

Ageing on the Frontlines: Examining the Experiences of Older Frontline Healthcare Workers in Singapore General Hospital during the COVID-19 Pandemic

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Abstract

Objectives: The first aim of this study was to understand the psychosocial impacts faced by our older healthcare frontline workers during the COVID-19 pandemic in Singapore General Hospital. Secondly, we hoped to explore the issues faced by an ageing healthcare workforce and recommend improvements in daily operations for future health crisis. Lastly, we wanted to analyse ageist attitudes and misconceptions of being an older adult and recommend future changes in organizational policies.

Methods: This is a mixed-methods cross sectional survey. A self-designed questionnaire was developed by the study team through Form SG. It consists of 9 open and 45 closed ended questions. Data was collected during the months of December 2020 and January 2021. Healthcare workers aged 62 years old and above were eligible to participate in this study by scanning a QR code or via weblink.

Results: Participants had expressed mixed-feelings while working during the COVID-19 pandemic such as uncertainty (75%), anxiety (58%), fear (42%), stress (25%), and sadness (25%). 75% of the participants went on to acknowledge that due to their job, their loved ones would be at a higher risk of contracting COVID-19. Similarly, 75% responded that they were determined to do their duty as a frontline healthcare worker despite fears of being diagnosed with COVID-19 present amongst 33% of the participants. 25% of participants felt motivated to be a frontline healthcare worker with no reports of any form of discrimination from the public. 92% of the participants were aware that due to their age, they stood a much higher chance of contracting COVID-19 and had not considered being deployed to a lower risk area in fears of their health. All participants had taken part in the annual flu vaccination program, with 58% of responses indicating they believe the annual flu vaccination can prevent them from contracting COVID-19.

Conclusion: Older adults bring forth a wealth of experiences in any organization, however, as much experience as there may be, the ageing process is also accompanied by a myriad of complex challenges. Having a strong social, professional, and familial support have allowed the older adults to tide through this pandemic psychosocially. It is of utmost importance to understand the strengths and unique challenges that comes with working in an intergenerational workforce, despite so the intergenerational economy can flourish with proper management skills and job re-designing, re-tooling and re-skilling resources to ensure the right fit to employability skills and staff loyalty. Moreover, even younger staff will age through time.

Keywords: Healthcare workers; COVID-19; Frontline; Older adults; Ageing; Ageism; Psychosocial; Singapore general hospital

Introduction

Towards the end of December 2019, a new health crisis was looming over the world, which is now being known as the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2 or COVID-19). Shortly after, in January 2020, the World Health Organization (WHO) declared the outbreak of COVID-19 to be a Public Health Emergency of International Concern [1]. The transmission of COVID-19 occurs through person to person contact via droplet particles, orofecal route and through interactions with other people by coughing or sneezing, in which the virus carries an incubation timeline of 2 days to 2 weeks [2]. However, this is not our first global health crisis in Singapore. The first severe acute respiratory syndrome (SARS) began in 2002 with a global death toll of 813 people on estimate, and the Middle East Respiratory Syndrome Coronavirus in 2012 taking the lives of 858 people on estimate [3,4]. Currently, there are 160 million confirmed cases of COVID-19 worldwide with 3.3 million fatalities, which have caused massive tolls in healthcare systems and healthcare workers.

With the most unprecedented health crisis the world has ever faced, through the growing numbers of patients being diagnosed and suspected of COVID-19, HCWs have been pushed to their limits with an overload of cases. The emotional burden faced by the emergency HCWs is compounded by an insufficient provision of protective equipment, a lack of prescriptions or remedy, and the perception on having inadequate support [5]. With knowledge acquired from the first SARS pandemic in 2002, and initial COVID-19 studies, results

have shown that healthcare workers encounter significant amounts of nervousness, depression, distress, and fear of the unknown [6-8].

Prolonged working hours to compensate for the shortage of quarantined staff, donning PPE for longer durations to care for infected patients, especially those in advanced age and nursing institutions, increased paper work due to regulatory requirements, working group discussions and contact surveillance, limited interaction with coworkers and relatives are determinants leading to fatigue and exacerbated emotional stressors amongst HCWs [9,10]. Research on the SARS Pandemic conferred that the leading causes of stressors amongst HCWs are anxiety and alienation by one's wellbeing as well as their relatives [11]. 17 months later, we are still plagued with the ongoing COVID-19 pandemic, with an increase in new infections, re-infections, and mortality, despite the success of vaccinations being administered worldwide. This study was conducted prior to the emergence of the new COVID-19 variants and distribution of vaccination worldwide.

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Background

Individuals susceptible to infection are frontline healthcare workers (HCWs) whom are in direct contact with COVID-19 patients [12]. People with long term health problems, particularly older in age are more likely to be at a higher risk of mortality if they contract COVID-19 [13,14]. Thus, it is obligatory for HCWs to don on personal protective equipment (PPE) to avert the outbreak of an infection in the clinical settings [15]. Numerous HCWs faced anxiety that they could be the source of infection toward their family, companions and co-workers, considering the infectious nature and extended incubation conditions of COVID-19 (2 days to 2 weeks; an average of 5 to 16 days) [3,16,17] reported during the outbreak of Avian influenza, an estimate of 87% of HCWs were observed to have experienced higher stressors at work, which echoes the uncertainty and struggle faced by HCWs during a global pandemic contributing to elevated levels of stress.

WHO [18] reports more than 20,000 HCWs in 52 countries had contracted COVID-19 as of April 2020. However, it is hard to establish the actual number of HCWs that have been infected with COVID-19. In a systematic review performed by [32], a total of 152,888 infections and 1413 deaths were released, with COVID-19 mainly infecting women with the deaths seen mostly in men and infections predominant amongst nurses. On its website, [6] wrote an article on 3rd September 2020 revealing 7,000 HCWs had died globally from COVID-19. 7,000 HCWs deaths is truly alarming as there had been an increase of 4,000 HCW deaths since their last report on 13 July 2020 [6]. Since then, the death toll of HCWs have risen to 17,000 as of March 2021 [7]. Of these figures, it is unknown, the number of older HCWs that have been exposed, recovered, or died from COVID-19. Apart from the rising mortality rates, HCWs face a significant number of psychological stressors. Research involving 1257 HCWs in China rendering care for COVID-19 patients conducted by revealed that 41.5% of participants reported feeling depressed, anxious, sleeplessness and discomfort in contrast to those who do not have immediate interactions with COVID-19 patients.

This research study seeks to examine the experiences of older frontline HCWs in Singapore General Hospital during the COVID-19 pandemic, which will be the first of its kind, both domestically and internationally. For this research, the term 'older' is defined as per Singapore's retirement and re-employment age of 62 years old and above. Previous studies had not focused on the ageing population of HCWs still serving their duties on the frontline despite their many personal and physical health concerns. The undertaking of this research attempts to understand the various psychosocial challenges faced by our older HCWs during a global pandemic. This research will help various organisations and departments including managers, supervisors, and colleagues to better comprehend the issues faced by our older HCWs in an ageing healthcare workforce and recommend improvements in daily operations and management of future global health pandemics. Results from this study can provide paradigm shifts and remove the misconception of ageism, not only in the field of healthcare. Potentially, more re-training opportunities and job re-design options could be offered to better suit the needs of an ageing healthcare workforce in Singapore.

Why choose older healthcare workers?

We have the ability and knowledge to influence and empower older adults in the community during their silver age, which includes the responsibility to educate younger generations on the misconceptions of ageism and age discrimination in the workplace and society. In 2013, the United Nations documented that 11.7% of the universal populace

comprised of older adults aged 60 years and above, a number projected to increase to 21.1% by 2050, a captivating 9.4% hike by estimation [33]. Singapore's aging population has increased significantly, with 590,544 elderly persons aged 65 and older and reportedly with a projected increase to 900,000 by 2030 [19].

Singapore's employment rate had witnessed a decline for older adults within the age group of 60-64 years despite economic expansion [22] which brought about the amendment of Retirement and Re-employment Act in 2012, a key determinant in addressing unemployment rates among older adults dwelling in Singapore. The act had strengthened the requirements to support re-employment for proficient workers from ages 62 to 65 years old whilst retaining the retirement age of Singaporeans at 62 years.

The Ministry of Manpower announced the Retirement and Re-employment (Amendment) Act on 1st July 2017, that enabled the re-employment age in Singapore to be raised from age 65 to 67 years old [20]. Currently, one in four elderly adults are gainfully employed in Singapore, with statistics indicating a substantial increase in re-employment from 13.8% in 2006 to 26.8% in 2018, in spite of that, the job rate for elderly within that age group had reached 40% [21]. The National Day Rally speech in 2019 by Prime Minister Lee Hsien Loong, declared that the mandatory retirement age will be raised in phases from ages 62 years old to 65 years old by 2030, a change in policy after 20 years. These statistics and change in policy prove that many older adults are being re-employed, many of whom are in the healthcare sector, which highlights the need to address the concerns of an ageing healthcare workforce in times of global health pandemics. [24] sampled 4549 elderly Singaporeans living in the community and reported that 38% of the respondents had upwards of three long term health issues, with their self-rated health as poor. In addition, about 9% had expressed having troubles with one or more activities of daily living (ADLs) such as dressing, bathing, and toileting. Within this 9%, 4% described their troubles with one to two ADLs and the remaining 5% struggle with three or more ADLs. On gender comparison, it was recorded that women had more trouble in their ADLs as compared to the men.

Furthermore [24] documented that 20% of the elderly Singaporeans had also expressed their concerns with instrumental activities of daily living (IADLs), such as using the telephone, shopping, preparing food and handling medications. Of this 20%, 12% had been identified to have trouble with one to two IADLs while 9% had troubles with three and more. Two factors were observed to have affected the group of older adults, their increase in age and the female gender. Reiterates the higher chances of hospitalisation from COVID-19 occurs if people have pre-existing health problems such as asthma, high blood pressure, kidney or heart disease, elevated blood glucose, stroke and chronic obstructive pulmonary disorder; with 2 or 3 or more of these causing a higher likelihood. This report detailed the physical difficulties faced by our elderly Singaporeans. With chronic diseases, co-morbidities and challenges performing ADLs and IADLs, the older HCWs on the frontlines of COVID-19 are at an increased risk of contracting the virus.

Aims

There are three aims specific to this study. Firstly, to understand the psychosocial impacts faced by our older healthcare frontline workers during the COVID-19 pandemic in Singapore General Hospital. Secondly, to explore the issues faced by an ageing healthcare workforce and recommend improvements in daily operations and future health crisis for our older workers. Finally, to analyse ageist attitudes and misconceptions of being an older adult and recommend future changes in organizational policies.

Methods

Study design

A web-based mixed methods cross-sectional study was conducted using an online survey platform in Singapore, FormSG. The study was carried out from December 2020 till the end of January 2021.

Participants

Participants were recruited in Singapore General Hospital, the main site for this study. According [26] older adults are defined within the age groups of 65 years old and above. This study had focused on a sample that echoes the Retirement and Re-employment act in Singapore. Thus, frontline healthcare workers aged 62 years old and above were eligible for recruitment in this study. The authors define 'frontline healthcare workers' as staff who had worked more than 1 shift per week with likely exposure to suspected and confirmed cases of COVID-19 in the emergency department, intensive care units, and wards that have been designated as infectious disease units housing these patients. Participants, however, were not just limited to those in the medical field such as doctors and nurses, but from a wide array of professions such as respiratory therapists, administrative staff, housekeepers, pharmacists, and security officers.

Instruments

The online self-designed survey instrument consisted of 45 close-ended and 9 open-ended questions. It took approximately 20 minutes to complete (Multimedia Appendix 1). The 54-question survey was divided into 6 parts: participant demographics (12 items), psychosocial impacts of COVID-19 (12 items), social, familial and professional support (9 items), sources of information (3 items), intergenerational bonding (6 items), and ageism (12 items). To ensure validity of the self-designed questionnaire, the Delphi method was adopted, and the questionnaire was sent to Gerontology experts to gather their feedback and make changes if necessary. The finalized survey was then piloted amongst a selected sample who were age 62 years old and above to ensure readability. After which, the survey was posted online through Form SG and made public.

Data collection procedures

Posters were made regarding this study and placed in the various tea rooms of the wards mentioned. An online advertisement was uploaded on the hospital's webpage for staff's access. An email notification was also sent to the Senior Nurse Managers of the designated wards to disseminate to their staff. A reminder email followed suit. Participants were provided both an online weblink and a QR code that would lead them to the survey page.

Data analysis

The data obtained was coded, validated, and analysed using Microsoft Excel. Descriptive analysis was applied to calculate means and percentages.

Ethical considerations

This study was reviewed and approved by the SingHealth Centralised Institutional Review Board (CIRB). The reference number for this study is 2020/2979. Implied consent was obtained through participants willingness to take part and complete the online survey. Potential participants were informed that their participation in this study is entirely voluntary and should they wish to participate, to click on an online link or scan a QR code which would lead them to the

survey site. By completing the survey, it would indicate their consent to this study.

Results

Sample characteristics

There was a total of 12 older adult frontline healthcare workers that completed the survey (Table 1). 5 were female while the remaining 7 were male. All participants were employed full-time in the Department of Emergency Medicine in Singapore General Hospital. The average age of the participants was 64 years old, with their work experiences ranging from 9-48 years. 11 of the participants were married and living with their family members in a HDB flat except for one participant who was a widower, living alone. 75% of the participants had at least one pre-existing medical condition with 42% having co-morbidities. All participants had been a part of at least one global health crisis, from SARS in 2003 to Mers-CoV in 2018.

	N (%)
Age, mean (range), years	64 (62-67)
Gender	
Male	7 (58)
Female	5 (42)
Occupation	
Patient care assistant	5 (42)
Care service associate	1 (8)
Senior staff nurse, assistant nurse clinician, nurse clinician	5 (42)
Transportation	1 (8)
Experience, mean (range), years	28 (9-48)
Medical conditions	
None	3 (25)
1 Medical condition	4 (33)
2 or More medical conditions	5 (42)
Education Level	
Primary	1 (8)
Secondary	2 (17)
O levels	4 (33)
A levels	2 (17)
Diploma	1 (8)
Degree	2 (17)
Marital status	
Widowed	1 (8)
Married	11 (92)
Living arrangements	
Living alone	1 (8)
Living with family members	11 (92)
Type of housing	
HDB flat	12 (100)
Global health crisis	
SARS	7 (58)
H1N1	12 (100)
Ebola	10 (83)
Mers-CoV	12 (100)
All the Above	6 (50)

Table 1: Sample characteristics of participants.

Psychosocial impacts of COVID-19

The participants had expressed mixed-feelings while working during the COVID-19 pandemic (Table 2). Some of these feelings were uncertainty (75%), anxiety (58%), fear (42%), stress (25%), and sadness (25%). Some statements related to their current feeling and their involvement in previous pandemics were;

Statement	N(%)	All the Above
When you first heard of COVID-19, which of the following had come to mind?		
Fear	5 (42)	
Anxiety	7 (58)	
Stress	3 (25)	
Sadness	3 (25)	
Uncertainty	9 (75)	
Surprised	0	
Happiness	0	
Has any of these thoughts ever crossed your mind during the COVID-19 pandemic?		
I will be diagnosed with COVID-19	4 (33)	
Due to my job, my loved ones would be at a higher risk of contracting COVID-19	9 (75)	
I feel discrimination from the public for being a frontline healthcare worker	0	
I am afraid to commute via public transportation for fears of being a COVID-19 carrier	2 (17)	
I am motivated to be a frontline healthcare worker	3 (25)	
I am determined to do my duty as a frontline healthcare worker	9 (75)	
	Yes, n(%)	No, n(%)
Are you aware that people in your age group have a much higher chance of contracting COVID-19 as compared to your younger colleagues?	11 (92)	1 (8)
Have you ever considered being deployed to a lower risk area due to COVID-19?	1 (8)	11 (92)
Do you feel that ever since the implementation of lockdown measures in Singapore, your life has only revolved around work as a frontline healthcare worker?	5 (42)	7 (58)
Were you ever afraid that there would not be enough personal protective equipment for yourself?	2 (17)	10 (83)
Do you take part in the annual flu vaccination programme in SGH?	12 (100)	0
Do you believe that your annual flu vaccination can help prevent you from contracting COVID-19?	7 (58)	5 (42)

Table 2: Perceptions of psychosocial impacts of COVID-19.

- “I feel the same, always prepare for the worst”,
- “Not much difference, as we are prepared to do so, but importantly we must take care of ourselves”,
- “Poor immunity can lead to much worst health outcomes”.

75% of the participants went on to acknowledge that due to their job, their loved ones would be at a higher risk of contracting COVID-19. Similarly, 75% responded that they are determined to do their duty as a frontline healthcare worker. Fears of being diagnosed with COVID-19 was present amongst 33% of the participants, and 17% of the participants felt afraid of commuting via public transportation for fears of being a COVID-19 carrier. 25% responded feeling motivated to be a frontline healthcare worker and none of the participants reported any form of discrimination from the public for being a frontline healthcare worker.

92% of the participants were aware that due to their age, they stood a much higher chance of contracting COVID-19 and had not considered being deployed to a lower risk area in fears of their health. 83% of participants were not afraid that there would be a lack of supply for personal protective equipment in their work area. When asked what they thought if there was a shortage of personal protective equipment in their work area, some responses were;

- “I may feel at risk to exposure of COVID-19”

- “Fear of contact with COVID-19”
- “I would feel fear and anxiety”

With the current lockdown measures in effect during the time of this study, 42% of participants felt that their daily lives had only revolved around work. Some statements from participants who felt that their daily lives were not revolved around work solely;

- “I do my own projects, mainly electronics”
- “In my free time I do my exercises”
- “I walk whenever I get a chance to”
- “I play lawn bowling”
- “Playing musical instruments in the comfort of my own home”
- “Watching television and listening to music”
- “I cycle during my off days”
- “I do my own exercises at home”
- “I perform yoga”

All participants had taken part in the annual flu vaccination programme, with 58% of responses indicating that they believe the annual flu vaccination can prevent them from contracting COVID-19.

Social, familial and professional support

83% of participants felt that they had enough time to spend with their family and friends and did not feel any form of social isolation from their family, friends, or colleagues due to their nature of their job (Table 3). When asked about what their family had felt about them being a frontline healthcare worker during the pandemic, some responses were;

- “They feel ok”
- “They give more support and encouragement and always remind me to do hand hygiene and take care of myself”
- “They accept it as part of my job in any disease outbreak and they understand that they are at a higher risk of exposure”
- “They are supportive”
- “They feel proud”
- “They are worried”

Statement	Yes, n(%)	No, n(%)
Do you feel that you have enough time to spend with your family and friends?	10 (83)	2 (17)
Have you ever felt socially isolated by your family, friends, or colleagues due to the nature of your job?	2 (17)	10 (83)
Do you have anyone that you can confide in the most during the COVID-19 pandemic?	9 (75)	3 (25)
Are you aware that SGH has a peer support hotline?	12 (100)	0
If so, would you ever engage in SGH peer support hotline should you need anyone to talk to?	3 (25)	9 (75)
Do you feel that your colleagues do not value your presence and contributions during this pandemic?	1 (8)	11 (92)

Table 3: Perceptions of social, familial and professional support.

75% of participants had mentioned that they had someone they could confide in the most during the pandemic. Participants mentioned their family, children, colleagues, and friends as close confidants during the pandemic. All participants were aware that the organisation provided a peer support hotline that they could call in if they needed

someone to speak to, however, only 25% of the respondents mentioned that they would engage in this service. 92% of the participants felt that their colleagues had valued their presence and contributions during the pandemic.

Sources of information

When we had enquired about the sources of which reliable information about COVID-19 was accessed, we found that 92% of participants had mentioned using the organization's webpage, SGH Infonet to obtain their daily updates (Table 4). Alternatively, 83% of participants reported that they watched Singapore's local news television broadcasting service, Channel News Asia. Moreover, newspapers (58%) and Workplace @ Facebook (50%) were also accessed to obtain information. Notably, the least accessed sources were through the lack of use from the organisation's workplace e-mail (33%) and through social media (17%).

	Workplace E-mail	Workplace @ Facebook	Infonet	Channel News Asia	Newspapers	Social Media
Responses	4 (33)	6 (50)	11 (92)	10 (83)	7 (58)	2 (17)
Does Your Managers or Supervisors Provide You with Daily Updates about your job regarding COVID-19?						
Yes	12 (100)					
No	0					

Table 4: Participants sources of reliable information about COVID-19.

Intergenerational bonding

92% of the participants felt that they have the support from their younger colleagues (Table 5). When asked how intergenerational bonding could be improved, one participant responded saying:

Statement	Yes, n(%)	No, n(%)
Do you feel that you have the support from your younger colleagues?	11 (92)	1 (8)
Do you have any difficulties in communicating with your younger colleagues?	0	12 (100)
Have you ever heard your younger colleagues passing rude or insensitive comments towards you at work due to your age?	3 (25)	9 (75)
Do you feel that you have been unfairly evaluated by your supervisors as less favourable compared to your younger colleagues?	5 (42)	7 (58)

Table 5: Participants perceptions towards intergenerational bonding during COVID-19.

- “Senior management should take the lead in bonding, transitions of leadership, collaboration and success”

All participants mentioned that they did not encounter any difficulties communicating with their younger colleagues. When asked how the younger generation would be able to help the participants, some statements were;

- “Having a sense of respect to the older staff and be more active and proactive to assist, especially physically, like carrying heavy objects and other activities which require physical strength”
- “Cross checking of one another to ensure safety to oneself and patients”
- “We kind of slow down a bit, hopefully the younger generation can understand that”
- “Help with IT related stuff and to be more patient”
- “By being more sympathetic and respectful towards older workers”

However, 25% of participants reported hearing their younger colleagues passing rude or insensitive comments towards them at work due to their age with 42% feeling that they had been unfairly evaluated by their supervisors as less favourable compared to their younger colleagues.

Ageism

There were many responses to how participants perceived ageism at the workplace during COVID-19 (Table 6). 92% of participants felt that their contributions were valued during the pandemic however, 33% had mentioned that they were given lesser opportunities as compared to their younger colleagues, both before and after the pandemic had occurred. 33% responded that they had felt like they would lose their job due to the pandemic. 25% mentioned that there was a decrease in their salary and medical benefits as they grew older and that their strengths had been ignored by their supervisor. 50% of participants had felt that they were passed over for a work role/task and left out from decision-making processes at work. 42% felt that they were treated as less capable and if they had spoken out their concerns, they would be discriminated based on their age. 83% of participants felt that they did not have lesser responsibilities at work due to their age and 67% had mentioned that they were encouraged by their supervisors to take advantage of relevant training/education opportunities. 75% of participants did not feel that they were excluded from any social interactions at work due to their age.

Statement	Yes, n(%)	No, n(%)
Do you feel that your contributions are not valued during the COVID-19 pandemic?	1 (8)	11 (92)
Has there been a decrease in your salary and/or medical benefits as you grow older?	3 (25)	9 (75)
Do you feel that you have been given less opportunities as compared to your younger colleagues before and/or during the COVID-19 pandemic?	4 (33)	8 (67)
Have you been passed over for a work role/task?	6 (50)	6 (50)
Do you feel that your strengths have been ignored by your supervisor?	3 (25)	9 (75)
Do you feel that you have been treated as less capable?	5 (42)	7 (58)
Have you been encouraged by your supervisors to take advantage of relevant training/education opportunities?	8 (67)	4 (33)
Do you feel that if you speak out your concerns, you will be discriminated based on your age?	5 (42)	7 (58)
Have you been excluded from any social interactions at work due to your age?	3 (25)	9 (75)
Have you ever been worried about losing your job during the COVID-19 pandemic?	4 (33)	8 (67)
Do you feel that you have been left out from decision-making processes at work?	6 (50)	6 (50)
Do you feel that you have lesser responsibilities at work due to your age?	2 (17)	10 (83)

Table 6: Participants perceptions towards ageism at the workplace.

Discussion

Generativity vs. stagnation, integrity vs. despair

Participants in this study had reported having at least one pre-existing medical condition and some having multimorbidity. The presence of medical conditions in older adults make them highly susceptible to infection from COVID-19, however, with their experience in previous global pandemics, the older healthcare workers were more fluent of their infection control practices such as hand hygiene and proper wearing of their personal protective equipment when taking care of suspected or confirmed cases. They were also aware that due

to their age, they stood a higher chance of contracting COVID-19. However, none of the participants had ever considered being deployed to a lower risk area in fear of their pre-existing medical conditions. To touch upon Erikson's theory of psychosocial development, the 7th and 8th stages known as Generativity vs. Stagnation and Integrity vs. Despair focuses on the need of contributing to society and to the next generation as they look back upon their lives, and the previous pandemics that they had been a part of, they can feel proud of their sense of accomplishments with little regrets. By being deployed to a lower risk area, older adults may experience stagnation due to a failure of not being able to contribute their skills fully during deployment. They will not be able to contribute much in a new environment, thus lose their purpose of meaning. According to studies, generativity would increase incentive to begin and sustain positive habits [26]. Participants have reported feeling determined to perform their duties as a frontline healthcare worker. [27] proposed one significant way to achieve a sense of purpose is through social solidarity and active engagement in others lives to make an impact on the community. As such, the participants felt that they had enough time to spend with their family and friends and did not feel any form of social isolation. As such, they were able to have someone that they could confide in during the pandemic, be it family, friends, or colleagues. They had also felt the support from their younger colleagues during this time. These could help relieve the feelings of uncertainty, anxiety, fear, stress, and sadness. Participants were also aware that the organisation had provided a peer support hotline in which they could call in if they needed someone to speak too, however, the intention to partake in such a service was scarce. Our older adults are at the Integrity vs. Despair stage where they have faced a loss of a spouse, loss of friends, facing multimorbidity and possibly retirement [25]. Strong social support, engaging in new experiences and seeking help are some of the ways to reduce feelings of despair.

Participants had also felt that their contributions were valued during the pandemic and had not been excluded from any social interactions at work. However, the participants had mentioned that they felt that they were passed over for a work role/task and left out from decision-making processes at work. Assistant nurse clinicians and senior staff nurses should be given more teaching, mentoring and leadership roles in guiding and training the younger generation of nurses, to further enhance their sense of productivity. Also, the older adults had reported that they were encouraged by their supervisors to take advantage of relevant training/education opportunities, which is a measure to avoid stagnation at the workplace to increase productivity through continual lifelong learning for adapting to the ever changing workforce.

Due to the stringent lockdown measures in Singapore at the point in time known as 'Circuit Breaker', there were not many activities that could be performed when compared to pre-covid times. The 'Circuit Breaker' measure only allowed people to leave their place of residence to either work if they were listed under essential service providers such as healthcare or transportation, purchasing essential goods such as groceries, exercising alone or those that you live with, seeking medical help, sending your child to childcare and complying with court orders. Thus, for many people, their lives revolved around home and work. However, it was reported that participants were creative in adopting activities outside of their work such as music, exercises and games which could be performed in the comfort of their own home, a way to explore new hobbies and opportunities to improve oneself.

With new measures being implemented such as safe distancing, tightening of border control for travel, wearing of a mask, reducing social contacts daily including home visits, work from home for non-essential services, crowd control at places of visit such as malls and

religious places, had prevented the virus from consuming our society. With strict adherence to these measures, not only have our older healthcare workers been able to stay safe, it protects the community, including those who visit the hospital for treatment. As our older healthcare workers were not keen on being deployed to other working environments, further measures were taken to protect them. With split team arrangements being made during the pandemic, older adult healthcare workers can be assigned to 'cold' teams that are not facing suspected or confirmed cases of COVID-19.

Importance of social, familial and professional support

Participants were also aware that due to the nature of their job, their families would be at a higher risk of contracting COVID-19. Measures were put in place to reduce the incidence of cross-infection such as providing healthcare workers with disposable working suits, providing meals during break times and creating more shower facilities for them to clean up after they have finished their duties prior to going home. Another preventive measure was the allocation of separate living arrangements which were catered for those who had older parents or young children at home. If so, they could approach the organisation to be assigned a temporary place of residence at a local hotel.

Support from the public was also present as participants did not feel any form of discrimination. This proved useful as there had been discrimination against healthcare workers who had worn their uniform home, were asked to move out from their rental residence and were not able to engage in private hire vehicles. We would also like to consider the needs of older adults who are socially isolated. Re-employment and retirement can introduce new challenges, the death of a spouse can launch individuals into bereavement and these ageing issues can cumulatively contribute to the decline in feelings of social connectedness [28]. As such, these individuals would likely need to engage in new hobbies, adopt a pet or involve themselves within the community to build social capital, to enhance both physical and mental wellbeing.

Reliable sources of information

With COVID-19 being a global pandemic, reliable sources of information were imperative during these times as it was difficult to fact check every piece of news that was presented. All participants had taken part in the annual flu vaccination programme however, more than half believed that the flu vaccine was sufficient in preventing them from contracting COVID-19. This leads to a wrong belief, as such creates a knowledge deficit amongst the older adults. The organisation's webpage was the most sought-after place for information. Alternatively, participants had turned to the local news channel and newspapers. Social media was the least accessed source of information among the older adults. Furthermore, in order to enhance the organization's, managers, or supervisors' methods to improve communication to the healthcare workers, mobile applications such as WhatsApp or TigerConnect, engaging in periodic conversations with staffs when there is time, newsletters and department meetings via video conferencing for the dissemination of important updates are measures that could be adopted to ensure every healthcare worker is thoroughly updated of the changes daily. These methods could prove imperative for older adults who are not so technologically savvy in keeping updated with daily changes in their workplace.

Ageism

Ageism, according to [29], is a commonly held prejudice towards elderly adults built on the assumption that ageing decreases intellect

and productivity [30] asserted in their studies of ageism and ableism are similarly oppressive structure, likened to disability, while ageing are not innate, it is a society constructed conception materialised. Despite having the support of their younger colleagues with no hindrance in communication, the older adults reported hearing them pass rude or insensitive comments at work due to their age, with some older adults feeling that they had been unfairly evaluated by their supervisors as less favourable compared to their younger colleagues. Physically, the older adults are at a deficit, as their strength and movements are not comparatively better than the younger adults. However, their thought process and problem-solving skills would be faster due to their many years of experience in the field. This leads to the importance of having an intergenerational workforce as both the older adults and younger adults can learn from each other.

Thus, each healthcare worker's performance during this pandemic needs to be considered holistically, especially for our older adults. Participants had felt that they were given lesser opportunities, or they could lose their jobs during the pandemic. Participants had also felt that they would be treated as less capable if they were to voice out their concerns. Managers and supervisor should be able to personally know the strength and weaknesses of every member under their charge and should not be based on a comparison towards other younger individuals. Being slow and not technologically savvy should not be deemed as an incompetence.

Another cause for concern is the highlight that there was a decrease in the salary and medical benefits of the older employees as they approached re-employment age at 62 years old, being employed on a contract basis. It is alarming to note that their competence has been devalued once they have reached their re-employment ages. According to [31], fluid intelligence; abstract reasoning decreases for most individuals age 30 and beyond, however crystallised intelligence; experience and expertise, the key indicators of employability skills, continue to increase even after the age of 80. As such, recommendations for flexible arrangements could be in place, alongside job re-designing, re-tooling, and re-skilling of our older adults to adapt to the changes of this ever-evolving technological universe.

Limitations

As this is a single site study, it can limit the generalizability of the findings towards other healthcare institutions and older frontline healthcare workers in Singapore. Thus, we encourage that further research be carried out in multiple hospitals. Our study focused specifically on frontline healthcare workers and due to the limitation in the definition of frontline healthcare workers, a small sample size was obtained. Further research could investigate expanding this field to all older healthcare workers regardless of their frontline status. Thirdly, our survey was designed in the English language, thus limiting the possibility to be able to record the responses of those who are unable to comprehend the English language.

Conclusion

Older adults bring forth a wealth of experiences in any organisation, however, as much experience as there may be, the ageing process is also accompanied by a myriad of complex challenges. Organisations, managers, supervisors, and colleagues will need to be more aware of the unique needs of our older adults while also understanding the concept of ageism and its ill effects. Performance appraisals should be tailored towards each individual and assessed based on their strengths, weaknesses, and contributions. Room for improvements should be advised diligently. Quicker movements and greater physical strength do

not equate to a greater output; thus, their performances should not be appraised unequivocally against their younger counterparts. Having a strong social, professional, and familial support have allowed the older adults to tide through this pandemic psychosocially. It is of utmost importance to understand the strengths and unique challenges that comes with working in an intergenerational workforce, despite so the intergenerational economy can flourish with proper management skills and job re-designing, re-tooling and re-skilling resources to ensure the right fit to employability skills and staff loyalty. Moreover, even younger staff will age through time.

Declaration

Ethics approval and consent to participate

Ethical approval was obtained from SingHealth Centralised Institutional Review Board (CIRB). The reference number for this study is 2020/2979.

Consent for publication

Not applicable

Availability of data and materials

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

Competing interest

The authors declare that there are no competing interests.

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Authors' Contributions

G.C, S.L: Full contributions to the conceived idea of this study, designing of the questionnaire and poster, application to CIRB, data collection and analysis, drafting and editing of the manuscript and agreement of the final approval of the version to be published. Both authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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