

# THE STUDY OF THE CLINICAL DRUG DELIVERY PROCESS AND THE HUMAN RESOURCE PRACTICES IMPACTED DURING THE LOCKDOWN PERIOD

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## ABSTRACT

This study was conducted to explore the drug delivering process and the impact Human Resource practices towards the delivering drugs to the clinical patients during the lockdown period in Sri Lanka. This study carried out a qualitative analysis. Improvements required during the pandemic for most provisional Human Resource practices on health and safety, and training was identified from this process. Researchers conducted interviews with the government employees who contributed to this process (Postmen and PHD). Gampaha district was selected as the sample area for this study, Further, this research motivated the researchers to study about the effectiveness of employee training and health and safety practices in drug delivery process on COVID-19 situation.

**Keywords:** Human Resource Practices; Pharmaceutical Supply Chain; COVID-19; Sri Lanka.

## 1. INTRODUCTION

Because of its rapid spread across six continents, the World Health Organization declared the COVID-19 as a pandemic on March 11, 2020, and urged governments worldwide to declare a state of health emergency, undertake preparatory and response steps in accordance with the Global Strategic Preparedness and Response Plan. (Aday and Aday, 2020). The COVID-19 is a worldwide pandemic and public health threat, but it also propelled economies with a significant and widespread economic and financial impact. Substantial decline in income, increased unemployment all around the world, and disruptions were reported in a variety of businesses, including transportation, hospitality, and manufacturing (Pak et al., 2020). According to Haruhiko (2020), the Asian economy has been the engine of global growth for the past few decades. However, challenging public health

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actions affecting various economic sectors such as domestic, commercial, and production orders, have interrupted supply networks in Asia.

Following the first COVID-19 case reported in Sri Lanka of a Chinese visitor on January 27, 2020, and then the first local case on March 11, 2020, the government implemented a tight case detection, identification of contacts, quarantine, travel restriction, and isolation of small communities policy in Sri Lanka. (Erandi et al., 2020). As a result of their actions, many daily tasks had to be modified to be in line with the new processes, and people's conduct and lifestyle had to be completely altered. To curb the spread of the virus, Sri Lanka attempted to implement a strategic preparedness and response plan in the eight categories recommended by the WHO, according to global WHO guidelines.

The COVID-19 pandemic impacted critical parts of the healthcare business, such as hospitals, and patients hospitalized to receive medications faced the danger of contagion. The unexpected surge in demand for drugs saw the need for increased supply of drugs, which became a significant concern as well as a problem after Sri Lanka, went into full lockdown mode. In China, pharmacies can share the information of drug availabilities and its store locations online or through mobile APPs to guide patients when they need to buy medications and patients who not able to visit the pharmacy (Zheng et al., 2021). Through the postal service (via postman), Sri Lankan government decided to supply pharmaceuticals to the door step to patients who monthly visit medical clinics of local hospitals to receive medication. (Durairatnam et al., 2021). Chronic diseases patients and patients who need drugs after serious surgeries are the main types of patients who come to receive drugs from government hospital's clinics once a month. During the lockdown season, regarding postal services, delivering letters was not much required when compared to the season before lockdown. Firstly, clinics of the hospitals handover the drugs to their divisional post office. Sometimes, post office employees go to those hospitals and collect the drugs issued to patients. Upon their return to the post office, issued drugs were delivered by the postman to patients. Public health inspectors (PHIs) are the other type of employee involved to this process.

According to Mwita (2020), how these resources are managed through human resource management strategies determine how well an organization functions. The process of attracting, maintaining, and motivating people to ensure the organization's survival is known as human resource practices. Human resource management methods are effective and benefit both employees and employers. Human resource methods, according to his

research, include training, health, and safety (Hassan, 2016). The relationship between pharmaceutical industry and human resource practices can be assumed as important. According to previous study findings, healthcare personnel were trained on how to use safety equipment because the COVID-19 was not the only pandemic that plagued humanity in the recent past. SARS was first detected in China in 2003 and quickly spread to other nations. Personal Protective Equipment (PPE) was rarely used by Indian healthcare personnel to manage and treat airborne infections like SARS in 2003 and rare incidents like the NIPAH virus encephalitis pandemic was reported in Kerala. The rapid spread of COVID-19 mandates the implementation of an education program to make aware the health-care workers on how to wear PPE correctly and consistently, as well as how to comply with national PPE criteria. Social media channels including WhatsApp, Zoom, and other institutional online platforms were used to provide these instructional activities (Sharma et al., 2020). PPE such as protective suits, masks, gloves, goggles, and face shields, were provided to frontline healthcare workers treating COVID-19 patients (Liu et al., 2020). According to Ying et al. (2021), in China, the training was mostly conducted online, and it included hospital isolation guidelines, preventive, and the COVID-19 diagnosis and treatment planning training. After referring these kinds of past researches, researchers have focused two main Human Resource practices which were the most influential in the drug delivering supply. First, is Health and Safety and the other is Training. In this study, researchers focused only Gampaha district in Sri Lanka, because of the limited time period and the restrictions imposed by the government due to COVID-19 pandemic which impeded the research activities.

## **2. RESEARCH PROBLEM**

The clinical drug delivering process and the human resource practices impacted during the COVID-19 lockdown period in Sri Lanka.

The process of delivering a drug that has been introduced by the government which was a new system to the society in this lockdown period. This is mainly because along with social distancing, the connection between the patient-doctor or the patient-hospital had not successfully operated as normal days. As such, the contribution received from the postman and PHI in every place, is enormous and commendable. Although they did not have proper HR practices during this period, they directly influenced the drug delivery process. Further, it was needed to conduct a study to identify the influence of HR practices on this drug delivery process. When the interviews were conducted with the postmen and the PHI, it was identified that they have had some HR practices such as health and safety and Training. These are identified as the

performance gap of this research. Sri Lanka, unlike in other countries, has not conducted any research on the pandemic, according to information available to the researcher.

## **2.1 RESEARCH QUESTIONS**

1. What is the drug delivery process to patients when the country was locked up due to the pandemic situation?
2. What are the human resource practices which influenced the employee who contributed to the drug delivery process?

## **2.2 RESEARCH OBJECTIVES**

1. To explore the process of delivering drug to the patients when the country was lockdown due to the COVID-19 pandemic situation.
2. To explore the HR practices that influenced the employees who contributed to the drug delivery process.

## **3. METHODOLOGY**

The qualitative approach was used in this study. This study has provided qualitative analysis to identify the process of clinical drug delivering and the Human Resource practices impacted towards this process during the lockdown period. Seven interviews were conducted with employees (PHI and Postmen) who were involved in the drug delivery process, and the interviews were conducted via telephone in the Sinhala language and translated into English. First interview was conducted on January, 2021 with a postman in Gonawala area. Afterwards, researchers contacted postmen from Kelaniya and Kiribathgoda areas. Contacting the PHIs was difficult, because their schedules were tight with duties associated with the pandemic. However, researchers contacted PHIs on March and May 2021. Then, they were interviewed via mobile phone. The main reason restricting attention Gampaha district was it reported the highest COVID-19 virus cases rather than other districts in Sri Lanka. The other reason is that the lockdown was imposed for the longest time in the Gampaha district compared to other districts.

## **4. RESULTS**

In this study, content analysis was used. In this analysis, the first step is to identify appropriate data sources based on the research question; the second step is to develop useful, valid categories based on the research question; the third step is to establish a decision rule as to whether items should be coded to one category or categories based on a preliminary review of data and coding

testing; the fourth stage is to assess inter-rater reliability after coding is completed, and the final stage is to analyze results.

**4.1 Objective 1: To investigate the process of delivering drug to the patients when the country was lockdown due to the COVID-19 pandemic situation.**

After interviewing Postmen and PHI, researchers could better identify this drug delivery process which is depicted in the graph.

**Postman A:** In this area, main hospital is Kiribathgoda, Kelaniya and Biyagama. Firstly, those hospitals handover the drugs to their divisional post office. Then our post office officers go to hospitals by vehicle and collect the drugs and come back to the Biyagama post office.

The drug distribution process, according to postman A's statement, begins at the main hospital.

**Postman B:** Firstly, Colombo hospital releases the clinic medicine to those hospitals. Then those divisional hospitals handover the drugs to their divisional post office. Then our postmen go to hospitals by vehicle and collect the drugs and come back to the post office.

Postman B also indicated that the first stop in the drug distribution process was the hospital. According to Postman B's account, the principal distributor of this technique was the Colombo Hospital.

**Postman C:** Hospital pharmacist checked the clinic book of each patient that registered under the hospital and collect medicine according to the patient's number and the prescription in the clinic book. Then the staff put the medicine into packets and given it to the post office after marked the details in a paper by them.

Only patients who registered under the hospital clinic received drugs from the hospital pharmacy, according to Postman C. The PHI took part in this process as a result of this problem. The reason was that patients who are not registered with the hospital clinic also wanted to acquire their medications.

**PHI A:** The medicine was sent home through the post office and in case of an emergency, PHI delivers the medicine to the home directly. At first, there was no system to delivered medicine. Then they put together a system to deliver medicines through the post office and handed over the medicine to the post office so that it could be delivered to patients' homes.

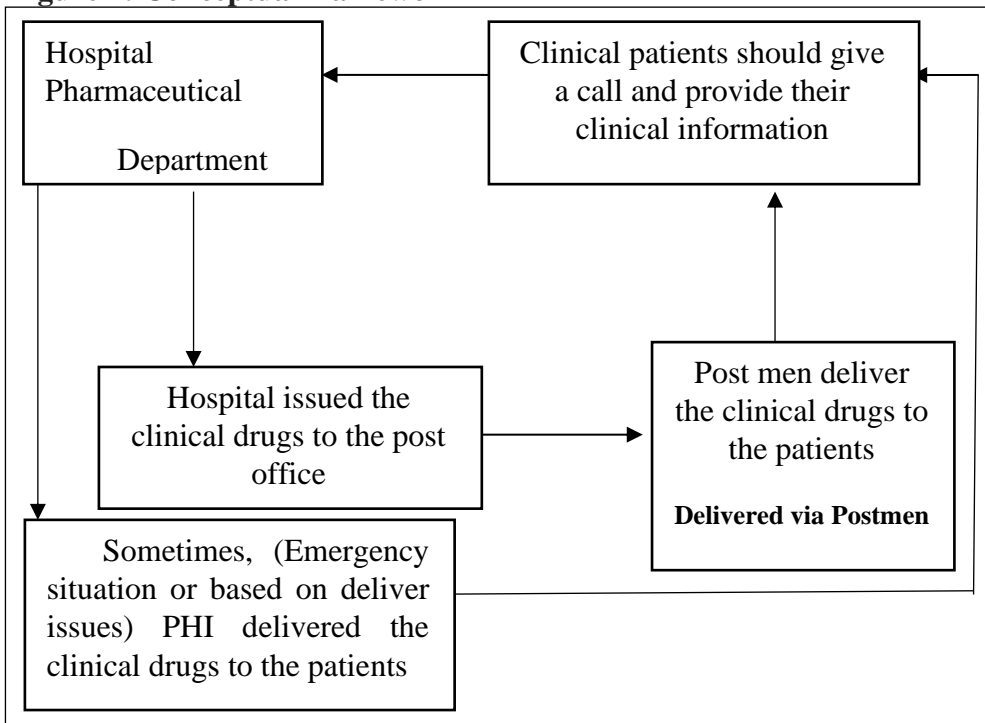
Initially, **PHI A** stated that there was no system in place to provide medications to patients during the lockdown time. Thereafter, government built up this system to deliver the drugs via postmen.

**PHI B:** The PHI was held responsible in delivering the medicine to patient's houses before the development of this system and only the patients who were registered with the clinic got the chance to get medicine delivered through post.

Patients who were not enrolled with the hospital clinic were unable to get drugs delivered from the post office, according to PHI B. In this case, PHI was in charge of delivering the medications to the patient. Calling and providing clinical information for verification of details was mandatory prior to dispatching drugs for clinical patients.

After interviews conducted with postmen and PHI were analyzed, this source was drafted by the researchers.

**Figure 1: Conceptual framework**



Source: Created by Authors.

Hospital was the starting point of the drug delivery process. Post offices collected drugs from the hospitals and then these had to be delivered to the patients in a safe manner. Because of this, post office and postmen had to bear a high responsibility under this process. Additionally, postmen delivered only the clinical drugs to patients who have already registered under the respective clinics of the hospital. The other contributor of this process is PHIs but they did not directly get involved with this process. However, according to some situations, patients who were not registered under the hospital clinic couldn't obtain the drugs from postman and then PHI held the responsibility for delivering the drugs to the respective patient. Even though they have not been directly not involved to this process, PHIs solved many problems regarding this drug delivery process.

#### **4.2 Objective 2: To identify the Human Resource practices which influenced the employee who contributed to the drug delivery process.**

##### **Health and Safety**

Then the researchers identify the HR practices that influenced the employees who contributed to the drug delivery process according to the interviews. For the effective drug delivery process, health and safety practices were mostly involved based on the postmen and PHI interviews.

**Postman A** stated that “We had delivered the drugs to the quarantine homes also. It was a huge risk. Because we had not any special protective equipment and we had only mask.”

**Postman B** said that “In the first wave of the COVID-19 pandemic, we have not been given any health and safety equipment. All of those health and safety equipment were fulfilled by us.”

**PHIs** also stated that “We have received PPE kits and also masks, gloves, coveralls or gowns, goggles, N95 masks, shoe coverings, triple-layer medical masks, and head covers. We always try to maintain social distance especially between patients and also try to limit interaction with staff. We always wash our hands; always try to use sanitizer for our hands and also our personal equipment”

According to these statements, researchers identified health and safety practices are most important and influence HR practice during this COVID-19 pandemic situation. Postmen have not been provided with full PPE kit and they only had face mask. However, researchers identified that PHI had safety equipment like masks, gloves, and hand sanitizers provided by the government

to continue their responsibilities during this pandemic situation. PHIs were always aware of social distancing and how to deal with people who were in quarantine, and they always followed government's health and safety policies, rules and regulations.

### **Training**

According to the interviews had with PHI and Postman they mentioned about their training and development during the pandemic. When considering the feedback of postmen, they had not received special training program about usage of PPE kit. But PHIs have received some guidelines to follow when they deal with infected people especially in delivering drug such as wearing PPE kit, removing PPE kit and disposing the trash.

**Postman A** said that “In the pandemic season, when we deliver the drugs and letters, there were not any special training or guideline regarding the PPE equipment using and self isolation was provided by the government to follow. We followed general COVID-19 guidelines which were released by the media.”

**Postman B** also stated similar idea to Postman A “According to the drugs delivering, we have not been given any special training on using PPE equipment or self isolation unless we had no instructions to use”

With these statements it is clear that postmen have not given any training regard to this drug delivery system and also safety equipment such as PPE kits. It is necessary to provide any kind of training on using PPE equipment because postmen are involved with essential work which can risk their lives.

**PHIs** mentioned that “The government continuously provided PPE kits mask, face shields for our safety and our unions gave guidelines about how to wear PPE kits, how to remove PPE kits correctly and how to disposal PPE kit safely and self isolation”

According to PHIs, government has provided needed PPE kits, masks, and face shields that important for maintain safety and they also guided by how to wear PPE kits, how to remove it correctly and what are the instructions to follow when disposing PPE kits safely. Because of that they had proper training about drooping and drooling of PPE kit.

Due to past pandemic situations, some countries like Australia and New Zealand have already provided health care workers with adequate training about how to use safety equipment. In addition, the hospitals usually train their



workers under the government rules and regulations. Comparing to India workers in this region had little experience in utilising personal protective equipment (PPE) to control spreading viruses as SARS virus affected them in 2003. As such, their experiences in controlling pandemics were high when compared to the exposure of Sri Lanka. As such, the COVID-19 pandemic was new to Sri Lanka. In this setting, PHIs and Postmen didn't receive special training during the emergency situation about using safety equipment but they followed government health care rules and precautions when delivering drugs to the patients.

## **5. DISCUSSION**

When the country was under lockdown, the Ministry of Health of Sri Lanka suddenly pivoted to using the postal service of Sri Lanka to distribute medicines to door steps of patients who visited government medical clinics once a month (Durairatnam et al., 2021). The hospital served as the starting point for the medicine distribution operation. Post offices were responsible for collecting drugs from hospitals and delivering them to patients in a secure manner. As a result, the post office and postmen were given enormous duties in this operation. In addition, postmen only delivered clinical drugs to patients who had already registered in the hospital's clinic. PHIs are another important actor in this process. Though they are not actively involved in this process, PHIs resolved many issues ensuring that the patients receive drugs on time. When patients who were not enrolled with the hospital clinic could not acquire the drugs from the postman in some cases, as they said, then the PHI was responsible for delivering drugs to such patients. Similar scenario could be identified from China, where their pharmacies can share the details of drugs including availabilities of the drugs and its store locations online or through mobile application to guide the patients when they need to buy medications and patients who not able to visit the pharmacy (Zheng et al., 2021).

Due to the rapid spread of this fatal virus across the country, it was vital to control the health and safety of PHI and postmen who key players were delivering drugs during a pandemic. According to (Pornkul and Chomsupak, 2020) also has mentioned that a relationship can exist between human resource practices and pharmaceutical industry. During the pandemic, the most influential human resource practices in this process were health and safety and training. Health and safety practices can be segregated into two categories which are PPE and social distancing. According to the WHO (WHO, 2020), anyone who is suspected or confirmed as positive for COVID-19, or who is awaiting viral laboratory test results, should continue to wear a medical mask when going out in public. PHIs have been given a full PPE package for their

health and safety when engaging with this newly adopted process. A face mask, a face shield, head covers, sanitizers, gloves, and a GSM suit were among the items included. Providing a complete PPE kit was extremely critical and vital due to the face-to-face interaction with the patients. This can be illustrated by (Opatha, 2020) when entering the construction site, all employees should wash their hands with soap or hand sanitiser due to COVID-19. A NIOSH-certified N95, EU standard FFP2, or comparable safety particle respirator should be used in circumstances when a protective mask standard is necessary. However, when examining the response of postmen, this was not the case with the PHIs. Some of the employees, according to this postman, were not provided with any safety equipment, including masks. As a result, they took care of themselves using their own safety equipment. However, the government provided safety equipment to the vast majority. Any postmen who helped distribute the drugs, on the other hand, were given a face mask.

Long-term effectiveness will depend on assessing training needs and developing discrete training components for knowledge of PPE, abilities to utilise PPE effectively, and attitude toward wearing PPE (Tamene et al., 2020). PHIs were given instructions for wearing PPE kits as part of this medicine delivery process, and they followed the instructions because the PPE training was also appropriately created. However, concerning PPE training, the postmen experienced the polarized situation of the PHIs. Regardless of the fact that some of them had PPE training requirements, the majority of the postmen stated that they had not received any particular training and instead relied on instructions and information spread through media. However, no instructions were provided on mandatory concerns such as how to wear PPE equipment. This is critical because by delivering drugs they are already exposing themselves to high-risk tasks that pose a threat to their life.

## **6. CONCLUSION**

The first objective and second objective were accomplished by conducting interviews with the postmen and PHIs. The first objective of investigating the process of delivering drugs to patients when the country was on lockdown due to the COVID-19 pandemic situation was successfully achieved after conducting interviews with interviewees. With this kind of drug delivery process, it was a new experience to the patients and also the postmen and PHIs. The initial goal was to investigate the implications of the supply chain in the incidence of a COVID-19 pandemic. The COVID-19 pandemic has a significant negative impact on a range of economic activities, including employment and commercial supply chain flows, and the outbreak has

impacted almost all supply networks throughout the world, with many of them being affected.

Especially, in this study researchers focused only Gampaha district. Hence, future researchers can extend the study to one or more districts in a given time period. If Sri Lanka undergoes any critical situation similar to the COVID-19 pandemic in the future, this process can be implemented by the government. Hence, this can be identified as a trial to increase preparedness in similar disasters while loopholes can be minimized from lessons learnt. Future studies may be performed by considering Sri Lanka as a whole, as this provides geographical stability. There is also the option of conducting studies to investigate and obtain findings for the one aspect that has the greatest influence. Employees who were involved in the medicine distribution process during the pandemic were also anticipated to be eligible for a special reward scheme in exchange for their efforts. However, the administration or authorities has not responded to their plea. As a result, this study did not go into detail regarding compensation management as an HR practice that affects the medication distribution process. As such, these are concerns future researchers can look into.

## REFERENCES

- Aday, S. and Aday, M. S. (2020). Impact of COVID-19 on the food supply chain. *Food Quality and Safety*, 4(4), pp. 167-180.
- Durairatnam, S., Alwis, G. and Sohal, A. (2021). Healthcare Supply Chains in Sri Lanka: Responsiveness and Resilience during the COVID-19 Pandemic. *Journal of Supply Chain Management*, 12(1), pp. 1 - 12.
- Erandi, K. K. W. H., Mahasinghe, A. C., Perera, S. S. N. and Jayasinghe, S. (2020). Effectiveness of the strategies implemented in Sri Lanka for controlling the COVID-19 outbreak. *Journal of Applied Mathematics*, 1(1), pp. 1-10.
- Haruhiko, K. 2020. Novel Coronavirus (COVID-19): Economic and Financial Developments and the Responses Taken by the Bank of Japan. Research Institute of Japan: Naigai Josei Chosa Kai.
- Hassan, S. (2016). Impact of HRM Practices on Employee's Performance. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(1), pp. 16-22.
- Liu, M., Cheng, S.-Z., Xu, K.-W., Yang, Y., Zhu, Q.-T., Zhang, H., Yang, D.-Y., Cheng, S.-Y., Xiao, H., Wang, J.-W., Yao, H.-R., Cong, Y.-T., Zhou, Y.-Q., Peng, S., Kuang, M., Hou, F.-F., Cheng, K. K. and Xiao,

- H.-P. (2020). Use of personal protective equipment against coronavirus disease 2019 by healthcare professionals in Wuhan, China: Cross sectional study. *BMJ Clinical Journal*, 369(1), pp. 1-6.
- Mwita, K. (2020). Effects of corona virus pandemic (covid-19) on selected human resource management practices in Tanzania. *East African Journal of Social and Applied Sciences*, 2(2), pp. 252-259.
- Opatha, H. H. D. P. J. (2020). COVID-19 in Sri Lanka and Seven HRM Related Recommendations against COVID-19. *Asian Journal of Social Sciences and Management Studies*, 7(1), pp. 152-157.
- Pak, A., Adegboye, O. A., Adekunle, A. I., Rahman, K. M., McBryde, E. S. and Eisen, D. P. (2020). Economic consequences of the COVID-19 outbreak: the need for epidemic Preparedness. *Journal Frontiers in Public Health*, 8(241), pp. 1-4.
- Pornkul, S. and Chomsupak, C. (2020). The relationship between human resources practices and organizational performance in pharmaceutical industry of Thailand. *A multifaceted review journal in the field of pharmacy*, 11(3), pp. 67-76.
- Sharma, N., Hasan, Z., Velayudhan, A., M a, E., Mangal, D. and Gupta, S. (2020). Personal Protective Equipment: Challenges and Strategies to Combat COVID-19 in India: A Narrative Review. *Journal of Health Management*, 22(2), pp. 157-168.
- Tamene, A., Afework, A., Mebrhatu, L. and Al-Khatib, I. (2020). A Qualitative Study of Barriers to Personal Protective Equipment Use among Laundry Workers in Government Hospitals, Hawassa, Ethiopia. *Journal of Environmental and Public Health*, 2020(1), pp. 1 - 8.
- WHO (2020) Coronavirus disease (COVID-19) advice for the public: When and how to use masks: World Health Organization. Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks>.
- Ying, W., Qian, Y. and Kun, Z. (2021). Drugs supply and pharmaceutical care management practices at a designated hospital during the COVID-19 epidemic. *Research in social & administrative pharmacy : RSAP*, 17(1), pp. 1978-1983.
- Zheng, S.-Q., Yang, L., Zhou, P.-X., Li, H.-B., Liu, F. and Zhao, R.-S. (2021). Recommendations and guidance for providing pharmaceutical care services during COVID-19 pandemic: A China perspective. *Research in social & administrative pharmacy : RSAP*, 17(1), pp. 1819-1824.