

EFFECT OF COVID-19 ON PRIMARY HEALTHCARE NURSES' JOB SATISFACTION AND THEIR TURNOVER INTENTION IN SINGAPORE

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ABSTRACT

BACKGROUND:

Globally, COVID-19 has added pressure to the healthcare workforce, particularly nurses, who face an exacerbated shortage. Few studies have investigated job satisfaction and turnover intention among primary healthcare nurses in the long-drawn pandemic situation. Hence, this study aims to examine job satisfaction and retention among primary healthcare nurses.

AIMS:

To assess the level of job satisfaction and identify factors that affect job satisfaction and turnover intentions among primary healthcare nurses. This will serve to inform organisations on ways to improve processes and support mechanisms that promote job satisfaction and retention for primary healthcare nurses.

METHODS:

A cross-sectional quantitative study was conducted that involved 132 primary care nurses from seven healthcare centres in Western Singapore. Level of job satisfaction and turnover intentions was assessed using a 39-item questionnaire. Relationships between job satisfaction and turnover intentions were analysed using Pearson correlation and linear regression analysis.

RESULTS:

Among the five job satisfaction subscales, personal satisfaction had the highest score ($M=3.73$, $SD=0.47$), while satisfaction with workload had the lowest score ($M=3.24$, $SD=0.69$). The overall job satisfaction mean score of 3.47 ($SD=0.49$), is considered within the moderate range and is similar to other studies conducted during COVID-19 pandemic. Albeit the challenging period, more than half of the nurses reported their intention to stay in a primary healthcare setting.

CONCLUSION:

This study demonstrated the multifaceted nature of nurses' job satisfaction and its intricate interplay with various factors, including personal accomplishment, workload, professional support, pay and prospects, training and the challenges posed by the COVID-19 pandemic. The findings of this study provide insight for organisations to look at targeted factors to improve the rate of retention for primary care nurses.

KEYWORDS

primary care, nurses, job satisfaction, turnover intention, COVID-19.

BACKGROUND

The World Health Organization (WHO) declared Coronavirus disease 2019 (COVID-19) a global pandemic [1] and overtime impacted the healthcare system significantly, specifically the nursing workforce [2, 3]. Singapore received its first imported case on 23rd January 2020 [4]. Healthcare providers responded to COVID-19 pandemic, including nurses, who supported the healthcare system by providing care to meet patients' need. Study [5] have indicated that the pandemic has led to immense stress to nurses due to substantial surges in workload coupled with physical and psychological exhaustion, and fear of being infected at work and their family members. Many studies have examined the well-being of nurses impacted by COVID-19. Most of the studies are hospital-based [6] and relatively few studies have investigated job satisfaction and turnover intention amongst primary care nurses. The Ministry of Health Singapore announced that COVID-19 pandemic became endemic on 13 February 2023 [7]. Investigating job satisfaction within the nursing profession requires a nuanced approach, accounting for diverse settings and organisational environment to gain insights into unique challenges experienced by different nursing groups [8].

Nurses comprised almost half of the global healthcare workforce and nursing shortages can posit a big challenge for the healthcare systems [9]. In Singapore, the public primary healthcare centres provide services and care for acute illnesses, chronic diseases, preventive health, children and women health and well-being. Data showed that the pandemic has taken a toll resulting in rising attrition rates for both foreign and local nurses [10]. The attrition rate in the public acute hospitals reached a five-year high in 2021 at 7.4% for local nurses, and 14.8% for foreign public nurses [3]. However, there is a lack of reports on the situation for nurses in the primary healthcare setting. Excessive turnover can lead to staffing shortages, which have been associated with reduced continuity of care [11]. In view of the known impact of COVID-19 on nursing workforce, it will be useful to examine how primary care nurses have coped to inform nursing management on the support mechanism for retention.

Many researchers have provided definitions for job satisfaction that involves multiple elements. Lu et al. defined job satisfaction as encompassing not only an individual's emotional responses towards their work, but also the nature of the job and expectations regarding its attributes [12]. Studies have shown that job satisfaction is significantly associated with quality of health care, patient safety [13] and employee loyalty [14]. Job satisfaction is also considered a decisive factor strongly and positively associated with nurses' intention to stay [15]. Fasbender et al. (2019) found that job satisfaction is negatively correlated with turnover intentions [11]. Factors such as organisational support and job autonomy have shown predictive effect on job satisfaction [15].

"Intention to stay" can be defined as nurses' perception of the likelihood of remaining in their current role or staying within the present organisation and serves as a strong predictor for the retention of nurses [9,15]. High turnover of nurses in an organisation can be costly and to recruit and replace can affect the quality for continuity of care and productivity [16]. The percentage of nurses expressing their intention to leave ranged from between 5% and 17% across different countries [15].

AIM

The aim of this study is to assess the level of job satisfaction and turnover intention among primary care nurses. This research seeks to identify factors that promote job satisfaction and retention in primary care nurses' post-pandemic. Findings from this study will serve as a guide to inform management in developing targeted strategies to better improve processes aim at sustaining nurses' satisfaction level and retaining nurses in future pandemic situation. The research questions for this study are as follow:

- 1) What are the factors in the workplace that affect the level of job satisfaction of primary care nurses during COVID-19 pandemic?
- 2) What is the job satisfaction level of primary care nurses during COVID-19 pandemic?
- 3) What is the turnover intention of primary care nurses post-COVID-19 pandemic?

METHODS

DESIGN, PARTICIPANTS, SETTINGS, AND SAMPLE SIZE

A cross-sectional survey was conducted with a convenience sample of primary care nurses. A total of 218 nurses in seven primary healthcare centres in Western Singapore were invited to participate in an online questionnaire. The inclusion criteria include nurses who had worked for more than a year in the healthcare centres to render patient care. As the number of Nursing Administrators, Senior Nurse Managers and Senior Nurse Clinicians are small, it was subsumed under Nurse Manager or Nurse Clinicians in this study. Locum or temporary nurses were excluded from this study. A sample size of 131 nurses was required to achieve a 5% margin of error, 95 % CI with a response distribution of 50%.

DATA COLLECTION

An online platform (Form SG) was used to facilitate the completion of a set of anonymous, self-administered questionnaires on a voluntary basis from 6th March to 27th April 2023. The initial section of the questionnaire contained information to inform participants on the aim and objectives of the study, participation was voluntary and assurance on data confidentiality. The survey link was provided via staff institutional email invitation. The questionnaire sought to obtain demographic information without identifiers and assess nurses' job satisfaction and turnover intention. Completion of the survey constituted implied consent. Data were collected and stored in a password-protected excel spreadsheet only accessible by researchers.

INSTRUMENTS

Job Satisfaction

This study employed the Measure of Job Satisfaction (MJS), an instrument developed and validated by Traynor and Wade to assess the level of job satisfaction among community nurses [17]. Written permission was obtained to use the MJS which consists of 38-items and five subscales: Personal Satisfaction (10 items), Satisfaction with Workload (7 items), Satisfaction with Professional Support (9 items), Satisfaction with Pay and Prospects (8 items), and Satisfaction with Training (4 items). The original 38-items were worded and modified into individual questions to assess job satisfaction specifically during the COVID-19 pandemic. In Traynor and Wade's study, concurrent and discriminatory validity were satisfactory, and the Cronbach's alpha was 0.93 for MJS [17]. Cronbach's alpha for this study was 0.96 based on the responses of the participants in this study (see Table 1). No pilot study was conducted, as the instruments were appropriate for study's context. MJS has been demonstrated to be a valid and reliable instrument with sufficient sensitivity to discriminate between various groups of community nurses [17]. The coefficients for the scales were all higher than the usually recommended level of 0.70, indicating good internal consistency and reliability of the scale to measure job satisfaction. Responses were assigned a 5-point Likert-type scale, from 1 (strongly disagree) to 5 (strongly agree). The mean scores of all responses were analysed with higher scores indicating a higher level of job satisfaction.

TABLE 1: CRONBACH'S ALPHA VALUES OF THE MEASURE OF JOB SATISFACTION

Scale	Cronbach's Alpha
Personal Satisfaction	0.85 (0.88)
Satisfaction with Workload	0.91 (0.88)
Satisfaction with Professional Support	0.93 (0.86)
Satisfaction with Pay and Prospect	0.89 (0.87)
Satisfaction with Training	0.73 (0.84)
Overall Job Satisfaction	0.96 (0.93)

Note. () Cronbach Alpha in Traynor and Wade's (1993) study

Turnover Intentions

Intentions to stay were assessed using a single-item question: "Given the current COVID-19 situation, I intend to stay in the healthcare centres and contribute to primary healthcare nursing". Participants responded on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). The mean score reflects the level of intention to stay, with higher scores indicating a stronger intention to stay.

ETHICAL CONSIDERATIONS

Approval for the study was obtained from The National Healthcare Group Domain Specific Review Board (DSRB) Singapore, with protocol number 2022/00820. The study involved conducting employee surveys without personal identifiers.

STATISTICAL ANALYSIS

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) software version 29. Descriptive statistics were used to present social demographic characteristics of the respondents. Mean scores were calculated to determine the level of overall job satisfaction and the intention to stay. The Shapiro-Wilk test was used to test the normality of the sample distribution. Independent sample t-tests and one-way analyses of variance (ANOVA) were used to test the differences in the level of job satisfaction between demographic subgroups. Pearson's r correlation analysis was conducted to explore the relationships between job satisfaction, intention to stay, and demographic characteristics. Multiple regression analysis was employed to identify the linear relationship between subscales of job satisfaction and intention to stay among primary care nurses. For all analysis, an alpha-level of $p < 0.05$ was considered statistically significant.

RESULTS

DEMOGRAPHIC PROFILE OF THE PARTICIPANTS

This study had received responses from 136 nurses. Four survey responses were excluded as participants did not fulfil the inclusion criteria of having more than a year of work experience. The participants' demographic characteristics are presented in Table 2. Most participants ($n=106$; 80.3%) were Assistant Nurse Clinicians, Senior Staff Nurses, Staff Nurses, and Enrolled Nurses (ANC, SSN, SN, EN). Nurses aged 31-40 years old formed the majority (42.4%), 69.7% of nurses held a bachelor's degree and 37.1% of nurses reported having more than 10 years of experience in the primary care setting.

TABLE 2: SOCIODEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS (N=132)

Social Demographic Characteristics	N	%
Designation		
Nurse Manager/ Nurse Clinician/ Advanced Practice Nurse	26	19.7
Assistant Nurse Clinician/ Senior Staff Nurse/ Staff nurse/ Enrolled Nurse	106	80.3
Age		
21 - 30 years old	17	12.9
31 - 40 years old	56	42.4
41 - 50 years old	35	26.5
51 - 70 years old	24	18.2
Highest Educational level		
Pre-University/ Vocational/ Certificate	7	5.3
Diploma	20	15.2

Social Demographic Characteristics	N	%
Bachelor's degree	92	69.7
Master's degree	8	6.1
Others (School of Nursing/ N, O level/ITE)	5	3.8
Years of Experience in Primary Care Setting, National University Polyclinics		
1-3 years	25	18.9
4-5 years	26	19.7
6-10 years	32	24.2
>10 years and above	49	37.1

PRIMARY CARE NURSES' JOB SATISFACTION AND INTENTION TO STAY

Mean score for overall job satisfaction was 3.47 (SD=0.49). The average scores and percentage of each item in the Measure of Job Satisfaction are shown in Table 3. The subscale "Personal Satisfaction" was ranked the highest (M= 3.73, SD =0.47) while "Satisfaction with Workload" ranked the lowest (M = 3.24, SD = 0.69). The mean score for intention to stay in the current workplace was 3.43 (SD=0.81). More than half of the nurses (53%) indicated their intention to stay in primary healthcare, 13% indicated otherwise while 34% chose to remain neutral in their decision.

TABLE 3: DESCRIPTIVE STATISTICS OF PRIMARY CARE NURSES' JOB SATISFACTION SCORES AND INTENTION-TO- STAY SCORES

Item/Subscale	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD
Subscale Personal Satisfaction						3.73	0.47
1 I had a feeling of accomplishment from my work during Covid-19	0.8	6.8	33.3	50.0	9.1	3.60	0.78
2 I can use my skills during Covid-19	0	0.8	19.7	67.4	12.1	3.91	0.59
3 I made contribution to patient care during Covid-19	0	1.5	6.8	64.4	27.3	4.17	0.61
4 There were challenges in my job during Covid-19	0	0.8	9.8	56.1	33.3	4.22	0.65
5 My job was varied and interesting during Covid-19	1.5	9.1	39.4	40.2	9.8	3.48	0.85
6 I had accomplishment when I went home at the end of the day during Covid-19	3.0	12.1	40.2	39.4	5.3	3.32	0.87
7 I was able to provide standard care to patient during Covid-19	0.8	3.8	20.5	65.9	9.1	3.79	0.69
8 I achieved personal growth and development from my work during Covid-19	3.8	5.3	37.9	46.2	6.8	3.47	0.85
9 My work with patients during Covid-19 were in good quality	0	3.0	28.8	62.1	6.1	3.71	0.62
10 I could exercise independent thought and action in my work during Covid-19	0.8	3.8	31.1	61.4	3.0	3.62	0.65

Item/Subscale	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	
Subscale Satisfaction with Workload						3.24	0.69	
11	I had sufficient time to get through my work during Covid-19	4.5	15.9	34.8	42.4	2.3	3.22	0.90
12	The amount of time was sufficient to finish everything I have to do during Covid-19	4.5	16.7	39.4	39.4	0	3.14	0.85
13	I spent sufficient time for providing patient care during Covid-19	3.0	9.8	35.6	48.5	3.0	3.39	0.83
14	I was able to manage my workload during the Covid-19 pandemic	4.5	12.1	32.6	49.2	1.5	3.31	0.88
15	I was happy with the way that I cared for patients during Covid-19	2.3	2.3	32.6	60.6	2.3	3.58	0.69
16	In my work area, there were enough staff to safely care for patients during Covid-19	7.6	22.0	40.2	28.8	1.5	2.95	0.94
17	The amount of time spent on administration was sufficient during Covid-19	3.0	19.7	45.5	31.8	0	3.06	0.80
Subscale Satisfaction with Professional Support						3.54	0.60	
18	I received adequate support and guidance from my supervisor during Covid-19	3.0	9.1	33.3	52.3	2.3	3.42	0.81
19	I had opportunities to discuss my concerns during Covid-19	3.0	6.8	37.1	53.0	0	3.40	0.75
20	I feel supported for my job during Covid-19	3.0	7.6	30.3	58.3	0.8	3.46	0.78
21	I received good quality of the supervision in my work during Covid-19	0.8	11.4	37.9	50.0	0	3.37	0.71
22	I received respect and fair treatment from my boss during Covid-19	1.5	12.9	33.3	50.0	2.3	3.39	0.80
23	I feel that I belong to part of the team during Covid-19	1.5	3.8	25.8	62.9	6.1	3.68	0.71
24	I am happy with the people I talked to and worked with during Covid-19	0.8	1.5	29.5	62.9	5.3	3.71	0.63
25	I was kept informed by my supervisor of Covid-related changes in my workplace	0.8	3.8	12.9	71.2	11.4	3.89	0.67
26	Good values were placed on my work by my supervisor during Covid-19	1.5	7.6	31.8	55.3	3.8	3.52	0.76
Subscale Satisfaction with Pay and Prospect						3.39	0.61	
27	I am satisfied with the pay and remuneration that I received	6.8	14.4	31.8	43.9	3.0	3.22	0.97
28	I am happy with my performance grading	3.0	7.6	37.1	52.3	0	3.39	0.76
29	I am fairly paid for what I had contributed to the healthcare centre	3.0	12.9	40.2	43.9	0	3.25	0.79
30	I am satisfied with my prospects for promotion	2.3	18.2	40.2	38.6	0.8	3.17	0.82
31	I have opportunities to advance my career	3.0	13.6	35.6	45.5	2.3	3.30	0.85
32	My job description matches what I do at work	1.5	7.6	30.3	56.1	4.5	3.55	0.77

Item/Subscale	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
33 The future in the healthcare centre looks secured for me	2.3	6.1	37.1	50.8	3.8	3.48	0.77
34 I have a sense of job security	0	5.3	25.0	60.6	9.1	3.74	0.70
Subscale Satisfaction with Training						3.25	0.68
35 I had opportunities to attend courses during Covid-19	4.5	22.7	24.2	44.7	3.8	3.20	0.99
36 I could take time off to attend courses during Covid-19	5.3	25.0	39.4	28.8	1.5	2.96	0.90
37 The courses that I attended during Covid-19 were being funded	0.8	6.1	49.2	42.4	1.5	3.38	0.66
38 I received adequate training to manage my current job scope during the COVID-19 outbreak	0.8	7.6	35.6	56.1	0	3.47	0.67
Intention To Stay							
39 Given the current situation, I intend to stay in the healthcare centre and contribute to primary healthcare nursing.	1.5	11.4	34.1	48.5	4.5	3.43	0.81

CORRELATIONS BETWEEN NURSES' INTENTION TO STAY, OVERALL JOB SATISFACTION AND VARIOUS DEMOGRAPHIC VARIABLES

The correlations between perceived intention to stay, perceived job satisfaction and various demographic variables were examined using Pearson product-moment correlation coefficient. Preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Perceived overall job satisfaction and perceived intentions to stay were found to be moderately positively correlated ($r=0.57$). This means that as job satisfaction increases, so does intentions to stay. Additionally, a small positive correlation was found between perceived overall job satisfaction with age ($r=0.26$), designation ($r=0.23$), and years of experience ($r=0.22$). Detailed results of the analyses are shown in Table 4.

TABLE 4: DESCRIPTIVE STATISTICS AND CORRELATIONS FOR STUDY VARIABLES

Variable	M	SD	1	2	3	4	5	6
1. Age ^a	1.53	1.00	—					
2. Designation ^b	0.20	0.40	.27**	—				
3. Educational Level ^c	1.88	0.75	.05	.23**	—			
4. Years of Experience in Primary Care Setting ^d	2.80	1.14	.58**	.21*	.04	—		
5. Intention to Stay	3.43	0.81	.27**	.07	.00	.14	—	
6. Overall Job Satisfaction	3.47	0.49	.26**	.23**	.12	.22*	.57**	—

Note. a 0 = 21-30 years old, 1 = 31-40 years old, 2 = 41-50 years old, 3 = 51-70 years old

b 0 = Assistant Nurse Clinician/ Senior Staff Nurse/ Staff Nurse/ Enrolled Nurse, 1= Nurse Manager/ Nurse Clinician/ Advanced Practice Nurse

c 0 = Pre-University/ Vocational/ Certificate, 1=Diploma, 2= bachelor's degree, 3= master's degree, 4= Others

d 0 = 1 year, 1 = 1-3 years, 2 = 4-5 years, 3 = 6-10 years, 4 = above 10 years

* $p < .05$, ** $p < .01$

The analysis further revealed a significant positive medium correlation between intention to stay and personal satisfaction, satisfaction with professional support and satisfaction with pay and prospect. Furthermore, significant small positive correlations were identified between intention to stay and satisfaction with workload and training (see Table 5).

TABLE 5: DESCRIPTIVE STATISTICS AND CORRELATIONS BETWEEN INTENTION TO STAY AND JOB SATISFACTION SUCALES

Variable	M	SD	1	2	3	4	5	6
1. Intention to Stay	3.43	.81	—					
2. Personal Satisfaction	3.73	.47	.46 ***	—				
3. Satisfaction with Workload	3.24	.69	.33 ***	.53 ***	—			
4. Satisfaction with Professional Support	3.54	.60	.55 ***	.73 ***	.66 ***	—		
5. Satisfaction with Pay and Prospect	3.39	.61	.59 ***	.59 ***	.56 ***	.77 ***	—	
6. Satisfaction with Training	3.25	.68	.34 ***	.44 ***	.47 ***	.54 ***	.60 ***	—

*** p < .001

COMPARISONS OF DIFFERENCES IN THE LEVEL OF JOB SATISFACTION BETWEEN DEMOGRAPHIC SUBGROUPS

Analysis using ANOVA indicated significant difference in overall job satisfaction between age subgroups (21-30, 31-40, 41-50 and 51-70 years old), $F(3,128) = 3.4, p = .02$. Specifically, the Scheffe post-hoc analysis showed that age group 51-70 ($n = 24, M = 3.67, SD = 0.30$) exhibited a significantly higher mean score for overall job satisfaction compared to the 21-30 years old group ($n = 17, M = 3.21, SD = 0.49, p = .03$), eta squared = 0.07 indicating a small effect size. No statistically significant difference in overall job satisfaction mean scores was found related to educational level, $F(4,127) = .71, p = .58$. However, there was a significant effect of years of experience in primary care on overall job satisfaction, $F(3,128) = 3.29, p = .02$, eta squared = 0.07, indicating a small effect size.

The NM, NC, APN group reported significantly higher level of overall job satisfaction, satisfaction with workload, professional support, pay and prospect, and training than ANC, SSN, SN, EN group ($p < 0.05$). However, no significant differences were found between the two categories of nurses in the subscales for personal satisfaction (Table 6).

TABLE 6: COMPARISON OF OVERALL AND SUBSCALE JOB SATISFACTION MEAN SCORE BY DESIGNATION

	Nurse Manager/ Nurse Clinician / Advanced Practice Nurse		Assistant Nurse Clinician/ Senior Staff Nurse/ Staff nurse/ Enrolled Nurse		t	p	Cohen's d
	M	SD	M	SD			
Overall Job Satisfaction	3.69	.33	3.42	.51	3.42	.001	.58
Personal Satisfaction	3.88	.39	3.69	.49	1.89	.061	.41
Satisfaction with Workload	3.53	.45	3.16	.72	3.28	.002	.55
Satisfaction with Professional Support	3.77	.41	3.48	.62	2.89	.005	.49
Satisfaction with Pay and Prospect	3.59	.53	3.34	.62	2.14	.038	.42
Satisfaction with Training	3.53	.65	3.19	.67	2.35	.020	.52

THE EFFECT OF JOB SATISFACTION SUBSCALES ON NURSES' INTENTION TO STAY

Regression analyses were conducted to examine the linear relationship between subscales of job satisfaction and intention to stay among primary care nurses (Table 7). The R-square value .34 indicates that approximately 34% of the variance in intention to stay is explained by the five predictor variables of job satisfaction subscales with $F(5,126) = 15.69$, $p < .001$. Satisfaction with pay and prospect ($\beta = 0.42$, $p < .001$) exhibit statistical significance in predicting intention to stay, indicating the higher the job satisfaction in pay and prospect, the higher the intention to stay.

TABLE 7: LINEAR REGRESSION ANALYSIS: SATISFACTION SUBSCALES AND INTENTION TO STAY

Satisfaction Subscales	95%CI				β	p
	B	SE	LL	UL		
Personal Satisfaction	.19	.18	-.14	.55	.12	.240
Satisfaction with Workload	-.12	.11	-.34	.10	-.10	.294
Satisfaction with Professional Support	.31	.19	-.06	.68	.23	.101
Satisfaction with Pay and Prospect	.56	.16	.25	.87	.42	<.001
Satisfaction with Training	-.04	.11	-.25	.17	-.03	.709

Note. participants =132. B= unstandardized coefficients; SE= standardised error; β =standardized coefficients; CI = confidence interval; LL = lower limit; UL = upper limit.

DISCUSSION

Job satisfaction is critical in care quality, influence on attaining good performance and efficiency [13]. Previous studies suggested that nurses' job satisfaction level tends to be generally moderate or low [13]. A study in 130 Israeli nurses during the COVID-19 pandemic reported a mean score ranging from 3.4 to 3.9 and interpreted as moderate to high level of job satisfaction [18]. This study showed an overall job satisfaction with a mean score of 3.47, is considered within the moderate range and is consistent with scores from other studies albeit the challenging period. Nevertheless, job satisfaction is a multifaceted concept that results from a complex interplay between organisational setting, professional experience, and individual factors [13]. Findings may also be affected by cultural contexts and values [19].

Nurses reported higher level of personal satisfaction, but lower satisfaction with their workload. Similarly, a study conducted in South Korea with 200 hospital healthcare workers found that heavier workload involving direct patient interaction emerged as a conflicting factor that contributed to personal accomplishment [20]. Hence, this study data suggests that while personal satisfaction is high, workload challenges may still exist. The increasing numbers of patients, constant manpower shortage, and the need to respond to frequent changes at short notice due to the rapidly evolving needs of an ageing population remains prevalent. Addressing workload dynamics could be vital to promote a balanced and supportive work environment for nurses. Exemplary initiatives in a public health institution in Singapore include working with nurses on adjusting workloads and job scopes to better suit their needs and allowing more autonomy over shift schedules. As a result, there were increased rest periods between shifts and trials of digitalisation, robotics, and artificial intelligence to reduce repetitive and labour-intensive tasks [21]. Data in this study showed that there was higher personal satisfaction in items pertaining to skill utilisation, making contributions to patient care, and recognising job-related challenges during the COVID-19 pandemic. Findings are aligned with previous research, indicating that components related to personal accomplishment such as the ability to provide skilled and quality care to patients, and professional challenges were the most important component of job satisfaction even during a pandemic [18].

Lower satisfaction with workload indicated the challenges faced by many organisations in staffing level during the COVID-19 pandemic. Findings are consistent with previous research, as heavy workload [12,13,19] and inadequate staffing [13]

were negatively associated with job satisfaction. Workload is considered a stressor strongly correlated with lower levels of job satisfaction.[12]. The COVID-19 pandemic has further intensified persistent challenges related to workload and staffing. To retain nurses amid concern about manpower shortage, some hospitals in Singapore initiated shuttle bus service to transport nurses living in neighbouring country Johor Bahru, Malaysia to and from their workplace. The shuttle bus services helped to reduce commuting time, enabling nurses to spend less time on commuting, thus promoting more time for rest and quality time with their families. Employer's support demonstrated care about the nurses' well-being and in fostering a positive culture. As for primary care, healthcare assistants are being trained to take on higher-level caregiving support roles, allowing nurses to better focus on clinical care [21]. For the primary healthcare centres in Western Singapore, initiatives that have taken place include training podiatry assistants to perform diabetic foot screening and healthcare assistants to conduct diabetic retinal photography for patients annual screening with an aim towards off-loading workload for nurses. Organisations may need to make necessary adjustments to skill mixed or adjust nurse-to-patient ratios during a pandemic. Innovative strategies, careful planning, coordination, and a higher staffing budget could be fundamental in maintaining adequate staffing levels [22].

Nurses were less satisfied on the opportunities in taking time off to attend courses during the COVID-19 pandemic. This could be attributed to the challenges in accessing training opportunities due to constraint in manpower. In the primary care setting, despite converting in-house training online to address their learning needs, nurses sometimes missed the training due to lack of manpower highlighting a significant challenge. During disease outbreak, nurses often take on additional responsibilities beyond their typical duties [23]. Labrague & Santos highlighted that it is essential for healthcare organisations and nursing administrators to develop training plans to improve the nurses' capacity to manage and care for patients effectively during COVID-19 period [23]. The emergence of the COVID-19 pandemic had affected clinical nursing education globally. Organisations could consider exploring flexible learning approaches, such as a blending virtual and in-person clinical education with capacity planning to overcome the challenges posed by the COVID-19 pandemic [24].

Nurses comprising of nurse managers, nurse clinicians and advanced practice nurses reported higher overall job satisfaction than assistant nurse clinician, senior staff nurses, staff nurses and enrolled nurses. These findings coincide with a study that demonstrated higher job satisfaction amongst nursing managers compared to assistant staff [25]. Difference could be attributed to a higher frequency of managerial roles amongst the nurse managers, nurse clinicians and advanced practice nurses. Managerial positions are associated with greater autonomy and responsibility, hence leading to higher satisfaction [18]. According to Frederick Herzberg's two-factor theory, intrinsic factors such as higher-skilled work, performance recognition, autonomy, meaningfulness, and decision-making involvement lead to positive job satisfaction [18].

Study data revealed that 53% of the nurses indicated their intention to stay. In contrast, a study conducted in Taiwan during the COVID-19, which involved 333 novice nurses, reported that the average intention- to- stay score was close to disagreement [16]. In a pre-pandemic study among 2,352 hospital nurses in China reported an average intention to stay score (3.37/ 5) [15], while this study data revealed a slightly lower average score (3.21/ 5). Though the intention to stay data are comparable to other empirical findings, additional strategies should be explored and put in place to enhance long-term retention and address the situation more effectively. To this effect, the Ministry of Health in Singapore conducted a country wide survey post-pandemic and implemented The Ministry of Health's Award for Nurses' Grace Excellence Loyalty (ANGEL) scheme to support the retention of nurses in the public healthcare institutions by offering financial incentives of up to \$100,000 over a 20-year period. This initiative was launched in September 2024 and aimed at encouraging nurses to build lifelong careers in Nursing [26].

Study data showed that overall job satisfaction had significant medium positive correlations with nurses' intention to stay. This finding is aligned with previous literature that found job satisfaction highly positively associated with an intention to stay and serves as a decisive factor that safeguards intention to stay [9,15]. Significant medium positive correlations were observed between an intention to stay and satisfaction with professional support and pay and prospect. Our healthcare setting supports employee well-being by fostering a culture that commits to caring for every member and enables

employees to speak up without fear of judgement or retaliation. A dedicated well-being office plays a central role in developing holistic strategies, emphasising the importance of caring for employees. Key measures include access to confidential counselling services, externally or in-house, as well as peer support programs and helplines. Clear reporting channels address disruptive behaviour with strict confidentiality, and an employee grievance policy ensures fair resolution of concerns. These initiatives reflect organisational commitment to a positive workplace environment. Opportunities for professional development of nurses are available through scholarships and course sponsorships. In February 2024, the Ministry of Health (Singapore) released its first-ever salary guidelines to help community care organisations offer competitive salaries and improve fairness in pay structure [27]. Existing literature have shown that presence of professional relationships significantly contributes to nurses' intention to stay [9]. Fostering better support from colleagues and organisations [12], a sense of acknowledgement and mutual respect among individuals [13] as well as providing fair promotion opportunities [12] and remuneration [13] enhances job satisfaction. Study findings allude that nurses choose to stay when professional relationships offer support, trust, and a sense of belonging [9].

STRENGTHS AND LIMITATIONS

This study provides knowledge that serve as a useful guide to promote job satisfaction and reduce turnover intention. Some limitations of the study include the use of convenience sampling and recruitment of nurses from a single cluster of healthcare centres, which may not be representative of all primary care nurses in Singapore. Future research may consider obtaining study samples across different healthcare sectors to ensure generalisability. Furthermore, there might be non-job-related factors such as personal factors [13] that contribute to the level of job satisfaction and their turnover intentions. The use of cross-sectional design in this study is another limitation. Longitudinal studies would allow for a better understanding of the impact of COVID-19 on job satisfaction and turnover intentions.

CONCLUSION

The COVID-19 pandemic has affected and stressed the healthcare system, further straining the nursing workforce. This study sheds light on the multifaceted nature of nurses' job satisfaction and its complex interplay with various factors. Nurses reported higher personal satisfaction from utilising their skills, contributing to patient care, and managing job-related challenges but lower satisfaction with their workloads during the pandemic. Organisations could consider strategies such as adjustments to skill mixes or nurse-to-patient ratios, fostering professional support, providing fair promotion opportunities, and exploring flexible training approaches to promote job satisfaction and retention rate. It is heartening to find that amidst the unprecedented challenges, more than half of the nurses in primary healthcare had chosen to stay and commit to caring for the community.

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