

Cognition status and demand on “Internet plus nursing services” in China

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Abstract

In recent years, the Chinese government has issued a series of policies to strongly support the development of "Internet plus nursing services". "Internet plus nursing services" mainly health medical institutions use existing within the agency registered nurse resources, combining the power of information technology, such as the Internet, online apply for related to patients, medical institutions according to the application for offline services as the core, to discharged patients or action inconvenience, far from medical service institution of patients with nursing services. "Internet plus nursing services" has just started in China, and the overall research on it is insufficient. So far, there has been no research on the cognitive status and demand of discharged patients for "Internet plus nursing services", nor has there been any research on the cognitive status and demand of clinical nurses for "Internet plus nursing services". As a new nursing model, scientific and detailed research should be carried out, especially in the case of COVID-19 normalization, how discharged patients as services objects and clinical nurses should recognize and what needs they have, which is of great practical significance. Therefore, an accurate understanding of the cognitive status and needs of discharged patients and clinical nurses for "Internet plus nursing services" can provide a scientific basis for the smooth development of this new nursing mode in the future.

Keywords: internet + nursing service, discharged patients, nurses, cognition, demand

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1. Introduction

According to the data in China Development Report 2020, “China's social economy has been developing rapidly since 2000, but at the same time, the degree of population aging has become serious, and the population structure is gradually developing toward the direction of an aging society. In 2019, 254 million Chinese people entered the age group of 60 or older. By 2022, the number of people over 65 will account for 14 percent of the total population. It is expected that China will reach the peak of social aging in 2050, and China will become a senile country.” At present, the problem of aging population in China is becoming more and more serious, and the resource shortage for the treatment and care of chronic diseases in the elderly is increasing day by day. Nursing service in the traditional sense refers to the basic nursing operations for patients' conditions during hospitalization. With the progress of nursing science, continuous nursing plays an important role in improving the quality of life of patients. "Internet + nursing service" is specially aimed at those who need extended care at home, through the mode of "online application, offline service", send "nurses" to the door.

The United States, the United Kingdom, Australia, Japan and Russia and other countries have carried out the work of nurse door-to-door service. The service mode in Australia is that nurses and doctors jointly make on-site diagnosis and treatment. Similar to China, the main body of on-site service is medical institutions. The nurses who make on-site diagnosis and treatment together with doctors are not independent individuals, but only transfer the service location from the clinic to the patient's home. In order to alleviate the huge social demand for the elderly, the Japanese government has promulgated a series of laws and provisions. In the Japanese medical system, doors-to-door service for the elderly is a quite important link. In the United States, home care was included in health insurance in 1909, so that patients could avoid health problems caused by continuation of services or inadequate home medical care.

The rapid development of Internet technology provides more possibilities for the expansion of continuity care service quality and service scope. After the release of relevant policies, Beijing issued a work plan related to the nursing model, and carried out in-depth exploration of the nursing model. It can be predicted that the establishment of "Internet + nursing service" mode can not only improve the work efficiency of nursing staff, further meet the needs of the public for health management, but also become an effective measure to deal with the aging of society. Based on this policy background and the current situation and problems of nursing services in health institutions in Beijing, this study conducted a large-scale questionnaire survey on nurses and discharged patients in some hospitals in Beijing so as to provide a reference for the pilot work of medical and health institutions in Beijing.

Based on the above literature information, we predict that the trial implementation of "Internet + nursing service" in Beijing will bring beneficial effects on medical institutions, medical staff, and the aging population. As the providers and recipients of nursing services, the cognition degree, service willingness and risk factors of nurses and patients on this policy background are of great research significance. The data collected by the questionnaire can provide data support for the government and health institutions to formulate pilot programs and provide data support for the government and health institutions to develop pilot programs. It can also be used as a research tool to investigate nurses' cognition and service willingness in other areas.

Objectives of the Study - To study the cognitive status and needs of discharged patients and nurses on "Internet + nursing service", so as to provide reference for promoting "Internet plus nursing services" and providing specific service content, operation process and related policies. The implementation of "Internet plus nursing services" can effectively utilize health resources, provide patients with real-time, convenient and beneficial services, effectively improve medical experience, so as to alleviate doctor-patient conflicts and

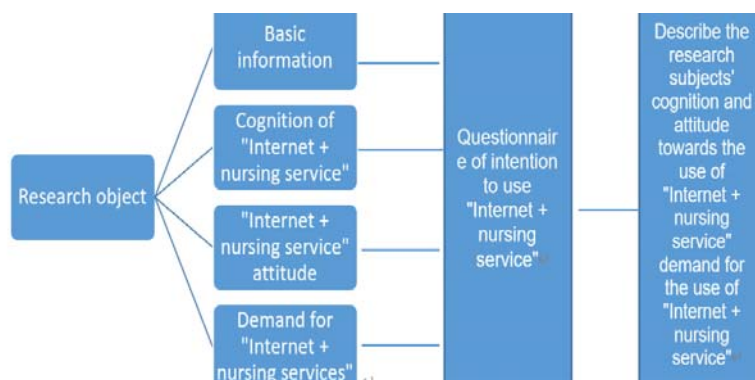
improve the quality of medical services. Explore effective medical service models to meet the needs of discharged patients for extended care, and enhance the well-being and sense of security of discharged patients and their families.

2. Methods

Research Design - The quantitative research methodology used in this study. Questionnaire Star was used for online questionnaire collection in this study. A total of 97 discharged patients and 131 clinical nurses from 7 hospitals in Beijing from February 2023 to April 2023 were collected.

Participants of the Study - Subjects: This study adopted the convenient sampling method, and selected discharged patients and clinical nurses from some hospitals in the sample Beijing area as the research subjects. Inclusion criteria: Discharged patients: Patients or their caregivers have no communication difficulties and can communicate effectively with investigators; Volunteer to participate in this survey. Nurse: Holding the Nurse Practicing Certificate of the People's Republic of China; Engaged in clinical nursing work; Volunteer to participate in this survey. Exclusion criteria: Discharged patients: had a history of mental illness; Unstable vital signs or acute onset of chronic disease. Nurses: those who were not in the clinical nursing position of their department due to further study, sick leave, or post transfer during the investigation; Non-nurses working in the hospital during the investigation period, such as visiting students, interns, etc.

Data Gathering Instrument



Data Gathering Procedure - Domestic and foreign literature databases and official government websites were searched, and domestic literature and policy documents related to "Internet + nursing service" were consulted, so as to clarify the direction and investigation objects of this research. The structural framework and specific items of the questionnaire were designed by referring to the service projects provided by the pilot cities of "Internet + nursing service". Five long-term experts were selected in clinical nursing, care management, geriatric care, and community care. The panel conducted expert consultation on the designed questionnaire. The experts evaluated the rationality and importance of the questionnaire design items and content setting.

Ethical Considerations - The first step to conduct the study is to obtain an approval from the research instrument proponent, nursing school, and nursing administration and research ethical committee. Nurses who participated in this research has received an explanation of the purpose of this study. The participants were informed that they have the right to choose not to complete and to exit from the study if they decide to. In addition, nurses involved in this study were provided with an official consent and the anonymity and confidentiality of all participants was ensured.

Data Analysis - In this study, SPSS27.0 was used for statistical analysis, t-test or ANOVA was used for measurement data, Pearson correlation analysis was used for correlation analysis, cross-table chi-square test was used for count data, and binary logistic regression analysis was conducted by including control variables in the regression model.

3. Results and discussion

Survey results of the nurses about "Internet plus nursing services" - A total of 131 subjects were investigated in this study, including 5 males (3.82%) and 126 females (96.18%); 101 cases (77.10%) were married; 120 cases (91.6%) had Bachelor's degrees; 80 cases (61.07%) had the title of supervisor nurse; 65 cases (49.62%) had one child.

Table 1

Social demographic survey of nurses

Topic	Item	Count	Percent
Gender	Male	5	3.82%
	Female	126	96.18%
Educational background	Diploma	3	2.29%
	Undergraduate degree	120	91.60%
	Graduate student	8	6.11%
Professional title	Nurse	4	3.05%
	Nurse practitioner	80	61.07%
	Nurse in charge	39	29.77%
	Deputy chief nurse and above	8	6.11%
Marital status	Unmarried	29	22.14%
	married	101	77.10%
	divorced	1	0.76%
Family situation	Childless	39	29.77%
	The only child	65	49.62%
	Two children	26	19.85%
	Three or more children	1	0.76%

Table 2

Comparison of different social demographic data and results of nurses' cognition

Table 2 Comparison of different social demographic data and results of nurses' cognition (n=131)

Topic	Item	Knowledge of policies related to "Internet + nursing service"					Total	χ^2	p
		Very willing	Be willing to	General	Be reluctant to	Very reluctant to			
Gender	Male	2	4	4	0	0	10	2.019	0.568
	Female	22	125	88	12	0	247		
Educational background	Diploma	2	1	3	2	0	8	13.374	0.037
	Undergraduate degree	22	122	86	10	0	240		
	Graduate student	0	6	3	0	0	9		
Professional title	Nurse	6	4	6	0	0	16	28.269	0.001
	Nurse practitioner	8	36	31	2	0	77		
	Nurse in charge	10	81	55	10	0	156		
	Deputy chief nurse and above	0	8	0	0	0	8		
Age	<25 years	3	5	4	0	0	12	47.361	0
	25-30 years	9	23	25	2	0	59		
	30-35 years	6	38	27	0	0	71		
	35-40 years	6	44	23	1	0	74		
	40-45 years	0	11	7	6	0	24		
	>45 years	0	8	6	3	0	17		
Average monthly income (RMB)	<5000	0	4	2	0	0	6	29.798	0.003
	5000-10000	22	90	60	2	0	174		
	10000-15000	2	25	22	6	0	55		
	15000-20000	0	10	6	3	0	19		
	>20000	0	0	2	1	0	3		
Marital status	Unmarried	8	28	19	0	0	55	6.138	0.408
	married	16	99	71	12	0	198		
	divorced	0	2	2	0	0	4		
	Childless	8	40	23	4	0	75		
Family situation	The only child	10	60	51	6	0	127	11.062	0.271
	Two children	4	27	18	2	0	51		
	Three or more children	2	2	0	0	0	4		

The social demographic information of the respondents was taken as the independent variable, and the results of the respondent's understanding of the relevant policies of "Internet + nursing service" were taken as the dependent variable. The results of single factor analysis showed that Gender, marital status and children's status did not affect nurses' cognition of the policy. There were statistical differences in the cognition degree of "Internet + nursing service" among different professional titles, educational backgrounds, and average monthly income. In 2021, Yan-yan and Fang-ni's research on the cognition of 158 nurses in Shandong Province showed

that 50.63% said they knew or heard of "Internet + nursing service." Compared with the results, the cognition level of nurses in Beijing has been improved. The results showed that the professional title, educational background and average monthly income of nurses had an impact on their cognition. Nurses with a Bachelor's degree or above have higher awareness than those with junior college degrees. In addition, nursing staff with high education and professional titles have the excellent educational backgrounds, rich experience, and broad vision, so they may have a higher degree of cognition of "Internet + nursing service."

Table 3

Comparison of different social demographic data and nurses' willingness to serve

Table 3 Comparison of different social demographic data and nurses' willingness to serve (n=131)

Topic	Item	Survey results of service willingness of "Internet + nursing services"					Total	χ^2	p
		Very willing	Be willing to	General	Be reluctant to	Very reluctant to			
Gender	Male	2	6	2	0	0	10	0.935	0.817
	Female	64	119	51	13	0	247		
Educational background	Diploma	6	8	0	2	0	16	14.359	0.11
	Undergraduate degree	21	42	12	2	0	77		
	Graduate student	39	69	39	9	0	156		
Professional title	Nurse	6	4	6	0	0	16	28.269	0.001
	Nurse practitioner	8	36	31	2	0	77		
	Nurse in charge	10	81	55	10	0	156		
	Deputy chief nurse and above	0	8	0	0	0	8		
Age	<25 years	6	4	0	2	0	12	39.085	0.001
	25-30 years	21	30	8	0	0	59		
	30-35 years	16	38	10	7	0	71		
	35-40 years	19	32	23	0	0	74		
	40-45 years	2	11	9	2	0	24		
	>45 years	2	10	3	2	0	17		
Average monthly income (RMB)	<5000	2	2	2	0	0	6	34.354	0.001
	5000-10000	52	93	24	5	0	174		
	10000-15000	10	22	17	6	0	55		
	15000-20000	2	8	7	2	0	19		
	>20000	0	0	3	0	0	3		
Marital status	Unmarried	11	34	6	4	0	55	12.201	0.058
	married	55	87	47	9	0	198		
	divorced	0	4	0	0	0	4		
Family situation	Childless	15	44	12	4	0	75	12.505	0.186
	The only child	32	54	32	9	0	127		
	Two children	17	25	9	0	0	51		
	Three or more children	2	2	0	0	0	4		

The results of the survey on the willingness to carry out "Internet + nursing service" showed that 25.95% (34 people) of nurses were very willing to participate in door-to-door nursing service, 48.09% (63 people) of nurses were willing to participate in door-to-door nursing service, 20.61% (27 people) of nurses were determined by the situation, and 0.05% (7 people) of nurses were not willing to participate in door-to-door service. This is the same as the research results of Xiaohong (2020). Compared with the research results of Hong (2019) (8.3% unwilling to provide door-to-door services), the willingness of nurses to participate in "Internet + nursing services" increased significantly.

What services should be provided for patients to carry out Internet + nursing services? According to the data table, 131 people filled in this question, among which a high proportion of people chose nasogastric tube care, urinary tube care, blood glucose monitoring, rehabilitation guidance, pressure ulcer care, and other services, all of which exceeded 70%. The proportion of choosing traditional Chinese medicine nursing, maternal and child care, hospice care and other services is low, less than 40%. In addition, the proportion of selected services such as catheter (PICC) maintenance/infusion port maintenance, specimen collection, intravenous infusion, intravenous injection, subcutaneous injection, intramuscular injection, wound/stoma dressing change, and vital sign monitoring also exceeded 60%. Therefore, when developing Internet nursing services for patients, we should focus on nasogastric tube care, urinary tube care, blood glucose monitoring, rehabilitation guidance, pressure sore care and other services, and provide other services appropriately according to actual needs (Yumei, et al. (2020).

This is roughly the same as the findings of some previous studies on the choice of house-call programs.

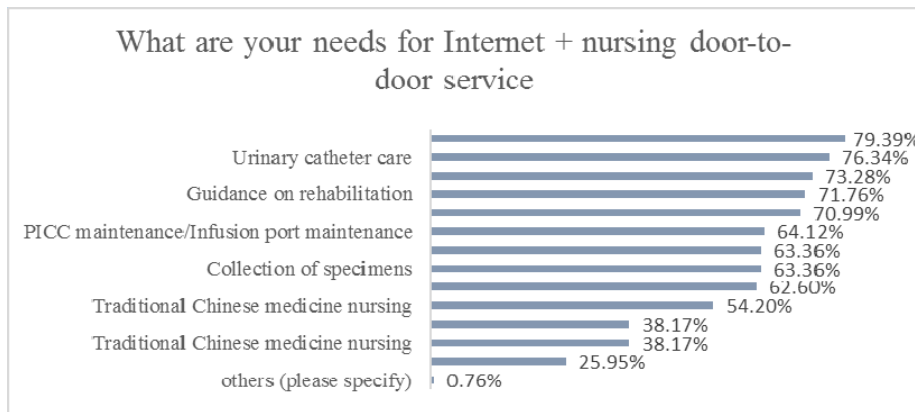


Fig. 1. What are your needs for Internet + nursing door-to-door service ?

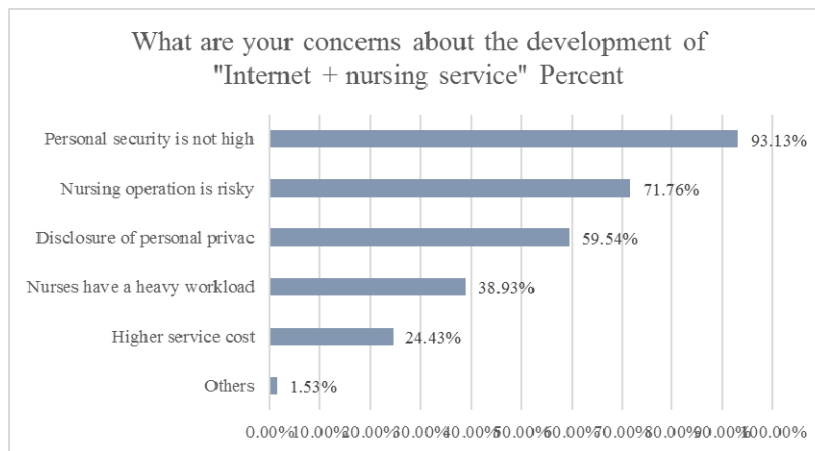


Fig. 2. What are your concerns about the development of "Internet + nursing service"

According to the survey results, for providing "Internet nursing service" nurses' door-to-door work, the respondents are most concerned about personal safety (93.13%) and high risk of nursing operation (71.76%). The second was personal privacy leakage (59.54%) and increasing the workload of nurses (38.93%). Relatively, there were fewer concerns about higher service costs (24.43 percent). Safety is the key issue affecting the provision of "Internet + nursing services" by nurses, which is consistent with the findings of Yueshi et al., (2020); Yu-tong, et al., (2020). This is similar to the findings of Ying et al., and security issues are currently the main topic of concern.

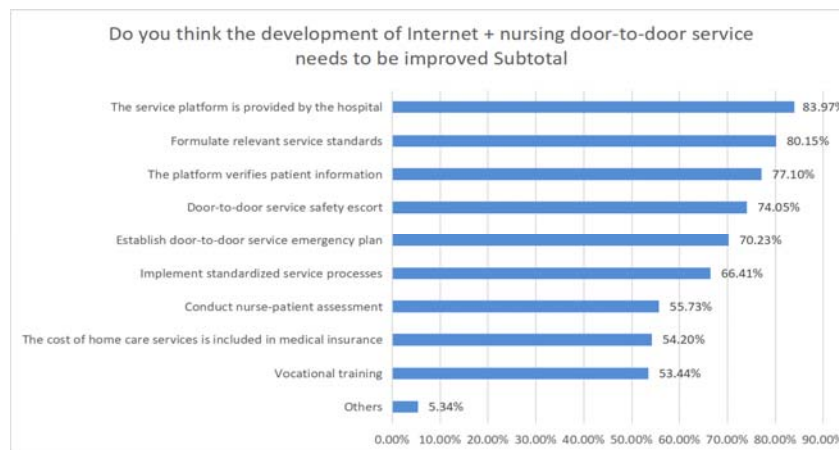


Fig. 3. Do you think the development of Internet + nursing door-to-door service needs to be improved ?

Among the items that need to be improved in Internet + nursing door-to-door service, the provision of service platform by the hospital, the formulation of relevant service standards, the verification of patient information by the platform, the safety escort of door-to-door service and the establishment of door-to-door service emergency plan are the items that are considered to be the most in need of improvement, and their proportion is more than 70%. The implementation of standardized service processes, the evaluation between nurses and patients, the inclusion of home care service costs into the scope of medical insurance and vocational training are also matters that need to be improved, which account for about 50%. Most patients support the development of Internet + nursing service, indicating that it is a project of people's livelihood, which provides convenience for patients and gives nurses the opportunity to realize professional value, but the personal safety of nurses needs to be protected. This is consistent with the findings of Liyun et al., (2021).

Results of the patients' survey on the development of "Internet + nursing" services - The social demographic information of the respondents was taken as the independent variable, and the results of the respondents' understanding of the relevant policies of "Internet + nursing service" were taken as the dependent variable. The results of single factor analysis showed that; Marital status, gender, children's status, occupation and other factors did not affect nurses' cognition of the policy. Education, family situation, average monthly income and average monthly income have statistical differences in the degree of awareness of "Internet + nursing services".

Table 4

Do you think the development of Internet + nursing door-to-door service needs to be improved ?

Table 4 Comparison of different social demographic data and willingness to accept services (n=97)

Topic	Item	knowledge of policies related to "Internet + nursing service"					Total	X ²	p
		Very willing	Willing to	General	Not willing to	Very reluctant			
Gender	Male	2	10	39	44	5	100	6.508	0.164
	Female	3	36	81	64	5	189		
Educational background	Primary school and below	2	1	3	2	0	8	13.374	0.037
	middle school	1	2	9	4	0	16		
	Diploma	0	14	27	20	5	66		
	Undergraduate degree	2	28	78	80	5	193		
	Graduate student	2	2	3	0	0	7		
Current/pre-retirement occupation	None	0	2	9	16	0	27	36.188	0.033
	Individual employment	0	6	21	16	0	43		
	An enterprise unit	1	12	36	40	0	89		
	Public institutions	4	24	51	28	10	117		
Average monthly income (RMB)	Government agencies	0	2	3	8	0	13	57.956	<.001
	<5000	0	2	6	20	0	28		
	5000-10000	4	30	51	28	0	113		
	10000-15000	0	6	21	12	5	44		
	15000-20000	0	0	9	16	0	25		
Marital status	>20000	1	8	33	32	5	79	19.458	0.078
	Unmarried	0	6	9	12	0	27		
Family situation	married	5	34	108	88	10	245	22.436	0.033
	divorced	0	4	0	8	0	12		
	Widowed	0	2	3	0	0	5		
	Childless	0	8	12	20	0	40		
	The only child	2	26	78	60	10	176		
Two children	3	12	27	20	0	62			
Three or more children	0	0	3	8	0	11			

The results of this survey on the willingness to carry out "Internet + nursing service" show that: A total of 97 questionnaires were collected, among which 39.1% (38 cases) of patients were very willing to accept door-to-door nursing services, 49.4% (48 cases) of patients were willing to accept door-to-door services, 11.3% (11 cases) of patients were generally accepted, and no patients chose not to accept nurses' door-to-door services. 88.5% of patients are willing to accept nurses' door-to-door service, which is higher than the 82.73% of patients who are willing to accept nurses' door-to-door service by Mao-cheng, et al., (2020).

The survey results showed that wound/stoma dressing change, pressure sore care, intravenous infusion, intravenous injection, subcutaneous injection, intramuscular injection, urinary catheter care, catheter (PICC) maintenance/infusion port maintenance were the most needed Internet nursing services for patients, and their proportion was 67%, 64%, 64%, 63%, 63%, 63%, respectively. The proportions of blood glucose monitoring, specimen collection, rehabilitation guidance, traditional Chinese medicine nursing, vital sign monitoring,

nasogastric tube nursing, maternal and infant nursing, and hospice care were relatively low, which were 52%, 56%, 62%, 39%, 38%, 55%, 31%, and 28%, respectively. The proportion of other services is 3%, which requires further understanding of the specific needs and suggestions of the fillers. This is slightly different from the results of Gong Sha et al. 's survey of registered nurses in Hunan Province, which showed that the top three items nurses were most willing to provide were vital sign monitoring (79.3%), psychological care (69.1%), and indwelling/replacing catheter care (59.8%).

Table 5

Comparison of different social demographic data and willingness to accept services

Table 5 Comparison of different social demographic data and willingness to accept services (n=97)

Topic	Item	Willingness to accept "Internet + nursing services"					Total	χ ²	p
		Very willing	Be willing to	General	Be reluctant to	Very reluctant to			
Gender	Male	14	30	9	0	0	53	0.771	0.68
	Female	24	66	24	0	0	114		
Educational background	Primary school and below	2	0	0	0	0	2	25.1	0.001
	middle school	2	8	0	0	0	10		
	Diploma	6	26	9	0	0	41		
	Undergraduate degree	24	62	24	0	0	110		
Current/pre-retirement occupation	Graduate student	4	0	0	0	0	4	13.785	0.088
	None	4	6	3	0	0	13		
	Individual employment	6	14	3	0	0	23		
	An enterprise unit	5	40	12	0	0	57		
Average monthly income (RMB)	Public institutions	21	34	12	0	0	67	8.277	0.407
	Government agencies	2	2	3	0	0	7		
	<5000	3	8	3	0	0	14		
	5000-10000	17	46	9	0	0	72		
	10000-15000	6	14	3	0	0	23		
	15000-20000	3	6	3	0	0	12		
Marital status	>20000	9	22	15	0	0	46	16.072	0.013
	Unmarried	3	12	0	0	0	15		
	married	34	78	27	0	0	139		
	divorced	0	6	3	0	0	9		
Family situation	Widowed	1	0	3	0	0	4	30.111	0
	Childless	3	20	0	0	0	23		
	The only child	24	46	33	0	0	103		
	Two children	10	26	0	0	0	36		
	Three or more children	1	4	0	0	0	5		

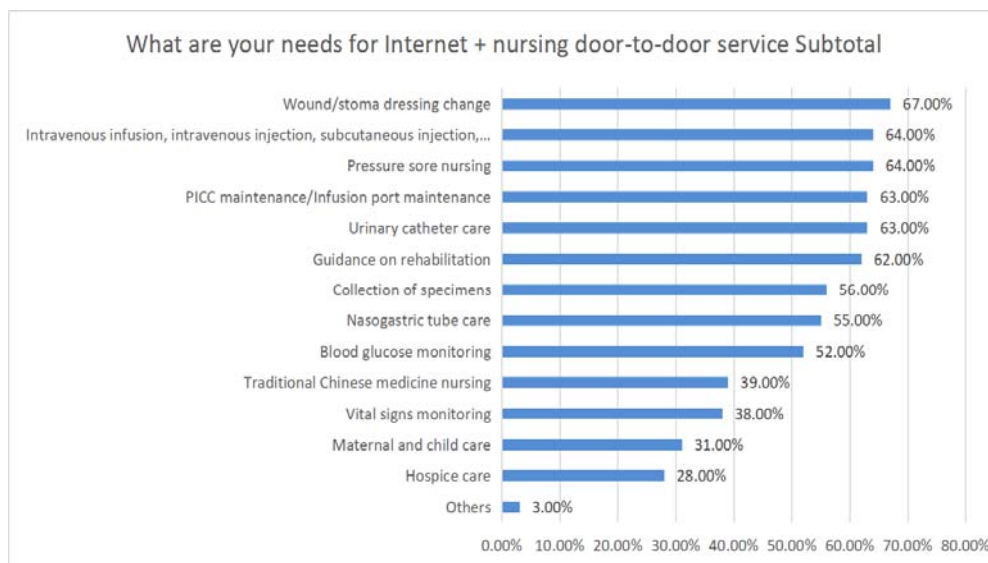


Fig. 4. What are your needs for Internet + nursing door-to-door service ?

The result of service mode selection

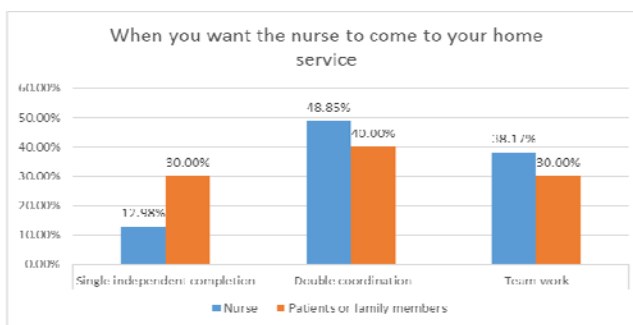


Fig. 5. When you want the nurse to come to your home service ?

According to the survey data table, 48.85% of the nurses who participated in the survey hoped that the nurses would choose to cooperate with each other, 38.17% of them would choose team service, and 12.98% of them would choose to complete the service independently. Among the patients or family members who participated in the survey, 40% wanted to use the two-person cooperation method to complete the service, while 30% wanted to choose the single-person independent way to complete the service, and 30% wanted to use the team service. It can be seen that two-person collaboration is the most popular option for both caregivers and patients. A total of 131 nurses were surveyed, and the results showed that the respondents highly recognized that nurses' door-to-door service could increase their income, provide convenience for patients, and enhance their self-value. If "strongly agree" and "agree" represent "agree", the overall approval is above 70%. This is the same result as some previous studies. Compared with the results of Mengdan et al., (2020) study, nurses' awareness of the benefits of Internet plus nursing services has improved.

Nurses are willing or very willing to provide "Internet + nursing service" because it can reduce the shortage of hospital beds and relieve the shortage of resources. In addition, to a certain extent, it is helpful to improve personal nursing professional skills, realize self-value, and increase income. With the development and change of the nursing profession, nurses urgently need to realize their self-worth and improve their social status, so they prefer to use the platform of "Internet + nursing service" to show themselves, which is consistent with the research results of Shu-zhen et al (2020). The results of a survey of 100 patients (including family members) show that the respondents have a very high degree of recognition that nurses' door-to-door service can provide convenience for patients and enhance their self-value. If the "strongly agree" and "agree" representatives are agreed, the overall approval is above 80%. The results showed that patients' perception of the benefits of "Internet + nursing services" was similar to the results of previous studies on nurses

Table 6

Research results of nursing staff on other problems of Internet + nursing service

Table 6 Research results of nursing staff on other problems of Internet + nursing service (n=131)

The Survey Questions	Research results of nursing staff on other problems of Internet + nursing service					
	Couldn't agree more	Agree to	General	Disagree with	Strongly disagree	
Nurses' door-to-door service can effectively reduce patients' visiting time and unnecessary expenses (such as transportation and registration)	51.91%	38.93%	90.84%	6.87%	2.29%	0.00%
Nurse door-to-door service can largely provide convenient nursing services for patients in need	59.54%	36.64%	96.18%	3.05%	0.76%	0.00%
Nurses' door-to-door service can improve patients' satisfaction with nursing services	48.85%	38.93%	87.79%	9.16%	2.29%	0.76%
Nurse house calls can increase the income of nurses: Couldn't agree more	40.46%	41.22%	81.68%	16.79%	1.53%	0.00%
Nurses' door-to-door service can increase the flexibility and autonomy of nurses' work	44.27%	38.93%	0.00%	15.27%	1.53%	0.00%
Nurse door-to-door service can maximize the potential of nurses and realize their own value	41.98%	38.93%	80.92%	17.56%	1.53%	0.00%
Nurses' door-to-door service can improve the social status of nurses and stimulate their work enthusiasm:	38.93%	33.59%	72.52%	22.90%	3.82%	0.76%
Nurses' door-to-door service is conducive to the sinking of high-quality resources in large hospitals, so that patients can enjoy high-quality nursing services at home	41.98%	44.27%	86.26%	12.21%	1.53%	0.00%
Nurses' door-to-door service can relieve the pressure of hospital treatment and meet the needs of patients, so as to achieve a win-win situation	46.56%	40.46%	87.02%	12.21%	0.76%	0.00%

Table 7*Research results of nursing staff on other problems of Internet + nursing service*

Table 7 Research results of patients or family members on other problems of Internet + nursing service (n=100)

The Survey Questions	Research results of patients or family members on other problems of Internet + nursing service				
	Couldn't agree more	Agree to	General	Disagree with	Strongly disagree
Nurses' door-to-door service can effectively reduce patients' visiting time and unnecessary expenses (such as transportation and registration)	51.00%	36.64%	23.00%	1.00%	0.00%
Nurses' door-to-door service can improve patients' satisfaction with nursing services	57.00%	41.00%	0.00%	0.00%	0.00%
Nurse house calls can increase the income of nurses: Couldn't agree more	55.00%	42.00%	0.00%	0.00%	0.00%
Nurses' door-to-door service can increase the flexibility and autonomy of nurses' work	44.27%	39.00%	0.00%	0.00%	0.00%
Nurse door-to-door service can maximize the potential of nurses and realize their own value	62.00%	36.00%	0.00%	0.00%	0.00%

4. Conclusions and recommendations

The results of the study show that there is a big difference in the awareness rate of "Internet + nursing service" between nurses and patients (including family members). The results show that there is a big difference in the awareness rate of "Internet + nursing service" between nurses and patients (including family members). This shows that compared with nursing staff, the awareness rate of patients (including family members) on "Internet + nursing service" is still at a low level. Perhaps because the publicity work of "Internet + nursing service" has not been vigorously carried out, the awareness of most patients (including their families) is low. Nurses and patients (including family members) have a strong willingness to participate in "Internet + nursing services". Nursing staff have a strong willingness to participate in "Internet + nursing service", and hold a more optimistic attitude towards the promotion and prospect of "Internet + nursing service". This indicates that nurses and patients (including family members) in Beijing have a strong willingness to participate in and accept "Internet + nursing services". The reason why patients (including family members) are very willing to accept is that under the traditional medical mode, there are many patients in the hospital, which leads to difficulties in registration, complicated treatment process and long waiting time, and the comprehensive treatment cost of the hospital is relatively high. Home care not only reduces waiting times, but also provides personalized care for each patient.

The influence of security and economic factors remains significant, and the influence of non-economic factors continues to strengthen Nursing staff participating in "Internet + nursing service" are most concerned about personal safety, followed by nursing operation risk, and the proportion of personal privacy leakage is also high. The biggest concern of patients (including family members) receiving home service is about cost, followed by personal safety and personal privacy disclosure. On the other hand, most respondents from both the supply and demand sides prefer nurses to cooperate with each other or provide team services, which is based on the above concerns. Analysis of influencing factors of nurses' willingness to participate in "Internet + nursing service" From the multiple regression analysis data, the study found that it may be that nurses with higher professional titles and higher education have more work experience, stronger theoretical knowledge and professional skills operation, and are therefore more willing to participate in "Internet + nursing services". Analysis of influencing factors of patients' (including family members) willingness to accept "Internet + nursing service". Education level, family monthly income and family situation are the main factors affecting patients (including family members) to receive "Internet + nursing service".

Attach importance to cognitive ability training and popularize the knowledge of "Internet + nursing service". Nurses and discharged patients are the supply side and demand side of "Internet + nursing service", and their cognitive level is very important to promote "Internet + nursing service". The publicity of "Internet + nursing service" related knowledge should be strengthened, and the channels of publicity should be broadened to

eliminate information barriers. Especially for the residents with low education level, the characteristics of their poor understanding ability and learning ability should be fully considered, and more acceptable methods should be adopted to improve the cognitive level of patients and their families. To meet the personalized needs of patients and improve the willingness to accept "Internet + nursing services". Economic factors are important factors affecting patients' willingness to participate.

On the market, the cost of door-to-door service led by social forces is much higher than the price charged by hospitals for the same service items. Therefore, "relevant departments should make reasonable" Internet + nursing service "prices with reference to Beijing medical service prices after comprehensive consideration of transportation, information costs, technical value of nursing staff labor services and labor remuneration, and incorporate the costs into medical insurance, so that more patients can benefit from the convenience brought by door-to-door services." At the same time, the time and distance of sending orders on the platform should be coordinated to ensure that patients can get corresponding door-to-door services within the shortest time after placing orders. Avoid the risk of door-to-door service, balance the safety of both nurses and patients. The nursing staff, mostly female, provide care services alone, or at night and when the service is far away, and the personal safety of individuals needs to be guaranteed. Therefore, it can be considered to increase practice points, narrow the service distance, refine the time period for nurses to provide door-to-door service, and try to concentrate the time period in the daytime.

At the same time, the relevant insurance should be purchased for the nursing staff participating in the door-to-door service to protect the vital interests of the nurses. In the face of high operational risks or when providing services for the first time, two nursing staff can be considered to carry out door-to-door service together or accompanied by a doctor. Before the service, it is not only necessary to make a comprehensive assessment of the patient's condition, family situation and living environment and sign an agreement, but also to inform the patient of the condition and related risks in advance and sign an informed consent to ensure the maximum reduction of medical risks and the possibility of medical disputes. At the same time, it is necessary to strictly control the qualification of nursing staff, prohibit the working years and qualifications do not meet the requirements of nursing staff door-to-door service, in the case of conditions, but also on the door-to-door nursing staff face recognition, in order to protect the rights and interests of patients. In addition, in order to ensure the safety of practice, the division of responsibility for medical disputes should also be clarified, and mobile video terminals should be equipped for door-to-door nursing staff to realize the whole process of positioning, leaving marks, background synchronous monitoring and one-click alarm. If conditions permit, it is recommended to make audio, video and video recordings of on-site services on the premise of not disclosing patient privacy. Relevant departments should clarify the positive and negative list of service items, establish unified standards, explicitly prohibit the service items that are not suitable to be carried out in patients' homes, and establish service standards for some low-risk items that are suitable to be carried out, so as to improve the service quality of nursing staff.

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