

Study on the Participation Behavior of Community Residents in Health Education and its Influencing Factors

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Abstract: Object The purpose of this paper is to understand the community health education participation behavior of residents in Nanjing area and its influencing factors, and to provide empirical evidence for community health education work. Methods In this paper, 453 residents in Nanjing area were investigated by using random sampling method and self-made questionnaire, and multiple ordered Logistic regression analysis was carried out by using SPSS26.0 software. Results The results showed that residents' self-evaluation of health, residents' evaluation of the schedule of health education, staff service attitude and quality evaluation, and feedback collected after community activities significantly affected residents' participation behavior in community health education. Conclusions First of all, the free time of people at various stages should be maximized according to the characteristics of specific groups. Secondly, the community needs to carry out regular training and assessment of health education staff to improve the quality of service; Finally, the community should also broaden the channels of public opinion expression and communication, earnestly understand the needs of residents, and adopt suggestions for improvement given by residents.

1. Introduction

Community health education refers to organized, planned and evaluated health education activities that take urban community as the basic unit, urban community population as the educational object and promote the health of urban community residents as the goal [1]. Health education in 'Healthy China 2030' as a separate chapter, points to "promote comprehensive health way of life clearly, to strengthen families and high-risk persons healthy lifestyle guidance and intervention", effective health education is not only beneficial to strengthen the residents' health cognition, improve residents' health related behavior, establish scientific health perspectives, more conducive to individual, family, social and economic burden of disease risk [2]. Based on the survey data of community health education participation behavior, this study explored the influencing factors of community health education participation behavior, thus laying a foundation for better community health education services.

2. Data source and sample characteristics

2.1 Data source

This study conducted a survey on the participation behavior of residents in community health education in Nanjing from December 2020 to January 2021. Considering the differences in the characteristics of each age group, the survey was carried out in residents' homes, community markets and evening rush hour traffic stations in the form of questionnaires. A total of 470 questionnaires were sent out and 459 were collected with a recovery rate of 97.66%. After manual screening, it was found that there were 6 key variables missing or contradictory answers in the returned questionnaires. After eliminating these invalid questionnaires, 453 valid samples were finally obtained, and the effective rate of the questionnaire was 96.38%.

According to the reliability analysis of the questionnaire, Cronbach's Alpha is equal to 0.836,

indicating that the internal consistency of the questionnaire is high. The calibration analysis results showed that the KMO value was 0.832, and the Bartlett spherical test chi-square value reached the significance level of 0.01, indicating that the validity of the structure coefficient of the questionnaire was good.

2.2 Sample characteristics

2.2.1 Sample basic information

The survey results show that the sample has the following characteristics: one is that there are slightly more women than men. Women accounted for 52.3% and men 47.7% of the sample. Secondly, the age of the study subjects was concentrated in 46-55 years old and 56 years old and above, accounting for 38.4% and 22.5% of the total sample size, respectively. Thirdly, the educational level of residents is mainly bachelor degree or above, accounting for 55.0% of the total surveyed residents. Fourth, residents' self-rated health is relatively good. Only 30.5% of residents think their health is not good and they often get sick.

2.2.2 Health education participation behavior of community residents

According to the results of the survey, 67 respondents "hardly participate in" community health education activities of residents, accounting for 14.8% of the total number of respondents; 163 residents, accounting for 36.0% of the total respondents, participated less in community health education activities. 161 residents participated in community health education activities, accounting for 35.5% of the total number of respondents. There were 62 residents who participated in almost every game, accounting for 13.7% of the total number surveyed. The overall participation behavior of residents in community health education was at a medium level.

3. Variable setting and model selection

3.1 Variable setting

In this paper, the participation behavior of residents in community health education was taken as the explained variable. On the basis of referring to the relevant research results and combining with the actual investigation situation, this paper selects a total of 11 variables from the three dimensions of residents' individual characteristics (PC), process evaluation (PE) and service evaluation (SE) as the factors affecting residents' participation behavior. Table 1 shows the model variables and statistical descriptions.

Table 1 Description of model variables and descriptive statistics.

Variable	Code	Variable value definition	AVG	SD
Participation behavior frequency	y	Very little participation =1, little participation =2, More participation =3, almost every participation =4	2.48	0.906
Gender	x1	Male =1, female =0	1.52	0.501
Age	x2	25-35 years =1, 36-45 years =2, 46-55 years = 3,56 years and above =4	2.34	1.02
Level of education	x3	Junior high school or below =1, high school or technical secondary school =2, junior college =3, undergraduate or above =4	3.17	1.088
Self-reported health	x4	Very Bad =1, Pretty Bad =2, Pretty Good =3, Very Good =4	2.87	1.028
Evaluation of educational content	x5	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	3.05	0.958
Evaluation of educational form	x6	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	3.01	0.983
Evaluation of educational time	x7	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	2.93	0.96

Activity environment assessment	x8	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	2.97	0.948
Staff service attitude and quality evaluation	x9	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	3.02	1.01
The professional level of the speaker	x10	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	3.12	0.923
Collect feedback and evaluation	x11	Very dissatisfied =1, relatively dissatisfied =2, relatively satisfied =3, very satisfied =4	3.00	1.013

The empirical model of influencing factors of community health education participation behavior is as follows:

$$y = f(PC + PE + SE) + \mu \quad (1)$$

In Equation (1), μ is the random disturbance term, reflecting other influence factors that cannot be observed. y is the participation behavior of residents in community health education, which is divided into four orderly levels of "almost no participation", "relatively little participation", "relatively much participation" and "almost every participation", and the values are assigned as 1, 2, 3 and 4 in turn.

3.2 Model selection

As the explained variable "participation behavior of residents in community health education" has multiple and ordered options, multiple ordered Logistic regression model was adopted. The basic form of this model is as follows:

$$\ln\left(\frac{p(y \leq j|x)}{1-p(y \leq j|x)}\right) = \mu_j - (\alpha + \sum_{i=1}^k \beta_i x_i) \quad (2)$$

In Equations (2) and (3), j represents the four levels of community residents' participation in health education, $j = 1,2,3,4$. y is the explained variable. x_i represents the i th factor affecting the participation behavior of residents in health education. α is the intercept term; β_i is the partial regression coefficient. μ_j is the cut-off point.

4. Analysis on the influencing factors of health education participation behavior of community residents

4.1 Results

Before the estimation of multiple ordered Logistic regression, it is also necessary to ensure whether the data satisfy the assumption of proportional advantage, namely, the parallelism test. If this assumption is not satisfied, the data is not suitable for the cumulative ratio Logit model, namely the multiple ordered Logistic regression model, which may lead to biased estimates and even have a great impact on the results. According to the results, the P value in the parallelism test was 0.292, greater than 0.05, indicating that the data met the conditions for the use of multiple ordered Logistic regression model. After the parallelism test, SPSS26.0 software was used to carry out ordered Logistic regression, and the following results were obtained: The chi-square value of the model was 61.140, and the significance level was less than 0.001. The R^2 values of Cox and Snell, Nagelkerke and McFadden were 0.333, 0.368 and 0.312, indicating that the model fit well. The specific regression analysis results are shown in Table 2.

Table 2 Multiple ordered Logistic regression analysis results.

Variable	estimate	Standard error	Wald	df	Sig.
Self-reported health(x4)	0.233	0.095	6.070	1.000	0.014
Timing evaluation(x7)	0.549	0.106	27.109	1.000	0.000
Staff service attitude and quality evaluation (x7)	0.293	0.101	8.419	1.000	0.004
Collect feedback and evaluation (x11)	0.273	0.101	7.356	1.000	0.007

4.2 Analysis

Firstly, one of the factors that affect residents' participation behavior is residents' self-rated health. In the model, the partial regression coefficient of this variable is 0.233, which has a significant positive impact on residents' participation in health education at the statistical level of 5%, that is, the better the residents' self-rated health is, the higher the frequency of their participation in community health education activities. Self-rated health is an important index to measure population health and healthy life expectancy. Individual's future health status, life quality, morbidity and mortality are all related to self-rated health [3]. According to surveys and interviews, residents with good self-reported health tend to have good living habits and pay more attention to the understanding and grasp of health knowledge, so they are more willing to participate in and communicate in health education activities carried out by the community. Therefore, a virtuous circle of health behaviors is formed. For residents with poor self-evaluation health, physical strength and energy are limited to a certain extent due to some diseases, so for this group of people, in addition to the daily work, do not have too much time and energy to participate in health education activities carried out by the community.

Secondly, residents' evaluation of the schedule of community health education also affects their participation behavior. In the model, the partial regression coefficient of time arrangement evaluation of health education is 0.549, which has a significant positive impact on residents' participation in health education at the statistical level of 5%, that is, the higher the residents' evaluation of the time arrangement of health education activities in the community, the higher the frequency of participation in community health education activities. Different people have great differences in their free time, which is easily affected by work and life arrangements. For the salaried class, for example, their free time is mainly concentrated in the commute or after work. For retired older people, there is also the possibility of leisure time activities and childcare. The variance analysis was conducted for the time arrangement evaluation of the four age groups, and the results were significant at the statistical level of 5%, indicating that the four age groups had significant differences in the evaluation of the time arrangement of community health education. Among them, people aged 36-45 received the highest evaluation, with an average of 3.24, while those aged 25-35 received the lowest, with an average of 2.50.

Thirdly, residents' service attitude and quality evaluation of community health education staff should also be considered. In the model, the health education staff service attitude and quality evaluation of partial regression coefficient is 0.293, in the 5% level of statistical significant positive impact on residents' health education participation behavior, namely the residents of community health education staff service attitude, and the higher the quality evaluation, its participation in the community health education activities of the higher frequency. Service quality refers to the degree to which service work can meet the needs of the serviced. The evaluation of service quality by the serviced should not only consider the result of service, but also involve the process of service. According to Anderson [4] et al. in their study, there is a positive correlation between service quality and customer satisfaction, and service quality strongly affects customer satisfaction, and quality improvement should be based on customer demand so as to improve customer satisfaction. Therefore, in this study, residents' evaluation of community health education service quality will directly affect residents' satisfaction with community health education, and then affect residents' participation behavior.

Finally, it is also important for residents to collect feedback and evaluation from the community. In the model, the partial regression coefficient of this variable is 0.273, which has a significant positive impact on residents' participation in health education at the statistical level of 5%, that is, the higher the feedback and evaluation collected by residents after carrying out health education activities in the community, the higher the frequency of their participation in community health education activities. Feedback opinions can directly or indirectly reflect and display the receiving motivation, needs and mentality of the audience, and indicate and reflect their attitude and evaluation to the communicator and the information conveyed. Therefore, the feedback opinions of the recipients can help the communicator to check and formalize the communication effect. At the same time, it can also help the communicator to improve and optimize the next step of communication content, form

and behavior. Therefore, collecting feedback from residents after carrying out health education activities in the community is helpful for the activity organizers to further understand the needs and wishes of residents, and make targeted optimization of the activities according to the feedback from residents, so as to improve the enthusiasm of residents to participate.

5. Conclusions and suggestions

5.1 Conclusions

Based on the survey data of 453 residents in Nanjing, Jiangsu Province, this paper empirically analyzed the influence of individual characteristics (PC), process evaluation (PE) and service evaluation (SE) on the participation behavior of residents in community health education. The results show that residents' self-evaluation of health, residents' evaluation of health education schedule, staff service attitude and quality evaluation, and feedback collected after community activities significantly affect residents' participation behavior in community health education. However, education content, form, environment and speaker's professional level have no significant influence on community residents' health education participation behavior.

5.2 Suggestions

Based on the above research conclusions, this paper puts forward the following suggestions for the community to improve residents' participation in health education:

First of all, combined with the characteristics of the specific crowd, maximizing the free time of people at all stages. Due to the existence of individual differences and the constraints of work and life goals, free time varies from person to person. However, through interviews and surveys, we found that the free time of fixed people has some similarities. For example, the working class, who go out early and come back late, spend most of their free time on the way to and from work and after coming home from work. For retired elderly people, some of them play the role of helping their children to take care of their children, and the main task is to pick up the children from kindergartens or primary schools. Therefore, children's school period is mostly the free time for such people. For the community, first of all, it should be clear about the age structure of the population in the community, second, it should know the content and form needs of the people of all ages for health education in advance, and finally, it should make the community health education activities more personalized according to the characteristics of the population, and then improve the effectiveness of the community health education activities.

Secondly, regularly carry out training and assessment of community health education staff, improve the quality of service. The ultimate goal of training is to improve service quality. The community constantly optimizes health education activities according to the suggestions given by residents, which requires regular training of staff, so that they can master higher service skills and means, and then improve service quality. At the same time, scientific and rigorous assessment system is an important means to motivate employees. Clear reward and punishment, coexistence of pressure and motivation, can make employees focus and stimulate thinking to a certain extent, and improve work efficiency ultimately. Therefore, it is also necessary to carry out targeted and timely assessment. In addition, relevant departments of the community can consider introducing new blood to the organization, such as recruiting volunteers or students with health management related professional background, so as to provide a good platform for them to move from practice to practice, cultivate their ability to find and solve problems, and put what they have learned into practice.

Finally, the community should broaden the expression and communication channels of public opinion, earnestly understand the needs of residents, and adopt the improvement suggestions given by residents. Community health service emphasizes prevention as the priority and prevention as the combination. It covers a wide range of areas and can provide basic health services for the general public. It aims to meet the increasing needs of the public for health services and improve the important guarantee of people's health level. Therefore, the community should broaden the channels of public opinion expression and communication, carry out public opinion communication in multiple forms

online and offline, and understand the problems of community health education and the areas to be improved. For example, online public opinion communication channels should be opened, and offline communication should be conducted when necessary to understand residents' doubts and needs as much as possible. The community should also arrange staff to summarize residents' feedback regularly, timely improve the community health education work, and lay a foundation for providing better community health services.

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