The mechanism of knowledge seeking and sharing behaviors influenced by individual cognition and motivation of online health community users in China

Mecanismos que influenciam as percepções individuais, a motivação dos usuários das comunidades de saúde online para recorrer aos seus conhecimentos, e o seu comportamento de partilha

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Abstract

This study is to solve the problem of blocked help-seeking behavior and "hitchhiking" in patient user groups, to explore the mechanism of knowledge seeking and sharing behaviors influenced by individual cognition and motivation. The thesis integrates the ERG theory cognitive behavior factors then construct the theoretical model of cognition-motivation-behavior. The structural equation model of 390 valid data is analyzed. The results showed that: (1) Perceived ease of use has no effect on motivation and knowledge seeking, but only on knowledge sharing; (2) survival motivation, relationship motivation and growth motivation, all promote knowledge seeking, while only growth motivation promotes knowledge sharing; (3) perceived usefulness, perceived interpersonal trust and disease cognition have different effects on all these three motivations; (4) perceived usefulness, perceived interpersonal trust and disease cognition have direct effects on knowledge seeking, while perceived usefulness and perceived ease of use have direct effects on knowledge sharing; (5) the key factor to promote knowledge seeking is perceived usefulness, while the key factor to promote knowledge sharing is perceived ease of use; (6) survival motivation and growth motivation play an intermediary role between perceived usefulness, perceived interpersonal trust, disease cognition and knowledge seeking respectively, while only growth motivation plays an intermediary role between these three cognitive factors and knowledge sharing.

Keywords: Patient user groups. Individual cognition. Motivation. Knowledge seeking. Knowledge sharing.

Resumo

O objetivo deste trabalho é investigar o mecanismo de ação da cognição individual e da motivaçãosobre o comportamento de pedirajuda e compartilharconhecimento para resolver osproblemas do grupo de pacientes-usuários, como o comportamento de pedirajuda e "pedirajuda". Métodos: integrar a teoria Existência, Relação e Crescimento a fatorescognitivos da doença etc. Conclusões: osresultados do estudoconcluíram que: (1) a percepção da facilidade de usonãotemqualquerefeitosobre a motivação, o

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recursoaoconhecimento, *apenastem um impactodiretonapartilha de conhecimento; (2) a motivação para o crescimento, a motivação para a sobrevivência ea motivaçãorelacionalpodem promover o recursoaoconhecimento, enquanto que apenas a motivação para o crescimentopromove a partilha de conhecimento; (3) a percepção da utilidade, a percepção da confiançainterpessoal e a percepção da doençatêmdiferentesgrausde influênciasobre as trêsmotivações; (4) a percepção da utilidade, a percepção da confiançainterpessoal e a percepção da facilidade de usotêm um impactodiretosobre o recursoaoconhecimento, enquantoapenas a percepção da utilidade e a percepção da facilidade de usotêm um impactodiretosobre a partilha de conhecimento; (5) a percepção da utilidade é o fator-chave que facilita o recursoaoconhecimento, enquanto a percepção da facilidade de utilização é o fator-chave que facilita a partilha do conhecimento; (6) a motivação para a sobrevivência e a motivação para o crescimentodesempenham um papelintermediário entre a percepção da utilidade, a confiançainterpessoal, o reconhecimento da doença e o recursoaoconhecimento, respectivamente, enquanto a motivação para o crescimentodesempenha um papelintermediário entre esses três fatores cognitivos e a partilha de conhecimento.*

Palavras-chave: *Grupo de usuários doentes. Percepção individual. Motivação. Recurso ao conhecimento. Partilha de conhecimentos.*

Introduction

An online health community is an online community in which members use the Internet to share knowledge, consult experts, and exchange ideas on health or treatment issues (Lin; Hung; Chen, 2009). The online health communities in China are divided into doctor-patient Q & A communities, patient user groups and doctor-doctor communication communities (Zhang *et al.*, 2016). From the point of view of acquiring knowledge, the doctor-patient Q & A community mainly provides professional knowledge to users, while the patient-user group mainly provides experiential knowledge. Patient user groups can provide users with health knowledge and emotional support, which is irreplaceable. Based on the affected user's group, users meet their needs through interactive behavior such as information and knowledge.

The interaction among users is the main knowledge seeking and sharing. Knowledge seeking behavior refers to people asking for knowledge-related assistance, advice, or support from others (Fiona, 1997). Knowledge sharing behavior refers to transferring personal knowledge, experience, and skills between individual users. Knowledge seeking and sharing helps activate the community atmosphere, attract new users, enhance user stickiness, *etc*. However, at present, the following problems exist in the group of affected users: (1) the false users send information indiscriminately, which leads to the lack of trust among the users, which results in the obstruction of the help-seeking behavior; (2) the phenomenon of "hitchhiking" exists (Fang; Chiu, 2010). This group of users searches for information and knowledge they need and does not share it with others; (3) communities fail to meet user needs effectively and interact less with users. Therefore, the formation mechanism of users' individual knowledge seeking and sharing behaviors is explored to solve this kind of online health community management practice (Daizadeh, 2021).

Literature Review

Status of research on influencing factors of online community knowledge or information help-seeking behavior

According to the existing research, the influencing factors can be divided into:(1) external factors, such as social support, technical pressure, social capital, *etc*.; (2) individual cognitive factors, such as perceived usefulness, perceived risk, perceived offline support ineffectiveness, *etc*.; (3) individual characteristic factors, such as gender, information literacy, medical habits, *etc*. Some scholars have researched from the perspective of external factors, such as crook B, and found that information support and emotional support impact users' online health information help-seeking intention (Crook; Love, 2016). From the perspective of individual cognitive factors, such as Ybarra and Suman (2006), perceived convenience and other factors affect users' willingness to seek help for online health

information. Zhang, Chen, and Zhang (2019) integrated attachment theory found perceived offline support ineffectiveness and perceived online resource effectiveness on online willingness to seek help. There are also many factors, such as Wu and Li's findings (2017), that social support, achievement needs, and perceived trust positively affect users' willingness to use, perceived risk negatively affects willingness to use, and gender influences variables differently.

Status of research on influencing factors of online community knowledge or information sharing behavior.

According to the existing research, the influencing factors can be divided into:(1)external factors, such as obtaining benefits, sharing norms, the influence of friends, *etc*.; (2) individual cognitive factors, such as self-efficacy, perceived results, *etc*.; (3) individual characteristic factors, such as online identification, habits, *etc*.; (4) individual motivation factors. From the perspective of external factors, some scholars, such as Xia *et al*. (2012), based on the social exchange theory, found that the more benefits music-sharing website users get from the network, the more likely they will continue to share. From the point of view of individual cognitive factors, such as Hsu *et al*. (2007) and other social cognitive theories, other scholars have found that trust, self-efficacy, and outcome expectation can affect knowledge sharing behavior. From the point of view of individual characteristic factors, such as Ma and Agarwal (2007) and other theories based on social psychology, some scholars have found that the more complete the online identification and personal label of users are, the more likely they are to participate in knowledge sharing. Scholars also consider many factors, such as Li and Zhou (2011) and others based on interpersonal behavior model theory, individual perception results, community perception results, and emotional impact information sharing intention. In addition, based on previous studies, Jiang (2014) summed up the motivation of online community user information sharing, including self-improvement, helping others, socializing *etc*.

However, the current research needs to be further studied in theory: (1) There is little literature on the motivation of user help behavior. (2) There is still a lack of research on the original empirical knowledge in the characteristic factors of suitors and donors. (3) The mechanism of users' individual cognition and motivation on their knowledge seeking and sharing behavior has not been proved. As a result, integrating ERG motivation theory, disease cognitive factors, and so on, taking the patients with chronic disease as a sample, this paper explores the mechanism of knowledge seeking and sharing behavior influenced by individual cognition and motivation to enrich the behavior theory and provide inspiration for online health community management.

Model Construction and Hypothesis Proposition

Based on the following points, the theoretical model is constructed: (1) motivation is the direct antecedent of behavior, and motivation affects behavior. Combining ERG theory (Alderfer, 1969), motivation is divided into survival, relationship, and growth. (2) The individual's behavior motivation results from the interaction between subjective needs and objective things. Still, the degree to which objective things meet their own needs and the possibility of satisfaction depends on the individual's cognition (He, 2009). Therefore, cognition influences motivation. Cognitive psychology regards people as information processors and thinks that environmental factors should dominate external behavior through a cognitive process. The group of affected and other users belongs to the individual users' environmental factors, so the cognitive factors are divided into the platform, the other patients, and their cognition. Because the patient-user group is a management information system, the technology acceptance model is used as the theoretical basis. The perceived usefulness and ease of use are used as the individual cognition of the platform. According to the basic logic, the perception of interpersonal trust and disease cognition is selected as other patients' cognition and themselves. (3) Kotler believes that individual cognition refers to the process of
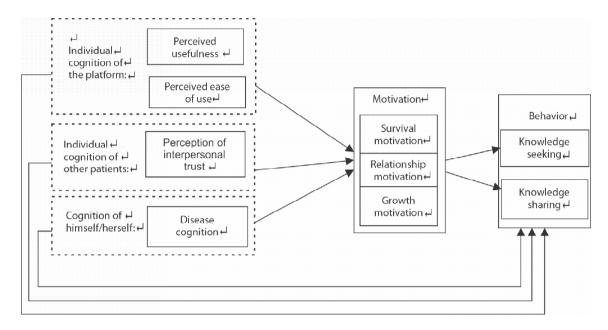
individual choosing, organizing, and explaining information input, and individual cognition determines individual behavior in a group environment (Collins; Smith, 2006). Thus, individual cognition influences their behavior. The theoretical model diagram is shown in *Figure 1*.

Figure 1– Model of Action Mechanism of Knowledge Seeking and Sharing Behaviors.
Influenced by Individual Cognition and Motivation in Online Health Communities.
Source: Elaborated by the author (2021).

Assumptions about the impact of perceived usefulness and perceived ease of use on knowledge seeking and sharing behavior

Cognitive psychology holds that people know the objective environment and guide their behavior according to their understanding. Whether the user's cognition of the community is valuable and easy to use affects their participation behavior. When users realize that the platform is useful, which can solve their problems and save their time easily, it will promote their knowledge seeking and sharing behavior. The assumption is, therefore, made that:

H1: perceived usefulness positively affects knowledge seeking

H2: perceived usefulness positively affects knowledge sharing.

H3: perceived ease of use positively affects knowledge seeking.

H4: perceived ease of use positively affects knowledge sharing.

Assumptions about the impact of perceived interpersonal trust on knowledge seeking and sharing behavior

Interpersonal trust is an expectation of the reliability of words, promises, or statements made by individuals or groups of other individuals or groups (Rotter, 1967). The reflection of the trust of individual users to other users in their minds is perceived interpersonal trust as a research variable. (1) Sharing behavior. Based on the online

knowledge community, Zhao *et al.* (2020) found that the development of trust between users is a process of cognitive trust-affective trust.Cognitive trust does not affect knowledge sharing, while emotional trust impacts knowledge sharing. Perceived interpersonal trust belongs to the category of cognitive trust. (2) The act of seeking help. When users perceive trust in other users in terms of knowledge ability, reciprocity, honesty, *etc.*, it will be more likely to produce knowledge help willingness.The assumption is, therefore, made that:

H5: perceived interpersonal trust positively affects knowledge seeking.

Assumptions on the Impact of Disease Cognition on Knowledge Seeking and Sharing Behavior

Disease cognition refers to using previous disease knowledge and experience to analyze and explain current symptoms when individuals are in a state of illness or when their health is threatened, thus forming a cognitive and emotional response to the current disease (Zhang *et al.*, 2016). Disease cognition reflects the user's original disease knowledge and experience. (1) If the suitor's own disease experience is more, it can more accurately judge the potential donor's disease-related knowledge and ability to choose the donor more targeted to seek help more effectively to meet their own needs. (2) If the donor knows more about his illness and experiences, he will share knowledge. The assumptionis, therefore, made that:

H6: disease cognition positively affects knowledge seeking.

H7: disease cognition positively affects knowledge sharing.

Assumptions about perceived usefulness and perceived ease of use on motivation, motivation on knowledge seeking and sharing behavior

The more useful and easier to use the platform, the greater the degree and possibility that the platform meets his own needs, thus stimulating greater motivation. Combined with ERG theory, motivation is divided into survival, relationship, and growth. Based on the following considerations: (1) Jiang (2014) summed up the motivation of online community users' information sharing: self-improvement, helping others, socializing, image, and so on. (2) Zhang and Jiang (2020) found that the motivation of online health community users' participation included perceived peer support, health ability perception, autonomy perception, *etc*. (3) As a suitor, there must be a survival motivation to participate in the use of online health community. Therefore, it is inferred that knowledge seeking behavior motivation includes survival, relationship, and growth motivation.The donor is mainly to help others, there is no survival motivation, but there is the possibility of relationship motivation.The knowledge-sharing motivation of the donor includes relationship motivation and growth motivation. The assumptionis, therefore, made that:

H8: perceived usefulness positively affects survival motivation.

H9: perceived usefulness positively affects relational motivation.

H10: perceived usefulness positively affects growth motivation.

H11: perceived ease of use positively affects survival motivation.

H12: perceived ease of use positively affects relational motivation.

H13: perceived ease of use positively affects growth motivation.

H14: survival motivation positively affects knowledge seeking.

H15: relationship motivation positively affects knowledge seeking.

H16: growth motivation positively affects knowledge seeking.

H17: relationship motivation positively affects knowledge sharing.

H18: growth motivation positively affects knowledge sharing.

3.5 Assumptions about the impact of perceived interpersonal trust on motivation

Motivation is the psychological tendency or internal drive that directs action to a certain goal and stimulates, pointing, and maintaining regulation. (1) The act of seeking help. When the suitor perceives trust in the knowledge ability, reciprocity, honesty of donors, and so on, it makes him realize that the problem is solved and the goal is easier to achieve, thus enhancing the motivation. (2) Sharing behavior. There is a need for social, self-improvement, and altruism among donors (Jiang, 2014). A sense of trust arises when the donor perceives difficulties and suitors need help with a sincere attitude. The stronger the sense of trust, the more satisfied the donor recognizes his needs, the stronger the motivation. The assumption is, therefore, made that:

H19: perceived interpersonal trust positively affects survival motivation.

H20: perceived interpersonal trust positively affects relational motivation.

H21: perceived interpersonal trust positively affects growth motivation.

Assumptions about the effect of disease cognition on motivation

1)The act of seeking help. The higher the degree of cognition of the suitors' diseases, the more accurate the knowledge and ability of the potential donors. The choice of donors is more targeted and more effective in meeting their own needs. And then realize that the goal will be easier to achieve, thus enhancing their motivation. To achieve the purpose of help, patient users will also try to establish a harmonious relationship with donors, potential donors, *etc*. (2)Sharing behavior. If the donor has more knowledge and experience of his disease, he can help others, meet his own needs, and stimulate the motivation of relationship and growth. The assumption is, therefore, made that:

H22: disease cognition positively affects survival motivation.

H23: disease cognition positively affects relational motivation.

H24: disease cognition positively affects growth motivation.

3.7 Intermediation of motivation hypothesis

Based on the above assumptions, the hypothesis is:

H25: survival motivation plays an intermediary role between perceived usefulness and knowledge seeking.

H26: relationship motivation plays an intermediary role between perceived usefulness and knowledge seeking.

H27: growth motivation plays an intermediary role between perceived usefulness and knowledge seeking.

H28: survival motivation plays an intermediary role between perceived ease of use and knowledge seeking.

H29: relationship motivation plays an intermediary role between perceived ease of use and knowledge seeking.

H30: growth motivation plays an intermediary role between perceived ease of use and knowledge seeking.

H31: survival motivation plays an intermediary role between perceived interpersonal trust and knowledge seeking.

H32: relationship motivation plays an intermediary role between perceived interpersonal trust and knowledge seeking.

H33: growth motivation plays an intermediary role between perceived interpersonal trust and knowledge seeking.

H34: survival motivation plays an intermediary role between disease cognition and knowledge seeking.

H35: relationship motivation plays an intermediary role between disease cognition and knowledge seeking.

H36: growth motivation plays an intermediary role between disease cognition and knowledge seeking.

H37: relationship motivation plays an intermediary role between perceived usefulness and knowledge sharing.

H38: growth motivation plays an intermediary role between perceived usefulness and knowledge sharing.

H39: relationship motivation plays an intermediary role between perceived ease of use and knowledge sharing.

H40: growth motivation plays an intermediary role between perceived ease of use and knowledge sharing.

H41: relationship motivation plays an intermediary role between perceived interpersonal trust and knowledge sharing.

H42: growth motivation plays an intermediary role between perceived interpersonal trust and knowledge sharing.

H43: relationship motivation plays an intermediary role between disease cognition and knowledge sharing.

H44: growth motivation plays an intermediary role between disease cognition and knowledge sharing.

Research Design

Questionnaire design and survey

The existing scale was adapted and localized to ensure validity and reliability, and a scale including nine variables and 37 items was formed. The Likert grade 5 scale measured all the items. Before the large-scale investigation, 230 questionnaires were collected through the QQ group of chronic diseases, including 190 valid questionnaires. The reliability analysis of the questionnaire showed that "Cronbach's α" coefficient was 0.936. At the same time, the questionnaire was adjusted according to the investigators' feedback and factor analysis results. The revised scale is shown in Table 1.

Table 1 – Measurement of the Action Mechanism of their Knowledge Seeking and Sharing Behavior influenced by Individual Cognition and Motivation in Online Health Communities.

1 of 2

Variable	Survey items	References
Perceived usefulness (Z_yoyx)	1) I think the online health community is useful for me to get health information or knowledge 2) I think the online health community is useful for me to judge the type of disease 3) I think the online health community is useful to assist my decision making 4) I think online health community can help me solve problems such as disease care or medication 5) I think the online health community can help me get to know more patients 6) Generally speaking, the online health community is good for me	Venkatesh and Davis (2000); Davis, Bagozzi and Warshaw (1989)
Perceived ease of use (Z_yyx)	1) It is considered that the interactive interface design of online health community is clear and easy to use 2) Learning to use an online health community is easy for me 3) It is easy for me to use online health community skillfully 4) I can easily use the online health community to do what I want to do	Davis Bagozzi and Warshaw (1989)
Perception of interpersonal trust (Z_rjxr)	1) I think the vast majority of users in the online health community are trustworthy 2) I think online health community users are honest when publishing information 3) I believe most users in the online health community are objective and unbiased 4) I trust the health community as a whole	Ridings, Gefen and Arinze (2002)

Table 1 – Measurement of the Action Mechanism of their Knowledge Seeking and Sharing Behavior influenced by Individual Cognition and Motivation in Online Health Communities.

Variable	Survey items	References
Disease cognition (Z_jbrz)	1) I have a certain understanding of my illness 2) I understand the factors that can easily cause the disease 3) I understand the symptoms of my illness 4) I know how to prevent my illness in life 5) I know how to relieve my illness 6) I understand the types and methods of drug treatment for my own diseases	Bo, Zou and Yan (2019)
Survival motivation (Z_scdj)	1) I'm in a healthy online community and want to have a healthy lifestyle 2) I participate in the online health community to determine the type of illness I have 3) I joined the online health community to treat my illness 4) I participated in the online health community to care for my illness 5) I participated in the online health community to relieve my pressure	Alderfer (1969)
Relational motivation (Z_gxdj)	1) In the online health community, I can develop friends 2) I can gain respect and prestige in the online health community 3) I'm honest with other users in the online health community 4) I have a sense of belonging in the online health community	Alderfer (1969)
Growth motivation (Z_czdj)	1) The online health community taught me about health 2) The online health community enables me to improve my ability to make decisions or care about health 3) The online health community allows me to help other patient users	Alderfer (1969)
Knowledge seeking (Z_zsqz)	1) In the online health community, I often ask other people for information about disease treatment or medication 2) I often spend a lot of time in the healthy online community asking other people for information about disease treatment or medication 3) When I participate in the online health community, I often actively ask others for knowledge of disease treatment or medication	Kumi and Sabherwal (2019)
Knowledge sharing (Z_zsfx)	1) In the online health community, I often share my knowledge of disease treatment or medication with others. 2) I often spend a lot of time sharing my knowledge of disease treatment or medication with others in the online health community 3) When participating in an online health community, I often actively share with others my knowledge of disease treatment or medication	Kumi and Sabherwal (2019)

Source: Elaborated by the author (2021).

Data collection

Five hundred issue questionnaires are given out to patient user groups. In the way of "point-to-point", we first try to add each other as friends, then I put forward the research intention, supplemented by red packets. This process lasted for nearly two months; I finally collected 390 valid questionnaires. The effective rate was 0.78.

Sample user information analysis

Descriptive statistical analysis of sample characteristics: in terms of gender, male users (55.9%) were more than female (44.1%). The majority were over 40 years old (55.22%), while the age range of 31-40 accounted for 37.39%. In terms of education, college degree or below accounted for 55.78%, undergraduate degree (35.37%), graduate degree (8.85%). As to income, more users were within 4000-6000 the yuan range. The cumulative usage of patient user groups is mostly between half a month and three months. Most users are over middle age, middle income, and have rich experience using patient user groups. They recently engaged in knowledge seeking and sharing activities such as disease treatment or medication. Thus, all these meet the research needs.

Reliability and Validity Test

The result of the reliability analysis is good. The "Cronbach's α " coefficients of each variable are between 0.839 and 0.926, which meet the standard of greater than 0.7. The validity test of the measurement model mainly evaluates its content validity, convergence validity, and distinguishing validity. The measurement items mainly come from existing studies and have been modified. At the same time, experts are asked to analyze the items to ensure accuracy and comprehensiveness to have better content validity.

To test the convergent and differentiated validity of the model, AMOS 24.0 was used to analyze confirmatory factors. Combination reliability CR is between 0.842 and 0.926, a standard greater than 0.7. AVE's average extraction volume is between 0.630 and 0.677, a standard greater than 0.5. It shows that the scale has good convergence validity. Differentiation validity can be tested by comparing the correlation coefficients between AVE square root and latent variables. After calculation, all latent variables AVE the square root (diagonal) is greater than its correlation coefficient with other latent variables. It shows that the validity of each latent variable is good.

Model validation

Assumptions H1-H24 validation

The relationship model is constructed with perceived usefulness, ease of use, perceived interpersonal trust, disease cognition as exogenous latent variables, survival motivation, relationship motivation, growth motivation as intermediary variables, knowledge seeking, and knowledge sharing as endogenous latent variables. The fitting results are obtained by running the structural equation model, as shown in Table 2. As a result. The χ^2/df value <3 and is in the ideal range. Because most of the indexes such as GFI meet the standard, the effect is good.

Table 2 – Fitting Index of the Model of Action Mechanism of their Knowledge Seeking and Sharing Behavior influenced by Individual Cognition and Motivation in Online Health Communities.

Fitting indicators	χ^2/df	GFI	AGFI	RMSEA	IFI	CFI	NFI	PGFI	PNFI
Evaluation criteria	<3	>0.8	>0.8	<0.08	>0.9	>0.9	>0.9	>0.5	>0.5
Model	2.334	0.820	0.792	0.059	0.914	0.913	0.858	0.709	0.782

Note: χ^2/df: is the ratio between chi-square and degrees of freedom; GFI: Goodness of Fit Index; AGFI: Adjusted Goodness of Fit Index; RMSEA: Root Mean Square Error of Approximation; IFI: Incremental Fit Index; CFI: Comparative Fit Index; NFI: Normed Fit Index; PGFI: Parsimony Goodness-of-Fit Index; PNFI: Parsimony-adjusted Normed Fit Index; NNFI: Non-Normed Fit Index.
Source: Elaborated by the author (2021).

Figure 2 is a structural model of their knowledge seeking and sharing behavior influenced by individual cognition and motivation in online health communities. The test results show that, In H1-H24, 14 hypotheses such as H2, H4, H8, H9, H10, H14, H16, H18, H19, H20, H21, H22, H23, and H24 have significant effects, and the hypothesis is valid. The path coefficients of H1, H5, H6, and H15 are of low significance but still reach the significance level of 0.1. It can be considered that the relevant hypothesis is supported, and the hypothesis is tenable. H3, H7, H11, H12, H13, H17 hypothesis is not significant, and the hypothesis is invalid.

Assumptions H25-H44 validation

Using the Bootstrap method to test the intermediary effect, repeated random sampling is 2000 times and 95% effect confidence interval. Adopt a User-defined estimand function, then write a program to calculate a single mediating effect. The upper and lower limits of the biased correction confidence intervals are observed. If the lower limit and upper limit of indirect effect do not include 0, the intermediary effect is significant. Table 3 shows the hypothesis H25-H44 test results.
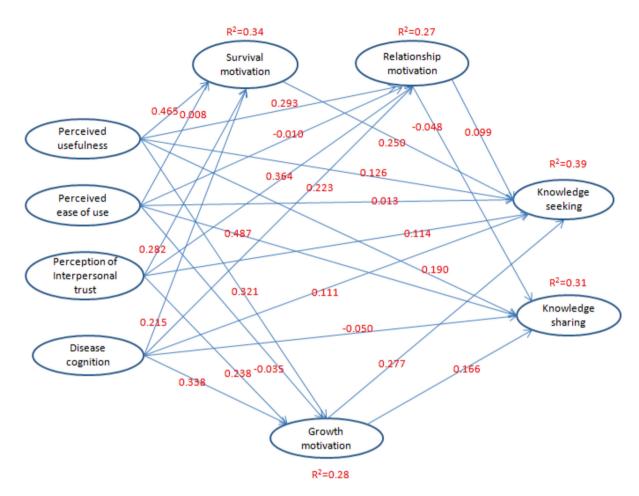
Figure 2 – Structure Model of Action Mechanism of Individual Cognition and Motivation on Knowledge Seeking and Sharing in Online Health Communities.
Source: Elaborated by the author (2021).

Table 3 – Hypothesis H25-H44 Verification Table on the Mechanism of Individual Cognition and Motivation on Knowledge Seeking and Sharing in Online Health Communities.

1 of 2

Path	Standardized estimates of indirect effects	95% confidence intervals		P-value	significance	Assumption Verification
		Lower limit	Upper limit			
Perceived Usefulness→Survival Motivation→Knowledge Seeking	0.116	0.044	0.193	**	Significant	Established
Perceived Usefulness→Relational Motivation→Knowledge Seeking	0.029	-0.009	0.073	0.137	Not significant	Not established
Perceived Usefulness→Growth Motivation→Knowledge Seeking	0.090	0.032	0.152	**	Significant	Established
Perceived Ease of Use→Survival Motivation→Knowledge Seeking	0.002	-0.023	0.030	0.812	Not significant	Not established
Perceived Ease of Use→Relational Motivation→Knowledge Seeking	-0.001	-0.018	0.009	0.667	Not significant	Not established
Perceived Ease of Use→Growth Motivation→Knowledge Seeking	-0.010	-0.043	0.016	0.440	Not significant	Not established

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Table 3 – Hypothesis H25-H44 Verification Table on the Mechanism of Individual Cognition and Motivation on Knowledge Seeking and Sharing in Online Health Communities.

2 of 2

Path	Standardized estimates of indirect effects	95% confidence intervals		P-value	significance	Assumption Verification
		Lower limit	Upper limit			
Perception of Interpersonal Trust→Survival Motivation→Knowledge Seeking	0.071	0.024	0.123	**	Significant	Established
Perception of Interpersonal Trust→Relational Motivation→Knowledge Seeking	0.036	-0.013	0.084	0.151	Not significant	Not established
Perception of Interpersonal Trust→Growth Motivation→Knowledge Seeking	0.066	0.021	0.119	**	Significant	Established
Disease Cognition→Survival Motivation→Knowledge Seeking	0.054	0.016	0.102	**	Significant	Established
Disease Cognition→Relational Motivation→Knowledge Seeking	0.022	-0.006	0.060	0.132	Not significant	Not established
Disease Cognition→Growth Motivation→Knowledge Seeking	0.094	0.036	0.151	**	Significant	Established
Perceived Usefulness→Relational Motivation→Knowledge Sharing	-0.014	-0.057	0.020	0.390	Not significant	Not established
Perceived Usefulness→Growth Motivation →Knowledge Sharing	0.053	0.012	0.113	**	Significant	Established
Perceived Ease of Use→Relational Motivation →Knowledge Sharing	0.000	-0.006	0.012	0.544	Not significant	Not established
Knowledge Ease of Use→Growth Motivation→Knowledge Sharing	-0.006	-0.034	0.009	0.385	Not significant	Not established
Perceived Interpersonal Trust→Relational Motivation→Knowledge Sharing	-0.017	-0.065	0.026	0.397	Not significant	Not established
Perceived Interpersonal Trust→Growth Motivation→Knowledge Sharing	0.040	0.009	0.083	**	Significant	Established
Disease Cognition→Relational Motivation→ Knowledge Sharing	-0.011	-0.046	0.016	0.347	Not significant	Not established
Disease Cognition→Growth Motivation Knowledge Sharing	0.056	0.013	0.123	**	Significant	Established

Note: ** means P<0.01.
Source: Elaborated by the author (2021).

Discussion and Conclusion of Research

Effects of perceived usefulness, perceived ease of use, perceived interpersonal trust, and disease cognition on knowledge seeking and sharing.

Perceived usefulness, perceived interpersonal trust, and disease cognition directly impacts knowledge seeking and supported hypotheses. The cognitive factors that have the greatest influence on knowledge seeking are perceived usefulness (path coefficient β=0.126), followed by perceived interpersonal trust (β=0.114). Perceptual ease of use does not significantly affect knowledge seeking, and the hypothesis is not supported. This shows that perceived ease of use is not a factor for suitors. Similar conclusions have been reached by Deng and Guan (2016).

Perceived usefulness and ease of use significantly impact knowledge sharing supported assumptions. The direct effect of perceived ease of use on knowledge sharing (β=0.487) was significantly stronger than perceived

ease of use (β=0.190). A similar conclusion is obtained by Yang (2017) based on the MOOC platform, and the impact of ease of use is greater than usefulness. The direct effect of disease cognition on knowledge sharing is not significant, and the hypothesis is not supported. Disease cognition significantly impacts knowledge sharing through the mediating role of growth motivation (β=0.056). This shows that the original disease experience knowledge and knowledge sharing do not have a direct causal relationship; the original disease experience knowledge will not cause knowledge sharing or not. The original disease experience knowledge first leads to the user's growth motivation affecting its knowledge sharing. Furthermore, perceived interpersonal trust does not directly impact knowledge sharing but rather on the mediating role of growth motivation (standardized indirect effect estimates β=0.040). This shows that when users perceive interpersonal trust, it first leads to their growth motivation and then affects knowledge sharing.

Impact of motivation on knowledge seeking and sharing

The hypothesis is supported by survival, relationship, and growth factors that impact knowledge seeking. Growth motivation is the main motivation that affects knowledge seeking behavior (β=0.277). This shows that the biggest motivation for users to participate in knowledge seeking is their motivation to grow up and the most urgent improvement of their ability to disease knowledge, health decision-making, or nursing.

Growth motivation significantly impacts knowledge-sharing behavior, and assumptions are supported. Relational motivation had no significant impact on knowledge sharing, assuming it was not supported, possibly because Jiang (2014) and Zhang (2020) have found that user information sharing and community participation have relationship motivation, which does not necessarily indicate that relationship motivation affects knowledge sharing. Information is different from knowledge. Information can contain emotion, entertainment, knowledge, *etc*. Based on Maslow's hierarchy of needs theory, Choudhury, Alani, and Kmi (2014) found that knowledge sharing corresponds to self-actualization needs. Therefore, the motivation of users to participate in knowledge sharing is mainly growth motivation.

Impact of perceived usefulness, perceived ease of use, perceived interpersonal trust, and disease cognition on motivation

Perceived usefulness, perceived interpersonal trust, and disease cognition significantly affects motivation. The most important cognitive factor affecting survival motivation is perceived usefulness (β=0.465). The most important factor affecting relationship motivation is perceived interpersonal trust (β=0.364). Disease cognition is the most important factor affecting growth motivation (β=0.338). This shows that perceived usefulness, perceived interpersonal trust, and disease cognition can stimulate users' survival, relationship, and motivation growth. The key cognitive factors that stimulate survival, relationship, and growth motivation are platform usefulness, perceived interpersonal trust, and disease cognition.

Perceived ease of use cannot stimulate three motivations. On the one hand, the effect of perceived ease of use on knowledge seeking is not significant for suitors. The possible reason is that users knowledge seeking behavior in online health communities due to disease treatment or nursing problems. Therefore, the platform's ease of use will not significantly impact his motivation and knowledge seeking behavior. Davis, Bagozzi, and Warshaw (1989) have noted when users first adopt an information system, the intention to use behavior is determined by perceived usefulness and ease of use. As familiarity increases, perceived ease of use decreases, and when the system's complexity is relatively low, perceptual ease of use will not affect its use. However, this study uses user samples that are not the first to use Patient user groups. It empirically shows that perceived ease of use directly impacts knowledge sharing. From this point of view, Davis and others may not be fully suitable for interpreting

user knowledge seeking and sharing behavior in the context of patient user groups. On the other hand, can perceived ease of use stimulate their growth motivation for donors? The study found that perceived ease of use cannot stimulate growth motivation, possibly because measuring growth motivation improves knowledge ability and help others to reflect; as donors become more familiar with the platform, the role of perceived ease of use decreases. When the complexity of system use is relatively low, perceived ease of use will not affect its improvement of knowledge, ability, and help.

The mediating effect of motivation between cognitive factors and knowledge seeking

The hypothesis that survival and growth motivation have intermediary effects between perceived usefulness and knowledge seeking is supported. Survival motivation has the largest mediating effect between perceived usefulness and knowledge seeking (standardized indirect effect estimates $\beta=0.116$), followed by growth motivation ($\beta=0.090$). This shows that survival motivation plays the most important role between the user's perception of platform usefulness and knowledge seeking behavior. When the user perceives the platform as useful, it can stimulate survival motivation and growth motivation; survival motivation plays the main role in promoting knowledge seeking behavior. The hypothesis that relational motivation mediates perceived usefulness, interpersonal trust, disease cognition, and knowledge seeking is not supported. The possible reason is that the influence of relational motivation on knowledge seeking behavior is relatively weak. Because the object of study is the patient-user. Unlike physical and mental health users, patient users seek knowledge to solve their disease problem, whether the relationship with the help object is strong or weak.

The hypothesis that the intermediary effect between perceived ease of use and knowledge seeking is not supported, mainly because perceived ease of use cannot stimulate the user's three motivations. The hypothesis that survival and growth motivation have an intermediary effect between interpersonal trust and knowledge seeking perception is supported. Survival motivation has a great mediating effect between the perception of interpersonal trust and knowledge seeking ($\beta=0.071$). This shows that when users perceive interpersonal trust, it can strongly stimulate survival, growth, and survival, affecting their knowledge seeking behavior.

The hypothesis that survival and growth motivation have an intermediary effect between disease cognition and knowledge seeking is supported. The mediating effect of growth motivation between disease cognition and knowledge seeking was greater ($\beta=0.094$), followed by survival motivation ($\beta=0.054$). This shows growth motivation, survival motivation, and stronger growth motivation than survival motivation.

Intermediation of motivation between cognitive factors and knowledge sharing

The hypothesis that growth motivation has an intermediary effect between perceived usefulness, interpersonal trust, disease cognition, and knowledge sharing is supported. The mediating effect values are $\beta=0.053$, $\beta=0.040$, and $\beta=0.056$, respectively. This shows that perceived usefulness, the perception of interpersonal trust, disease cognition, and knowledge sharing are mainly guided by growth motivation. When the user perceives that the platform is useful, he trusts the other user or the user's original disease experience knowledge, which can stimulate his growth motion, then promotes knowledge sharing.

The hypothesis of mediating effect between perceived usefulness, the perception of interpersonal trust, disease cognition, and knowledge sharing is not supported. The main reason is that the influence of relationship motivation on knowledge sharing is weak. The hypothesis that a mediating effect exists between perceived ease of use and knowledge sharing is not supported, mainly because perceived ease of use cannot stimulate patients' relationship and growth motivation in the online health community.

Path to Knowledge Seeking and Sharing

1) Path of knowledge seeking.There are nine paths affecting knowledge seeking, three direct paths, six mediation paths. Three direct paths such as "perceived usefulness→knowledge seeking (β=0.126)" and so on. Six mediation paths such as "perceived usefulness→survival motivation→knowledge seeking (β=0.116)" and so on. From this, perceived usefulness→knowledge seeking(β=0.126), perceived usefulness→survival motivation→knowledge seeking (β=0.116) are critical paths. That means the most critical factor in attracting users is the platform's usefulness.

2) Path to knowledge sharing. A total of 5 paths impact knowledge sharing, including two direct paths and three mediation paths. Two direct paths include perceived ease of use→knowledge sharing (β=0.487). Three mediation paths such as "disease cognition→growth motivation→knowledge sharing (β=0.056)" and so on. Therefore, "perceived ease of use→knowledge sharing (β=0.487)" is the key to effect knowledge sharing. This shows that the most critical factor in promoting user knowledge sharing is the platform's ease of use.

To sum up, the following conclusions are drawn: (1) perceived ease of use has no effect on motivation or knowledge seeking, but only on knowledge sharing; (2) growth motivation, survival motivation, relationship motivation can promote knowledge seeking, while only growth motivationpromotes knowledge sharing; (3) perceived usefulness, perceived interpersonal trust, disease cognition have different degrees of influence on all three motivations; (4) perceived usefulness, perceived interpersonal trust, disease cognition have direct influence on knowledge seeking, but only perceived usefulness and perceived ease of use have direct influence on knowledge sharing; (5) the key factor of promoting knowledge seeking is platform usefulness, while the key factor of promoting knowledge sharing is platform ease of use; (6) Survival motivation and growth motivation play an intermediary role between perceived usefulness, the perception of interpersonal trust, disease cognition and knowledge seeking respectively, while growth motivation plays an intermediary role among these three cognitive factors and knowledge sharing.

Management Implications

Increase community usefulness and ease of use, and increase users' disease cognition

1) Increased community usefulness and users' disease cognition. (1) Improve the knowledge service mechanism to meet the personalized needs of users. Managers can set up community fixed sections and push windows to provide knowledge services to users. Identify and evaluate the knowledge of communication among users, form a knowledge base of chronic diseases, and push it to users intelligently. (2) Activate the interactive atmosphere and promote users' social interaction. The Time-Space-Content Theory should be used to study the Law of User Interaction (Yao *et al.*, 2020) by Multi-dimensional Hybrid Method and take corresponding incentive measures.

2) Improve community usability and user experience. Using the questionnaire survey and user behavior analysis method, I found the law of users using the community to understand the user experience. For example, a network questionnaire survey can directly obtain the user's experience and demand for community ease of use. It can indirectly obtain valuable information from the behavior track such as user button residence time and excavate the user's demand for community ease of use. Based on the user experience, improve the ease of use of the community.

Enhanced interpersonal trust perception among users

1) Identify false users and establish integrity mechanisms. Driven by commercial interests, the community has false users such as non-patients to send information, which destroys the integrity environment. Text mining and

H. ZHAO

other technologies can be adopted to monitor and identify the non-compliance behavior of users in real-time and then take measures to purify the community environment. At the same time, establish a good faith mechanism. Through the combination of user evaluation and manager evaluation, the credit grade of users is reflected in the form of scores. And according to the user integrity level, improve the integrity incentive mechanism. Given the violation of user privacy and other situations, start using the complaint reporting mechanism.

2) Encourage multi-channel interaction and enhance trust. Multi-channel interaction means users can use text communication, audio, and video media and communicate in a real environment. Multimedia is different from traditional information communication media, such as interactivity, presence, and so on, promoting cognition among users and guaranteeing better trust-building. Compared with the network environment, different users will have different value orientations. Managers can guide the selection of physical communication environments according to users' different and changing needs.

Stimulating and meeting different user needs

1) Survival motivation: (1) Excavate model patient, then push the typical case. Use data mining and other technologies to identify the model patients who have overcome or successfully managed diseases. It is timely pushed to patient users as a typical case; on the other hand, model patients are encouraged to introduce disease management experience. (2) Improve community response timeliness and response rate. Adopt intelligent reply and manual reply, and set reply priority. For example, a patient's manual response can be a higher priority and an intelligent response to a lower priority. Set the time threshold between the help and the patient's artificial reply. When the helping behavior occurs, it exceeds a certain time range. If the patient does not reply, the intelligent reply is automatically enabled.

2) Relational motivation: (1) Strengthen humanistic care and enhance community sense of belonging. Patient users usually show characteristics different from general users because of their diseases. Based on patients' psychological characteristics and individual differences, humanistic care should be transmitted through group activities and individualized psychological services to enhance their sense of belonging. (2) Strengthen propaganda and guidance to shape community culture. Community culture plays an important role in human behavior constraints. Through propaganda and guidance, we can standardize the speech behavior of users and lead the values to shape the community culture and form the atmosphere of benign interaction between user behavior and community culture.

3) Growth motivation: Establish a user-level promotion system and a perfect reward mechanism for helping others. You can encourage users to learn about disease management by self-answer test, two or more people competition. Material and spiritual rewards can be combined to encourage their continuous helping behavior.

This study constructs the theoretical model of "cognition-motivation-behavior" and gets useful conclusions that enlighten management. However, there are still some shortcomings and limitations: there are many factors that affect the user's knowledge seeking and sharing behavior, such as personality, cognitive style, *etc.*, but the study does not consider individual personality, cognitive style, and so on.

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16