

Original Article

Multicultural nursing care for patients with chronic obstructive pulmonary disease treated by acupuncture

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Abstract: Objective: To explore the influence of multicultural nursing care on the compliance of patients with chronic obstructive pulmonary disease (COPD) treated by acupuncture. Methods: A total of 100 patients with COPD treated by acupuncture were equally allocated into a routine group (routine nursing care) and a research group (multicultural nursing care). Multicultural nursing care focused on the formation of case management team, the establishment and improvement of management system, as well as the conduction of nursing training and psychological care. The self-care agency, self-perceived burden, self-efficacy, quality of life, sleep quality, and depression of patients were evaluated by corresponding scales, and the compliance, adverse reaction, and patient satisfaction were monitored. Results: After nursing, patients in research group presented higher self-care agency, self-efficacy, quality of life, rehabilitation compliance and satisfaction than those in routine group ($P < 0.05$). Besides, the self-perceived burden, sleep quality, self-rating depression scale score and the incidence of adverse reactions in research group were lower than those in routine group ($P < 0.05$). Conclusion: Multicultural nursing care is effective in improving compliance and enhancing self-care agency and quality of life of patients with COPD treated by acupuncture.

Keywords: Multicultural perspective, acupuncture, chronic obstructive pulmonary disease, compliance

Introduction

Chronic obstructive pulmonary disease (COPD), a destructive lung disease triggered by airflow obstruction, is common in the middle-aged and elderly populations with high morbidity and mortality [1]. In recent years, the mortality rate of COPD has increased to the fourth place among chronic diseases. Moreover, the treatment is generally expensive and time-consuming, which poses a significant economic burden on patients' families [2, 3]. Conventional nursing care focuses primarily on disease, and the quality of nursing staff is poor, leading to low satisfaction of patients. Whereas multicultural nursing care emphasizes the comparison and analysis of cultures related to nursing, health, disease, practice, beliefs and norms, thereby providing patients under different conditions with culturally consistent, meaningful and effective nursing care [4]. At present, there is a growing demand for multicultural nursing

care, and it is hoped that nurses can respect patients' values and perform comprehensive assessments, so as to take corresponding nursing measures [5]. There are a lot of studies on multicultural nursing care in other diseases, but its effects on COPD have been poorly dissected. Therefore, this study aimed to investigate the influence of multicultural nursing care on the compliance of COPD patients treated by acupuncture.

Materials and methods

Subjects

Research subjects: A total of 100 patients with COPD (62 males and 38 females) who were treated with acupuncture in The First Hospital of Nanchang from January 2019 to January 2020 were enrolled. They were randomly assigned into a routine group (routine nursing care, $n=50$, 30 males and 20 females) and a research group (multicultural nursing care,

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n=50, 32 males and 18 females). There was no significant difference in general data of the ratio of male to female and the average age between the two groups, indicating a good comparability ($P>0.05$).

Inclusion criteria: All the 100 patients followed the Guidelines for Diagnosis and Treatment of COPD formulated by Chinese Respiratory Society in 2007. All patients were treated with acupuncture and hospitalized. All patients had clear consciousness and were literate. Patients and their families were informed and signed the informed consent. This study was approved by the Ethics Committee of The First Hospital of Nanchang.

Exclusion criteria: Patients who were illiterate or not conscious; patients complicated with malignant tumors or other liver and kidney diseases; patients taking antidepressant and sleep-related drugs recently.

Nursing methods

Patients in the routine group received routine nursing care: Nurses paid attention to patients' vital signs such as breathing, headache and chest tightness upon hospital admission, and strictly monitored their sleep after acupuncture treatment. Adequate nutrition intake was guaranteed. Discharged patients were educated about COPD knowledge and smoking hazards to urge them to quit smoking. The medical staff comforted family members of critically ill patients and listened patiently to them, so as to relieve their anxieties. It was necessary to respect the way in which each family member relieved pain and take corresponding aftercare measures.

Patients in the research group received multicultural nursing care additionally [6]. (1) Setting up a multicultural nursing case management team: In order to ensure that the management team was organized, it was composed of nursing staff, deputy director of nursing department and head nurse (hospital- and department- level leaders), and specialists. Relevant system, process, evaluation, examination and feedback were formulated, and the department-level team was responsible for implementations. (2) Establishing and improving management system: Standards of ward management, stratified management and head nur-

se quality management were developed. Assessment of multicultural nursing care was added to the corresponding nursing quality standards. In the process of nursing, nurses adhered to the principles of humanistic care and patients' confidentiality, and were encouraged to fully respect taboos and religious beliefs of Tibetan and other minority cultures. They were also required to respect the life style of patients and to build trust with them, so as to create a smooth ward atmosphere. (3) Conducting multicultural nursing training: Pre-job nursing skill training was conducted for new nurses. Besides, national continuing education programs for multicultural nursing care were held every year, including explanations of multicultural nursing theory, introductions of customs and taboos, as well as demonstrations of COPD management under different cultural backgrounds. The nursing staffs included were all qualified after the training. (4) Conducting psychological care: Patients usually are trapped in fear and helplessness in the face of worsening or untreatable illness. Timely communications are necessary to ease their negative emotions and give them encouragement, support and confidence. Regular lectures on psychological crisis debugging and multicultural knowledge were held by outstanding medical professionals, and those who understood Chinese and minority languages were preferred. Individual psychological characteristics, especially the national self-esteem, of minority patients were correctly treated to achieve mutual understanding and respect. Patients in both groups received continuous nursing care for 1 week.

Outcome measures

Main outcome measures: One week after nursing, self-care ability was assessed by the Exercise of Self-care Agency (ESCA) scale that comprises 11 items including self-care skills and self-responsibility. The Self-perceived burden scale (SPBS) was employed to evaluate patients' self-perceived burden [7, 8]. It contains 10 items, "I am concerned that it costs my caregiver a lot of money to care for me", "I feel that I am a burden to my caregiver", "I think that I make things hard on my caregiver", etc. Among them, the higher score of the item "I believe that my caregiver is capable of handling this" indicated the heavier burden of pa-

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Table 1. Comparison of general data ($\bar{x} \pm sd$, %)

Group	Routine group (n=50)	Research group (n=50)	χ^2/t	P
Sex			0.170	0.680
Male	30	32		
Female	20	18		
Age (year)	61.3±1.7	61.5±2.5	0.468	0.641
Nation (year)			0.486	0.784
Han nationality	35	38		
Tibetan nationality	7	6		
Zhuang nationality	8	6		
Course of disease (year)	2.3±0.2	2.2±0.3	1.961	0.053
Complication (%)				
Hypertension	13	12	0.053	0.817
Diabetes	22	26	0.641	0.423
Past treatment history			0.016	0.9
No	31	30		
Yes	19	20		
Lung function				
Fev1 (L)	1.42±0.21	1.41±0.24	0.222	0.825
Fev1 (%)	51.60±3.54	50.92±4.36	0.856	0.394
BMI (kg/m ²)			0.265	0.876
Low	11	9		
Normal	29	30		
High	10	11		

Note: BMI: body mass index.

tients. In this present study, the Chinese version of the Self-efficacy Scale was used to evaluate the confidence of patients in coping with dyspnea in various situations, including dyspnea management, emotion fluctuation, and other 3 dimensions [9]. Self-efficacy assessment adopted Likert 5-Point Scale (1-5 points), and the lower the total score, the lower the self-efficacy of patients [10]. The quality of life was determined with the 36-item short-form (SF-36) [11]. It consists of eight dimensions, such as physical functioning and role-physical, with a total score of 800. The score was obtained by converting the original score with a standard formula: converted score = (actual score - possible lowest score in this dimension)/(possible highest score - lowest score in this dimension) × 100.

Secondary outcome measures: One week after nursing, the sleep quality of patients was evaluated by Athens insomnia scale (AIS) [12]. With a total score of 24 points, 0-4 indicated no sleep disorder, 5-6 indicated suspicious insomnia, and >6 indicated insomnia. The self-rating depression scale (SDS) was used to

evaluate the depression of patients [13]. The value after multiplying the total score (80 points in total) by 1.25 was rounded as the standard score. Patients' rehabilitation compliance was estimated by questionnaires and telephone visits from four aspects: sensible diet, emotional stability, adherence to oxygen therapy, and adherence to medications prescribed by doctors. Morisky Medication Adherence Scale assessed the medication compliance of patients, the higher the score, the better the compliance [14]. The incidence of chronic respiratory failure, sleep-disordered breathing, spontaneous pneumothorax, and chronic pulmonary heart disease in the two groups was counted. Patient satisfaction was collected by a unified self-made questionnaire, with a total score of 100 points, 100-80 for great satisfaction, 79-60 for satisfaction, and less than 59 for dissatisfaction. Total satisfaction rate = (case of great satisfaction + satisfaction)/total cases × 100%.

Statistical processing

SPSS20.0 was employed for data processing. Measurement data were described by mean ± standard deviation ($\bar{x} \pm sd$). Independent samples *t*-test was used for inter-group comparison, and paired *t*-test for intra-group comparison. Counting data were described by frequency count and percentage, and χ^2 test was used for inter-group comparison. Values of $P < 0.05$ were considered to be statistically significant.

Results

Comparison of general data

As shown in **Table 1**, there was no difference in general data between the two groups ($P > 0.05$).

Comparison of self-care agency and self-perceived burden

As shown in **Table 2**, there was no significant difference in self-care agency and self-perceived burden scores between the two groups be-

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Table 2. Comparison of self-care agency and self-perceived burden ($\bar{x} \pm sd$, score)

Group	Routine group	Research group	χ^2/t	P
n	50	50		
Self-care agency				
Before nursing	98.62±10.32	95.23±11.12	1.585	0.116
After nursing	126.52±22.85	149.64±33.64	4.02	0.001
t	7.869	10.860		
P	0.001	0.001		
Self-perceived burden				
Before nursing	30.51±2.54	30.84±3.06	0.587	0.559
After nursing	24.96±1.63	17.35±0.52	31.450	0.001
t	13.000	30.730		
P	0.001	0.001		

Table 3. Comparison of self-efficacy and quality of life ($\bar{x} \pm sd$, score)

Group	Routine group	Research group	χ^2/t	P
n	50	50		
Self-efficacy				
Before nursing	75.63±15.62	75.52±11.52	0.401	0.968
After nursing	96.96±20.63	116.85±24.51	4.390	0.001
t	5.829	10.790		
P	0.001	0.001		
Quality of life				
Before nursing	278.63±60.85	283.96±50.32	0.477	0.634
After nursing	362.32±76.54	485.63±90.63	7.469	0.001
t	6.052	13.760		
P	0.001	0.001		

Table 4. Comparison of sleep quality and SDS score ($\bar{x} \pm sd$, score)

Group	Routine group	Research group	χ^2/t	P
n	50	50		
Sleep quality				
Before nursing	6.32±2.31	6.03±1.97	0.675	0.501
After nursing	4.41±1.85	2.33±0.52	7.654	0.001
t	4.564	12.840		
P	0.001	0.001		
SDS score				
Before nursing	65.99±12.13	66.01±11.07	0.009	0.993
After nursing	44.18±5.12	32.04±3.93	13.300	0.001
t	11.710	20.450		
P	0.001	0.001		

Note: SDS: self-rating depression scale.

fore nursing ($P>0.05$). After nursing, the self-care agency score was increased, and the self-perceived burden score was decreased ($P<0.01$). The self-care agency score in research group was higher than that in routine group, and the self-perceived burden score was lower than that in routine group ($P<0.01$).

Comparison of self-efficacy and quality of life

As shown in **Table 3**, there was no significant difference in self-efficacy and quality of life scores between the two groups before nursing ($P>0.05$). The scores increased after nursing ($P<0.01$), and in research group they were higher than those in routine group ($P<0.01$).

Comparison of sleep quality and SDS score

As shown in **Table 4**, there was no significant difference in sleep quality and SDS score between the two groups before nursing ($P>0.05$). The scores decreased after nursing ($P<0.01$), and in research group they were lower than those in routine group ($P<0.01$).

Comparison of rehabilitation compliance

As shown in **Figure 1**, the rehabilitation compliance in research group was higher than that in routine group after nursing ($P<0.05$).

Comparison of the incidence of adverse reactions

As shown in **Table 5**, the incidence of adverse reactions in research group was lower than that in routine group ($P<0.05$).

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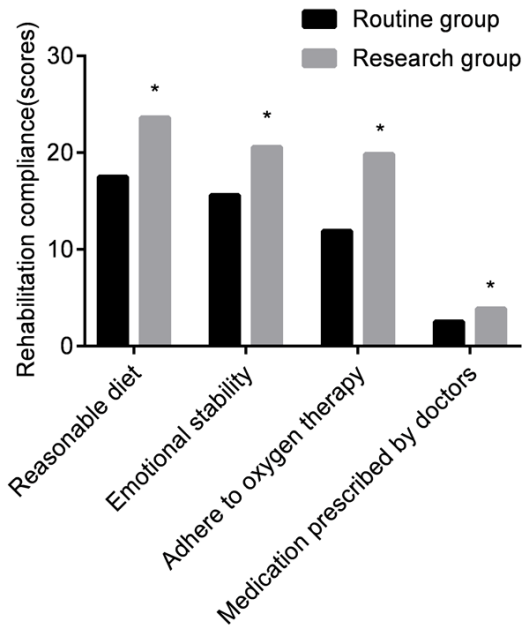


Figure 1. Comparison of rehabilitation compliance. * $P < 0.05$ vs. routine group.

Comparison of total satisfaction rate

As shown in **Table 6**, the total satisfaction rate in research group was higher than that in routine group ($P < 0.05$).

Discussion

Irregular lifestyle and environmental pollution are the main pathogenic factors of COPD. Long-term exposure to the high dust concentration may gradually cause damage to the human respiratory system, resulting in pathological changes [15]. COPD is characterized by dyspnea and chest tightness, and coughing and more serious symptoms may occur in severe cases [16]. Nowadays, multiculturalism, which influences the development of society and constitutes the cultural pattern of the world, has been applied in many fields. In nursing care, the integration of multiculturalism provides insights and promotes the emergence of multicultural nursing care. Multicultural nursing care, taking humanistic care as the core, relieves the pressure of patients in the process of nursing and enhances their comfort [17].

Self-care agency is not only an important cause for individuals to engage in health maintenance, but also a decisive factor in regulating

physical functioning, physiology and psychology. Self-care behaviors can be learned from the knowledge and skills of self-care taught by nurses [18]. Chen et al. believed that the higher the self-care agency score, the easier it is for patients to comprehend the harm of diseases and corresponding treatment knowledge, urging them to actively look for help to minimize the threat of diseases [19]. Self-perceived burden refers to the emotional and economic pressure of patients caused by the diseases. Medical staff should pay more attention to patient's psychological condition, so as to notice their abnormal behaviors in time and take corresponding measures [20]. Yao et al. revealed that the lower score of self-perceived burden indicated eased psychological pressure, as well as higher ability to face up to diseases, to cooperate with medical staff, and to keep a good mood [21]. Multicultural nursing care focuses on patients' behaviors and attitudes to keep their physical and mental pleasure and accelerate their recovery. In the present study, self-care agency was increased and self-perceived burden was decreased in the two groups after nursing, especially in the research group. Therefore, multicultural nursing care contributes to the alleviation of psychological pressure and the promotion of physical rehabilitation. The reasons may lie in the fact that psychological care in multicultural nursing care improves self-care agency and reduces self-perceived burden of patients by communicating with them in time and respecting their national self-esteem.

Self-efficacy score is a factor to predict behavior changes, the higher the score, the stronger the self-control of patients. Besides, it is an important indicator of emotional regulation of patients with chronic diseases, and is closely associated with the quality of life [22]. There is evidence that multicultural nursing care improves patients' self-management ability, thus enhancing their quality of life [23]. In this paper, the scores of self-efficacy and quality of life in the research group were significantly higher than those in the routine group after nursing, suggesting that it enhances the confidence and quality of life of patients. It is because that this nursing mode constructs a comprehensive management system to enhance patients' self-control and quality of life.

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Table 5. Comparison of the incidence of adverse reactions (n, %)

Group	Routine group	Research group	χ^2/t	P
n	50	50		
Chronic respiratory failure	9	5	1.329	0.024
Sleep-disordered breathing	13	8	1.507	0.220
Spontaneous pneumothorax	3	2	0.211	0.646
Chronic pulmonary heart disease	2	1	0.344	0.558
Incidence of adverse reactions	27 (54.00)	16 (32.00)	4.937	0.026

Table 6. Comparison of total satisfaction rate (n, %)

Group	Routine group	Research group	χ^2/t	P
n	50	50		
Great satisfaction	15 (30.00)	20 (40.00)		
Satisfaction	20 (40.00)	25 (50.00)		
Dissatisfaction	15 (30.00)	5 (10.00)		
Total satisfaction rate	35 (70.00)	45 (90.00)	6.250	0.012

Patients with COPD are usually in low immunity state and easily invaded by diseases, so irritability, mental decadence and other negative emotions, even sleep disorder in severe cases, are more likely to occur. In the process of nursing care, timely psychological care and sleep quality monitoring should be carried out to smooth negative emotions of patients [24]. Our findings demonstrated that the scores of sleep quality and SDS in the two groups decreased after nursing, and the decrease in research group was more significant than that in routine group, indicating that multicultural nursing care is effective in improving the sleep quality and depression of patients. Rehabilitation compliance and patient satisfaction in research group were remarkably superior to those in routine group, and the incidence of adverse reactions was lower than that in routine group. These data indicate that multicultural nursing care significantly increases the compliance and satisfaction of patients and reduces the incidence of adverse reactions. Consistent with our conclusions, Tang et al. confirmed that patients receiving multicultural nursing care are more satisfied with nursing services [25].

In this study, multicultural nursing care was implemented for only one week, and all data were collected at a single point in time, which

may result in inadequate result. Therefore, further research is required to confirm the extensive application of this nursing mode.

To sum up, multicultural nursing care is of great value in improving compliance and accelerating recovery of patients with COPD who are treated by acupuncture.

Disclosure of conflict of interest

None.

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