

The mediating effect of the use intensity of short video platforms on the use motivation and loneliness of unaccompanied patients during the epidemic

Shuang Wu^{a,*}, Jie Yao^b, Chunzhi Yang^c

Shaanxi University of Chinese Medicine, Xiayang, China

^a747729753@qq.com, ^b344246303@qq.com, ^cchunzhiyang@126.com

*Corresponding author

Abstract: To investigate the loneliness of patients without family members who were hospitalized during the epidemic by using short video platform. A total of 350 inpatients without accompanying care in a Class iii Grade A hospital in Shaanxi Province were investigated by loneliness scale, Use Intensity Scale and Use motivation scale. The use intensity had a partial mediating effect on the relationship between use motivation and loneliness in unaccompanied patients. The direct and indirect effects of motivation on loneliness were -0.512 and -0.343, respectively. As a social tool, short video can be used appropriately by patients without accompanying to expand social interaction and express themselves, which can satisfy their desire for entertainment, information acquisition and communication with others, and effectively reduce loneliness.

Keywords: unaccompanied patients; Loneliness; Short video platform; Questionnaire survey; Intermediary role

After the outbreak of coronavirus disease2019 (COVID-19), according to the announcement of Health Commission of the People's Republic of China ^[1], it is listed as Class B infectious diseases of the People's Republic of China and managed as Class A infectious diseases. The prevention and control of nosocomial infection in medical and health institutions at all levels has entered the normal stage ^[2] In this context, hospitals have limited the number of accompanying caregivers during hospitalization and strictly regulated the entrance and exit control system. Research ^[3] shows that at present, a large proportion of inpatients in general hospitals around the world are physical and mental diseases, and about 50% of them are secondary to or complicated with loneliness, anxiety, depression and other psychological disorders. Loneliness is a subjective experience. It is considered that loneliness is an unpleasant emotional experience caused by the lack of social relations and emotions perceived by individuals and is a negative subjective experience ^[4]. As a negative emotional state, loneliness can have a negative impact on the physical and mental health and psychosocial adaptation of hospitalized patients. Studies ^[5] have shown that hospitalized patients lack interpersonal communication and are often accompanied by varying degrees of loneliness and cognitive dysfunction. Short video talent display content is a kind of expressive psychotherapy based on art. Individual and collective art presentation can effectively improve patients' depressive symptoms, loneliness and cognitive function, and accelerate their physical and mental recovery.

Studies have shown ^[6] that unaccompanied patients with a relatively high level of short video use intensity during hospitalization have a strong use motivation and a low sense of loneliness. Unaccompanied patients with higher motivation to use usually use with higher intensity. However, previous studies mostly explored the relationship between variables. At present, there are few studies on the motivation, intensity and loneliness of unaccompanied patients. In order to understand the relationship among the motivation, intensity and loneliness of unaccompanied patients, we conducted a survey on patients with internal chronic diseases in a tertiary hospital in Shaanxi Province. The results are reported as follows.

1. Subjects

Using the convenient sampling method, patients with at least one chronic disease admitted to a Classiii Grade A hospital in Shaanxi Province from April to June 2022 were selected as the research objects. Inclusion criteria: unaccompanied patients who were hospitalized for ≥ 7 days, had independent

behavior and cognitive ability, and aged ≥ 18 years old, and could actively cooperate to complete the questionnaire. Exclusion criteria: (1) dialysis, heart failure, severe edema, hormone use, hyperthyroidism and hypothyroidism; Parkinson's disease, motor neuron disease, stroke sequelae, severe cognitive impairment, lower extremity arteriosclerosis obliterans, severe osteoarthritis, rheumatoid arthritis and other diseases affecting physical function; Contraindication of bioelectrical impedance measurement such as pacemaker implantation. People with a mental disorder or in the acute phase of schizophrenia; (2) patients who cannot correctly express their wishes; (3) patients unwilling to participate in this survey. Informed consent and signed informed consent forms were obtained from patients and their families for this investigation.

1.1 Research methods

1.1.1 Survey tools

The questionnaire used in this study included four parts. ① **General information questionnaire:** self-designed by the researcher according to the purpose and content of the study, including age, gender, education level, marital status, living status before hospitalization, and average daily use time of short video. ② **Loneliness Scale:** This scale was developed by Russell [7], including 11 forward items and 9 reverse items. Likert4 point scoring method was used to obtain the loneliness score of the respondents. The internal consistency coefficient was 0.913, and the reliability was high. ③ **Use motivation Scale:** This scale was adapted by Ma Zhihao [8] according to the Scale of Use Motivation of Network Broadcast Platform, in which the subject "wechat" and "live broadcast platform" were replaced by "short video" or "short video app". The scale consists of four dimensions. A 7-point scale was used (1 = strongly disagree, 7 = strongly agree). According to previous studies, this scale only examines the scores of each sub-dimension, and the higher the score, the higher the motivation intensity of this dimension, and the total score is not calculated. The overall Cronbach's α coefficient of the scale was 0.887, and the Cronbach's α coefficients of each dimension were all above 0.8. The reliability of the questionnaire was good. ④ **Use intensity scale:** This scale was adapted by Ma Zhihao et al. [9], and the scale contains four measurement statements. A 7-point scale was used (1 = strongly disagree, 7 = strongly agree). A higher score indicates that the subject subjectively believes that he or she uses the short video platform with higher intensity. The Cronbach's α coefficient of the modified scale was 0.807, which showed good reliability.

1.1.2 Data collection methods

From April to June 2022, a questionnaire survey was conducted among inpatients without caregivers in a Classiii Grade A hospital in Shaanxi Province. After contacting the patient and obtaining consent, the questionnaire was filled out on site. All patients who participated in the test were informed in advance of the purpose of the study and agreed to participate in the survey. Anonymous questionnaires were distributed and collected on site. A total of 332 questionnaires were distributed and 304 valid questionnaires were returned, with an effective rate of 91.5%.

1.1.3 Statistical methods

The questionnaires were checked, entered and a database was established by two people. SPSS26.0 software was used for statistical analysis. The mean, standard deviation, number of people and percentage were used to describe the data. Pearson correlation analysis was used to analyze the correlation between variables, and t test and variance analysis were used to analyze the difference between groups. AMOS23.0 was used for analysis, and structural equation model was used to verify the mediating effect of use intensity on the motivation of using short video platform and loneliness in unaccompanied patients. In terms of P<0.05 was considered statistically significant.

2. Results

2.1 Comparison of loneliness scores of unaccompanied patients with different characteristics

There were statistically significant differences in the scores of loneliness among unaccompanied patients with different ages, short video usage time, marital status and living conditions before hospitalization (all P<0.05). See Table 1.

Table 1: General information of the respondents (N=304)

Name	Options	Number of people [name (percentage, %)]	Total score of loneliness (score $\bar{x}\pm s$)	Value of statistics	p value
Gender	male	146(48.0)	39.25±5.15	0.214 ²⁾	0.129
	female	158(52.0)	40.15±5.32		
Age	35-44 years old	58(19.1)	38.65±6.24	3.173 ¹⁾	<0.05
	45-54 years old	121(39.8)	40.18±6.48		
	55-64 years old	83(27.3)	42.56±7.15		
	Over 65 years of age	42(13.8)	43.46±6.22		
Average daily use time	Within 0.5 hours	35(11.5)	39.21±5.14	5.231 ¹⁾	<0.01
	1-2 hours	52(17.1)	40.32±5.71		
	2-3 hours	56(18.4)	38.45±7.47		
	3-4 hours	112(36.8)	38.47±7.94		
	More than 4 hours	49(16.1)	42.41±7.21		
Marital status	Have a spouse	242(79.6)	37.41±5.23	2.367 ²⁾	<0.05
	No spouse	62(20.4)	41.28±6.41		
Status of residence	Live with your spouse	237(78.0)	39.23±5.28	3.526 ¹⁾	<0.05
	Live with spouse and children	55(18.1)	37.39±5.25		
	Live alone	8(2.6)	41.29±5.43		
	Other	4(1.3)	38.48±5.32		

1)Value of F; 2)Value of t

2.2 Loneliness, scores of use motivation and intensity of use in patients without accompanying

The results of this study showed that the total score of loneliness in 332 patients without caregivers was (38.45±7.35), the total score of use motivation was (30.17±19.49), the total score of use intensity was (20.32±6.19), and the score of interpersonal communication in each dimension of use motivation was (10.21±5.34). The score of information acquisition was (11.33±7.26), the score of self-expression was (10.16±5.14), and the score of recreation was (14.59±6.23). See Table 2.

Table 2: Scores of loneliness, motivation and intensity of use in patients without caregivers (score, $\bar{x}\pm s$)

The project	Number of items (n)	Dimension score	Item mean score
Feeling alone	20	38.45±7.35	3.63±0.94
Motivation for use	15		
Networking	4	10.21±5.34	3.68±0.76
Access to information	3	11.33±7.26	3.77±0.53
Expression of self	4	10.16±5.14	3.12±0.65
Entertainment and recreation	4	14.59±6.23	4.10±0.54
Total score of use motivation	15	30.17±19.49	3.89±0.92
Intensity of use	4	20.32±6.19	3.76±0.78

2.3 Correlation analysis of use motivation, use intensity and loneliness of unaccompanied patients

Table 3: Correlation analysis of the use intensity, motivation and loneliness of the short video platform in patients without accompanying (N=304)

		Networking	Access to information	Expression of self	Entertainment and recreation	Intensity of use
Feeling alone	Pearson correlation Significance (two-sided)	-0.331**	-0.344**	-0.289**	-0.170**	-0.390**
		0.000	0.000	0.000	0.002	0.000

** Significant correlation at the 0.01 level (two-sided)

The use motivation of unaccompanied patients was negatively correlated with loneliness ($r=-0.512$, $P<0.01$), and the intensity of use was negatively correlated with loneliness ($r=-0.547$, $P<0.01$),

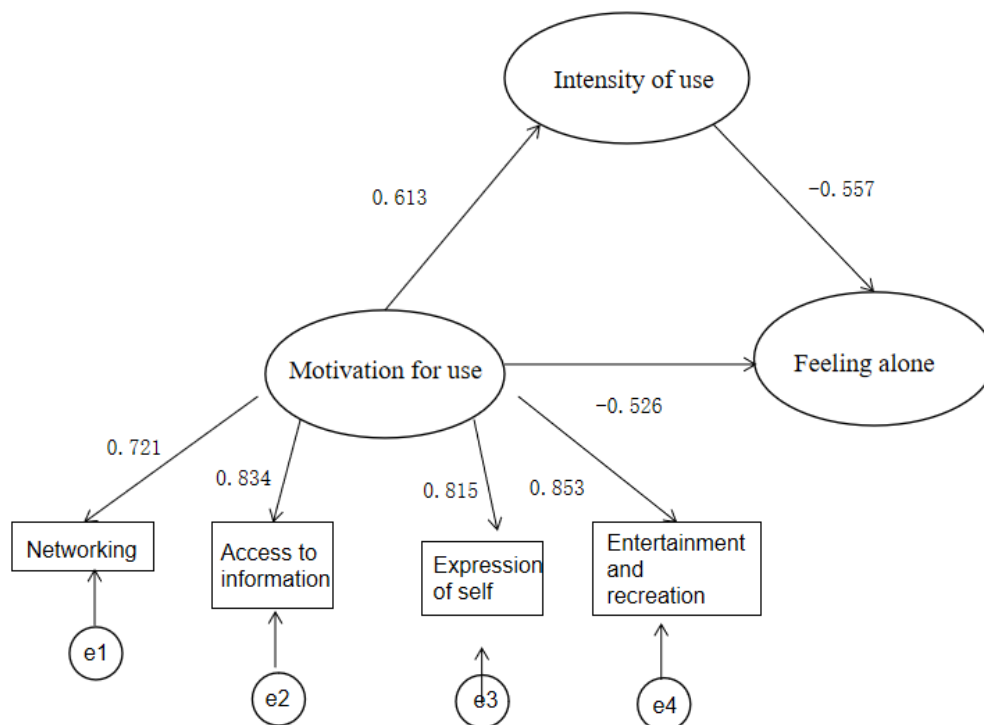
and the motivation was positively correlated with the intensity of use ($r=0.652$, $P<0.01$). See Table 3.

2.4 The mediating effect of loneliness on the use motivation and use intensity of unaccompanied patients

According to the results of the above research, the following hypothesis is proposed: the use motivation has a direct effect on loneliness, and the use intensity of short video platform is the mediating factor of use motivation and loneliness. The results showed that motivation had a positive predictive effect on use intensity ($\beta=0.613$, $P<0.01$), and the intensity of use had a negative predictive effect on loneliness ($\beta=-0.557$, $P<0.01$), use motivation had a negative predictive effect on loneliness ($\beta=-0.526$, $P<0.01$), and the intensity of use had a negative mediating effect between use motivation and loneliness ($\beta=-0.343$, $P<0.01$). See Figure 1 and Table 4.

Table 4: Mediating effect of use intensity on use motivation and loneliness in unaccompanied patients (N=304)

Independent variable	Dependent variable	Direct effect	Indirect effect	Total effect
Motivation for use	Feeling alone	-0.526	-0.343	-0.869
Motivation for use	Intensity of use	0.613	0.000	0.613
Intensity of use	Feeling alone	-0.557	0.000	-0.557



Note: e1 to e4 are residual terms. The data in the figure are standardized path coefficients, and all p-values of path coefficients are <0.01 .

Figure 1. Model of the mediating effect of intensity of use among unaccompanied patients on motivation for use and loneliness

3. Discussion

3.1 Status analysis of motivation, loneliness, and intensity of use of unaccompanied patients

The score of motivation for using short videos in unaccompanied patients was (30.17 ± 19.49) , which was consistent with the results reported in literature [10]. Among them, the entertainment dimension scored the highest, followed by information acquisition, while interpersonal communication and self-expression were low. This indicated that unaccompanied patients were good at using the short video platform to exert their entertainment function in the closed hospitalization treatment environment, and the users' perception of entertainment was high. Patients used the short video platform more to seek

happiness, and the demand for pleasure also had the demand for information. She can actively watch short knowledge science videos on the short video platform, but she still lacks awareness of social expression, showing the strength of interpersonal relationship. The reason may be that patients have negative emotions to communicate with others and reduced willingness to communicate during hospitalization^[11]. Therefore, nurses can encourage patients to actively forward and share the pleasure or disease knowledge science content received through wechat circle of friends or short video platform friend interaction columns, so as to promote the motivation of interpersonal communication and self-expression of patients.

In this study, the loneliness score of unaccompanied patients using the short video platform was (38.45±7.35), and the average score of items was (3.63±0.94), which was lower than the survey results of loneliness in outpatients^[12]. It may be due to the differences in the formation of different research groups. At the same time, factors such as diseases lead to increased negative emotions, so the score of loneliness is lower than that of outpatients. According to the analysis of Table 1, there were statistically significant differences in loneliness scores of unaccompanied patients with age, average daily use time of short video, marital status and living status before hospitalization. Among them, the elderly living alone and without a spouse were more likely to feel lonely, which was similar to the survey results in literature^[13]. Therefore, nurses should pay attention to hospitalized patients without accompanying, and the loneliness of hospitalized patients without accompanying can be reduced through short video demonstration education and training or intervention^[14].

The results of this survey showed that the score of the use intensity of short videos of patients without accompanying was (20.32±6.19), which was consistent with the results reported in literature^[15]. Use intensity is a direct reflection of the length of time patients use the short video platform. The loneliness of patients with high use intensity during hospitalization decreases, and the life satisfaction of patients without accompanying can also be improved^[16]. Research^[17] shows that inpatients can increase their social support and improve their mental health through rational use of short video platforms. Therefore, nurses should reasonably guide patients to watch short videos, actively communicate with patients to coordinate the watching time, avoid excessive use, and timely supervise and remind patients to use the intensity of short videos.

3.2 Correlation analysis between motivation and intensity of using short video platform and loneliness of patients without accompanying

The study showed that motivation had a direct negative predictive effect on loneliness ($r=-0.512$, $P<0.01$), that is, the use motivation can directly affect the loneliness of unaccompanied patients, indicating that the greater the use motivation, the lower the loneliness of unaccompanied patients, which is consistent with the research results of Zhang Ying et al.^[18]. The analysis may be due to^[19] that chronic diseases and pre-hospitalization living conditions affect patients' motivation for use, and the negative psychology caused by chronic diseases will damage their health function, and health dysfunction will seriously affect patients' demand for use, thus increasing their risk of loneliness. Therefore, nurses can actively communicate with family members and patients before admission, cooperate with family members to correctly guide patients to use motivation, expand patients' positive emotions and reduce negative interactions, so as to reduce the loneliness of patients without accompanying.

3.3 The intensity of use had a partial mediating effect between the use motivation and loneliness of unaccompanied patients

The results showed that the effect of use motivation on loneliness was still significant after adding the intensity of use, indicating that use motivation could indirectly affect the loneliness of patients without caregivers through use intensity, that is, use intensity was the mediating variable between use motivation and loneliness. In view of this, it is recommended that nurses pay close attention to the motivation and intensity of unaccompanied patients, take targeted intervention measures, and give corresponding and correct guidance, so as to reduce the perception of loneliness and optimism of patients in hospital. However, the mediating effect of the use intensity is incomplete, and the relationship between the use motivation and loneliness of hospitalized patients without accompanying needs to be further studied in combination with other influencing factors^[20].

4. Conclusion

This study found that due to the recovery of insight of hospitalized patients during the epidemic period, the stigma of the disease was enhanced, and the sense of loneliness was more serious. In addition, the closed inpatient treatment environment isolates patients from family and society, which increases the loneliness of patients and affects their treatment compliance and confidence [21]. The overall level of loneliness in unaccompanied patients who use short videos is low. Motivation and intensity of use are important factors of loneliness in unaccompanied patients, and intensity of use plays a mediating role in the effect of motivation on loneliness. The short video platform is an effective tool to relieve patients' mental stress and reduce their loneliness. It is suggested that clinical nursing workers should pay attention to guide unaccompanied patients to use the short video platform correctly in a special period, and monitor and intervene it, so as to reduce patients' loneliness.

References

- [1] Liu Y Y. *Research on short video reports of mainstream media under COVID-19: a case study of China Central Television News report on TikTok* [J]. *Chinese Radio and Television Journal*, 2021(01):94-96.
- [2] Li Xiaojun, Wu Ye, Hu Fan. *Crisis transmission of emerging infectious diseases on social media: computational content analysis of short videos of COVID-19 on TikTok* [J]. *News Knowledge*, 2020(10):55-67.
- [3] LI K. *Analysis of the communication role of short videos in epidemic prevention and control reports: taking Hubei Daily TikTok as an example* [J]. *News Sentinel*, 2020(07):24-25.
- [4] Li Li, Chen Juan, Chen Lin, Chen Jianhong. *Effects of expressive psychotherapy on loneliness and cognitive function in elderly inpatients with post-stroke depression* [J]. *Chin J Health Psychology*, 2019, 27(09):1373-1377.
- [5] Zou Yi, Zhou Jia, Fu Yidong, Mou Shan, Qin Jun. *Experience analysis and strategy discussion on the operation and maintenance of hospital video number: taking the video number of Shanghai Renji Hospital and Ningbo Hospital as an example* [J]. *Chinese media technology*, 2022 (8) : 53-56.
- [6] Yangyang Han, Yuhan Li, Tian Gao, Rui Guo. *Beijing hospital short video platform propagation force status and prospects of* [J]. *China's hospitals*, 2021, 25 (7) : 37-40.
- [7] Russel, Chiorri C. *Academic stress and active learning of nursing students: a cross-sectional study* [J]. *Nurse Educ Today*, 2018 (68) : 128-133
- [8] Wu Yuanzheng, Feng Dezheng. *Multimodal discourse governance in the context of social media: a case study of TikTok short video news in the COVID-19 epidemic* [J]. *Journal of Beijing International Studies University*, 2022, 44(02):31-50.
- [9] ZHANG Aihong. *Research on the industrial Communication Path of short Video embedded in culture and Tourism Integration: An Analysis based on Granovetter's embeddedness Theory* [J]. *Journal of Shandong University (Philosophy and Social Sciences Edition)*, 2022(06):60-70.
- [10] Yao Jiale. *Research on the relationship between public psychological resilience and Internet use motivation and behavior during the epidemic* [J]. *News Knowledge*, 2021(03):31-36.
- [11] Yang Mengmei, Qiaodan Yang. *Communication and promotion of cultural tourism industry in Lanzhou under the background of short video* [J]. *Journal of Lanzhou University of Arts and Science (Social Science Edition)*, 2023, 39(01):118-123.
- [12] Xu Xinyan, Zheng Xingmin, Zheng Lili, Ding Jie, Ou Wei, Chen Ling. *The effect of stigma perception on anxiety and depression in patients with pulmonary tuberculosis and the chain mediating effect of self-esteem and loneliness* [J]. *Chin J Preventive Med*, 2021, 22(10):766-770.
- [13] Wei Dongping, Liu Shuang, Deng Shangzheng, Yan Xuemei, Wang Chunrui. *The relationship between social media use and loneliness and social support in the elderly and its intervention measures* [J]. *Chin J Gerontology*, 2021, 41(20):4584-4587.
- [14] Wang Junya. *Effect of short video demonstration education combined with pelvic floor muscle Kegel exercise training on urination function of patients after radical cystectomy with orthotopic ileal neobladder* [J]. *Cancer Foundation & Clinic*, 2021, 34(05):400-403.
- [15] HAN J. *Short video communication strategies of Shanxi mainstream media in public health emergencies: Taking the COVID-19 epidemic as an example* [J]. *Journal of Journalism Research*, 2022, 13(22):75-77.
- [16] Jing Lijia, Liu Zongzhuang, Wang Xin, Xia Xiaoli, Li Li. *The mediating effect of loneliness on the relationship between social participation and life satisfaction in the elderly* [J]. *Modern Preventive Medicine*, 2021, 48(21):3920-3924.
- [17] Heo J, Chun S, Lee S, et al. *Internet use and well-being in older adults* [J]. *Cyberpsychology*,

Behavior, and Social Networking, 2015,18 (5) : 268-272.

[18] Zhang Ying, Sun Jinhai, Ding Lin, Zhao Peilin. *Study on the correlation between mobile phone dependence and loneliness in elderly patients [J]. Geriatrics and Health Care,2019,25(02):239-242.*

[19] Guo HWY, Chen XQ, TAO XH. *Application of "Internet +" short video combined with teach-back French health education in the perioperative period of cervical cancer [J]. Evidence-based Nursing,2023,9(11):2009-2012.*

[20] Zhang Hong, Zhang Wenguang, Wang Weiqiong, Tong Fang, Xu Zhenhua, Wang Hui. *Effects of short video-based integrated media nursing education on patients with diabetic foot in remission [J]. Nurse education magazine, 2023, 38 (9) : 822-826.*

[21] Zhang Xuanye, Wang Li, Wei Wei, Sun Jing. *Operation status and suggestions of short video platform in public hospitals: taking Kuaishou platform as an example [J]. Medical Education Management,2021,7(03):336-339.*