Original article

Burn-out after COVID-19 pandemic: A survey of flight attendants of an airlines company in Thailand

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Abstract

Background: Several airlines in Thailand underwent organizational difficulties following the COVID-19 outbreak, which had an impact on their flight attendants. Burn-out has become as an increasing concern, However, there are few studies on burn-out issues in the pandemic period among airline workers in Thailand.

Objective: This study aimed to prevalence of medium to high scale of burn-out and analyze the associated factors among flight attendants after COVID-19 pandemic.

Methods: This survey was conducted among 358 flight attendants from June to November 2022. The subjects completed a self-administered questionnaire including: 1) personal and work-related questionnaire; 2) stressful event questionnaire; 3) questionnaire examining the effects of the COVID-19 outbreak; and 4) the Maslach burnout inventory-general survey (MBI-GS) Thai version. Descriptive were used to report collected data and *t* - tests and one-way analysis of variance (ANOVA) were used to determine associated factors before identifying predictive factors using multiple linear regression analysis.

Results: The study recruited 358 flight attendants (age range 26 - 58, mean age 39.0 ± 7.4 years). The prevalence of medium to high scale in emotional exhaustion, cynicism, and professional efficacy was 46.6%, 63.7%, and 56.4%, respectively. Predictive factors of emotional exhaustion included older age ($P = 0.015$), increased indebtedness ($P = 0.01$), schedule dissatisfaction ($P = 0.012$), a lower number of qualified aircraft ($P = 0.007$), decreased feelings of work stability ($P < 0.001$), sleeplessness ($P = 0.041$), higher stress scores ($P < 0.001$), and worse mental health ($P = 0.011$). Predictive factors of cynicism were non-leadership position ($P < 0.001$), schedule dissatisfaction ($P = 0.001$), decreased feelings of work stability ($P < 0.001$), higher stress scores ($P < 0.001$), and worse mental health ($P = 0.015$). Only non-leadership position was associated with professional efficacy ($P < 0.001$).

Conclusion: This study identified predictive factors of burn-out in three elements including personal, work-related, and mental health factors which are older age, financial stress, schedule dissatisfaction, decreased feelings of work stability, mental health status, stress levels, and sleep quality.

Keyword: Burn-out, COVID-19, flight attendant.

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Coronavirus disease of 2019 (COVID-19) is a highly contagious disease caused by the Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus which quickly spread worldwide and was declared a pandemic by the World Health Organization (WHO). To prevent the spread of the virus, several measures were implemented.[1] The airlines industry was in response to lockdown measures implemented in many countries around the world. The decrease in revenue flights and passengers had a significant impact on the airline industry's financial stability leading to operational challenges.[2] As a result, an airlines company faced organizational restructuring.

The COVID-19 pandemic had a negative impact on employees, causing work interruptions, reduced hours, and financial insecurity, leading to adverse effects on mental health. This is especially true for those working in high-risk jobs, such as flight attendants, who experienced increased stress, anxiety, fear, and job insecurity, potentially leading to decreased job performance and satisfaction.[3] Cahill J, *et al*. revealed that flight attendants experienced the highest rates of depression, with 20.0% of them having suicidal thoughts.[4] Niklass M. recruited 443 services sector employees in Latvia and reported that 38.6% had danger signs of burn-out and 31.7% sufferied from burn-out.[5] It is essential to address mental health issues following the COVID-19 pandemic, as previous epidemics have shown that outbreaks can have long-lasting effects on mental health.[6]

Burn-out is a syndrome caused by chronic workplace stress that has not been effectively managed. It is characterized by three dimensions: 1) feelings of energy depletion or exhaustion; 2) increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and 3) a sense of ineffectiveness and lack of accomplishment. Burn-out refers specifically to phenomena in the occupational context. [7] It is often occurred among individuals in the service industry causing the lacking of enthusiasm in carrying out work, daily life activities, and decreased performance and productivity[8] and also a risk of developing major depressive disorder.[9] the Maslach burnout inventory-general survey (MBI-GS) was designed to measure burn-out consisting of emotional exhaustion, cynicism, and professional efficacy.[10] For Thai version, it was developed by Kleebbua C. and Chioroongroj K. who studied the predictive factors of burn-out among flight attendants and found personal, work-related, and social variables to be significant.[11]

Despite the significant impact of the pandemic on the mental health of service industry employees, particularly burn-out, no study has been conducted on burn-out among flight attendants in Thailand. Our survey aimed to address this gap by identifying the prevalence of burn-out and factors associated with it in Thai flight attendants. The findings will be beneficial in developing strategies and measures to address the burn-out issues in the short and long term, as well as to prepare for any future crisis situations that may affect frontline personnel.

Materials and methods

This study protocol has been approved by the Institutional Review Board (IRB), the Ethics Committee, the Faculty of Medicine, Chulalongkorn University (IRB no.0204/65). The data were obtained from flight attendants between June and November 2022 using self-completion questionnaires.

Subjects

To reduce sampling error, the flight attendants were recruited to gather data from every individual who meets the inclusion criteria. Before participating in the study, the flight attendants were provided with a subject information sheet, which outlined the purpose of the study, the procedures involved, and any risks or benefits associated with participation. The flight attendants were required to sign a consent form to indicate their willingness to participate. To be eligible for the study, subjects had to be actively working as flight attendants for the company. Out of 3,000 flight attendants, 358 voluntarily participated.

The questionnaire consists of four sections as follows:

1) Personal and work-related questionnaire that contains 19 questions aimed to collect information about the flight attendants' demographic characteristics, job-related, and health concerned factors.

2) Stressful event questionnaire contains 13 questions developed by researchers, based on literature review focusing on factors linked to stress.[11 - 13] Subjects were asked to rate their stress levels based on thirteen different life events that had occurred in the past year. These events included: 1) experiencing the loss of a family member or lover; 2) experiencing severe health problems; 3) getting

infected with COVID-19 or having a close person infected; 4) having a family member or lover suffering from severe illness; 5) dealing with debt problems; 6) encountering legal issues; 7) experiencing family conflicts; 8) experiencing conflicts with colleagues or supervisors onboard; 9) experiencing conflicts with company management personnel; 10) experiencing conflicts with other individuals; 11) experiencing conflicts with passengers; 12) having resignation thought; and 13) experiencing other problems. The response was on an ordinal scale (0 represents not involve in the event, 1 represents involve in the event but not affect the livings, and 2 represents involve in the event and affect the livings). Total score ranged from 0 - 26. The questionnaire has Cronbach's alpha coefficient of 0.61.

3) The effects of the COVID-19 outbreak contains 9 questions aimed to assess the impact of the pandemic on the flight attendants' work and personal life. The questionnaire was developed by the researchers, based on the literature review that emphasizes the effects of COVID-19. [3, 14, 15]

4) MBI-GS Thai version is developed by Kleebbua C. MBI-GS has been widely used in the most occupational group [16] and has been widely used in many countries. Also, it has been evaluated on its validity.[17, 18] This can imply its acceptance in academia. It consists of 16 questions answered on a Likert scale ranging from 0 to 7. The questionnaire was designed to assess the levels of burn-out in three dimensions: emotional exhaustion, cynicism, and professional efficacy. The total scores of questions number 1- 5 represent burn-out score of emotional exhaustion into 3 levels: low (≤ 10), medium (10.01 - 15.99), and high (≥ 16). The total scores of questions number 6 - 10 represent burn-out score of cynicism into 3 levels: low (≤ 5), medium (5.01 - 10.99), and high (≥ 11). The total scores of questions number 11 - 16 represent burn-out score of professional efficacy into 3 levels: low (≥ 30), medium (24.0 - 29.0), and high (≤ 24).[19] Cronbach's alpha coefficients, which were found to be 0.832 for emotional exhaustion, 0.901 for cynicism, and 0.839 for professional efficacy.

Statistical analysis

The data were analyzed using SPSS for Windows version 28.0. The prevalence of burn-out in each dimension was reported by descriptive statistics, including frequency, percentage, mean, and standard deviation (SD).

To determine the variables associated with burn-out, inferential statistics were used, such as *t* - tests and one-way analysis of variance (ANOVA). Linear contrast was applied for ANOVA in case of ordinal variables.

To identify the predictive factors, multiple linear regression analysis was conducted, and all variables with a significance level ($P \leq 0.10$) were included in the first model. The variables that did not significantly contribute to the model ($P > 0.05$) were removed manually using the backward elimination method. Finally, only the variables that had a significant impact on the burn-out dimensions with $P < 0.05$ were retained as predictive factors.

Results

Demographic characteristics

Three hundred and fifty-eight subjects participated in this study. Almost half of subjects are 31 - 40 years old (49.4%) with 154 males (43.0%) and 204 females (57.0%). Most of them are senior cabin crew (46.6%). The demographic characteristics are shown in **Table 1.**

Effects of the COVID-19 outbreak

The impacts of the ongoing COVID-19 pandemic were found to have resulted in a significant decrease in income (63.1%) and savings or assets (40.0%), as well as a reduced sense of job security (42.2%). Regarding mental health, 38.3% reported relatively unchanged mental health as shown in **Table 2.**

The prevalence of burn-out

The findings revealed that most of the subjects exhibited low levels of emotional exhaustion (53.4%) and professional efficacy (43.6%). However, the cynicism dimension displayed a relatively balanced distribution. The prevalence of medium to high scale in emotional exhaustion, cynicism, and professional efficacy among the flight attendants of 46.6%, 63.7%, and 56.4%, respectively. The mean burn-out scores of 358 subjects in every dimension were in medium levels as reported in **Table 3.**

Table 1. Demographic characteristics of subjects (n = 358).

Variables	n (%)
Age (years) mean = 39.0, SD = 7.4	
< 31	46 (12.8)
31 - 40	177 (49.4)
41 - 50	102 (28.5)
> 50	33 (9.2)
Gender	
Male	154 (43.0)
Female	204 (57.0)
Total income (Baht)	
≤ 35,000	97 (27.1)
35,001 - 50,000	206 (57.5)
> 50,000	55 (15.4)
Financial status	
Sufficient with savings	77 (21.5)
Sufficient without savings	127 (35.5)
Insufficient with supporter (s)	96 (26.8)
Insufficient with debt	57 (15.9)
Years of service (years)	
5 - 8	101 (28.2)
9 - 12	97 (27.1)
13 - 19	58 (16.2)
≥ 20	102 (28.5)
Position	
Junior cabin crew (ASY)	115 (32.1)
Senior cabin crew (ASE)	167 (46.6)
Zone supervisor (ZSV)	38 (10.6)
Crew in charge (CIC)	38 (10.6)
Satisfaction in schedule	
Most satisfaction	36 (10.1)
Moderate satisfaction	227 (63.4)
Little satisfaction	77 (21.5)
Dissatisfaction	18 (5.0)
Number of aircraft qualified	
0	3 (0.8)
1	35 (9.8)
2	154 (43.0)
3	166 (46.4)
Experiencing in smoking in the last 1 month	
Always	26 (7.3)
Sometimes	27 (7.5)
Never	305 (85.2)
Alcoholic drinking in the last 1 month	
Always	4 (1.1)
Sometimes	146 (40.8)
Never	207 (57.8)
Trouble sleeping in the last 1 month	
Always	5 (1.4)
Sometimes	174 (48.6)
Never	179 (50.0)
Stress scores mean = 4.6, SD = 3.1	

Table 2. Effects of the COVID-19 outbreak on subjects (n = 358).

	Effects of the COVID-19 outbreak				
	Extremely decrease n (%)	Quite decrease n (%)	Unchanged n (%)	Quite increase n (%)	Extremely increase n (%)
Income	226 (63.1)	88 (24.6)	15 (4.2)	16 (4.5)	13 (3.6)
Savings or assets	147 (41.1)	111 (31.0)	30 (8.4)	36 (10.1)	33 (9.2)
Physical status	24 (6.7)	88 (24.6)	193 (53.9)	42 (11.7)	11 (3.1)
Mental status	38 (10.6)	108 (30.2)	137 (38.3)	59 (16.5)	16 (4.5)
Indebtedness	31 (8.7)	44 (12.3)	183 (51.1)	72 (20.1)	28 (7.8)
Sense of job security	151 (42.2)	130 (36.3)	45 (12.6)	19 (5.3)	13 (3.6)

Table 3. Prevalence of burn-out of subjects (n = 358).

	n (%)
Emotional exhaustion (mean = 11.1, SD = 7.3, Min = 0, Max = 30)	
Low (≤ 10.00)	191 (53.4)
Medium (10.01 - 15.99)	81 (22.6)
High (≥ 16.00)	86 (24.0)
Cynicism (mean = 9.9, SD = 7.9, Min = 0, Max = 32)	
Low (≤ 5.00)	130 (36.3)
Medium (5.01 - 10.99)	89 (24.9)
High (≥ 11.00)	139 (38.8)
Professional efficacy (mean = 26.1, SD = 8.5, Min = 0, Max = 36)	
Low (≥ 30.00)	156 (43.6)
Medium (24.01 - 29.99)	73 (20.4)
High (≤ 24.00)	129 (36.0)

The associated factors

Before statistical analysis, some variables were re-categorized. Gender was not found to be significantly associated with any dimensions. The age range of flight attendants was between 26 and 58 years, with an average age of 39.0 ± 7.4 years, and was found to be statistically significant with emotional exhaustion and cynicism ($P < 0.05$). Years of service, satisfaction with the schedule, and stress scores were also found to be significantly associated with emotional exhaustion and cynicism ($P < 0.001$). Moreover, the position was significantly associated with all dimensions ($P < 0.001$). The results of the univariate analysis are presented in **Table 4.**

The predictive factors

Based on the multiple linear regression analysis, the predictive factors for each dimension were identified. The predictive factors were classified into three elements which were personal factors, work-related factors, and health-concerned factors **(Table 5).**

Predictive factors of emotional exhaustion included older age ($P = 0.015$), increased indebtedness ($P = 0.01$), schedule dissatisfaction ($P = 0.012$), a lower number of qualified aircraft ($P = 0.007$), decreased feelings of work stability ($P < 0.001$), sleeplessness ($P = 0.041$), higher stress scores ($P < 0.001$), and worse mental health ($P = 0.011$).

Predictive factors of cynicism were non-leadership position ($P < 0.001$), schedule dissatisfaction ($P = 0.001$), decreased feelings of work stability ($P < 0.001$), higher stress scores ($P < 0.001$), and worse mental health ($P = 0.015$).

Only non-leadership position was significantly associated with professional efficacy ($P < 0.001$).

Table 4. Relationship between factors and burn-out dimensions in univariate analysis.

Factor	Emotional exhaustion		Cynicism		Professional efficacy	
	Mean, SD	*P* - value	Mean, SD	*P* - value	Mean, SD	*P* -value
Demographic characteristics						
Age (years)		0.001		0.019		0.099
< 31	11.2, 7.4		9.3, 7.4		24.2, 8.3	
31 - 40	12.6, 7.4		11.8, 8.2		25.6, 8.0	
41 - 50	9.9, 6.7		8.0, 6.9		27.3, 8.6	
> 50	6.8, 5.5		6.5, 6.4		27.6, 10.1	
Gender		0.434		0.591		0.698
Male	10.8, 7.3		9.7, 7.9		26.3, 8.5	
Female	11.3, 7.2		10.1, 7.9		25.9, 8.4	
Total income (baht)		< 0.001		0.003		0.151
≤ 35,000	12.5, 6.9		11.2, 7.7		24.9, 7.6	
35,001 - 50,000	11.4, 7.4		10.0, 8.1		26.2, 8.5	
> 50,000	7.7, 6.4		7.4, 6.6		27.7, 9.6	
Financial status		0.058		0.025		0.088
Having savings or having supporter	10.4, 7.0		9.0, 7.5		26.9, 8.3	
No savings or having debt	11.8, 7.4		10.8, 8.1		25.3, 8.6	
Years of service (years)		< 0.001		< 0.001		0.207
5 - 8	11.8, 7.6		10.7, 8.0		25.2, 8.0	
9 - 12	12.9, 6.9		12.0, 8.2		25.5, 8.2	
13 - 19	11.2, 7.2		9.8, 7.9		26.0, 7.8	
≥ 20	8.7, 6.6		7.2, 6.7		27.5, 9.4	
Position		< 0.001		< 0.001		< 0.001
Junior cabin crew (ASY) or senior cabin crew (ASE)	11.8, 7.4		10.9, 8.0		25.2, 8.4	
Zone supervisor (ZSV) or crew in charge (CIC)	8.7, 6.0		6.4, 6.5		29.2, 7.9	
Satisfaction in schedule		< 0.001		< 0.001		0.404
Most satisfaction	8.8, 5.4		6.9, 7.7		28.1, 8.4	
Moderate satisfaction	10.9, 6.6		9.4, 7.1		25.8, 8.3	
Little satisfaction	11.7, 8.1		11.3, 8.1		26.2, 8.6	
Dissatisfaction	17.4, 10.1		16.3, 11.8		24.6, 10.2	
Number of qualified aircrafts		0.006		0.016		0.871
1	13.3, 7.5		12.1, 9.2		26.8, 6.2	
2	12.0, 7.6		10.6, 8.0		25.9, 8.3	
3	9.7, 6.5		8.63, 7.0		26.0, 9.1	
Smoking in the last 1 month		0.059		0.031		0.120
Always	8.4, 5.3		6.5, 4.4		28.8, 6.9	
Sometimes	13.5, 8.2		13.0, 8.2		27.7, 8.2	
Never	11.1, 7.2		9.9, 8.0		25.7, 8.6	
Alcoholic drinking in the last 1 month		0.534		0.143		0.674
Always	9.3, 3.9		3.8, 4.2		29.3, 10.3	
Sometimes	11.6, 7.0		10.5, 7.5		26.3, 8.0	
Never	10.8, 7.4		9.5, 8.0		25.9, 8.6	
Trouble sleeping in the last 1 month		0.023		0.005		0.038
Always	16.6, 10.4		18.0, 8.8		17.6, 7.8	
Sometimes	12.8, 7.0		11.4, 8.0		25.6, 8.0	
Never	9.3, 7.0		8.3, 7.3		26.7, 8.7	

Table 4. (Cont.) Relationship between factors and burn-out dimensions in univariate analysis.

Factor	Emotional exhaustion		Cynicism		Professional efficacy	
	Mean, SD	*P* - value	Mean, SD	*P* - value	Mean, SD	*P* -value
Stress score	11.1, 7.2	<0.001	9.9, 7.9	<0.001	26.7, 8.5	0.412
Effects of the COVID-19 outbreak						
Savings or assets		0.028		0.098		0.532
Extremely decrease	12.9, 7.6		11.5, 8.8		26.0, 8.38	
Quite decrease	10.1, 7.0		8.9, 7.0		26.2, 8.77	
Unchanged	9.1, 6.5		8.9, 6.7		25.7, 8.24	
Quite increase	10.7, 6.2		8.5, 6.9		24.6, 8.83	
Extremely increase	9.2, 6.7		8.9, 7.6		28.1, 7.54	
Physical status		0.011		0.042		0.724
Extremely decrease	13.5, 8.1		12.1, 8.4		28.0, 9.1	
Quite decrease	13.0, 7.2		11.5, 8.6		26.0, 8.1	
Unchanged	10.4, 7.1		9.5, 7.7		26.0, 8.3	
Quite increase	9.9, 6.5		7.8, 6.0		25.2, 8.8	
Extremely increase	8.2, 7.7		8.0, 6.1		27.6, 11.0	
Mental status		0.029		0.029		0.716
Extremely decrease	16.0, 9.2		15.1, 10.3		26.7, 8.7	
Quite decrease	12.7, 6.9		11.3, 8.3		26.3, 7.8	
Unchanged	8.4, 5.6		7.6, 6.0		26.9, 8.5	
Quite increase	11.0, 7.3		9.2, 7.2		24.7, 9.2	
Extremely increase	12.3, 8.0		11.1, 7.0		27.1, 9.3	
Indebtedness		0.006		0.079		0.150
Extremely decrease	9.2, 6.4		8.7, 7.5		31.0, 6.2	
Quite decrease	10.7, 7.4		9.7, 7.9		25.6, 9.3	
Unchanged	10.2, 6.8		9.2, 7.3		25.0, 8.5	
Quite increase	13.6, 7.9		11.9, 9.2		26.4, 8.2	
Extremely increase	13.3, 7.7		11.5, 7.6		27.2, 7.9	
Sense of job security		0.038		0.073		0.528
Extremely decrease	13.8, 7.9		13.3, 8.4		25.5, 8.2	
Quite decrease	9.8, 6.7		7.7, 6.5		27.1, 8.3	
Unchanged	7.7, 5.2		6.3, 6.2		26.0, 8.9	
Quite increase	7.5, 5.3		7.2, 6.1		24.5, 8.7	
Extremely increase	10.5, 7.1		9.4, 7.1		25.9, 10.7	

Table 5. The final model of predictive factors.

Variables	B	S.E.	β	*t*	*P* - value
Emotional exhaustion					
Personal factors					
Age	- 1.0	0.4	- 0.1	- 2.5	0.015
Indebtedness	0.9	0.3	0.1	2.6	0.010
Work-related factors					
Satisfaction in schedule	1.2	0.5	0.1	2.5	0.012
Number of qualified aircraft	- 1.4	0.5	- 0.1	- 2.7	0.007
Sense of job security	- 1.4	0.3	- 0.2	- 4.4	<0.001
Health- concerned factors					
Experiencing in lacking the ability to sleep last 1 month	-1.4	0.7	- 0.1	- 2.1	0.041
Stress scored	0.6	0.1	0.3	5.2	<0.001
Mental health status	- 0.9	0.3	- 0.1	- 2.6	0.011
Constant	16.0	2.3		6.9	<0.001

Table 5. (Cont.) The final model of predictive factors.

Variables	B	S.E.	β	*t*	*P*-value
Cynicism					
Work-related factors					
Position [a]					
Zone supervisor (ZSV) or crew in charge (CIC)	-3.3	0.9	-0.2	-3.6	<0.001
Satisfaction in schedule	1.7	0.5	0.2	3.2	0.001
Sense of job security	-1.5	0.4	-0.2	-4.3	<0.001
Health-concerned factors					
Stress scored	0.8	0.1	0.3	6.4	<0.001
Mental health status	-0.9	0.4	-0.1	-2.4	0.015
Constant	10.4	1.5		7.1	<0.001
Professional efficacy					
Work-related factors					
Position [a]					
Zone supervisor (ZSV) or crew in charge (CIC)	4.0	1.1	0.2	3.7	<0.001
Constant	25.2	0.5		51.0	<0.001

[a]Junior cabin crew (ASY) or senior cabin crew (ASE) is a reference group.

Discussion

The study shows moderate burn-out levels across all three components, consistent with prior research on ground staff at Suvarnabhumi Airport.[20] High burn-out was found in 24.0 - 38.8% of the sample, similar to findings on flight attendants in Latvia during the COVID-19 pandemic [5], where 31.7% had high burn-out.

This study investigated the prevalence of burn-out in different components. Firstly, results showed that the majority of subjects experienced low levels of emotional exhaustion (53.4%), which is consistent with previous studies on representatives from international pharmaceutical companies and flight attendants.[21, 22] However, a previous study on medical professionals during the COVID-19 pandemic found that the majority experienced high levels of emotional exhaustion.[12] Working in different environments and destinations may be the reason that flight attendants had low levels of emotional exhaustion. Secondly, in terms of cynicism, burn-out levels were similar with low levels at 36.3%, moderate levels at 24.9%, and high levels at 38.8%, consistent with the results on representatives from international pharmaceutical companies and flight attendants. [14, 15] However, the high burn-out rate differs from the previous study on medical professionals found that the majority of resident physicians and nurses had low burn-out levels in the area of cynicism.[12, 23] It was possibly caused by the period of pandemic. Flight attendants performed their duties critically less than their usual and may disengage from company for some ages. Lastly, for professional efficacy, the majority had burn-out at a low level (43.6%), which is consistent with previous findings in flight attendants.[22] In medical professionals, there was a previous study found that up to 94.0% had low level of professional efficacy.[12] In pandemic period, medical professions tended to work harder in order to heal the patients. Hence, the very high proportion of low level in professional efficacy was shown. However, findings are inconsistent with previous study in representatives from international pharmaceutical companies which found that the majority had high levels of professional efficacy.[12, 21, 23]

When considering the components, it was found the consistency among flight attendants. The incidence of burn-out among flight attendants was low, especially in emotional exhaustion, which is different from other professions like medical services. The difference became more apparent during the COVID-19 pandemic due to the unique job demands. In terms of cynicism the results of the study were consistent with those of Singh J, *et al*. who used the Maslach burnout inventory and found that professions

related to customer service had a higher cynicism than other professions, with nursing having a higher incidence of exhaustion than that of resident physicians.[24]

There was a statistically significant relationship between age and emotional exhaustion indicated that older flight attendants experience lower levels of emotional exhaustion compared to younger flight attendants related to other studied stated that they are able to adapt well to the problem of emotional exhaustion due to their accumulated work experience.[25, 26] Flight attendants with more experience are less likely to experience emotional exhaustion because they have dealt with challenging situations in the aviation industry before.

There was a statistically significant relationship between debt burden and emotional exhaustion indicated that flight attendants who experienced an increase in debt burden due to the impact of the COVID-19 pandemic were more likely to experience higher levels of emotional exhaustion. This factor was similar to the study conducted among medicine residents in USA.[27] Considering the context of debt burden among flight attendants during the COVID-19 pandemic, flight attendants faced a significant reduction in income which may lead to increased debt burden and financial stress.

The statistically significant relationship between position and dimensions of cynicism and professional efficacy which related to a former study conducted in flight attendants. Employees who perceive a higher workload tend to experience more job fatigue in less demanding tasks [28], particularly in the role of a team leader. Furthermore, this is consistent with the study conducted by Görlich Y. and Stadelmann D. on flight attendants as frontline workers before and during the COVID-19 pandemic. They found that flight attendants had higher levels of mental health issues, such as depression, anxiety, and stress, during the COVID-19 outbreak compared to the purser position .[3]

Flight attendants' satisfaction with their assigned flight schedule and job security were found to be related to emotional exhaustion and cynicism. Those who worked on aircraft with fewer qualified aircraft types may experience limitations in destination diversity and flight schedule patterns, which could impact their job satisfaction and well-being. On the other hand, flight attendants who worked on aircraft with a higher number of aircraft types had lower levels of emotional exhaustion, with statistically significant findings. These mentioned factors related to the former study addressed that burn-out is related to job satisfaction, feeling stability in job, and justice in workplace.[19, 29]

Stress levels and mental status were the predictors of emotional exhaustion and cynicism. There were a lot of study mentioned that experiencing stressful events can be predictive of job burn-out.[11, 30, 31]

The sleepless problem was related to experimental study which found that good quality sleep can have a significant impact on reducing emotional exhaustion.[32] Additionally, the was a study using MBI among residents of a hospital during COVID-19 outbreak found that sleep deprivation was the predictive factor of emotional exhaustion.[12]

The study is limited to one airline, and the lower response rate due to COVID-19 restrictions may have caused some significant predictors to be missed, leading to potential bias in the results. Moreover, the data on COVID-19 impact may also be biased due to self-assessment, suggesting the need for cautious interpretation of findings.

The study implies that organizations can manage employee burn-out by implementing policies that create job security, career advancement opportunities, and autonomy in managing work. It is important to take care of employees' mental health as burn-out is related to mental health issues, stress, sleep problems, substance abuse, decreased work performance, and problems with colleagues and customers.

Conclusion

To summarize, the study found that older age and increased indebtedness were the only personal factors that predicted emotional exhaustion, while working in a non-leadership position predicted cynicism and professional efficacy. The lower number of qualified aircraft predicted emotional exhaustion, while schedule dissatisfaction decreased feelings of work stability, and mental health issues were predictors of both emotional exhaustion and cynicism. Sleeplessness predicted emotional exhaustion, while higher stress scores and worse mental health predicted both emotional exhaustion and cynicism. Addressing these factors can potentially reduce burn-out and improve the working environment for flight attendants, benefiting the organization's personnel management and plans.

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Conflicts of interest statement

The author had completed an ICMJE disclosure form. No any potential or actual relationship, activity or interest were related to the content of this article.

Data sharing statement

This present review is based on the references cited. Further details, opinions and interpretation are available from the corresponding authors on reasonable request.

References

1. World Health Organization. COVID-19 Strategy Update. Geneva: World Health Organizaton; 2021.
2. International Civil Aviation Organization. Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis; 2021; Montreal, Canada: Internation Civil Aviation Organization, 2021.
3. Görlich Y, Stadelmann D. Mental Health of flying cabin crews: depression, anxiety, and stress before and during the COVID-19 pandemic. Front Psychol 2020;11:581496.
4. Cahill J, Cullen P, Anwer S, Gaynor K. The impact of the COVID 19 pandemic on aviation workers and the aviation system. 29th International Symposium on Aviation Psychology 2021:164-71.
5. Niklass M. Burnout during the COVID pandemic: a case of the social services sector in Latvia. In: Faculty of Economics and Social Development, Latvia University of Life Sciences and Technologies. Economic science for rural development. Proceedings of the 2021 International Scientific Conference Economic science for rural development 2021 No. 55 Sustainable bioeconomy integrated and sustainable regional development rural development and entrepreneurship circular economy: Climate change, environmental aspect, cooperation, supply chains efficienc of production process and competitive of companies new dimensions in the development of society; 2021 May 11 - 14; Jelgava, Latvia: Faculty of Economics and Social Development, Latvia University of Life Sciences and Technologies; 2021. p. 576-84.
6. Ren FF, Guo RJ. Public mental health in post-COVID-19 era. Psychiatr Danub 2020;32:251-5.
7. World Health Organization. International classification of diseases, eleventh revision (ICD-11). Geneva: World Health Organization; 2022.
8. Leksomboon P. Job stress, coping, and burnout among helping practitioners in public welfare centers : a mixed methods research [thesis]. Bangkok: Chulalongkorn University 2011.
9. Palitponganpim P. Burn-out syndrome. Bangkok: Amarin Health; 2019.
10. Schutte N, Toppinen S, Kalimo R, Schaufeli W. The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. J Occup Organ Psychol 2000;73:53-66.
11. Chiaoroongroj K. Prevalence of occupational stress and burnout and the related factors among cabin attendants of Thai Airways International public company limited [thesis]. Bangkok: Chulalongkorn University; 2005.
12. Tuangpermsub R, Nuallaong W, Charernboon T. Burnout and related factor among residents of Thammasat University Hospital in the COVID-19 outbreak. J Psychiatr Assoc Thailand. 2021;66:189-202.
13. Leo CG, Sabina S, Tumolo MR, Bodini A, Ponzini G, Sabato E, et al. Burnout among healthcare workers in the COVID-19 Era: A review of the existing literature. Front Public Health. 2021;9:750529.
14. Kleinberg B, van der Vegt I, Mozes M. Measuring emotions in the COVID-19 real world worry dataset. In: Verspoor K, Bretonnel Cohen K, Dredze M, Ferrara E, May J, et al, editors. Proceedings of the 1st workshop on NLP for COVID-19 at ACL 2020. Kerrville, TX: Association for Computational Linguistics; 2020.
15. Yongthasaneekul T, Thammaboosadee S, editors. Emotion and worry measurement comparison of United Kingdom and Thailand during the first COVID-19 lockdown situation. 2021 IEEE international conference on bioinformatics and biomedicine (BIBM); 2021 Dec 9 - 12; Houston, TX, USA: IEEE; 2021. p. 2924-30.
16. Choi YG, Choi BJ, Park TH, Uhm JY, Lee DB, Chang SS, et al. A study on the characteristics of maslach burnout inventory-general survey (MBI-GS) of workers in one electronics company. Ann Occup Environ Med 2019;31:e29.
17. Bakker AB, Demerouti E, Schaufeli WB. Validation of the maslach burnout inventory - general survey: An internet study across occupations. Anxiety Stress Coping 2002:15;245-60.
18. Kitaoka K, Masuda S. Academic report on burnout among Japanese nurses. Jpn J Nurs Sci. 2013;10:273-9.
19. Kleebbua C. Development of the causal model of burnout at work : an application of the job demand-resource model [thesis]. Bangkok: Chulalongkorn University; 2009.
20. Ubuabon P, Feongkeaw C. The relationship between perceived workload and job burnout of the ground service staff at Suvarnabhumi airport. J Manag Sci Kasetsart Univ 2022;l:1-18.

21. Vichanjalearnsuk V. Job burnout and related factors among pharmaceutical representatives of international pharmaceutical company [thesis]. Bangkok: Chulalongkorn University; 2014.
22. Zakrizevska M. Stanga G. Professional deformation correlation with burnout between airline cabin crew. 4th International Multidisciplinary Scientific Conference on Social Sciences and Arts SGEM; 2017 Aug 24 - 30; Bulgaria: SGEM; 2017. p. 271-8.
23. Thamrongvisava S, Pitanupong J, Srisintorn W. Burnout and associated factors among nurses at Songklanagarind Hospital. Royal Thai Army Med J 2019;72:177-85.
24. Singh J, Goolsby JR, Rhoads GK. Behavioral and psychological consequences of boundary spanning burnout for customer service representatives. J Mark Res 1994;31:558-69.
25. Ninsanguandecha S, Buathong N. Job burnout and problem coping strategies among employees of government pharmaceutical organization. Chula Med J 2016;60: 545:60.
26. Sirorat P. Job burnout among baby boomers in state-enterprise employees [thesis]. Bangkok: Mahidol University; 2020.
27. West CP, Shanafelt TD, Kolars JC. Quality of life, burnout, educational debt, and medical knowledge among internal medicine residents. JAMA 2011;306: 952-60.
28. Suwanvatin P. Perceived workload and job burnout among flight attendants; The moderating effects of organizational communication and job stress [thesis]. Pathum thani: Thammasart University; 2016.
29. Maslach C, Leiter MP. Understanding the burnout experience: recent research and its implications for psychiatry. World Psychiatry 2016;15:103-11.
30. Therdthoonphuphuch WS. Work stress and burnout among licensed lawyers at Thai lawyers council under royal patronage [thesis]. Bangkok: Chulalongkorn University;2015.
31. Calgan Z, Aslan D, Yegenoglu S. Community pharmacists' burnout levels and related factors: an example from Turkey. Int J Clin Pharm 2011;33:92-100.
32. Sadangrit K. The effectiveness of music therapy in reducing burnout syndrome and quality of sleep improvement among workers in A Private hospital group in Rayong province [thesis]. Chonburi: Burupha University; 2022.