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Burnout and Related Factors in Organ Donation Coordinators: A Cross-Sectional Study in China

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Background: Organ donation coordinators play an important role in the organ transplantation process. Job burnout can seriously affect their turnover rates and the organ donation rate. The present study investigated the level of job burnout and its related factors among organ donation coordinators in China.

Material/Methods: From March to May 2017, we administered questionnaire surveys to 320 organ donation coordinators from 32 cities. The questionnaire included the following: the Chinese version of MBI-GS was used to evaluate the burnout levels of organ donation coordinators, the Chinese version of GSES was used to assess related personal factors, and the Job Demands Scale and the SSRS were used to evaluate related environmental factors.

Results: We received a total of 283 questionnaires with a response rate of 88.4%. Out of 283 organ donation coordinators, 169 coordinators (59.7%) showed burnout symptoms. Among them, 161 (56.9%) had mild burnout and 8 (2.8%) had severe burnout. Analysis by multiple linear regression reveals that gender, marital status, educational level, work unit, type of coordinator, job demands, self-efficacy, social support, and job satisfaction are the main factors affecting job burnout in organ donation coordinators.

Conclusions: The prevalence of job burnout among Chinese organ donation coordinators is relatively high, with mild burnout as the main symptom and reduced personal accomplishment as the main clinical feature. We hope this study will provide a reference for the recruitment and reduction of coordinator burnout.

MeSH Keywords: **Burnout, Professional • Personnel Turnover • Tissue and Organ Procurement**

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Background

Burnout has been studied in various occupations, such as education, health care, and other human-services related areas [1–5]. However, limited research has examined burnout among organ donation coordinators, with no available data from China. Compared with other health care professionals, we find some distinctions. In China, the organ donation coordinator career appeared in 2010, when China officially launched a pilot program of human organ donation to solve the organ shortage [6]. Because the organ donation policy in the country appeared relatively late, there is no appropriate mechanism to link regions and departments, and media exposure and public awareness of organ donation are insufficient. It is difficult for organ donation coordinators to perform their work, and they may suffer from suspicion and the strict requirements of working hours. It is not difficult to imagine that organ donation coordinators endure great psychological pressure. However, there has been no quantitative assessment of job burnout specifically for organ donation coordinators in China.

The term “job burnout” was originally proposed by the American scholar Freudenberger [7] and was used to describe the emotional and physical exhaustion of an employee in the face of excessive and prolonged job demands or stress. This paper uses the three-dimensional concept of job burnout proposed by Maslach and Jackson [8] in 1981, which is currently the most widely used concept. This concept mainly refers to a syndrome that includes emotional exhaustion, depersonalization, and reduced personal accomplishment due to an individual’s inability to cope effectively with job-related stress. Staff working in medical systems have been generally considered to be vulnerable to job burnout due to complicated working environments, uneasy doctor-patient relationships, and irregular working hours. Kader et al. [2] assessed burnout levels among 122 organ donation coordinators in Turkey and found that coordinators had low levels of emotional exhaustion and depersonalization and medium levels of personal accomplishment. Based on a survey of 26 organ donation coordinators in Israel, Gruener [9] concluded that the average level of burnout among coordinators is low. Burnout may affect productivity, performance, turnover, and the attitude toward service goals among medical professionals [10]. Previous papers have indicated that excessive job demands and lack of social support may result in burnout [11,12].

Organ donation coordinators are important participants in the organ donation process. Job burnout in coordinators can seriously affect their retention rate and the organ donation rate. The goal of this study was to explore the level of burnout and to identify possible predictors of burnout among organ donation coordinators in China.

Material and Methods

Participants and procedure

In mainland China there are 32 organ donation districts, including 23 provinces, 4 municipalities, and 5 autonomous regions. Each district has a certain number of organ donation coordinators. We used simple random sampling in which 10 coordinators were randomly selected from each district. A total of 320 coordinators were initially identified. Inclusion criteria were: 1) having obtained an organ donation coordinator certificate; 2) working as a coordinator and being independently responsible for at least 1 case; and 3) volunteering to participate in this study. Exclusion criteria were: 1) refusing to participate in this study and 2) not having completed a case independently.

The Organ Donation Administrative Center in China approved this study, and we ensured that participation was anonymous and confidential. From March to May 2017, we contacted organ donation coordinators by email and asked them to participate in this study. Those who agreed were sent a questionnaire, which they could return to us upon completion. Finally, 283 questionnaires were returned, for a response rate of 88.4%. The sample size met the statistical requirements.

Measures

In this study, we used a background information table and 4 self-completed scales to collect data. The background information table included gender, age, marital status, type of work, educational level, monthly income, work unit, and work experience. Burnout and its related personal and environmental factors were assessed by the Chinese version of the Maslach Burnout Inventory-General Survey (MBI-GS) [13], the General Self-Efficacy Scale (GSES) [14], the Job Demands Scale [15], and the Social Support Rating Scale (SSRS) [16].

Burnout

The MBI-GS was originally developed by Maslach and colleagues in 1996 [17]. The Chinese scholar Li translated and revised it to form a scale containing 15 items [13]. The questionnaire consists of 3 dimensions: emotional exhaustion (5 items), depersonalization (4 items), and reduced personal accomplishment (6 items). Each item is rated on a 7-point Likert scale ranging from 0 (never) to 6 (every day); all items in the dimension of reduced personal accomplishment are reverse-coded. Based on previous research [18–20], we used a weighted burnout score (total scores = $0.4 \times \text{emotional exhaustion} + 0.3 \times \text{depersonalization} + 0.3 \times \text{reduced personal accomplishment}$) to describe the level of burnout. The level of burnout was classified into 3 categories: no burnout (sum score 0–1.49), mild burnout (sum score 1.50–3.49), and severe burnout (sum score 3.50–6).

In our study, mild or severe burnout was considered to have burnout symptoms. Higher scores indicate a higher level of job burnout. In this study, the total Cronbach's α value for the scale was 0.888, and the α for the 3 dimensions was 0.938, 0.902, and 0.919, respectively.

Personal factor

We chose self-efficacy as the personal factor associated with job burnout. The 10-item GSES was used to measure the self-efficacy of coordinators using a 4-point Likert scale. Values from 1 to 4 (completely wrong to completely correct) were available for each item. The total score was the sum of all 10 items, ranging from 10 to 40. Higher scores reflect better self-efficacy. Self-efficacy can be divided into 3 levels: low (10–20), moderate (20–30), and high (30–40). In our study, Cronbach's α for the GSES was 0.91.

Environmental factors

We used job demands and social support as environmental factors associated with job burnout.

The Job Demands Scale developed by Krasek [21] was used to determine the degree of a respondent's job demands. The scale includes 7 items that are scored on a 5-point scale ranging from 1 (very small) to 5 (very large). Possible total scores range from 0 to 35, and higher scores imply a stronger level of job demands. The Cronbach's α value for all 7 items was 0.874, indicating acceptable internal consistency.

The 10-item SSRS can be divided into 3 subscales: subjective support (4 items), objective support (3 items), and utilization of support (3 items). It uses a 4-point Likert scale ranging from 1 "has no support" to 4 "has complete support". Higher scores on this scale indicate a higher level of support and high utilization of support. In our study, the overall Cronbach's α for SSRS was 0.81, and the α for each subscale ranged from 0.68 to 0.77.

Statistical analyses

Collected data were analyzed using SPSS, version 18.0 (IBM SPSS). Descriptive statistics were used to summarize background information on the coordinators and overall variables. Pearson correlation analysis and multiple stepwise regression analysis were used to determine the related factors of organ donation coordinator burnout. $P < 0.05$ was considered statistically significant.

Results

Background information

Out of 283 organ donation coordinators, 51.2% were male and 43.8% were female, and 94.7% were more than 25 years old. With regard to marital status, 21.9% of the coordinators were unmarried and 78.1% were married. The coordinators primarily had undergraduate education (60.8%), and their monthly income was reported to range from RMB 3000 to 5000 (42.4%). Of the coordinators, the majority were part time, and only 38.2% were full time. Furthermore, a total of 138 (47.8%) of the coordinators had short working experience (< 1 year). A total of 67.8% of the coordinators worked for a hospital and 32.2% worked for the Red Cross Society of China. The specific results are shown in Table 1.

Scores of overall scales

The burnout, job demands, self-efficacy, and social support scores for the organ donation coordinators are shown in Table 2. For the MBI scale, mean scores on emotional exhaustion, depersonalization, and reduced personal accomplishment were 9.98, 4.10, and 12.62, respectively. According to the statistics, 59.7% of the coordinators had job burnout symptoms, with mild burnout accounting for 56.9% and severe burnout accounting for 2.8%. For the Job Demands Scale, the overall mean score was 24.15. Of the 7 job demands, the top 3 were that organ donation coordinators must work quickly, organ donation coordinators must work hard, and organ donation coordinators had a heavy workload. For the GSES scale, the overall mean score was 27.60. A moderate level of self-efficacy was found for 182 coordinators (64.3%). For the SSRS scale, the overall mean score was 42.35.

Job burnout-related factors

The relationship between the variables is shown in Table 3. We used background information, job demands, self-efficacy, and social support as the independent variables and the 3 dimensions of job burnout as the dependent variables. Then, we performed multivariate linear stepwise regression analysis to identify the predictors of the 3 dimensions of burnout. The values of α for entering and removing predictors from the regression analysis were 0.05 and 0.1, respectively.

Variables related to background information were assigned values, which are shown in Table 4. According to the results of the multivariate linear stepwise regression analysis (shown in Table 5), after controlling for all confounders, we found that 44.2% of emotional exhaustion was explained by a combination of gender, type of work, work unit, marital status, educational level, job demands, and social support;

Table 1. Background information of organ donation coordinators (n=283).

Index	Frequency	Percentage (%)	Index	Frequency	Percentage (%)
Gender			Monthly income (RMB)		
Male	145	51.2	≤3000	31	11.0
Female	138	48.8	3000–5000	120	42.4
Age			5000–10000	111	39.2
≤25	15	5.3	>10000	21	7.4
26–30	69	24.4	Type of work		
31–35	77	27.2	Part-time	175	61.8
36–40	62	21.9	Full-time	108	38.2
≥41	60	21.2	Work experience (years)		
Marital status			≤1	138	48.8
Unmarried	62	21.9	1–3	79	27.9
Married	221	78.1	3–5	46	16.3
Educational level			≥5	20	7.0
College/vocational school	43	15.2	Work unit		
Undergraduate	172	60.8	Hospital	192	67.8
Postgraduate	68	24.0	The Red Cross Society of China	91	32.2

Table 2. Scores of burnout, job demands, self-efficacy and social support.

Variables	Mean	SD	Variables	Mean	SD
Emotional exhaustion	9.98	5.91	Job demands	24.15	4.84
Depersonalization	4.10	4.18	Self-efficacy	27.60	5.55
Reduced personal accomplishment	12.62	7.52	Social support	42.35	8.16

SD – standard deviation.

Table 3. Pearson's correlation coefficient between dimensions of burnout and job demands, self-efficacy, social support.

	1	2	3	4	5	6
1	1					
2	0.566**	1				
3	0.101	0.421**	1			
4	0.534**	0.157**	-0.175**	1		
5	-0.067	-0.200**	-0.480**	0.120*	1	
6	-0.269**	-0.330**	-0.270**	0.004	0.228**	1

1 – emotional exhaustion; 2 – depersonalization; 3 – reduced personal accomplishment; 4 – job demands; 5 – self-efficacy; 6 – social support. * P<0.05; **P<0.01.

Table 4. Variable assignment table of multiple stepwise regression analysis.

Variable	Assignment method
Gender	0=Male, 1=Female
Age	1= ≤ 25 , 2=26–30, 3=31–35, 4=36–40, 5= ≥ 41
Marital status	0=unmarried, 1=married
Educational level	1=college/vocational school, 2=undergraduate, 3=postgraduate
Monthly income	1= ≤ 3000 , 2=3000–5000, 3=5000–10000, 4= > 10000
Type of work	0=part-time, 1=full-time
Work experience (years)	1= ≤ 1 year, 2=1–3 years, 3=3–5 years, 4= ≥ 5 years
Work unit	0=hospital, 1=the Red Cross Society of China

21.3% of depersonalization was strongly related to age, educational level, marital status, social support, job demands, and self-efficacy; and 27.8% of reduced personal accomplishment was explained by job demands, social support, and self-efficacy. The corresponding equations were as follows: 1) emotional exhaustion= $0.42+0.11*\text{job demands}-0.04*\text{social support}+0.22*\text{educational level}+0.39*\text{marital status}+0.29*\text{type of work}-0.33*\text{work unit}-0.27*\text{gender}$; 2) depersonalization=

$2.31-0.04*\text{social support}+0.03*\text{job demands}-0.03*\text{self-efficacy}+0.24*\text{educational level}-0.17*\text{age}+0.39*\text{marital status}$; 3) reduced personal accomplishment= $6.77-0.10*\text{self-efficacy}-0.03*\text{social support}-0.04*\text{job demands}$.

Discussion

Level of burnout

To the best of our knowledge, the present study is the first to focus on the level of job burnout among organ donation coordinators in China. We found that 59.7% of the 283 coordinators had job burnout symptoms, with mild burnout accounting for 56.9% and severe burnout accounting for 2.8%. This result indicates that the burnout of coordinators was at a high level, which can result in decreased work efficiency and a high turnover rate among organ donation coordinators, eventually leading to a reduced organ donation rate.

Background information related to burnout

The level of job burnout was related to gender, age, marital status, educational level, type of work, and work unit.

Male organ donation coordinators were more vulnerable to job burnout than their female peers were. This result differs from those of previous studies [22]. Due to the special nature of the work, the coordinator must communicate quickly with

Table 5. Multivariate linear regression analysis of three dimensions of burnout.

Dependent variables	Independent variables	Beta	P	R ²
Emotional exhaustion	Gender	-0.11	<0.05	44.2%
	Type of work	0.12	0.01	
	Work unit	-0.13	<0.01	
	Marital status	0.14	<0.01	
	Educational level	0.12	<0.05	
	Job demands	0.44	<0.001	
	Social support	-0.27	<0.001	
Depersonalization	Age	-0.20	<0.01	21.3%
	Educational level	0.14	<0.05	
	Marital status	0.15	<0.05	
	Social support	-0.29	<0.001	
	Job demands	0.15	<0.05	
	Self-efficacy	-0.14	<0.05	
Reduced personal accomplishment	Job demands	-0.14	<0.01	27.8%
	Social support	-0.17	<0.01	
	Self-efficacy	-0.42	<0.001	

the family of a patient who has just been declared brain-dead and persuade them to agree to donate the organs to save others [23]. When asking for the consent of the family, compared with male coordinators, female coordinators are more approachable and more easily trusted by organ donors' families, and thus may more likely to get the consent of the families. Another possible reason was that men bear greater social responsibility and a heavier burden. Older organ donation coordinators have rich working experience, which makes it easier for them to meet the job demands and to receive abundant social support; therefore, they are less likely to suffer from job burnout compared with younger coordinators. Similar results were reported in a previous study that found that young physicians had a high prevalence of burnout [24]. Another important difference from a previous study [2] was that married coordinators had a higher prevalence of job burnout. A possible explanation is that married coordinators assume more social roles and have greater pressure. Organ donation coordinators with a high educational level had high rates of burnout, which may be because the coordinator's job prospects are uncertain, and highly educated coordinators have high requirements for promotion.

Most of the full-time coordinators worked for the Red Cross Society of China. On the one hand, they must coordinate the relationship between the state and inter-regional organ coordination agencies; on the other hand, they must study medical knowledge related to organ transplantation and participate in the coordination of organ donation [25]. Therefore, full-time coordinators have a heavy workload and a higher level of job burnout. The findings in the present study were different from the findings of a previous study [26]. Organ donation coordinators working in hospitals were more likely to appear to have burnout symptoms compared with those working in the Red Cross Society of China, which may be due to complex working environments and uneasy doctor-patient relationships.

Personal and environmental factors related to burnout

According to previous studies, job burnout was associated with many factors, such as organizational leadership [27], practice environment [28], control, the sense of satisfaction and self-realization, and the sense of responsibility [9]. In general, all factors can be divided into personal factors and environmental factors. In this study, we used self-efficacy as personal factor and considered job demands and social support environmental factors. According to the data analysis results, all factors showed strong predictive power.

In the dimension of emotional exhaustion, we found that environmental factors showed stronger predictive power, whereas the personal factor was not significant. Of the environmental factors, the contribution of job demands was more obvious.

Job demands refer to stressors from work. The focus of the organ donation coordinator's work is to maximize the potential donor into an actual donor and to communicate with the family of the brain-dead patient for a limited period of time to obtain permission for organ donation. The urgency of time and the constraints of morality cause coordinators to face enormous psychological stress [6], which can cause emotional exhaustion. This result is similar to the result reported by Sierra, who found that job demands can predict nurse burnout [29]. Furthermore, the findings indicated that more social support is related to lower emotional exhaustion. This result was also reported by a previous study in which the participants were teachers [30]. A possible explanation is that emotional exhaustion is a personal emotional response to stress, and greater social support can provide coordinators with more resources to successfully confront stress.

Regarding depersonalization, environmental factors had higher predictive power than personal factors. The findings showed that lower depersonalization was related to lower job demands, more social support, and higher self-efficacy. Similar results were reported among other professionals in previous studies [31,32]. Depersonalization belongs to the category of interpersonal relationships. Higher job demands mean that coordinators must work harder and work an on-call schedule, which produces great inconvenience in their lives. However, more social support and higher self-efficacy can help coordinators to adapt their mental state so that they are more confident about withstanding pressure and can channel their inner anguish.

Many previous studies have indicated that reduced personal accomplishment was associated with many factors related to career prospects [33]. In this study, personal factors played a more important role in predicting reduced personal accomplishment compared with environmental factors. Self-efficacy refers to one's level of self-confidence. Coordinators with high self-efficacy are willing to accept challenging tasks and can overcome various difficulties to complete a task. When the coordinators experience personal accomplishment, self-efficacy increases. Therefore, during the hiring process, managers should recruit coordinators with strong self-efficacy, and they should encourage coordinators to develop their self-efficacy through appropriate training and experience [34]. It is worth noting that in this study, job demands had a negative predictive effect on reduced personal accomplishment. A similar result was reported by Lee and Akhtar [35], who found that job demands had a positive effect on personal accomplishment among nurses, suggesting that job demands can motivate coordinators to some extent. Social support also contributed to explaining personal accomplishment. If the media increases publicity related to organ donation, the public can better understand and support the work of organ donation coordinators, and coordinators can increase their odds of success.

Conclusions

The prevalence of job burnout among Chinese organ donation coordinators is relatively high, with mild burnout as the main symptom and reduced personal accomplishment as the main clinical feature. We found that gender, marital status, educational level, work unit, type of coordinator, job demands, self-efficacy, social support, and job satisfaction are the main factors affecting the job burnout of organ donor coordinators. We hope our study will provide a reference for the recruitment of coordinators and reduction of coordinator burnout prevalence.

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Limitations

In the present study, we did not assess factors related to the organizational environment that contribute to burnout. Future research should explore this aspect. Furthermore, personal factors in the present study did not involve details such as self-esteem and mastery. Therefore, it is possible that taking these factors into account can offer new and additional information.

Conflicts of interest

None.