Appendix 1

A Questionnaire on the Use of Intelligent Medical Products (Patient Version)

Dear madam/sir:

Hello! We are a research team from the School of Public Health, Capital Medical University. We are now conducting a research about people's opinions and the application status of intelligent medicine. We hope you can give some suggestions on the application of intelligent medicine so that intelligent medical products can better serve most people in the future. It will take about 20 minutes to complete the questionnaire. Thank you for your cooperation! This research uses the anonymity method, and any information will not be disclosed to others. Your answer is only used for research!

Intelligent medicine is to point to artificial intelligence, Internet, big data, cloud computing, wearable devices, IT infrastructure with the medical infrastructure integration, and on this basis to realize accurate triage, auxiliary diagnosis, health management, remote medical services, patients and medical staff, the real-time interaction between the medical institutions, medical equipment, building intelligent medical service system.

Typical intelligent medical application scenarios are as follows: Dr. Zhang in Beijing communicated with patient Li in Lhasa through the medical APP, designed a physical examination program for Li. The analysis results were then transmitted to Dr. Zhang by a wearable intelligent medical device. Dr. Zhang worked with the doctors in the local hospital in Lhasa to formulate the treatment plan and quickly adjust the medication plan. During the treatment, Li's daily physical condition was monitored by a wearable intelligent medical device in real-time. When Li's indicators appeared abnormal, doctors in Beijing and Lhasa all received alarm information at the same time and immediately took further measures to guide Li to the appropriate hospital department.

I. Personal information (9 questions)

1. Sex: A. Female B. Male

2. Age (please fill in):

3. Occupation:
A. Professional (teacher/doctor/lawyer/programmer et al.)
B. Service personnel (catering waiter/driver/shop assistant et al.)
C. Freelancer (writer/artist/photographer/guide et al.)
D Workers (factory workers/construction workers/city sanitation workers, et al.)
E. Company staff/government workers
F. Student
G. Business personnel
H. Others

4. Educational background:
A. High school or below
B. Junior college
C. Bachelor
D. Master or above

5. Place of residence in recent two years (from National Health Commission (2018) China Health Statistics Yearbook)
A. Eastern Region (Beijing/Tianjin/Hebei/Liaoning/Shanghai/Jiangsu/Zhejiang/Fujian/Shandong/Guangdong/Hainan)
B. Middle Region (Heilongjiang/Jilin/Shanxi/Anhui/Jiangxi/Henan/Hubei/Hunan)
C. Western Region (Inner Mongolia/Guangxi/Chongqing/Sichuan/Guizhou/Yunnan/Tibet/Shaanxi/Gansu/Qinghai/Ningxia/Xinjiang)

6. Residence location:
A. City B. Suburban C. Rural

7. Monthly income (please fill in) :

8. Had underlying diseases? (multiple choice)
A. Hypertension
B. Diabetes
C. Coronary heart disease (CHD)
D. Stroke
E. Others (please fill in) _____
F. No underlying diseases

9. Had surgery
A. Yes
B. No

II. Understanding and application status evaluation (6 questions)

1. Do you understand and use intelligent medical products (wearable intelligent medical devices/mobile APP about health management et al.)? (select A or B, skip to the third part; select C, continue to answer Part II.
A. No understanding and no use B. Understanding but no use C. Understanding and use

2. What types of intelligent medical products are you using? (multiple choice)
A. Intelligent monitoring equipment (home intelligent blood pressure monitor/intelligent blood glucose monitor/intelligent electrocardiograph et al.)
B. Wearable devices (smart bracelets et al.)
C. APP of health management
D. Electronic medical records
E. Online medical service platform
F. Others (please fill in) _____

3. Access to intelligent medical products (multiple choice)
A. Active access
B. Recommendation by doctor
C. Recommendation by family
D. Recommended by friends
E. Enterprise promotion
F. Others (please fill in) _____

4. According to your user experience, how do you feel about the use of intelligent medical products at present?
A. Very difficult B. Difficult C. Ordinary D. Ease E. Very ease

5. According to your user experience, what do you think of intelligent medical products' current medical service effect?
A. Very dissatisfied B. Dissatisfied C. Ordinary D. Satisfied E. Very satisfied

III. Usage intention and influencing factors evaluation (23 questions, 5 means "strongly disagree"; 4 means "disagree"; 3 means "ordinary"; 2 means "agree"; 1 means "strongly agree")

Questions   Answer
1. I am willing to use intelligent medical products.   5 4 3 2 1
2. I would like to recommend intelligent medical products to my family and friends.   5 4 3 2 1
3. I will accept a more comprehensive range of intelligent medical products in the future. 5 4 3 2 1
4. The use of intelligent medical products can improve the understanding of physical conditions (such as monitoring blood pressure and heart rate).   5 4 3 2 1
5. Intelligent medical products can provide appropriate medical advice and find appropriate doctors (such as recommending medical departments and hospitals). 5 4 3 2 1
6. Intelligent medical products can enhance overall health status and improve the quality of life.   5 4 3 2 1
7. Compared with traditional medical care, I need to pay more to use and maintain intelligent medical products.   5 4 3 2 1
8. Compared with traditional medical care, I need to spend more time learning to use intelligent medical products. 5 4 3 2 1
9. By using intelligent medical products, I feel I need more time to communicate with doctors.   5 4 3 2 1
10. I think through my efforts, I can master the use of intelligent medical products.   5 4 3 2 1
11. I think I can master the use of intelligent medical products with the help of the people around me.   5 4 3 2 1
12. I worry that I will be cheated in hospitals where intelligent medical products are used for triage.   5 4 3 2 1
13. I worry that intelligent medical products cannot accurately report the health condition.   5 4 3 2 1
14. I worry that the triage and treatment of intelligent medical products are not timely and may delay the illness.   5 4 3 2 1
15. I worry that intelligent medical products may disclose personal information. 5 4 3 2 1
16. Many people (doctors/family/friends et al.) have recommended using s intelligent medical products.   5 4 3 2 1
17. Many people (friends/family et al.) are using intelligent medical products.   5 4 3 2 1
18. The use of intelligent medical products can reflect that I pay more attention to personal health.   5 4 3 2 1
19. The network conditions around me can support me to use intelligent medical products.   5 4 3 2 1
20. When problems arise in using intelligent medical products, my family, community or hospital can help me solve time problems.   5 4 3 2 1
21. I think the manufacturers of intelligent medical products should timely feedback my usage problems.   5 4 3 2 1
22. I will take the initiative to use intelligent medical products to monitor health conditions.   5 4 3 2 1
23. I will use intelligent medical products to monitor health status in real-time. 5 4 3 2 1

IV. Functions and benefits of intelligent medical products (2 questions)

1. Compared with traditional medical care, what benefits do you think intelligent medical products bring to you?
A. Make an appointment for diagnosis and treatment on the APP, which saves time and is convenient and fast.
B. More humanized and can check and understand the health conditions at any time.
C. Compared with going to the hospital, it saves a lot of unnecessary medical costs.
D. Family doctor, who can make an appointment for home service, can provide one-to-one follow-up service and home service.
E. Health services can be provided for self-examination.
F. Services such as reminders to take medicine on time and physical examination.
G. Recovery and treatment tracking service for patients with chronic diseases.
H. Health management service for the elderly (APP health tracking service).
I. Other (please fill in) _____

2. Do you have any suggestions and opinions on the future function expansion of intelligent medical products?

Table S1 Survey items-UTAUT Measurement Constructs and Entries

Constructs	Construct code	Entries	References
Health expectancy	HE1	The use of intelligent medical products can improve the understanding of physical conditions (such as monitoring blood pressure and heart rate)	Zheng Y, Poon CCY, Yan BP, *et al.* Pulse arrival time based cuff-less and 24-h wearable blood pressure monitoring and its diagnostic value in hypertension. J Med Syst 2016;40:195.
	HE2	Intelligent medical products can provide appropriate medical advice and find appropriate doctors (such as recommending medical departments and hospitals)	Mannini A, Trojaniello D, Cereatti A, *et al.* A machine learning framework for gait classification using inertial sensors: application to older adults, post-stroke and huntington's disease patients. Sensors 2016;16:1-14.
	HE3	Intelligent medical products can enhance overall health status and improve the quality of life	Chen Y, Wu F, Wu Y, *et al.* Development of interventions for an intelligent and individualized mobile health care system to promote healthy diet and physical activity: using an intervention mapping framework. BMC Public Health 2019;19:1311.
Perceived cost	PC1	Compared with traditional medical care, I need to pay more to use and maintain intelligent medical products	Lewy H. Wearable technologies-future challenges for implementation in healthcare services. Healthc Technol Lett 2015;2:2-5.
	PC2	Compared with traditional medical care, I need to spend more time learning to use intelligent medical products	Iftikhar P, Kuijpers MV, Khayyat A, *et al.* Artificial Intelligence: A New Paradigm in Obstetrics and Gynecology Research and Clinical Practice. Cureus 202;12:e7124.
	PC3	By using intelligent medical products, I feel I need more time to communicate with doctors	Lewy H. Wearable technologies-future challenges for implementation in healthcare services. Healthc technol lett 2015; 2:2-5.
Perceived ease of use	PEOU1	I think through my efforts, I can master the use of intelligent medical products	Lewy H. Wearable technologies-future challenges for implementation in healthcare services. Healthc technol lett 2015; 2:2-5.
	PEOU2	I think I can master the use of intelligent medical products with the help of the people around me	
Perceived risk	PR1	I worry that I will be cheated in hospitals where intelligent medical products are used for triage	Cilliers L. Wearable devices in healthcare: privacy and information security issues. Health Inf Manag 2020;49:150-156.
	PR2	I worry that intelligent medical products cannot accurately report the health condition	Rodgers MM, Alon G, Pai VM, *et al.* Wearable technologies for active living and rehabilitation: Current research challenges and future opportunities. J Rehabil Assist Technol Eng 2019;6:2055668319839607.
	PR3	I worry that the triage and treatment of intelligent medical products are not timely and may delay the illness	Dewsbury G, Clarke K, Rouncefield M, *et al.* Designing appropriate assistive technology for home users: Developing dependable networks. Inclusive Design and Mobility Response in Indoor/Outdoor Public Buildings and Facilities: CIB Working Group W084-Building Non-Handicapping Environments, 2002; Rome.
	PR4	I worry that intelligent medical products may disclose personal information	Wen D, Zhang X, Lei J. Consumers' perceived attitudes to wearable devices in health monitoring in China: A survey study. Comput Methods Programs Biomed 2017;140:131-137.
Social influence	SI1	Many people (doctors/family/friends *et al.*) have recommended using intelligent medical products	Kamal SA, Shafiq M, Kakria P. Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM). Technol Soc 2019; 60:101212.
	SI2	Many people (friends/family *et al.*) are using intelligent medical products	
	SI3	The use of intelligent medical products can reflect that I pay more attention to personal health	
Facilitation conditions.	FC1	The network conditions around me can support me to use intelligent medical products	Lewy H. Wearable technologies-future challenges for implementation in healthcare services. Healthc technol lett 2015; 2:2-5.
	FC2	When problems arise in using intelligent medical products, my family, community or hospital can help me solve time problems	
	FC3	I think the manufacturers of intelligent medical products should timely feedback my usage problems	
Behavioral intention	BI1	I am willing to use intelligent medical products	Venkatesh V, Morris M G, Davis G B, *et al.* User acceptance of information technology: Toward a unified view. MIS Quarterly 2003;27:425-478.
	BI2	I would like to recommend intelligent medical products to my family and friends	Li N, Zhang P. Consumer online shopping attitudes and behavior: an assessment of research. Information Technology 2006: 102-110.
	BI3	I will accept a more comprehensive range of intelligent medical products in the future	Ho Cheong J, Park, Myeong-Cheol. Mobile internet acceptance in Korea. Internet Res 2005;15:125-140.
Use behavior	UB1	I will take the initiative to use intelligent medical products to monitor health conditions	Venkatesh V, Morris M G, Davis G B, *et al.* User acceptance of information technology: Toward a unified view. MIS Quarterly 2003;27:425-478.
	UB2	I will use intelligent medical products to monitor health status in real-time	