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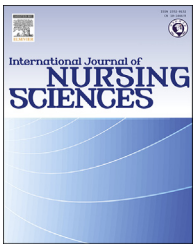

Original Article

Nurses' knowledge and attitudes regarding potential impacts of climate change on public health in central of China

Juan Xiao [a,b], *Wei Fan* [a,b], *Yang Deng* [a,b], *Shaolan Li* [a,b], *Ping Yan* [a,b,*]

[a] *School and Hospital of Stomatology, Wuhan University, Wuhan, China*

[b] *The State Key Laboratory Breeding Base of Basic Science of Stomatology (Hubei-MOST), Key Laboratory of Oral Biomedicine, Ministry of Education, Wuhan 430079, China*

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ABSTRACT

Objective: This study aims to determine the knowledge and attitudes of nurses concerning climate change and their role in addressing health-related impacts of climate change in Central China.

Method: The cross-sectional study was conducted in 2014. The study randomly selected nurses from hospitals in Central of China and they were asked to complete a questionnaire about climate change Descriptive statistical analysis was used to analyze the data.

Results: Majority of nurses (76%) knew about the climate change would affect public health. But more than half of the nurses did not know their work could also affect the development of climate change; 83–96% of the nurses thought it were necessary and would like to learn the knowledge about climate change.

Conclusion: The education program about this issue in Chinese colleges or universities is still very weak nursing courses and needs to be emphasized in the future.

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1. Introduction

Climate change is a worldwide environment problem; this phenomenon refers to changes in climate caused by variations in solar radiation, earth's orbit, ocean circulation, and human activities, such as deforestation and increased emission of greenhouse gases from burning of fossil fuels [1–3]. Climate change causes drought, heatwaves, rain-related floods, storms, and hurricanes, which affect human lives and present threats to the health and well-being of populations on earth. These events can increase physical and mental injuries, which could lead to illnesses and even deaths [4]. People with preexisting cardiopulmonary diseases are most likely to be affected by climate change because of poor quality and dry air caused by increased CO_2 levels and temperature [5,6]. For example, dehydration and heat exhaustion increased the mortality rates among old people in France in

* *Corresponding author.*
E-mail address: 105633851@qq.com (P. Yan).

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2005 [7]. All these adverse effects on health severely increase the burden of health service providers and national economists.

Nurses are a major part of a health service team because of their critical roles in improving the health and well-being of individuals. Nurses are also affected by health issues related to climate change, which has intensified in recent decades because of increased human industrial activities. To provide nurses with understanding regarding the effects of climate change on health, nursing schools of some universities in developed countries include climate change-related knowledge in teaching modules [8,9]. Investigations [10–12] revealed that nurses in developed countries are more knowledgeable regarding climate change than nurses in developing countries; hence, the former could contribute to solving climate change-related health issues by helping patients to adapt to the changing environment. In this regard, knowledge and attitude of nurses toward climate change are fundamental, and many studies on climate change and nurses have been published [10,13,14].

To date, minimal information is known regarding the perspective of nurses toward climate change and their effects on public health in China. Nurses in China are now concerned on issues and politics related to climate change. However, few reports and articles have been presented regarding recognition of nurses concerning climate change in China. To understand the status quo of nurses' recognition with regard to the relationship between climate change and healthcare in China, we investigated 330 randomly selected registered nurses from six public hospitals in central China by using a pre-designed questionnaire.

2. Materials and method

2.1. *Definition of climate change*

Climate change refers to changes in climate caused by variations in solar radiation, earth's orbit, ocean circulation, and human activities, such as deforestation and increased emission of greenhouse gases from burning of fossil fuels [1–3].

2.2. *Questionnaire design*

Twenty single-choice questions related to the background of testees and climate change were included in the self-administered questionnaire. Only completely filled questionnaires with a clear single-choice answer were considered valid for analysis.

2.3. *Testee selection*

A total of 330 registered nurses were randomly selected from six public hospitals (No. 3 Hospital of Wuhan, Zhongnan Hospital, Tongji Hospital, Renming Hospital, General Hospital of Guangzhou Military District, and Xiehe Hospital) in central China. Nurses from different hospitals were selected based on the scale of the hospital. The distribution of selected nurses is shown in Table 1.

Table 1 – Distribution of selected nurses among different hospitals.

Hospitals	No. of selected nurses
General Hospital of Guangzhou Military District	72
No. 3 Hospital of Wuhan	26
ZhongNan Hospital	52
TongJi Hospital	66
RenMing Hospital	54
XieHe Hospital	60
Total	330

The study protocol was approved by the Ethics Committee of the School and Hospital of the Stomatology of Wuhan University (Wuhan, China).

3. Results

3.1. *Characteristics of participants*

All nurses under investigation were female. Most of them (70%) obtained a bachelor's degree in nursing. About 91% of the participants worked as nurses for less than 5 years, and 78% held a junior position. The distribution characteristics of nurses from the six hospitals are shown in Table 2.

3.2. *Recognition of climate change and related issues*

A total of 293 questionnaires were found valid for analysis. Among these 293 questionnaire answers, 76% of the participants (group 1) discerned that climate change would affect public health, whereas 24% of the participants (group 2) lack relevant knowledge. In group 1, 39% knew the main cause of climate change, 79% believed that climate change could affect their normal daily lives, and only 44% thought that climate change could affect their work. Meanwhile, 72% of the 224

Table 2 – Characteristics of participants.

Characteristics	N	%
Sex		
Male	0	0
Female	293	100%
Education		
Technical education	3	1%
Diploma	85	29%
Bachelor's degree	205	70%
Master's degree	0	
PHD	0	
Position		
Junior	229	78%
Middle	64	22%
Senior	0	
Years of work		
<3 years	129	44%
3–5 years	138	47%
6–10 years	19	6%
10–20 years	7	2%

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