing a number of critically ill patients at the same time, makes them particularly stressful and often impossible to maintain in hand hygiene compliance [5]. Within the context of Pakistan, Amin et al. (2025) have emphasized that the high patient-to-staff ratio in Lahore hospitals makes healthcare providers lack enough time to wash their hands between interactions [11]. The fact that the current study is specifically devoted to the post-pandemic period is especially pertinent. Wang et al. (2025) found that although the rates of hand hygiene compliance increased during the COVID-19 peak because of the increased perception of subjective risk, they ended up beginning to fall off a cliff as the perceived crisis calmed down [14].

This indicates that to physiotherapists in Lahore, the current barriers noted in the present study, such as lack of resources and workload pressure, may be becoming even more limiting as the current interventions are gradually phased out, returning to the practices that were in place before the pandemic.

Limitations:

The researchers faced some problems in gathering data, as a few hospitals do not allow

data to be gathered from their workers (physiotherapists).

Conclusion:

Participants in the study of physiotherapists identified hard workloads and product dissatisfaction (physiotherapists were not satisfied with the product, which was being provided for hand hygiene) as the main obstacles to hand hygiene. Environmental variables such as material shortages and inconvenient items also severely hinder compliance. The respondents still struggle with amnesia, even though many therapists are aware of its importance. Therefore, institutional initiatives to improve resources and lessen workload constraints are necessary to improve compliance in this clinical context.

Conflict of Interest: The authors declare that they have no conflicts of interest.

Funding Source: None

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