


# COVID-19 and job demands and resources experienced by nurses in Sri Lanka

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## Abstract

Sri Lanka has a history of successfully managing communicable diseases by utilising its extensive public healthcare network of community clinics and public hospitals. This article makes use of Job Demands-Resources theory (JD-R) to examine the impact of COVID-19 on nurses' working conditions in public and private hospitals in Sri Lanka. Prior to the COVID-19 pandemic, nurses' job demands on public hospital wards included long working hours, limited workplace autonomy, minimal medical resources and high workloads caused by understaffing. Private hospital nurses experienced pressure from patients and their families to provide them with discounts on medical bills. Nurses allocated to work on COVID-19 wards experienced additional physical job demands from wearing personal protective equipment (PPE) for lengthy periods on hospital wards in a humid climate. Nurses on COVID-19 wards also experienced increased anxiety that they could transmit the disease to family members. While nurses experienced job resources such as social support from nursing supervisors and other nurses, they reported receiving minimal training in the provision of healthcare to COVID-19 patients. This combination of high job demands and low job resources increased the levels of exhaustion and mental distress experienced by many nurses working on COVID-19 hospital wards.

**JEL codes:** H51, H54, J24, J45, O15

## Keywords

COVID-19, healthcare, nurses, job demands, job resources, Sri Lanka

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## Introduction

The COVID-19 pandemic has intensified the work environment for hospital nurses in the Global South (Lorente et al., 2021). Nurses represent the largest component of front-line hospital workers caring for COVID-19 patients and they face the highest risks of infection from the disease (Nie et al., 2020). This paper makes use of Job Demands-Resources theory (Bakker and Demerouti, 2017) to examine the added work pressures experienced by nurses in Sri Lanka in the years immediately preceding outbreak of COVID-19 in Sri Lanka and in the years immediately preceding the pandemic.

Job Demands-Resources (JD-R) theory provides a means of identifying predictors of job burnout, a major problem faced by many healthcare workers. Many nurses experience high job demands that include understaffing, limited resources on hospital wards and the emotional demands of dealing with severely ill and dying patients and their families (Keyko et al., 2016). Even before the outbreak of COVID-19, nurses in Sri Lanka were experiencing intensified work pressures because of overcrowded hospital wards, long working hours, limited career development opportunities, a lack of medical supplies and low pay (Aluwihare-Samaranayake et al., 2017). The COVID-19 pandemic has exacerbated these job demands by further intensifying nurses' workloads and increasing their levels of anxiety that they could infect family members (Leng et al., 2021). While a growing literature examines nurses' job demands and resources (Broetje et al., 2020; Havaei et al., 2021; LeGal et al., 2019; McVicar, 2016), there has been limited research to date into the effects of COVID-19 on nurses' job demands in South Asia. This paper examines how nurses in Sri Lanka responded to the additional job demands of caring for COVID-19 patients. The authors ask: did nurses in Sri Lanka receive sufficient job resources from hospital managers and supervisors to mitigate the impact of COVID-19-related job demands?

The paper is structured as follows. The first section of the paper provides a literature review of job demands-resources (JD-R) theory, leading to the hypothesis that prolonged exposure to high job demands and low job resources is likely to be detrimental to nurses' physical and psychological health and noting the gender dimensions of this impact. The second section provides an overview of Sri Lanka's healthcare system. The third reviews the qualitative research method used in the paper. The fourth explores the experiences of nurses of job demands and the provision of job resources during COVID-19 and in the years that immediately preceded the pandemic. The fifth section provides a discussion and conclusion to the paper.

## Job demands and resources, nurses and COVID-19

Job Demands-Resources (JD-R) theory provides a means of identifying predictors for job burnout, a major problem for many healthcare workers (Broetje et al., 2020). A central assumption of JD-R theory is that each job has risk factors related to job stress that can be placed into one of two categories, job demands and job resources (Hakanen et al., 2006). Job demands include physical, social, psychological and organisational demands of job roles that require employees to demonstrate sustained cognitive and emotional effort

(Bakker and Demerouti, 2017). Job demands can impose substantial physical and psychological costs on employees. The physical aspects of job demands include task duration and the intensity of labour required from employees when completing work tasks. Examples include where employees struggle to keep up with the pace of work, or when managers place excessive physical demands on them (Bakker and DeVries, 2020). The social aspects of job demands include the potential for increased interpersonal conflicts within the workplace because of additional workload pressures, which can spill over into the home and give rise to conflicts with family members (Xanthopoulou et al., 2013). Women workers may experience higher levels of work-family interference compared to males because of additional societal pressure to undertake household duties and caring responsibilities in patriarchal societies such as Sri Lanka (Kaufman and Taniguchi, 2019). The physical consequences of sustained high job demands includes increased risks of heart attacks, heart disease, high blood pressure, type two diabetes, disturbed sleep, headaches and increased mortality (Ahlin et al., 2018; Janssen et al., 2020; Magnusson Hanson et al., 2020).

In nursing, high job demands have been identified as arising from inadequate staffing levels on hospital wards, the physical effects of shift-work and the emotional demands of dealing with sick and dying patients (Broetje et al., 2020; Havaei et al., 2021; Patience et al., 2020). Nurses can also experience verbal aggression and sexual harassment from patients and their relatives on hospital wards. The potential for interpersonal conflicts with other nurses and medical doctors may also increase their levels of job strain (Gabriel et al., 2020; Keyko et al., 2016; McVicar, 2016; LeGal et al., 2019). The impact of sustained high job demands can result in nurses experiencing emotional exhaustion and job burnout (Bakker and Demerouti, 2017). For example, approximately 80% of nurses surveyed in Canada responded that they were permanently tired at work, with psychological demands responsible for the largest proportion of their fatigue (Janssen et al., 2020).

The COVID-19 pandemic has exacerbated the levels of exhaustion experienced by many hospital nurses caring for COVID-19 patients (Lorente et al., 2021). Many nurses have received minimal training on how to assist patients who were dependent on ventilators for oxygen and they often had inadequate supplies of masks and gowns. Nurses have also experienced increased levels of fatigue and discomfort wearing PPE (personal protective equipment) (Havaei et al., 2021; Muz and Yuce, 2021). Many nurses caring for COVID-19 patients experienced high levels of anxiety that they could become infected and transmit the disease to family members (Lord et al., 2021; Pei et al., 2020). Nurses caring for COVID-19 patients have also face discrimination from other nurses and the general public as potential carriers of the disease (Lord et al., 2021). In addition, nurses working on COVID-19 wards have been found to be susceptible to post-traumatic stress, anxiety and emotional exhaustion (Havaei et al., 2021). Nurses across South Asia have also experienced increased levels of depression and reduced mental health working on COVID-19 hospital wards (Saeed et al., 2021).

Such high job demands may be offset where senior managers and supervisors provide organisational job resources and social support to nurses to enhance their levels of job satisfaction, work motivation and resilience (Bakker and Demerouti, 2007; Cooper et al., 2020; Labrague and De Los Santos, 2020). Job resources include positive relationships

between co-workers, team cohesion and positive interactions with supervisors (Bakker and Demerouti, 2007). Social job resources experienced by nurses include positive interpersonal relationships with other nurses and regular communications and feedback from hospital supervisors and managers (Broetje et al., 2020). The provision of social resources are important to workers in Sri Lanka's collectivist national culture, where close-knit in-groups extend beyond employees' immediate families and across extended social networks (Ibrahim and Irfan, 2016).

Organisational resources include learning and development opportunities that can enhance employees' opportunities for personal and professional growth, increase work engagement and reduce turnover intentions (Bakker and Demerouti, 2017; Schaufeli et al., 2009). Organisational job resources also extend to the provision of job security, role clarity, opportunities to participate in decision-making and trust in managers. They further include employees' perceptions of organisational justice and access to fair remuneration (Bakker and Demerouti, 2017; McVicar, 2016). Additionally, organisational job resources for nurses include participation in decision-making regarding patient care, their ability to have control over their work schedules and opportunities for career advancement (Patience et al., 2020).

Nurses who received valued job resources from hospital managers have been found to be more successful in coping with the additional job demands caused by COVID-19. Nurses in South Africa who received high quality support from hospital supervisors when caring for COVID-19 patients experienced enhanced levels of work engagement and reciprocated by demonstrating increased organisational commitment (Patience et al., 2020). Nurses who received high levels of support from other nurses, their families and from the public in South Africa during the pandemic also experienced reduced levels of anxiety and depression and increased levels of professional pride (Patience et al., 2020).

Job resources includes individual employee's personal resources, or self-assessment of their levels of resilience, self-efficacy and sense of optimism when exposed to situations that cause increased job stress (Xanthopoulou et al., 2007). Nevertheless, reliance on personal resources can give rise to emotional coping involving venting at other employees and family members that can exacerbate employees' levels of emotional exhaustion (Bakker and DeVries, 2020).

Applying JD-R theory, this study explores the types of job demands and job resources experienced by nurses in public and private hospitals in Sri Lanka prior to and during the COVID-19 pandemic. The following section examines Sri Lanka's public and private healthcare systems and considers their ability to cope with COVID-19 hospitalisations.

## **Sri Lanka's public and private healthcare system**

Sri Lanka represents a lower middle income developing country with a history of providing 'good healthcare at low cost' (Thresia, 2013). Sri Lanka's public healthcare system has historically focused on treating communicable diseases through an extensive network of community clinics, public hospitals and pharmacies (Pallegedara and Grimm, 2017). From the 1930s onwards, healthcare was provided at minimal cost in public hospitals and clinics to the population regardless of income level (Chapman and

Dharmaratne, 2019). This public healthcare network focused on training public health workers, improving maternal and child welfare and providing immunisations to the population. Sri Lanka's public healthcare network has delivered positive public health outcomes and facilitated improvements in life expectancy, which had increased to 78 years for women and 72 years for men by 2019 (Central Bank of Sri Lanka, 2020).

Expenditure by the government of Sri Lanka on healthcare, however, has declined over recent decades and represented merely 1.6% of GDP in 2019 (Central Bank of Sri Lanka, 2020). The decline in public healthcare funding has resulted in chronic overcrowding on public hospital wards, limited access to specialist medical treatments and declining levels of service quality (Thresia, 2013). In addition, public hospitals in Sri Lanka have experienced a shortage of nurses over several decades. In 2019, there were 38,276 nurses employed across 603 public hospitals with a total bed capacity of 77,964, representing a shortage of approximately 30,000 nurses (Central Bank of Sri Lanka, 2020). Such shortages were exacerbated by limited government funding of student places in nurse training colleges. As a result, Sri Lanka had a relatively low density of 22 nurses per 10,000 population (Aluwihare-Samaranayake et al., 2017). The overwhelming majority of nurses were women, with the recruitment of male nurses restricted to 5% of the public nursing workforce (Jayasekara and Amarasekara, 2015).

Nursing shortages in public hospitals resulted in hospital managers requiring nurses to accept compulsory overtime. Before the COVID-19 pandemic, approximately two-thirds of nurses in Sri Lankan public hospitals were required to work regular overtime hours to ensure public hospital wards maintained minimum workforce levels. Public hospital nurses were expected to accept high workloads and it was not unusual for one public hospital nurse to care for 25–30 patients during a day shift and over 50 patients during a night shift. Public sector nurses also experienced low pay – in 2018, public nurses' salaries ranged from USD181 to USD279 per month (Central Bank of Sri Lanka, 2019). In addition, public hospital nurses in Sri Lanka experienced limited opportunities for career progression and a lack of decision-making authority over patient care on hospital wards (Aluwihare-Samaranayake et al., 2017; Hellerawa and Adambarage, 2015).

Sri Lanka's extensive public healthcare network enabled it to respond successfully to the initial impact of the COVID-19 pandemic. The national government responded rapidly and decisively to the initial outbreak of COVID-19 cases from March 2020. Those infected with COVID-19 were isolated in selected public tertiary hospitals across the country. A series of quarantine centres overseen by the military were also established and international arrivals and those suspected of being close contacts of persons infected with COVID-19 were required to remain in these centres for 14 days (Arambepola et al., 2021). A nation-wide lockdown and curfew were also implemented from March 2020 to restrict population movement and to ensure that people remained at home to minimise spread of the disease (Hettiarachchi et al., 2021).

Sri Lanka has experienced a series of COVID-19 outbreaks over 2020–2021. The first wave occurred among Navy sailors in April 2020 and a second outbreak began among garment workers from October 2020. As a result of its decisive actions from the beginning of the pandemic, Sri Lanka managed to limit the spread of COVID-19 to mainly younger populations who experienced milder forms of the disease (Hettiarachchi et al., 2021). The

Delta variant of COVID-19 spread rapidly across Sri Lanka over 2021 and resulted in a third nation-wide lockdown in August that lasted until October 2021. The Delta and Omicron variants significantly increased the number of people infected by COVID-19 and by 3 January 2022 Sri Lanka had experienced 587,435 infections and 15,019 deaths from COVID-19 among its population of 21.8 million people ([Johns Hopkins University, 2021](#)).

In this resource context, we identify the job demand impacts of COVID-19 through case studies of the experiences of nurses in one public tertiary hospital that was responsible for caring for COVID-19 patients and one private hospital. The following section outlines the research methodology utilised to gather the views of hospital nurses.

## Research method

The research involved interviews with nurses in one large public hospital and one private hospital located in Colombo in 2016, 2018 and 2020. The public hospital was a large teaching and general hospital that employed over 1700 public nurses and delivered cardiology, general medicine and surgical procedures free-of-charge to public patients. The private hospital was a multi-specialty hospital that employed 130 nurses and delivered paediatrics, obstetrics, gynaecology, dialysis, intensive care and neonatal medical services to private patients. The study was underpinned by a subjectivist epistemology where ‘... what constitutes knowledge depends on how people perceive and understand reality’ ([Moon and Blackman, 2014: 1172](#)). This highlights that reality may emerge through the perceptions of multiple individuals ([Creswell, 2018](#)) captured through a qualitative research methodology involving the collection of multiple sources of evidence ([Yin, 2014](#)).

Nurses in the public and private hospitals were asked to volunteer for this study in 2016 and 2018 and additional interviews were held with nurses working on COVID-19 hospital wards in 2020. The first researcher interviewed 26 nurses in the large public hospital prior to the pandemic, with 14 interviews conducted in 2016 and 12 in 2018. Some 30 interviews were conducted with nurses in the private hospital prior to the pandemic, 17 in 2016 and 13 in 2018. In addition, eight interviews were conducted with female nurses working on COVID-19 wards in the large public hospital in November 2020. The interviews lasted between 30 and 90 min and were conducted mainly in Sinhala. All interviews were digitally recorded, transcribed from Sinhala into English and loaded into the qualitative research software Nvivo11 software to assist with coding and analysis. To analyse interview data, the researchers collated a list of open codes that emerged from the interview transcripts into broader themes to facilitate thematic analysis. The open coding involved comparing the interview data for similarities and differences and grouping the data into categories based on this comparison ([Corbin and Strauss, 2008](#)).

The trustworthiness of the interview data was enhanced by a focus on credibility and confirmability ([Lincoln and Guba, 1986](#)). Confirmability involved ensuring that the findings of the study emerged from the experiences and suggestions of participants. The first researcher shared drafts of case study findings with interview participants to confirm

the accuracy of the data and maintained contact with public and private sector nurses throughout the period of data gathering from 2016 to 2020. During the second round of interviews in 2018, the first researcher discussed the findings of earlier interviews with participants to ensure that the interpretation of job demands and job resources accurately represented their views. The following section examines nurses' perspectives of their job demands and resources prior to the COVID-19 pandemic.

## Nurses' experiences of job demands

Prior to the COVID-19 pandemic, nurses in the public hospital experienced overcrowded hospital wards that they had to manage with limited nursing staff. It was not unusual for two nurses to manage up to 50 patients at a time during day shifts. Understaffing also resulted in nurses working additional shifts back-to-back. One public hospital nurse noted:

We don't have sufficient numbers. We need at least 20 nurses but we have only 14. I started my shift at 1p.m. yesterday and I will be finishing at 1p.m. today. So continuously I am working for 24 h. Then it's a little tiring. In the morning we sometimes go to the quarters and come back then we feel better ... (male nurse, medical/emergency treatment unit, 2016).

Many nurses believed they had little option but to remain on the hospital ward to ensure that patients received a minimal level of care. One nurse stated,

It gets stressful at times. Sometimes after night duty we have to work till 7p.m. the next day. Even today I am after night duty. But in the morning only five people were on duty so I couldn't leave. When you see the situation here you don't feel like leaving ... (woman nurse, 2018).

A significant job demand experienced by nurses involved the emotional demands of dealing with dying patients and their relatives (McVicar, 2016). One public hospital nurse noted:

With the workload and when the ward is busy with so many patients, we don't have time to mourn over the death of one patient. When a patient dies, we have to move on to the other[s] ... With the workload, there is no time for us to think of patients who died ... (woman nurse, 2018).

Women nurses in the Sri Lankan public healthcare sector also experienced verbal aggression from male patients. One public hospital nurse noted that '... We have not been harassed physically. But we have faced verbal harassment. They shout at us ...' (woman nurse, 2016). Patients vented their frustration at nurses over inadequate facilities on public hospital wards, such as the limited numbers of beds, the lack of bed sheets, the lack of bathroom facilities and the poor quality of the food. One public nurse stated:



I feel sad when patients shout at us. They don't shout at us because it's our fault. When there are no beds or something like that, they shout at us ... (woman nurse, 2016).

Some male patients removed their clothes and made sexualised comments, for example:

... some old patients pass dirty comments. Sometimes one nurse has to do the ward rounds. Then there are certain patients who remove their clothes when they feel we are coming ... In such instances, we feel ashamed because we are ladies. We just ignore the patient ...” (woman nurse, 2016).

Another nurse stated,

We always go with an attendant specially in the night. When we feel that the patient is trying to be different and is not dressed properly, we always go in pairs ... (woman nurse, 2016).

Nurses also experienced verbal aggression from patients' family members and visitors dissatisfied with the attention patients received on hospital wards. Some 23 out of 26 public hospital nurses interviewed experienced verbal aggression from patients' relatives and visitors. Relatives of patients often became aggressive when they were expected to purchase medicines for patients when the hospital's medical stocks were depleted. One nurse noted:

They get aggressive when they feel that we are not helping the patient. Then they come and tell us that we didn't do this and we didn't do that. ... We generally don't argue with them. We keep quiet (woman nurse, 2016).

Another public nurse noted that '(e)ven though we want to do a service it is not possible because of a lack of facilities ... (woman nurse, 2016). In addition, public hospital nurses experienced verbal aggression from bystanders on hospital wards. Bystanders comprised former hospital workers hired by patients' relatives to look after the patient. One public hospital nurse highlighted that:

... bystanders don't look after the patients properly. They take money from one patient and try look after many different patients and take money from them also (woman nurse, 2016).

Another public hospital nurse stated,

Nurses have more problems when there are bystanders. On the other hand, they at least give the patients water when required. But some disturb the nurses by coming up with different requests ... (woman nurses, 2016).



The combination of high workloads, understaffing and verbal aggression from patients, visitors and bystanders created an environment of low job control and high job demands for many nurses on public hospital wards in Sri Lanka.

## Job demands and private hospital nurses

Over the past four decades, private healthcare providers have played a more significant role in the delivery of healthcare in an environment of declining public investment (Chapman and Dharmaratne, 2019). Rising income levels among Sri Lanka's urban middle class led to increased demand for less crowded, cleaner hospital wards and specialist medical services and procedures. Private hospital patients, however, faced relatively high out-of-pocket expenses and few private patients possessed medical insurance resulting in demands for discounts on hospital bills (Pallegedara and Grimm, 2017). By 2021, the private healthcare sector comprised 207 registered private hospitals and a total bed capacity of 5147 (Central Bank of Sri Lanka, 2019; Private Health Services Regulatory Council, 2021).

Private hospital nurses faced different work pressures from public hospital nurses as they undertook both healthcare and customer service roles, which included managing patients' billing queries. One private hospital nurse stated:

We have to attend to everything. For example, if there is an issue with the bill the patient will talk to us. Then we can't say that it is not our duty to handle the bill. We have to personally go to the billing department and sort it out for the patient. ... (male nursing supervisor, 2018).

When the bill was presented to the patient, or their family, they often complained that the hospital's charges were too high. One private sector nurse noted that '... when they get the bill, most of them become aggressive ...' (male nurse, 2018).

Private hospital management were keen to minimise negative feedback from patients and their relatives in an effort to generate repeat business. One private hospital nurse stated:

The management thinks that the 'patient is always right'. Even if a patient lies, the management takes the side of the patient ... Even if we don't do anything wrong and if the patient says something that never happened, still the management would say that patients do not lie ... (woman nurse, 2018).

Private hospital nurses were also expected to provide medical assistance to support specialist doctors, such as surgeons, who often performed two to three surgeries in a short timeframe. One nurse noted:

We get stressed because of consultants [specialist doctors]. Some specialist doctors want us to do everything ... Some surgeons come at 2a.m. and if they have to attend to three surgeries, they finish all three before leaving. Before stitching the skin of one patient, they start the

second surgery ... The team is not big. It's stressful because we have to monitor three patients ... (male nurse, 2018).

## Job resources, personal resources and resilience

The provision of job resources by hospital managers and nursing supervisors had the potential to mitigate nurses' high job demands (Patience et al., 2020). Many nurses, however, experienced limited organisational support from hospital managers prior to the COVID-19 pandemic. The public hospital did not offer professional counselling services, or organised employee assistance programmes to assist hospital staff to cope with job stress. Some 20 out of 26 public hospital nurses interviewed highlighted that they had to develop their own coping strategies to mitigate job stress. One nurse noted that:

In most instances, coping is a personal responsibility ... There is no assistance to deal with stress or sort out their issues (woman nurse, 2018).

In place of organisational resources, many nurses relied on social support from other nurses and nursing supervisors. One public hospital nurse stated: 'I talk with other nurses in the ward ... Then I feel that I am not the only victim (woman nurse, 2016). Another public hospital nurse noted:

I talk with my friends in [nurses' accommodation] quarters. We eat together and go to places together. They tell their problems and we tell ours. Sometimes I scold [vent] with them and get it off my chest. Otherwise, it's too stressful ... (woman nurse, 2016).

Many Sinhalese nurses in Sri Lanka were Buddhist and they visited religious places, or listened to Buddhist sermons, following stressful incidents on hospital wards. These nurses believed in Buddhist teachings that included *Karma* (the belief that one's fate is determined by good and bad deeds committed in past lives) and believed that by caring for the sick they accumulated good deeds. They also believed in Samsara, the cycle of birth, mundane existence, death and rebirth. One public hospital nurse highlighted:

I really like to care for patients. I am a Buddhist and I believe that every action has a reaction. Also, I believe that I have another birth. I believe that what I do to patients will someday come back to me in some form ... (women nurse, 2016).

Nurses' reliance on their own personal resources though could also result in emotional venting towards other nurses and family members. One public hospital nurse noted:

When I get angry here, sometimes I can't vent it out here [at the hospital]. Then I go home and vent it out on my husband. I shout at him a couple of times. Then I think to myself why did I shout at him because this is something happened at work? He comes to me and says 'leave your problems relating work in the ward, don't bring them home. It will create problems

between the two of us. But he still knows that I will vent out my anger on him ... (woman nurse, 2016).

Emotional venting was also relied on by private hospital nurses to cope with job stress. Some 16 out of 30 private sector nurses interviewed admitted that they vented their frustrations at family members and junior colleagues. One private hospital nurse noted that "... my husband has to absorb everything ..." (woman nurse, 2016).

The limited job resources provided to nurses in Sri Lanka meant that they had limited buffers available to them to mitigate the high job demands they experienced on hospital wards. The persistence of high job demands resulted in nurses in both public and private hospitals in Sri Lanka suffering from ongoing health issues that included insomnia, hypertension, depression and heart palpitations (interviews with public and private hospital nurses, 2016, 2018, 2020). The following section explore nurses' experiences of job demands and job resources during the COVID-19 pandemic.

## **COVID-19 and nurses' job demands and job resources**

COVID-19 created a range of specific job demands for nurses in Sri Lanka that included being allocated to COVID-19 wards without their consent and the physical discomfort of wearing PPE for lengthy periods. For example, nurses who were not married, or who were still on probation, were often the first to be allocated to COVID-19 centres and hospital wards. One nurse stated,

... We were allocated to COVID centres without our consent. Initially the only criterion they considered was whether the nurse was unmarried. All unmarried nurses were sent to the COVID centre ... Also, some of the nurses who were allocated were still on probation. They were willing to be transferred to this centre because they thought that they will not be confirmed in their jobs if they refused to go ... If they refused to go, they had to provide explanation in writing... (woman nurse, COVID-19 Centre, November 2020).

Nurses working on COVID-19 hospital wards were also expected to wear PPE for lengthy periods and experienced considerable physical discomfort wearing PPE in Sri Lanka's humid tropical climate. Wearing PPE for long periods of time resulted in nurses experiencing headaches and vomiting. One nurse highlighted that:

Wearing PPE is extremely difficult. So we just wanted to finish the duty allocated to us as soon as possible ... When you wear PPE it's very warm and we sweat a lot inside. Also, we have goggles and masks and all these are fixed to our heads with tight bands. After some time, we feel like the ears are going to burst and it's very painful. It feels like someone is pulling [your] ears off ... (woman nurse, COVID-19 centre, 2020).

Many nurses who worked in COVID-19 centres also experienced discrimination and social isolation from other nursing colleagues who feared they might be infected with the virus. One nurse stated:

We had negative experiences at the nurses' quarters after we returned from the COVID-19 centre. ... we realised that others in the quarters were scared. House warden and matron were scared and we saw that...being nurses, they were scared... other nurses in our unit were also scared. They thought that we have contracted the virus ... (woman nurse, intensive care unit/ COVID-19 centre, November 2020).

Hospital management were often reluctant to conduct COVID-19 PCR (polymerase chain reaction) tests for nurses but relented following pressure from medical doctors that all healthcare workers be tested for COVID-19 regularly. One nurse interviewed noted that:

... nurses were later really scared of contracting the disease. However, the authorities conducted PCR on us. That was because the doctors refused to return to their families without being tested. Then we [nurses] also protested that we want PCR tests to be done on us. Then the authorities did. We did not return home until we received the test results ... (woman nurse, COVID-19 Centre, 2020).

In addition, nurses working on specialist COVID-19 wards received limited organisational support from public hospital managers. This included being provided with a limited supply of masks and other PPE along with limited training in the provision of healthcare to COVID-19 patients. One nurse highlighted that:

There is a significant shortage of PPE. I think this is because of the high demand. The infection control unit is a bit reluctant to issue sufficient PPE. For example, at the beginning of COVID-19 pandemic, we were told to change masks every 4–6 h. Now the infection control unit says that it is all right to wear a mask for 8–10 h. This is posing a risk ... (woman nurse, COVID-19 Centre, 2020).

Public hospital nurses highlighted that they received limited formal training before they were sent to COVID treatment centres and had to learn on the job how to care for COVID-19 patients. One nurse stated:

No training on handling COVID-19 patients was given. Only about 5–6 nurses were sent to the National Institute of Infectious Diseases in Sri Lanka to provide training on how to wear and remove personal protective equipment (PPE) we were provided with...So it was on the job training on how to care for COVID-19 patients ... (woman nurse, COVID-19 Centre, 2020).

Only a small number of nurses were trained by the infection control units of the hospital and they were expected to share their knowledge with their colleagues. One nurse noted that:

We didn't receive much training. In this hospital, an isolation unit was established and I was allocated to this unit. There they showed us how to take a sample for PCR, how to be disinfected, but in addition nothing much was taught or informed. I personally searched the

internet for more details on the disease ... (woman nurse, COVID-19 centre, November 2020).

The lack of organisational job resources provided to nurses by the public hospital's management during COVID-19 meant that they drew more heavily on their own levels of resilience amid fears of contracting the virus and transmitting it to family members. One participant stated:

I am generally not much worried about illnesses and I am fearless. I feel, if I become COVID-19 positive, it's going to be okay. But when I come home, I am scared because my parents are old. Also, when I come in a bus, a lot of people can contract the disease from me ... I told myself 'this is a disease. I am a nurse. As a nurse, I cannot hide from any disease in this world. I have to face it. I don't have a choice, so I go to face it' (woman nurse, COVID-19 centre, 2020).

## **Discussion and conclusions**

Nurses in Sri Lanka experienced persistently high job demands prior to the COVID-19 pandemic. Job demands comprise physical and psychological demands of job roles that overtime increase workers' exposure to job stress and job burnout (Hakanen et al., 2006). Nurses in Sri Lanka experienced long hours of work, limited autonomy to make decisions on hospital wards, staffing shortages and patient aggression. These workload pressures could spill over into nurses' home environments and give rise to emotional venting at family members. Misbehaviour by patients and their visitors added to nurses' job demands in both public and private hospitals. Such misbehaviour in the private hospital was motivated by a desire for additional discounts on medical bills because of high out-of-pocket costs and low rates of private health insurance in Sri Lanka. Such patient misbehaviour was often ignored by private hospital managers keen to retain customer loyalty.

The way nurses responded to job demands on hospital wards varied between male and female nurses. Women nurses in Sri Lanka often refrained from expressing their emotions. This may represent an outcome of Sri Lanka's patriarchal society where men were considered to be agentic and worthy of a higher status than women and women were expected to demonstrate respectability and submissiveness (Kaufman and Taniguch, 2019). This led female nurses to suffer higher levels of emotional exhaustion and poorer physical health outcomes than male nurses.

Nurses' prolonged exposure to high job demands resulted in a poor psychosocial safety climate on hospital wards. Psychosocial safety climate involves the implementation of policies and procedures by senior managers to protect workers psychological health and safety (Idris et al., 2012). One means of enhancing nurses' psychosocial safety climate is to provide them with opportunities to participate in decision-making in relation to patient care. Nurses in Sri Lanka, however, faced constraints on their ability to make decisions on hospital wards. Nurses also reported physical health concerns resulting from persistent high job demands including heart palpitations, insomnia and diabetes.

High job demands may be mitigated where hospital managers provide organisational resources and social support to nurses that can enhance their levels of work engagement (Bakker and Demerouti, 2007; Cooper et al., 2020). Public and private nurses in Sri Lanka reported receiving limited organisational job resources and relied on social support from nursing supervisors and on interpersonal relationships with other nurses to mitigate their job stress.

COVID-19 further intensified the job demands of nurses in Sri Lanka because of the discomfort of wearing PPE and their experiences of increased social isolation and increased anxiety that they could infect family members with the disease. Nurses on COVID-19 wards in the large public hospital experienced considerable discomfort wearing PPE for lengthy periods in Sri Lanka's humid tropical climate. Unmarried nurses, and nurses on probation, also experienced pressure to work in COVID-19 centres without their consent. Many nurses working on COVID-19 wards also experienced social isolation and discrimination in their nursing accommodation from other nurses who feared they were infectious with the disease. They also experienced high levels of anxiety that they could contract COVID-19 and transmit the disease to family members. Nurses on COVID-19 hospital wards reported receiving limited organisational job resources, such as training in the provision of health care to COVID-19 patients. These findings highlight the potential for nurses working on COVID-19 wards to experience a range of psychological job demands that include mental distress, Post-Traumatic Stress and depression (Havaei et al., 2021; Leng et al., 2021).

One means of addressing nurses' high job demands is to enhance their levels of resilience. A range of public hospitals have experimented with meditation and mindfulness to assist individual nurses to cope with job stress (Cooper et al., 2020; Janssen et al., 2020). These practises though overlook the social organisation of work on hospital wards and the impact of work intensification, long working hours and excessive patient numbers on nurses' levels of fatigue and exhaustion. Hospital managers could reduce nurses' levels of fatigue by ensuring that nurses received regular breaks during their work shifts and were provided with increased opportunities to participate in the design and operation of nursing shift rosters (LeGal et al., 2019).

Future research could explore solutions to the high job demands and physical and mental exhaustion experienced by many nurses in Sri Lanka. Research could examine the potential for nurses to participate in job redesign and team-working initiatives involving other medical professional on hospital wards (Gabriel et al., 2020). Research could also explore how nursing teams could be provided with increased responsibility for managing shift work rosters and for planning on-the-job learning and developmental opportunities. These enhanced social and organisational job resources could be complemented by research into the productivity benefits of providing nurses with enhanced wages and conditions to reduce chronic nursing workforce shortages and high labour turnover in Sri Lanka's public hospitals.

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