

# The Professional Identity of Nursing Students and Their Intention to Leave the Nursing Profession During the Coronavirus Disease (COVID-19) Pandemic

Shengxiao NIE<sup>1\*</sup> • Chao SUN<sup>2</sup> • Lei WANG<sup>3</sup> • Xia WANG<sup>3</sup>

## ABSTRACT

**Background:** The COVID-19 pandemic has affected China and other countries since December 2019. The effects of this pandemic on nursing students in terms of their professional identity, intention to leave the nursing profession, and perception of clinical nursing work remain unclear.

**Purpose:** The aims of this study were, first, to investigate nursing students' professional identity, intention to leave the nursing profession, and perception of clinical nursing work during the COVID-19 pandemic and, second, to explore factors influencing professional identity to help develop effective strategies to enrich and strengthen this factor in the future.

**Methods:** This cross-sectional, descriptive survey study was conducted on 150 nursing students in China in February 2020.

**Results:** The 14 (9.3%) participants who reported intending to leave the nursing profession earned lower scores for professional identity than their peers who reported intending to remain. The participants who believed that the COVID-19 pandemic had made them "more passionate about clinical nursing work" earned the highest scores, followed by those who believed the pandemic had "no effect." The lowest scores were earned by those who believed clinical nursing work to be "too dangerous to engage in." COVID-19 knowledge scores, the perceived effectiveness of preventive and control measures, the number of cases seen on the day the study survey was taken, and time spent daily on COVID-19 events were the variables found to influence professional identity.

**Conclusions:** COVID-19 outbreak is not merely a time of crisis but also an opportunity to reconstruct the professional identity of nursing students.

## KEY WORDS:

COVID-19, professional identity, retention, nursing student, cross-sectional study.

1,600,000 on April 11, 2020 (World Health Organization, 2020a). COVID-19 is highly contagious and generally susceptible and directly threatens the health and life of the public. However, no medicine is currently recommended for the prevention or treatment of COVID-19 (World Health Organization, 2020b), which has caused widespread panic among the public. In China, by February 24, 2020, more than 3,300 healthcare workers had contracted COVID-19 and several nurses had died of the disease.

Nursing students in China during this critical period were removed from all clinical placements in training hospitals. The main reason was safety, and the other reasons were that they were neither covered by health insurance for this type of epidemic disease nor seen as sufficiently competent to help. In this regard, they may have experienced a feeling of own inadequacy as well as unachieved professionalism. As nursing jobs certainly present elements of risk when caring for patients with COVID-19, especially undetected cases, nursing students at this moment were likely to be motivated to clarify their devotion to and reaffirm the meaning of nursing from a personal perspective.

The worldwide nursing shortage, high rates of attrition for both nursing students and new nurses, and workforce aging highlight the importance of recruiting and retaining suitable candidates (McCallum et al., 2006). Nursing students are the future of the nursing workforce. Thus, their retention within the nursing profession has been the focus of a considerable amount of research worldwide (Glew et al., 2019; Ten Hoeve et al., 2017; Powers et al., 2018). Individual factors

<sup>1</sup>MSN, RN, Department of Nursing, Beijing Hospital, National Center of Gerontology; Institute of Geriatric Medicine, Chinese Academy of Medical Sciences, People's Republic of China • <sup>2</sup>MSc, RN, Director, Department of Nursing, Beijing Hospital, National Center of Gerontology; Institute of Geriatric Medicine, Chinese Academy of Medical Sciences, People's Republic of China • <sup>3</sup>BSN, RN, Deputy Director, Department of Nursing, Beijing Hospital, National Center of Gerontology; Institute of Geriatric Medicine, Chinese Academy of Medical Sciences, People's Republic of China.

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## Introduction

The new coronavirus pneumonia (COVID-19) pandemic has affected China and other countries since December 2019. The number of COVID-19 cases worldwide surpassed

that have been reported to contribute to attrition rates include common reasons such as academic failure, personal/family difficulties, nursing as a wrong career choice, and financial difficulties (Urwin et al., 2010). Other reasons also contributing to attrition rates include, among others, disappointed dreams and lack of academic support (Glew et al., 2019; Ten Hoeve et al., 2017). Although there are many reasons why nursing students may choose to leave the nursing profession, the focus of this study is on the relationship that professional identity has on nursing student retention during the current COVID-19 pandemic.

Professional identity, defined as the attitudes, values, knowledge, beliefs, and skills that are shared with others within a professional group, may affect how people interact with, compare themselves with, and differentiate themselves from other professional groups in the workplace (Worthington et al., 2013). Professional identity has direct relationships with student retention in nursing programs and intention to leave the nursing profession (Worthington et al., 2013; Yang & Yin, 2019). The clinical internship is a transitional stage for nursing students from being a student to being a nurse. This stage is a critical period for the formation of nursing students' professional identity, as clinical placements help student nurses experience their future professional reality and compare this reality with what they had been taught in theoretical and academic classes (Arreciado Marañón & Isla Pera, 2015).

During the outbreak of severe acute respiratory syndrome (SARS) in early 2003, a study conducted in China found that some students reported that the SARS incident had made them better understand the dangers they may face in nursing work and made them concerned regarding their future work safety, fostering thoughts of leaving nursing work in the future (Sun et al., 2004). Although there are risks involved in caring for infected patients, there were also many moving stories of nurses in connection with this event. Nurses have been portrayed by the media as heroic, self-sacrificing, and having a strong sense of morality. Both the negative and positive information of the COVID-19 pandemic may impact the professional identity of nursing students, which may affect their retention in the nursing profession. Thus, this study was designed to explore how the COVID-19 pandemic has affected the professional identity, intention to leave the nursing profession, and clinical nursing work perceptions of nursing students. Therefore, the aims of this study were to (a) investigate nursing students' professional identity, intention to leave the nursing profession, and perception of clinical nursing work during the COVID-19 pandemic and (b) explore factors influencing professional identity to help develop effective strategies to enrich and strengthen this factor in the future.

## Methods

### Design and Sample

A cross-sectional study was conducted in seven medical schools with 150 participants. All of the participants were

nursing students who had completed an 8-month internship in a general hospital and were currently enrolled in either a junior college or a bachelor's degree study program. The internship for nursing students in China is scheduled during the final year of the nursing educational program, starting in late summer and finishing in late spring. Over these 8 months, nursing students should take a rotation in a general hospital in the surgical, medical, gynecological, or pediatric wards; emergency room; or operating room.

### Instruments

Four instruments and a demographic survey comprised the 55-item survey questionnaire that was provided to participants.

#### ***Professional identity***

This variable was assessed using the 17-item Professional Identity Questionnaire for Nurse Students (PIQNS) developed by Hao Yu-fang. This questionnaire includes the five dimensions of professional self-image, benefit of retention and risk of turnover, social comparison and self-reflection, independence of career choice, and social modeling. The PIQNS items are scored using a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores correlated with increasingly positive professional identity. The test-retest reliability, Cronbach's alpha, and split-half reliability of the scale were .74, .83, and .84, respectively, indicating good reliability and validity (Hao et al., 2014).

#### ***Intention to leave the nursing profession and the impact of the COVID-19 pandemic on perceptions of clinical nursing work***

Nursing students' intention to leave the nursing profession was assessed using the question: "Would you like to be a nurse in the future?" (yes/no). The impact of the COVID-19 pandemic on perceptions of clinical nursing work was assessed using the question: "What do you think the impacts of COVID-19 pandemic on your perception of clinical nursing work?" (no impact/clinical frontline work was too dangerous to engage in/more passionate about clinical nursing work).

#### ***Fear of COVID-19***

This variable was assessed using a one-item numeric rating scale, ranging from 0 (*no fear at all*) to 10 (*very scared*), with higher scores correlated with greater fear of COVID-19.

### Knowledge, Attitude, and Practice of COVID-19

These variables were assessed using a self-designed, three-part questionnaire. The knowledge part includes nine items scored using a 5-point Likert-type scale, ranging from 1 (*very strange*) to 5 (*very familiar*), with higher scores correlated with greater knowledge of COVID-19. The attitude part includes six dimensions and 10 items. Each item is scored using a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5

(*strongly agree*). The practice part includes nine items scored using a 5-point Likert-type scale, with 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *usually*, and 5 = *always*. Items 6 and 7 in the practice part employ reverse scoring. The average score for each item was calculated, with higher scores correlated with better practice of COVID-19. Five clinical experts were invited to evaluate the validity of this questionnaire. The average content validity index of all items was 1.0. In this study, the Cronbach's  $\alpha$  of the knowledge part was .90, that of the attitude part was .72, and that of the practice part was .65.

### ***Demographic survey***

This survey included seven items, including gender; educational level; place of residence; number of confirmed cases; current cases in their city of residence; whether nurses in the internship hospital were participating in the anti-COVID-19 pandemic medical team in Wuhan, China; and time spent on COVID-19 events daily.

### **Data Collection and Management**

A link to the questionnaire was sent to the participants through WeChat workgroups in February 2020. Concurrently, the internship leader at each school was invited to send the link to her classmates who were interns in other hospitals. Any invited nursing students could fill in the questionnaire. To ensure the quality of completed questionnaires, all of the items were flagged as "required questions." In addition, each device was limited to one questionnaire submission to avoid repeated submissions. Finally, the collected questionnaires were checked individually, and the questionnaires with all of the same options were deleted.

### **Data Analysis**

All of the items were transferred into an SPSS database from the electronic survey site. SPSS 16.0 statistical software (SPSS, Inc., Chicago, IL, USA) was used for data analysis. All of the demographic questions and the nursing students' professional identity, fear, knowledge, attitude, and practice scores were described in terms of mean and standard deviation (*SD*) values. To analyze the influence of professional identity on intention to leave the nursing profession and perception of clinical nursing work, we used *t* test, one-way analysis of variance, Pearson correlation, and Spearman correlation to identify if significant differences in professional identity existed between different demographic characteristics, fear scores, knowledge scores, attitude scores, or practice scores. Finally, after setting the professional identity of nursing students as the dependent variable and the statistically significant factors as the independent variables, a stepwise multiple linear regression was conducted. The alpha was set at  $p < .05$ .

### **Ethical Approval**

This study was approved by the ethics committee of one of the participating hospitals (protocol number: 2020BJYYEC-099-02; April 28, 2020). All of the participants were volunteers. Participant consent was assumed by their return of the questionnaires.

## **Results**

### **Characteristics of the Participants**

One hundred sixty-two questionnaires and 150 valid questionnaires were collected in this study (validity rate: 92.6%). The characteristics of the participants are shown in Table 1.

### **Professional Identity, Intention to Leave the Nursing Profession, the Impacts of COVID-19 Pandemic on Their Perception of Clinical Nursing Work, and Fear of COVID, Knowledge, Attitude, and Practice Scores of COVID-19**

The mean overall and dimension scores for the PIQNS, fear of COVID, knowledge, attitude, and practice scores of COVID-19; distribution of intention to leave the nursing profession; and the impacts of COVID-19 pandemic on nursing students' perception of clinical nursing work are shown in Table 2. The mean PIQNS score was 3.95 (*SD* = 0.61), with participants earning the highest mean score on social modeling (mean = 4.29, *SD* = 0.78) and the lowest score on independence of career choice (mean = 3.75, *SD* = 0.69). Of the 150 participants, 14 (9.3%) affirmed their intention to leave the nursing profession, 100 (66.7%) answered that the COVID-19 pandemic had no impact on their perception of clinical nursing work, 46 (30.7%) answered that the COVID-19 pandemic had made them "more passionate about clinical nursing work," and four (2.7%) expressed the opinion that "clinical frontline work was too dangerous to engage in." The mean scores for fear of COVID-19, knowledge, and practice of COVID-19 were 5.11 (*SD* = 2.04), 3.84 (*SD* = 0.59), and 4.24 (*SD* = 0.46), respectively.

### **Influences of the Professional Identity on Intention to Leave the Nursing Profession and Perceptions of Clinical Nursing Work**

The results with regard to the influence of professional identity on intention to leave the nursing profession and the perception of clinical nursing work are shown in Table 3. The participants who expressed an intention to leave the nursing profession had lower professional identity scores than those who expressed an intention to remain. Professional identity has been positively associated with perception of clinical nursing work. On the basis of the least significant difference one-way analysis of variance, the participants who expressed the opinion that the COVID-19 pandemic had made them "more passionate about clinical nursing work" had the highest professional identity scores, followed by those reporting

**Table 1***Characteristics of Participants and Factors Influencing Professional Identity in Nursing Students*

Variable	<i>n</i>	%	<i>M</i>	<i>SD</i>	<i>t/F/r</i>	<i>p</i>
Gender					<i>t</i> = 2.88	.005
Male	9	6.0	4.50	0.36		
Female	141	94.0	3.91	0.61		
Educational level					<i>t</i> = -1.41	.162
Bachelor degree	107	71.3	3.90	0.56		
College degree	43	28.7	4.07	0.73		
Area of residence					<i>F</i> = 0.72	.488
City	70	46.7	3.97	0.62		
Town	37	24.7	3.84	0.68		
Village	43	28.7	4.00	0.54		
Number of cases on the survey day, <sup>a</sup> <i>P</i> <sub>50</sub> and ( <i>P</i> <sub>25</sub> , <i>P</i> <sub>75</sub> )	146		(6, 157)		<i>r</i> = .29	< .001
Confirmed cases on the survey day, <sup>b</sup> <i>P</i> <sub>50</sub> and ( <i>P</i> <sub>25</sub> , <i>P</i> <sub>75</sub> )	410		(32, 410)		<i>r</i> = .23	.005
Participating in the anti-COVID-19 pandemic medical team in the internship hospital <sup>c</sup>					<i>F</i> = 1.80	.169
Yes	138	92.0	3.97	0.62		
No	4	2.7	3.59	0.49		
Do not know	8	5.3	3.72	0.13		
Time spent on COVID-19 cases daily					<i>F</i> = 3.95	.021
> 2 hours	24	16.0	4.19	0.62		
1–2 hours	60	40.0	4.00	0.53		
< 1 hour	66	44.0	3.81	0.65		

  

Variable	<i>r</i>	<i>p</i>
Fear score	.06	.441
Knowledge score	.48	< .001
Worrying about infection	.03	.745
Attitude score		
High possibility of being infected	-.19	.019
Perceptions of the consequences of infection	.06	.468
Feeling calm in the COVID-19 pandemic	.02	.786
Perceived importance of prevention and control measures	.34	< .001
Perceived effectiveness of preventive and control measures	.45	< .001
Practice scores	.38	< .001

Note. *P*<sub>25</sub> = 25th percentiles; *P*<sub>50</sub> = 50th percentiles; *P*<sub>75</sub> = 75th percentiles.

<sup>a</sup> Minimum is 0, and maximum is 198. <sup>b</sup> Minimum is 2, and maximum is 576. <sup>c</sup> Whether there were nurses in the internship hospital participating in the anti-COVID-19 pandemic medical team in Wuhan, China.

“no effect” and, finally, by those reporting “clinical nursing work is too dangerous to engage in” (*F* = 6.98, *p* < .05).

### Factors Influencing Professional Identity

The factors influencing professional identity are shown in Table 1. Men earned a higher mean score for professional identity than women (*t* = 2.88, *p* = .005). Those spending over 2 hours on COVID-19 daily earned higher scores for professional identity than those who spent less than 1 hour daily. Moderate but statistically significant and positive relationships were identified between number of confirmed cases, number of existing cases, COVID-19 knowledge scores, perceived importance of prevention and control measures, perceived effectiveness of preventive and control measures, practice scores,

and professional identity (*r* = .23–.48). Moreover, a negative relationship was found between having a high possibility of being infected and professional identity (*r* = -.19). However, educational level (*t* = -1.41, *p* = .162); place of residence (*F* = 0.72, *p* = .488); whether there were nurses in the internship hospital participating in the anti-COVID-19 pandemic medical team in Wuhan, China (*F* = 1.80, *p* = .169); fear scores (*r* = .06, *p* = .441); worrying about infection (*r* = .03, *p* = .745); perceptions of the consequences of infection (*r* = .06, *p* = .468); and feeling calm in the COVID-19 pandemic (*r* = .02, *p* = .786) were not found to influence professional identity.

The results of stepwise multiple linear regression analysis of professional identity and influencing factors are shown in

**Table 2**

*Mean Scores for PIQNS, Fear and KAP Scores of COVID, Distribution of Intention to Leave the Nursing Profession, and the Impacts of COVID-19 Pandemic on Nursing Students' Perception of Clinical Nursing Work*

Scale	Mean	SD	Min	Max
PIQNS				
Overall professional identity	3.95	0.61	2.12	5
Professional self-image	4.01	0.74	1.17	5
Benefit of retention and risk of turnover	3.77	0.75	1.00	5
Social comparison and self-reflection	3.98	0.64	2.00	5
Independence of career choice	3.75	0.69	2.50	5
Social modeling	4.29	0.78	1.50	5
Fear of COVID-19	5.11	2.04	0.00	10
KAP of COVID-19				
Knowledge	3.84	0.59	3.00	5
Attitude				
Worrying about infection	3.18	1.00	1.00	5
High possibility of being infected	2.25	1.00	1.00	5
Perceptions of the consequences of infection	3.46	0.93	1.00	5
Perceived importance of prevention and control measures	4.50	0.70	2.00	5
Feeling calm in the COVID-19 event	3.22	0.83	1.00	5
Perceived effectiveness of preventive and control measures	4.45	0.67	2.00	5
Practice	4.24	0.46	2.78	5

  

Variable	n	%
Intention to leave the nursing profession		
Yes	14	9.3
No	136	90.7
Impact of COVID-19 pandemic on perception of clinical nursing work		
No impact	100	66.7
More passionate about clinical nursing work	46	30.7
Clinical frontline work is too dangerous to engage in	4	2.7

Note. PIQNS = Professional Identity Questionnaire for Nurse Students; KAP = knowledge, attitude, and practice.

Table 4. The final model included four independent variables that together accounted for 33.8% of the variation in professional identity. Higher COVID-19 knowledge scores, perceived effectiveness of preventive and control measures, and more cases on the day of the survey were shown to correlate significantly and positively with stronger professional identity,

whereas less time spent on COVID-19 events daily was found to correlate with weaker professional identity.

## Discussion

In this study, the mean score for professional identity was found to be higher than in other studies (Chen & Zhang,

**Table 3**

*Influences of the Professional Identity of Nursing Students on Intention to Leave the Nursing Profession and Perception of Clinical Nursing Work*

Variable	M	SD	t/F	p
Intention to leave the nursing profession			t = -4.50	< .001
Yes	3.29	0.67		
No	4.01	0.57		
Perception of clinical nursing work			F = 6.98	.001
No effect	3.88	0.63		
More passionate about clinical nursing work	4.16	0.51		
Clinical nursing work is too dangerous to engage in	3.21	0.45		

**Table 4***Stepwise Multiple Linear Regression Analysis of Predictors of Professional Identity (N = 150)*

Variable	$\beta$	SE	$\beta'$	t	p
Constant	1.04	0.38	—	2.77	.006
Knowledge score	0.41	0.09	0.34	4.67	< .001
Perception of the effectiveness of preventive and control measures	0.27	0.07	0.27	3.79	< .001
The number of cases on the survey day	0.00	0.00	0.21	3.10	.002
Time spent on COVID-19 cases is < 1 hour	-0.20	0.08	-0.16	-2.42	.017

Note.  $R^2 = .355$ , adjusted  $R^2 = .338$ ,  $F = 19.978$ , and  $p < .001$ .

2015; T. T. Wang & Luo, 2018; C. Wu et al., 2020). The reason for this may be differences in the surveyed populations. Chen and Zhang's study included students of all grades, and Wu et al.'s study enrolled first-year, post-associate-degree baccalaureate nursing students. However, only students in the final year of their nursing programs were included in this study. Furthermore, nursing students at different grade levels have been shown to differ in terms of professional identity (Chen & Zhang, 2015). Moreover, the COVID-19 outbreak is a unique and unanticipated event that provided a stage for nurses to establish a good professional image. Nursing work has been universally respected and recognized by society, and the positive attitude of society toward nursing is likely to enhance the positive, professional attitude of nursing students. It may also be that, similar to during the previous SARS outbreak, nursing during the COVID-19 pandemic has helped nursing students recognize the value of nursing as a profession that focuses on the lives of others and on being altruistic, moral, and concerned with understanding more about those around them, providing a unique opportunity to mature and grow into their profession, thereby profoundly enhancing their professional identity (Heung et al., 2005). The dimension of "social modeling" earned the highest score in this study, which differs from other studies (Chen & Zhang, 2015; Q. R. Wang, 2018), indicating that the public's positive attitude toward nursing work has improved the professional identity of nursing students. The dimension of "independence of career choice" earned the lowest score. There are currently limited career choices for nursing graduates, and most will become a nurse, with only a very few with the best academic records continuing to study for a master's degree. In addition, nursing students' choice of career is influenced by other factors such as family members and the general employment situation (L. T. Wu et al., 2015), which limits career choice autonomy.

Significant differences were found in terms of professional identity, with different intentions to leave the nursing profession and perceptions of clinical nursing work, which is consistent with the findings of other research (Chênevert et al., 2016). Of the 150 participants in this study, 46 (30.7%) expressed that the COVID-19 event had made them "more passionate about clinical nursing work" and earned the highest scores for professional identity. However, four (2.7%) of the participants

in this study expressed the opinion that "clinical nursing work is too dangerous to engage in," supporting job security as an important factor affecting career choice (L. T. Wu et al., 2015) in light of the large overall population of nursing students in China.

The COVID-19 knowledge score was found to play an important role in enhancing professional identity, with higher knowledge scores correlating with stronger professional identity, indicating that improving the awareness of nursing students regarding COVID-19 will help improve their professional identity. This may be because nursing students with higher professional identity hold deeper understandings, convictions, and emotions toward the nursing profession and therefore pay more attention to knowledge related to the COVID-19 pandemic. Another possible reason for this phenomenon is that information on the COVID-19 pandemic help nursing students more deeply perceive the important role played by nurses in controlling this pandemic and the resultant high level of professional prestige, inspiring feelings of social responsibility and love for the nursing profession. Desire to help others, personal interest in healthcare, and professional prestige are important factors that influence the career choices of nursing students (L. T. Wu et al., 2015) and that thus enhance their professional identity.

The self-perceived effectiveness of preventive and control measures was shown to influence professional identity in this study, with higher "perception of the effectiveness of preventive and control measures" scores associated with stronger professional identity scores. The participants with higher scores of "perception of the effectiveness of preventive and control measures" were shown to be more likely to take good protective behaviors to ensure their own safety and thus to have a more reasonable understanding of the safety of nursing work, which also increased their perceived professional identity.

Number of confirmed cases was also found to be a factor that influences professional identity, although these did not necessarily share a positive relationship. A large number of current confirmed cases means that the COVID-19 pandemic situation is more serious, which also encourages nursing students to pay close attention to the pandemic situation, thereby improving their awareness of this situation, enhancing their self-perceived value of nursing work, and improving their professional identity.

In this study, those participants who paid attention to COVID-19 less than 1 hour every day had the lowest professional identity scores. Nursing students who pay less attention to the COVID-19 pandemic likely have a lower understanding of the value of nursing work, which, in turn, affects their professional identity. Nursing students with poor professional identity may not pay sufficient attention to the most currently important nursing-work-related events such as the COVID-19 pandemic.

## Conclusions

The professional identity of nursing students and its influences on intention to leave the nursing profession and perception of clinical nursing work were explored in this study. The factors that significantly influence professional identity were also explored. We found the professional identity of the participants to be at the upper middle level and that significant differences exist among perceived professional identity, with different intentions to leave the nursing profession and different perceptions of clinical nursing work. COVID-19 knowledge, the perceived effectiveness of preventive and control measures, the number of confirmed cases, and the time spent on COVID-19 events daily were identified as factors that significantly influence professional identity in nursing students. The COVID-19 outbreak is a time of crisis and an opportunity to reconstruct the professional identity of nurses. The pandemic has an affirming effect on the professional identity of nursing students. Making sense of this pandemic and incorporating related findings into educational activities have the potential to promote professional identity in nursing students and increase their commitment to remaining in the nursing profession.

## Author Contributions

Study conception and design: SN

Data collection: All authors

Data analysis and interpretation: SN

Drafting of the article: SN

Critical revision of the article: SN

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\*Address correspondence to: Shengxiao NIE, MSN, RN, Beijing Hospital, No. 1, Dahua Road, Dongcheng District, Beijing 100730, People's Republic of China. Tel: +86-15010021340; E-mail: nieshengxiao@163.com

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