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Original Article

A survey of the perception of well-being among emergency physicians in Taiwan

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Abstract

Objectives: The objective of this study is to investigate the feelings (well-being) of emergency physicians in Taiwan regarding their job and the relationship between these feelings and the work environment. **Materials and Methods:** A questionnaire was used to survey emergency physicians across Taiwan from January to June 2014. The questionnaire contents were categorized into five specific factors that could affect well-being, including "emergency quality, emergency safety, support environment, workload, and salary and benefits." Well-being was rated directly on a scale of 1–10, with 10 indicating the highest level of happiness. Physician retention was also surveyed. The correlations among the five factors, well-being, and physician retention were analyzed. The five factors were quantified as a "happiness index" and compared between religious and nonreligious hospitals and medical centers and regional hospitals. **Results:** A total of 398 questionnaires were received, and the response rate was 39%. Of these, 42.7% of responders reported high ratings for well-being (scores of 7–10, 1 is the worse, and 10 is the best) and 40.3% felt neutral (scores of 5–6). Only 12.3% doctors did not think they would stay at the same position for the next 3 years. All five factors had moderately significant correlations with each other (γ = 0.195–0.534, $P < 0.01$). All five factors also significantly correlated with well-being. Emergency safety (γ = 0.121, $P < 0.05$), salary and benefits (γ = 0.143, $P < 0.05$), and well-being (γ = 0.189, $P < 0.01$) were correlated with physician retention. The happiness indices of emergency quality, support environment, and workload were significantly higher in regional hospitals than medical centers. **Conclusions:** All five indicators had impacts on well-being. The respondents reported heavy workloads, including high stress and even poorly met physiological needs. In addition, the threat of violence, salaries, and well-being correlated with physician retention. Hospital administrators can make efforts to improve the well-being of doctors and physician retention by adjusting environmental factors.

Keywords: *Emergency physician, Overcrowding, Physician retention, Well-being, Workplace safety*

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Introduction

The well-being of people in different countries or cities is often compared. However, measuring the well-being of doctors who work in different emergency rooms is unheard-of. Most people relate emergency rooms to a grocery store, battlefield, or stock market trading floor. For emergency health-care personnel, emergency treatment is related to violence, medical disputes, overwhelming busyness, and patient

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complaints. Because of these pressures, emergency work has always been one of the least popular medical specialties among physicians in Taiwan.

Although most emergency rooms share these problems, we could find no study which assessed the feelings of emergency physicians. Investigations conducted in the United States (US) have shown that physicians are more likely to suffer from emotional exhaustion, depersonalization, and overall burnout than the public [1,2]. According to a 2012 questionnaire survey of 7288 physicians in the US, the degree of job burnout was different in each specialty, and physicians working in the emergency, general internal medicine, neurology, and family medicine departments were found to have relatively higher degrees of burnout than physicians in other specialties [3]. Physician burnout also seems to be closely associated with unsatisfying social relationships [4], alcohol abuse [5], and suicidal tendencies [6].

In contrast with "burnout," the meaning of "well-being" is close to "happiness" but not the same thing. The question of how well-being should be defined is still largely unresolved. Two approaches have emerged in historical studies, the hedonic tradition (subjective well-being) and eudaimonic tradition (psychological well-being). The hedonic tradition of well-being accentuates constructs such as happiness, positive affect, low negative affect, and satisfaction with life [7,8]. Hence, the hedonic tradition of well-being means desires can be satisfied. On the other hand, the eudaimonic tradition highlights positive psychological functioning and human development [9,10]. Despite the differences in approach, most researchers now believe that well-being is a multidimensional construct [11,12].

Many studies had found people with high levels of well-being have more friends and better social support than others [13,14]. It is also related to the performance of staff in the workplace. For example, people with high levels of well-being are more creative, productive, and efficient, and even earn more money [15,16].

We would like to survey emergency physicians concerning their feelings about their work. We want to know if they feel satisfied with their jobs or unhappy about the objective environment in the hospital. The above-mentioned feelings tend to be categorized as "subjective well-being." "Subjective well-being" can be subjectively defined by people as desirable, pleasant feelings, and a good life [11]. "Subjective well-being" includes cognitive and hedonic components. The cognitive components can be judged by life satisfaction. The hedonic components consist of positive affect and negative affect. A positive hedonic level refers to experiencing positive affect more often than negative affect [8,17]. The purpose of this study was to investigate the thoughts and feelings of emergency physicians regarding their job. The A high level of well-being for emergency physicians mentioned in this article can be defined as the emergency physician is happy with his/her job and experiences positive effect (etc., good backup, safe environment, and good salary) more often than negative affect (violence, overcrowd emergency room, and unmet needs).

Materials and methods

We developed a qualitative questionnaire to survey the well-being of emergency physicians. The survey was conducted from January to June 2014 with full-time emergency physicians from hospitals at the regional level or above across Taiwan. The questionnaires were mailed out in early April to regional hospitals and medical centers for emergency physicians to fill out, and the deadline for submitting the completed questionnaires was the end of June. The study was conducted in accordance with the Declaration of Helsinki. All participants filled out the questionnaire anonymously and mailed back to the principle investigator without signing written consent form to avoid knowing the affiliation of the participants. All participants understand that their names and initials will not be published and due efforts will be made to conceal their identity.

The questionnaire included issues that bother emergency physicians the most, including conflicts with other physicians during consultation or patient admission, violence in the emergency room, stress and spatial discomfort, and failure to meet their physiological requirements. In summary, emergency quality, emergency room safety, a supportive environment, workload, and salary and benefits were listed as happiness indicators to gauge the well-being of emergency physicians.

The contents of the questionnaire were classified into the following five specific indicators of well-being: emergency quality, emergency room safety, supportive environment, workload, and salary and benefits. These factors were scored from one to five points, with five points indicating the strongest agreement. We quantified emergency room happiness as the "happiness index." The "happiness index" was the sum of the points on the five indicators. We compared the "happiness index" at different hospital levels and compared differences between hospitals with different owners.

If physicians are not satisfied with their current position, changing the work environment is often a good solution. Therefore, it was also necessary to ask if emergency

physicians planned to leave their job within the next 3 years. Further, analysis was performed for to explore the relationship between environmental factors and physician retention.

Happiness measures developed by Fordyce ask respondents to rate "In general, how happy or unhappy you usually feel?" on an 11-point Likert scale [18]. Similarly, Lyubomirsky and Lepper's Subjective Happiness Scale asks respondents to rate their happiness on a 7-point Likert scale [19]. In this study, a straightforward measurement of well-being was used, which consisted of simply asking emergency physicians whether they were "happy". Emergency physicians self-rated their well-being in the questionnaire on a scale of 1–10, with 10 indicating the highest level of happiness. A score of 7 points or above was defined as feeling happy. Well-being was also compared between different types of hospitals.

All comparisons were conducted using Student's *t*-test for statistical analysis. During analysis, points for "workload" were awarded on a 5-point scale which was the reverse of the other factors, with a score of 1 indicating the most work stress. If more than two variables were compared, ANOVA and the Scheffe *post hoc* test were used to verify the results. $P < 0.05$ was defined as statistically significant. The correlations among the five factors, well-being, and physician retention were also analyzed.

Results

Altogether, 409 and 272 questionnaires were sent to attending physicians and chief residents in medical centers, respectively, and 272 and 64 questionnaires were sent to attending physicians and chief residents in regional hospitals, respectively. Of these, a total of 398 valid questionnaires were received, of which 218 (54.8%) were from medical centers, and 180 (45.2%) were from regional hospitals. The total retrieval rate was 39%, with rates of 43.32% (295/681) and 30.66% (103/336) for attending physicians and chief residents, respectively. The characteristics of the respondents and hospital characteristics are shown in Table 1. Almost all responders are male and more than 80% of them were between 31 and 60 years old. There were 218 respondents from medical centers (54.80%), followed by 180 from regional hospitals (45.2%). In terms of the cultural characteristics, the number of doctors at religious hospitals accounted for the majority (93, 23.4% of the total).

The opinions of emergency physicians about emergency quality, emergency room safety, support environment, workload, and salary and benefits in their own hospitals are shown in Table 2. The quality of care was determined by questions about consultations, bed availability, and care of patients in the observation unit. Most emergency physicians held a positive opinion of consultation facilities. Most consultants arrived within 30 min after an emergency call, were well-mannered, and provided patient-centered care. They tended to consider their emergency departments overcrowded and subspecialists did not share the care of patients in the observation unit who were waiting to be admitted. In questions about the support environment, most respondents agreed that nurses helped a lot, there was good backup from subspecialists, and emergency physicians cooperated well. They tended to feel that nursing workforce was inadequate. More than 40% of respondents reported that they were too busy to eat or drink. In addition, about one-quarter of the participants even reported that they were too busy to go to the restroom. If a score over 7 for well-being was considered happy and under 4 was not happy, 16.8% of respondents felt unhappy, and 42.7% happy. More than half of doctors (52.6%) were willing to stay at the same

Table 1: Features of emergency department doctors

Characteristic	*n* (%)
Gender	
Male	354 (89.7)
Female	44 (10.3)
Age (years)	
<31	53 (13.1)
31-40	183 (46.3)
41-50	99 (24.9)
51-60	58 (14.4)
>60	5 (1.3)
Hospital level	
Medical center	218 (54.8)
Regional hospital	180 (45.2)
Character of hospital	
Public medical center	69 (17.3)
Public regional hospital	60 (15.1)
Private medical center	149 (37.4)
Private regional hospital	120 (30.2)
Position	
Attending physician	295 (74.2)
Chief resident	103 (25.8)
Culture of hospital	
Religious hospital	93 (23.4)
Military hospital	58 (14.8)
Business run hospital	84 (21.1)
University hospital	74 (18.6)
Municipal hospital	43 (10.9)
Others	46 (11.2)

Table 2: Opinions of emergency physicians regarding quality, safety, and supporting environment

Questions	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	Cronbach's α coefficients
Emergency quality						
Consultants arrival within 30 min	8.6	40	30.3	17	3.5	0.835
Kind and polite consultant	4.8	49	32.7	11.6	1.8	
Patient centered management	2.2	32.2	40	21.2	4.4	
Ward bed available within 24 h	6.8	26.2	27.1	21.6	18.3	
ICU bed available within 6 h	8.4	27.2	25.4	24.5	14.6	
No stasis in ED	4.6	18.5	27.5	26.6	22.8	
Specialist take care of patients who stasis in ED observation unit	1.1	14.6	22.9	33	28.5	
Emergency safety						
Adequate video recording equipment	7.3	29.6	36.7	19.2	7.1	0.847
"Workplace violence managing protocol" implemented	11.7	53.1	25.3	7.9	2	
Victims of workplace violence protected well by hospital	5.5	32.4	42.1	15.1	4.9	
Supporting environment						
Adequate workforce of nurses	4	26.9	34.9	24.5	9.7	0.695
Nurses help a lot	16.3	61.8	19.2	2.6	0	
Nurses have a good manner toward physicians	9.9	52.9	33.7	3.3	0.2	
Volunteer assist the staff well	24.3	28.3	29.6	13.4	4.5	
More than two physicians work together anytime	30.7	51.1	10.9	4	3.3	
Cooperate well with another physician partner	27.7	53.2	15.3	2.4	1.3	
Spacious and less stressful workplace	7.7	30.2	33.5	17.2	11.5	
Subspecialist backup ED physician's management	5.8	38.3	36.7	15.9	3.3	
Activities support by hospital to relieve stress	2.3	22	44.4	21.1	10.2	
Workload						
You are too busy to dine	24.2	20.4	26.5	18.8	10.2	0.727
You are too busy to drink water	14.4	31.6	28.3	22	3.8	
You are too busy to go to restroom	5.1	20.8	29.2	32.5	12.4	
High self-estimate of work-related stress	11.8	47.1	34.8	5	1.3	
High working h/month	8.92	24.92	42.77	18.77	4.62	
Salary and benefits						
Salary and benefits would satisfy you	4.9	25.2	44.9	17	7.9	

ICU: intensive care unit, ED: Emergency department

Table 3: Rating of emergency department well-being and physician retention

Ranking the ED well-being from 1 to 10 points, 1 is the worse, 10 is the best				
Score 1-2	**Score 3-4**	**Score 5-6**	**Score 7-8**	**Score 9-10**
5.3%	11.5%	40.3%	39.2%	3.5%
Willing of stay in the same job for next 3 year				
Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
3.2%	9.1%	34.1%	36.1%	16.5%

ED: Emergency department

job for the next 3 years. However, 58.9% of physicians reported high work-related stress. The validity of the questionnaire (25 questions) was checked by experts, and the reliability was checked by Cronbach's α test. The Cronbach α values of the factors were as follows: emergency quality 0.835, emergency safety 0.847, support environment 0.695, and workload 0.727. There was no need to omit any question [Table 3].

Correlation analysis [Table 4] showed the five environmental factors (emergency quality, emergency

Table 4: Correlation between each of the five environmental factors of the job, well-being, and physician retention

	Emergency quality	Emergency safety	Supporting environment	Workload	Salary and benefits	Well-being	Willing of stay in the same job for the next 3 year
Emergency quality	1	0.498**	0.534**	0.476**	0.195**	0.185**	0.097
Emergency safety	0.489**	1	0.524**	0.318**	0.285**	0.301**	0.121*
Supporting environment	0.534**	0.524**	1	0.381**	0.392**	0.365**	0.036
Workload	0.476**	0.318**	0.381**	1	0.382**	0.301**	0.061
Salary and benefits	0.195**	0.285**	0.392**	0.382**	1	0.295**	0.143*
Well-being	0.185**	0.301**	0.365**	0.301**	0.295**	1	0.189**
Willing of stay in the same job for next 3 year	0.097	0.121*	0.036	0.061	0.143*	0.189**	1

*P<0.05, **P<0.01

safety, supporting environment, workload, and salary and benefits) significantly correlated with each other (γ = 0.195–0.534, P <0.01). There was also significant low to moderate correlation between each of the five factors and well-being. Emergency safety (γ = 0.121, P < 0.05), salary and benefits (γ =0.143, P < 0.05), and well-being (γ = 0.189, P < 0.01) were correlated with willingness to stay in the same position for the next 3 years.

Table 5 indicates that the position of the doctors and hospital owner characteristics were associated with the well-being of emergency physicians. Residents reported significantly lower well-being than attending physicians. Scheffe *post hoc* analysis revealed that emergency physicians in business-run hospitals reported higher well-being than those in military hospitals while the rest showed no differences.

A comparison of the "happiness index" (sum of the points on the five indicators) between hospitals at different levels is shown in Table 6. The happiness index at regional hospitals was significantly higher than that at medical centers (76.05 vs. 68.07, respectively). Indices for emergency quality, support environment, and workload at regional hospitals were significantly higher than at medical centers. There were no differences in well-being ratings between medical centers and regional hospitals or religious hospital and nonreligious hospitals.

Table 5: Comparison of "well-being" of emergency physicians between variables

Property of hospitals	Mean score	*t*/*F*	*P*
Level of hospitals			
Medical center	3.2	−1.17	0.242
Regional hospital	3.38		
Public or private hospitals			
Public	3.18	−1.57	0.117
Private	3.39		
Position of doctors			
Attending physician	3.41	3.826	0.005*
Chief resident	2.97		
Culture of hospitals			
Religious hospital	3.36	3.861	0.000
Military hospital	2.30**		
Business run hospitals	3.72**		
University hospital	3.00		
Municipal hospital	3.47		
Others	3.26		

*Mean score of happiness rating of attending physician is higher than that of chief residents, **After Scheffe *post hoc* analysis, the score of happiness rating of military hospitals is lower than business run hospitals statistically; there is no difference between other hospitals of different cultures

Discussion

The definition of well-being varies between individuals. Different researchers have different definitions of well-being. According to the hedonic tradition (subjective well-being), well-being could be based on what people experience every day. Under the unique medical culture in Taiwan, emergency physicians care for lots of patients and complaint of fatigue and difficulty in practice. In this study, we explored the impact of environmental factors and the level of "well-being" on emergency physicians.

On questions about quality of care, only 40%–50% emergency doctors felt there were enough admission beds and the subspecialists to help in patient care. This is related to the overcrowding in the emergency department. The observation unit has always been considered beneficial for resolving congestion in emergency facilities [20-22]. However, the lack of admission capacity and crowded observation units have created a new problem, putting pressure on most emergency physicians. Scores on emergency quality, the support environment, and workload were significantly higher in regional hospitals than medical centers. The higher number of patients with more complex diseases in medical centers may explain this situation.

In recent years, many cases of violence against medical staff due to illness have been reported in Taiwan and

Table 6: Comparison of "happiness index" between hospitals of different levels and cultures

	Mean (SD)	*t*
Emergency quality		
Medical center/regional hospital	17.72 (4.4)/21.84 (5.1)	−7.93*
Religious/nonreligious hospital	20.43 (4.6)/19.00 (5.2)	2.22*
Safety		
Medical center/regional hospital	9.81 (2.3)/10.03 (2.6)	−0.92
Religious/nonreligious hospital	9.76 (2.3)/9.97 (2.5)	−0.69
Supporting environment		
Medical center/regional hospital	26.28 (3.8)/28.44 (4.4)	−5.22*
Religious/nonreligious hospital	27.69 (4.3)/27.12 (4.2)	1.11
Workload		
Medical center/regional hospital	13.87 (3.6)/15.75 (3.9)	−4.49*
Religious/nonreligious hospital	14.44 (3.3)/14.83 (4.0)	−0.75
Salary and benefits (1-5 points)		
Medical center/regional hospital	2.91 (0.9)/2.98 (1.0)	−0.64
Religious/nonreligious hospital	2.82 (0.9)/2.99 (1.0)	−1.2
ED well-being (1-10 points)		
Medical center/regional hospital	5.91 (2.6)/6.25 (1.7)	−1.47
Religious/nonreligious hospital	6.11 (1.6)/6.06 (2.5)	0.19

*P<0.01. SD: Standard deviation, ED: Emergency department

worldwide. Medical personnel is at a high risk of workplace violence [23]. A very high proportion of doctors and nurses have been attacked verbally [24,25], and therefore, medical personnel pay more attention to their security and rights. This factor is so important that the level of well-being also correlated moderately with safety and physician retention in this study.

Each of the five indicators significantly correlated with each other. That means all five factors are really issues and require attention. Whether initiated by the employee or hospital, improvement in these five environmental indicators is progressing. Managing these indicators would be effective in promoting the well-being of emergency department physicians.

The previous studies in the US have shown that burnout and imbalance between work and life are more common in physicians than in any other work group. Burnout can result from work-related factors (hours of work, seniority, and nonprofessional chores) and nonwork-related factors (age, gender, and lifestyle factors) [3]. This present study further discusses work-related situations where the physiological needs of emergency physicians are not met. Most respondents reported that their physiological needs, including eating on time and using the bathroom, were restricted. The self-assessed work pressure on emergency physicians was mostly high or very high (58.9%). The workload of physicians at regional hospitals is statistically lower than at medical centers. This result is consistent with general experience because most patients prefer medical centers.

More than 80% of respondents rated their well-being regarding their satisfaction with their job ≧5 and 42.7% respondents rated it ≧7. The previous studies have reported similar results. Although severe burnout is common for emergency physicians, most (>60%) are satisfied with their jobs [3]. We found that emergency physicians in religious hospitals did not report higher well-being than those at business-run hospitals which are different from the previous studies [26]. Although there was no difference in well-being ratings between doctors in medical centers and regional hospitals, the happiness index was higher for doctors at regional hospitals than medical centers. Taking well-being ratings as job satisfaction and the happiness indices as physician feelings about the workplace; it is possible, there were other factors which make physicians at medical centers feel satisfied in spite of higher workloads and more crowded emergency departments.

Almost three-quarters of the respondents were attending physicians. All the doctors worked in medical centers and regional hospitals which handle moderate to severe emergencies. Therefore, these findings can only be used to infer the feelings and working status of emergency physicians currently responsible for the emergency medical services in Taiwan, and do not reflect, the situation of emergency physicians working in local hospitals.

Conclusions

The respondents in this study were physicians mainly responsible for the emergency medical services in Taiwan, and they were mostly chief residents and attending physicians. All five indicators in the questionnaire correlated with the well-being of emergency physicians. The respondents reported heavy workloads, including high stress and sometimes even unmet physiological needs, but still reported mainly fair to good levels of well-being. In addition, the threat of violence, salaries, and well-being correlated with physician retention.

Despite these problems, physicians reported that their working environment and relationships with colleagues were satisfactory, and many felt that their salary was satisfactory or they were neutral about it. More than half agreed that they would continue with their jobs in the next 3 years.

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Conflicts of interest

There are no conflicts of interest.

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