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Study on the Potential Categories and Influencing Factors of Stigma in Stroke Patients

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Abstract: *This study aimed to analyze the potential categories and influencing factors of stigma in stroke patients and to provide a basis for precise intervention. The study included 342 hospitalized stroke patients collected by the group from May to October 2024 in a tertiary hospital in Baoding. The latent class analysis (LCA) method was applied to analyze the characteristics of potential categories of stigma in stroke patients. Multicategorical logistic regression was adopted to analyze the influencing factors of different potential categories of stroke. Stigma in stroke patients included three potential categories: high stigma (42.9%), medium stigma (46.6%), and low stigma (10.5%). The multicategorical logistic regression showed that patients with medium stigma were positively correlated with harming cognitive evaluation (OR=1.237, P=0.000) and threatening cognitive evaluation (OR=1.171, P=0.029) and negatively associated with irrelevant/beneficial cognitive evaluation (OR=0.810, P=0.008) and yielding coping style (OR=0.850, P=0.023). High stigma was positively associated with threatening cognitive evaluation (OR=1.201, P=0.025) and negatively associated with challenging cognitive evaluation (OR=0.810, P=0.036) and avoidance coping style (OR=0.793, P=0.005). Patients with stroke stigma have prominent latent category characteristics. Patients with different potential categories of stigma take different cognitive evaluations and coping styles. Patients with moderate stigma are more inclined to injury/loss and threatening cognitive evaluation. Patients with high stigma are more inclined to threatening cognitive evaluation, and patients with low stigma are more inclined to irrelevant/beneficial cognitive evaluation and challenge cognitive evaluation. Avoidance and yielding negative coping styles have a specific protective effect on the stigma of stroke patients. This suggests that interventions should be targeted to different potential categories of stigma in stroke patients.*

Keywords: *Stroke, Stigma, Potential categories, influencing factors*

1. Introduction

Stroke is the leading cause of death and disability in adults in China[1]. Stroke events bring physical disability to patients, life dependence on others, or with the help of auxiliary equipment so that patients have a certain degree of stigma[2], which seriously affects their motivation to recover and participate in social activities[3]. Domestic and foreign scholars [4-8] classified stigma into different types from different angles. Most of the multidimensional scales [9-14] are used to measure stigma.

From the classification and measurement of stigma, there are multidimensional stigma characteristics. Presently, research on stigma in the stroke population in China focuses on the overall or dimensional level of the stigma of patients, mainly using the total and dimensional scores of the scale as the judging criteria and dividing them into different levels according to the score. However, the difference in stigma between individuals is quantitative and qualitative between certain groups. The measurement of the total and dimension scores cannot reflect the probability of stroke patients answering different questions horizontally and ignores the difference between question items. The inability to capture within-group variation in stigma and to accurately identify the characteristics of individual or group stigma categories in stroke has led to the biased classification of stigma. Therefore, it is urgent to analyze the heterogeneity of different categories of people based on the overall level. There is no research in China that analyzes the heterogeneity of stigma in stroke patients. Lazarus' stress-coping model believes that cognitive appraisal and coping play a vital role in the ability of stressors to produce stress in individuals[15]. Studies [16-18] have shown that cognitive appraisal and coping styles are correlated with stigma.

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This study used the latent class analysis (LCA) method to classify the stigma of stroke patients, to explore the rules of stigma classification of stroke patients from a horizontal perspective and to analyze the heterogeneity of stigma in stroke patients. Based on the theoretical framework of the Lazarus stress-coping model, this paper explores the mechanism of cognitive evaluation and coping style on the potential categories of stigma in stroke patients. It provides a basis for targeted mental health guidance for stroke patients.

2. Materials and methods

2.1. Sample

This study used data from 342 hospitalized stroke patients collected by our group from May to October 2024 in a tertiary hospital in Baoding. Stroke patients had a stigma score of (44.92±11.68) points. The Medical Ethics Committee approved the study, and informed consent was obtained from all patients and their families.

2.2. Research tools

2.2.1. The demographic characteristics

It included age, gender, marital status, education level, working status, family residence, family per capita monthly income, medical expense payment method, stroke frequency, disease course, and physical dysfunction.

2.2.2. Stroke Stigma Scale (SSS)

It developed by Zhu et al.[14], was used to measure the level of stigma in stroke patients. The content includes 16 items in 4 dimensions: physical disorder (items 1-4), social interaction (items 5-7), discrimination experience (items 8-11), and self-perception (items 12-16). A 5-point Likert scale was used, with a total score of 16~80 points. The higher the score, the more severe the stigma. The Cronbach's α coefficient of the total scale was 0.916. The Cronbach's α coefficient of this study's full scale was 0.880.

2.2.3. The Health Cognition Assessment Scale (CAHS)

It was developed by Kessler[19] and is a self-rating scale to evaluate the cognitive evaluation of stroke patients on stroke events. It consists of two subscales: primary and secondary evaluation. The primary scale consists of 23 entries in 4 dimensions, mainly evaluating the event or situation itself. The Cronbach's α coefficients were as follows: threat (0.85), challenge (0.72), beneficial/irrelevant (0.78), and injury/loss (0.88). A total of 5 items were used for the secondary evaluation, which evaluates the individual's coping choices and coping resources using a 5-point Likert scale. Lin et al.[20] conducted a Chinese version of Cronbach's α coefficient for threat (0.768), challenge (0.681), beneficial/irrelevant (0.647), and injury/loss (0.820). The Cronbach's α coefficients of this study were as follows: threat (0.75), challenge (0.82), beneficial/irrelevant (0.83), and injury/loss (0.85). The higher the score, the more inclined the individual is to evaluate stroke events.

2.2.4. The Medical Coping Style Questionnaire (MCMQ)

It was compiled by Herman Feifel et al. [21] and mainly evaluates the coping style of stroke patients in the face of illness. The Chinese version conducted by Shen[22] et al. includes 20 items in 3 dimensions: confrontation (8 items), avoidance (7 items), and yielding (5 items). A 4-point Likert scale was used, with higher scores suggesting more use of the corresponding coping style. The Cronbach's α coefficient of the scale was confrontation (0.69), avoidance (0.60), and yielding (0.76). The Cronbach's α coefficient of this study was confrontation (0.793), avoidance (0.52), and yielding (0.844).

2.3. Statistical analysis

Latent class analysis was performed using Mplus8.0 software. LCA model adaptation indicators included the likelihood ratio test, the Akaike information criterion (AIC), the Bayesian information criterion (BIC), and the adjusted Bayesian information criterion (aBIC). The fitting situation is judged by comparing the expected and actual values; the smaller the absolute value is, the better the fitting degree is. The Bootstrap-based likelihood ratio test (BLRT) and the Lo–Mendell–Rubin (LMR) likelihood ratio test were employed for model comparison. The closer the average information index

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(entropy) is to 1, the more accurate the classification is; when entropy ≥ 0.8, the classification accuracy rate exceeds 90%. The chi-square test, analysis of variance (ANOVA), and multivariate logistic regression analysis were performed using SPSS 25.0 software. The test level was $\alpha = 0.05$.

3. Results

3.1. The demographic characteristics

Among the 324 patients, the average age was (60.22 ± 12.95)years old. There were 189 males and 135 females; 296 were married, eight were unmarried, and 20 were widowed. There were 106 cases with primary school education or below, 105 with junior high school education, 76 with high school (secondary school) education, and 37 with college education or above. There were 44 unemployed cases, 49 on-the-job cases, 77 retired cases, and 154 farming cases. The per capita monthly income was ≤ 2000 yuan in 153 cases, 2000~3999 yuan in 119 cases, 4000~5999 yuan in 43 cases, and ≥ 6000 yuan in 9 cases. There were 19 cases of self-paid, 115 cases of employee medical insurance, 187 cases of urban medical insurance (new rural cooperative medical insurance), and three cases of commercial insurance. There were 211 cases of first stroke and 113 cases of two or more strokes. The course of the disease was ≤ one year in 250 cases, 1~3 years in 21 cases, three~five years in 22 cases, and > 5 years in 31 cases.

3.2. Analysis of a model of potential categories of stigma

The stigma variable in this study was a five-category variable. Moreover, the five-category variable was converted into 0 and 1 dichotomous variables. That is, scores of 1 (never) and 2 (occasionally) were regarded as low response rates, which were converted into 0; scores of 3 points (sometimes), 4 points (often), and 5 points (continually) were regarded as high response rates and were converted into 1. The maximum number of potential categories estimated was assumed to be 5, and the number of categories was gradually increased from 1 for potential category analysis. The results in Table 1 show that as the number of categories increases, the AIC, BIC, and aBIC values gradually decrease. When the model category is 3, the aBIC value is the smallest with entropy > 0.8, and both LMR and BLRT have $P < 0.05$. Therefore, we comprehensively considered the three categories as the best model (see Table 1).

Table 1: Model fits for potential categories of stigma (n=324)

Category	AIC	BIC	aBIC	Entropy	LMR	BLRP	Category probability
Category1	5754.301	5814.793	5764.043	—	—	—	1
Category2	5032.428	5157.192	5052.520	0.895	0.000	0.000	0.577, 0.423
Category3	4979.457	5168.495	5009.900	0.884	0.009	0.000	0.466, 0.429, 0.105
Category4	4941.027	5194.336	4981.819	0.828	0.051	0.000	0.432, 0.219, 0.306, 0.043
Category5	4893.122	5210.704	4944.265	0.844	0.058	0.000	0.383, 0.256, 0.111, 0.046, 0.204

Table 2 shows the posterior category probability (average attribution probability) of the three potential categories in each category to verify the reliability of the classification results in Table 1. As shown in Table 2, the probability of correctly attributing each category to each potential category (average attribution probability) ranged from 93.8% to 98.0%, indicating that the subgroup classification results were reliable.

Table 2: The average attribution probability of each potential category (n = 324,%)

	Category (C1)	Category 2(C2)	Category 3(C3)
Category 1(C1)	93.8	2.7	3.5
Category 2(C2)	1.60	98.0	0.4
Category 3(C3)	3.0	0.8	96.2

3.3. Characteristics of potential categories of stroke stigma

The stigma of stroke patients was divided into three potential categories, and the characteristics of

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each category were analyzed and named according to the conditional probability map (see Figure 1). Category 1 (C1) consisted of 151 cases (46.6%) and was named'medium stigma' because it had an overall average score of medium. Category 2 (C2) contained 139 patients (42.9%) with a high overall average score, named 'high stigma type'. Category 3 (C3) contained 34 cases (10.5%) and was named 'low stigma', as the overall average score for this category was low.

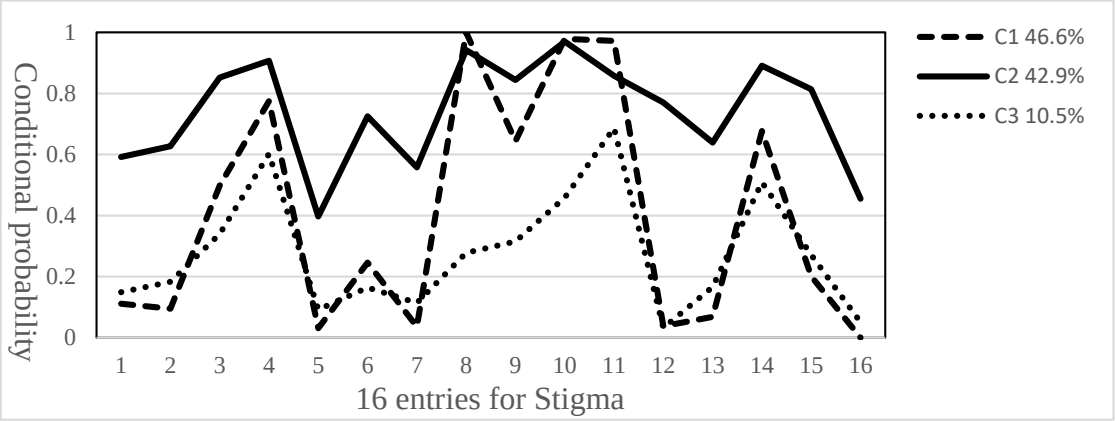

Figure 1: Conditional probability diagram of the potential category of stigma.

The chi-square test was used to compare the conditional probability of potential categories of different entries of stigma. The results are shown in Table 3.

Table 3: Probability of potential category conditions for different entries of stigma (n=324)

Stigma variable	C1	C2	C3	χ^2	*P*
Physical disorders					
① Accepting the impact of life on physical appearance	0.111	0.592	0.149	83.006	<0.001
② Feel embarrassed by slurred speech	0.095	0.627	0.183	101.561	<0.001
③ Life is still fulfilling	0.498	0.852	0.340	52.827	<0.001
④ Confident in persevering with rehabilitation training and recovery as soon as possible	0.775	0.907	0.602	20.622	<0.001
Social interaction					<0.001
⑤ Worried about being a burden to others because of illness	0.031	0.397	0.092	65.291	<0.001
⑥ Uncomfortable with the way others assist after illness	0.246	0.725	0.164	79.030	<0.001
⑦ Smaller circle of interaction after illness	0.036	0.558	0.114	109.354	<0.001
Experience of discrimination					<0.001
⑧ Unfair treatment due to illness	1.0	0.942	0.278	197.632	<0.001
⑨ Others no longer value opinions due to illness	0.644	0.844	0.315	43.503	<0.001
⑩ Discriminated against after illness	0.979	0.970	0.459	135.850	<0.001
⑪ Being treated patiently by others even after the illness	0.970	0.858	0.687	28.729	<0.001
Self-perception					<0.001
⑫ Feeling humiliated after being sick	0.032	0.770	0.032	189.396	<0.001
⑬ Self-blame due to illness	0.068	0.639	0.166	109.786	<0.001
⑭ Still feel useful after being sick	0.677	0.891	0.509	30.770	<0.001
⑮ Feeling less respected after being sick	0.201	0.814	0.271	116.466	<0.001
⑯ Feel sad to see others do something and not be able to do it	0.000	0.455	0.051	99.507	<0.001

3.4. Single-factor analysis of influencing factors of potential categories of stigma

A chi-square test was adopted for single factor analysis of general information (see Table 4).

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Table 4: Single-factor analysis of general information (n=324, n, %)

Variables		C1 (*n*=151)	C2 (*n*=139)	C3 (*n*=34)	χ^2	*P*
Age	<40	6(3.97)	14(10.07)	5(14.71)	13.399	0.037
	40~	45(29.80)	53(38.13)	15(44.12)		
	60~	92(60.93)	64(46.04)	12(35.29)		
	≥80	8(5.30)	8(5.76)	2(5.88)		
gender	Male	85(56.29)	82(58.99)	22(64.71)	0.852	0.653
	Female	66(43.71)	57(41.01)	12(35.29)		
Marital status	Unmarried	2(1.32)	5(3.60)	1(2.94)	1.657	0.798
	Married	139(92.05)	126(90.65)	31(91.18)		
	Widowed spouse	10(6.62)	8(5.76)	2(5.88)		
Education level	Primary school and below	56(37.09)	45(32.37)	5(14.71)	11.995	0.151
	Junior high	47(31.13)	45(32.37)	13(38.24)		
	High School	37(24.50)	31(22.30)	8(23.53)		
	College or higher	11(7.28)	18(12.95)	8(23.53)		
Working status	Unemployed	21(13.91)	18(12.95)	5(14.71)	4.489	0.611
	On-the-job	19(12.58)	24(17.27)	6(17.65)		
	Retirement	31(20.53)	38(27.34)	8(23.53)		
	Farming	80(52.98)	59(42.45)	15(44.12)		
Family residence	City	57(37.74)	59(42.45)	16(47.06)	1.290	0.525
	Rural	94(62.25)	80(57.55)	18(52.94)		
Family per capita monthly income(RMB)	<2000	79(52.32)	61(43.88)	13(38.24)	15.932	0.014
	2000~	52(34.44)	57(41.01)	10(29.41)		
	4000~	19(12.58)	14(10.07)	10(29.41)		
	≥6000	1(0.66)	7(5.04)	1(2.94)		
Medical expenses payment method	Self-financed	8(5.30)	10(7.19)	1(2.94)	2.354	0.884
	Employees' health insurance	52(34.44)	49(35.25)	14(41.18)		
	Urban Health Insurance (New Agricultural Cooperative)	90(59.60)	78(56.12)	19(55.88)		
	Commercial Insurance	1(0.66)	2(1.44)	0(0.00)		
Stroke frequency	First onset	93(61.60)	98(70.50)	20(58.82)	4.869	0.301
	Two or more times	58(38.41)	41(29.50)	14(41.18)		
Course of disease(years)	<1	112(74.17)	111(79.86)	27(79.41)	8.517	0.203
	1~	11(7.28)	8(5.76)	2(5.82)		
	3~	10(6.62)	7(5.04)	5(14.71)		
	≥5	18(11.92)	13(9.35)	0(0.00)		
With chronic disease	Yes	112(74.17)	98(70.50)	25(73.53)	0.508	0.776
	No	39(25.83)	41(29.50)	9(26.47)		
Physical dysfunction	Yes	79(52.32)	39(28.06)	17(50.00)	18.611	<0.001
	No	72(47.68)	100(71.94)	17(50.00)		

ANOVA was conducted for a single-factor analysis of the effect of cognitive appraisal and coping style on potential categories of stigma, as shown in Table 5.

Table 5: Single-factor analysis of influencing factors (n=342, $\overline{X} \pm S$)

Variables	C1 (*n*=151)	C2 (*n*=139)	C3 (*n*=34)	*F*	*P*
Challenge	17.42±2.80	23.78±3.59	18.03±3.48	54.065	<0.001
Threat	17.81±4.20	12.35±3.08	17.41±4.94	57.041	<0.001
Injury/Loss	31.36±4.31	32.35±5.94	28.71±6.79	104.161	<0.001
Beneficial/Irrelevant	7.37±3.34	7.84±3.18	9.29±3.86	65.311	<0.001
Secondary evaluation	17.25±1.92	16.95±2.20	16.53±2.39	1.910	0.150
Confrontation	15.68±4.85	9.13±3.92	16.32±5.18	21.988	<0.001
Avoidance	18.13±3.39	20.65±3.022	17.91±3.32	45.234	<0.001
Yielding	10.69±4.33	17.12±2.37	11.88±4.65	44.116	<0.001

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3.5. Multicategorical logistic regression analysis of potential categories of stigma

Taking the three potential categories of stigma as dependent variables, the statistically significant variables in the single-factor analysis are independent variables. Multicategorical logistic regression analysis was conducted with an inclusion criterion of 0.05 and an exclusion criterion of 0.1. For information on the assignment of independent variables and the configuration of dummy variables, please refer to Table 6. Multicategorical logistic regression analysis, with low morbidity stigma (C3) as the reference category, compared with high morbidity stigma (C2) and medium morbidity stigma (C1). The results are shown in Table 7.

Table 6: Independent variable assignment and dummy variable settings

Independent variables	Assignment form
Age	<40=1,40~=2,60~=3,≥80=4
Per capita monthly income (RMB)	<2000=1,2000~=2,4000~=3,≥6000=4
Physical dysfunction	No=1,Yes=2
CAHS	Numerical variables
MCMQ	Numerical variables

Table 7: Multicategorical logistic regression analysis of potential categories of stigma (n=324)

Category		Partial regression coefficient (B)	Standard Error(SE)	Wald	*df*	*P*	Exp(B) (*OR*)	95% of Exp(B) *CI*	
								Lower	Upper
C1	Intercept	2.141	3.253	.433	1	.511			
	Challenge	-.186	.097	3.653	1	.056	.831	.687	1.005
	threat	.158	.073	4.757	1	.029	1.171	1.016	1.350
	Injury/Loss	.213	.060	12.527	1	.000	1.237	1.099	1.391
	Beneficial/Irrelevant	-.211	.079	7.051	1	.008	.810	.693	.946
	Confrontation	-.059	.057	1.082	1	.298	.943	.844	1.054
	Avoidance	-.055	.075	.540	1	.462	.946	.816	1.097
	Yielding	-.163	.072	5.169	1	.023	.850	.739	.978
	Income1	-.526	1.675	.099	1	.754	.591	.022	15.752
	Income2	-.701	1.671	.176	1	.675	.496	.019	13.134
	Income3	-1.386	1.699	.666	1	.415	.250	.009	6.984
	Income4	0[b]	.	.	0	.	.	.	.
	Age1	-1.618	1.221	1.757	1	.185	.198	.018	2.169
	Age2	-.852	1.000	.726	1	.394	.426	.060	3.030
	Age3	.382	.981	.152	1	.697	1.466	.214	10.029
	Age4	0[b]	.	.	0	.	.	.	.
	Physical dysfunction1	.057	.481	.014	1	.906	1.058	.412	2.717
	Physical dysfunction2	0[b]	.	.	0	.	.	.	.
C2	Intercept	7.684	3.316	5.371	1	.020			
	Challenge	-.210	.100	4.403	1	.036	.810	.666	.986
	threat	.183	.082	5.057	1	.025	1.201	1.024	1.409
	Injury/Loss	.006	.060	.010	1	.919	1.006	.894	1.132
	Beneficial/Irrelevant	-.022	.082	.070	1	.792	.979	.833	1.150
	Confrontation	.016	.061	.073	1	.788	1.016	.903	1.144
	Avoidance	-.232	.083	7.778	1	.005	.793	.674	.933
	Yielding	-.161	.085	3.590	1	.058	.851	.721	1.006
	Income1	-.550	1.451	.144	1	.705	.577	.034	9.915
	Income2	-.643	1.438	.200	1	.655	.526	.031	8.801
	Income3	-2.194	1.487	2.177	1	.140	.111	.006	2.055
	Income4	0[b]	.	.	0	.	.	.	.
	Age1	-1.733	1.258	1.900	1	.168	.177	.015	2.079
	Age2	-1.233	1.095	1.268	1	.260	.291	.034	2.492
	Age3	-.095	1.086	.008	1	.930	.909	.108	7.636
	Age4	0[b]	.	.	0	.	.	.	.
	Physical dysfunction1	.078	.517	.023	1	.880	1.081	.393	2.976
	Physical dysfunction2	0[b]	.	.	0	.	.	.	.

**Cox and Snell R^2: 0.529; Nagelkerke R2: 0.621; McFadden R2: 0.394.*

The results of Table 7 show that compared with patients with low stigma (C3), the stigma of patients with moderate stigma (C1) was positively correlated with the cognitive evaluation of injury and threat; that is, the higher the scores of injury (OR = 1.237) and threat (OR = 1.171), the more patients tended to have medium stigma. It was negatively correlated with beneficial/irrelevant cognitive

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evaluation and yielding coping style; the higher the scores of beneficial/irrelevant cognitive evaluation (OR = 0.810) and yielding coping style (OR = 0.850), the more patients tended to have low stigma.

Compared to patients with low stigma (C3), the stigma of patients with high stigma (C2) was positively correlated with threat cognitive evaluation; that is, the higher the score of threat cognitive evaluation (OR = 1.201), the more patients had high stigma. It was negatively correlated with challenge cognitive evaluation and avoidance coping style; the higher the scores of challenge cognitive evaluation (OR = 0.810) and avoidance coping style (OR = 0.793), the more patients tended to have low stigma.

4. Discussion

4.1. The stigma of stroke patients can be divided into three types

The results showed that the stigma of stroke patients had noticeable classification features, which were divided into three potential categories: high stigma (C2), medium stigma (C1), and low stigma (C3). Among them, the middle Stigma (C1) accounted for the highest proportion (46.6%), followed by the high stigma type (C2) accounted for 42.9%, and the low stigma type (C3) accounted for the lowest proportion (10.5%), indicating a high level of stigma in stroke patients. It is suggested that nursing staff should pay attention to the psychological problems of stroke patients.

Figure 1 and Table 3 show that the top three conditional probabilities for each of the three latent categories of stigma include entry 4, "Confident to persevere with rehabilitation and training and recover as soon as possible" (the physical dysfunction dimension, which is reverse scored). This was followed by entry 8, "Unfair treatment due to illness" (the experience of discrimination dimension), and entry 11, "Being treated patiently by others even after illness" (the experience of discrimination dimension, which is reverse scored). This indicates that the stigma of patients is dominated by physical dysfunction and experience of discrimination, suggesting that medical staff should strengthen rehabilitation training of stroke patients to promote recovery of bodily functions. At the same time, it strengthens humanistic care to guide patients to face the changes in physiological functions caused by stroke and maintain their self-esteem.

Patients with high stigma (C2) have a significantly higher probability of response regarding social interaction, self-perception, and physical dysfunction. Because of physical dysfunction, these patients have smaller social circles, worry about being a burden to others, and worry about being discriminated against by others in social interaction. This negative self-perception often accompanies patients, forming a vicious circle in the long run[23]. In addition, the highest proportion of patients in this category were over 70 years old (68.3%). Stroke-related functional impairment, long-term dependence on others, negative emotions, and economic burden after illness will bring shame experience to stroke patients. Stigma will reduce patients' social activities and worry about becoming a burden to others, resulting in shame, guilt, worthlessness, and other manifestations. Therefore, patients should be encouraged to actively seek social support networks in nursing. At the same time, care workers should actively mobilize patients' families, friends, and others to care for, support, and encourage patients, improve patients' confidence in overcoming diseases, and reduce patients' negative emotions of stigma.

4.2. Negative cognitive evaluation is a significant risk factor for different potential categories of stigma in stroke patients

Table 7 shows that compared with patients with low stigma, the stigma of patients with medium stigma was positively correlated with injuring and threatening negative cognitive evaluations and negatively correlated with irrelevant/beneficial cognitive evaluations, similar to domestic and foreign research[16-18]. It shows that patients with medium stigma tend to have an injury and threatening negative cognitive evaluation. The injury and threatening cognitive evaluation influence medium stigma; the more negative emotions stroke patients feel during their illness, such as injury and loss, the higher the patient's level of stigma. To analyze the reasons, among the subjects of this study, stroke patients with a primary school education and below accounted for 37.1%, with relatively low educational levels and insufficient understanding of their consequences after the illness. Most stroke patients have physical dysfunction. A total of 58.33% of the patients in this study had physical dysfunction, which affected the patient's self-care ability. Patients experienced damage from stroke events to the patient's physical function. That is, the evaluation of stroke stress events tended to be injury/loss negative evaluation, the patient's self-esteem was impaired, and the patient had a sense of

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stigma. After the illness, it also affects other social functions, resulting in the sense of loss, loss of interest in other things, and aggravation of the patient's stigma.

Table 7 shows that stigma was positively correlated with threatening cognitive evaluation and negatively correlated with challenging cognitive evaluation in patients with high stigma compared to those with low stigma. Patients with high stigma tend to have a threatening cognitive evaluation, and threatening cognitive appraisal is an influential factor in high stigma. It shows that in the process of illness, the more emotions such as injury or loss the patient feels, the higher the level of stigma. Analyzing the reasons for this, when patients have a premonition that their work and life will be affected by dysfunction after a stroke, they will evaluate the stressful event of having a stroke as a threat. They are prone to anxiety and depression. Some studies[18,24] have found that stigma positively correlates with negative emotions. Negative emotions make patients unable to understand their diseases fully and cause them to worry about prognosis, thus aggravating the stigma of patients.

Patients with low stigma are inclined to have irrelevant/beneficial cognitive and challenging cognitive evaluations, influencing factors of patients with low stigma. It shows that patients with stroke have lower levels of stigma during their illness when they perceive that illness is beneficial and challenging to change their poor health behavior.

Therefore, nursing staff should pay attention to understanding the health cognition of stroke patients, mobilizing their positive cognition, and minimizing their negative cognition, while also educating patients to accept the reality of stroke events, enhancing their confidence in overcoming the disease, and reducing their stigma.

4.3. The protective effect of negative coping styles on different potential categories of stigma in stroke patients must be further verified

Compared to low stigma, the stigma of patients with medium stigma was negatively correlated with the yielding coping style, indicating that the higher the yielding coping style score, the more likely the patients were to have low stigma. Compared to low-stigma patients, the stigma of high-stigma patients was negatively correlated with avoidance coping style, indicating that the higher the score of avoidance coping style, the more patients tend to have low stigma. The above shows that the avoiding coping style is a protective factor against high stigma, and the yielding coping style is a protective factor against medium stigma.

The results of this study are inconsistent with studies such as Myers[25] and Tan[26]. Regarding the reasons, in the general data, women with medium and high stigma accounted for 43.7% and 41%, respectively, while women with low stigma accounted for 35.5%. Regarding occupational composition, 62.3% and 57.6% of rural patients had medium and high levels of stigma, respectively. This indicates that the data are dominated by rural female patients who perform domestic work, participate less in social activities, pay less attention to their image change and have a relatively low level of stigma. When faced with a stroke event, patients often adopt a negative attitude of avoidance and yielding due to the lack of relevant knowledge about psychological adjustment and deny the existence of negative experiences of stigma. It can distract or divert the patient's attention from the disease to some extent. It helps alleviate the patient's negative emotional response to stigma. Although the negative coping strategies of avoidance and yielding can temporarily alleviate the negative emotions of stigma, long-term use often leads to patients feeling powerless, lacking confidence, unable to face calmly, and unable to view the disease objectively. In addition, it also affects the patient's active medical treatment and compliance behavior, which is not conducive to the rehabilitation of patients. The protective effect of negative coping styles on different potential categories of stigma in stroke patients must be further verified.

Therefore, nursing staff should provide further psychological guidance according to the different coping styles of patients. Specifically, they should guide patients to adopt appropriate coping styles—both negative ones (e.g., yielding and avoidance) and positive ones (e.g., catharsis)—while helping them objectively view and accept the reality of their illness, thereby reducing negative emotions such as stigma and promoting recovery.

5. Conclusions

In summary, the stigma of stroke patients has prominent classification characteristics, which are divided into three potential categories: high stigma, medium stigma, and low stigma. Patients with

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different potential types of stigma adopt different cognitive evaluations and coping styles. Patients with medium stigma are more inclined to injury/loss and threatening cognitive evaluation. Patients with high stigma are more inclined to threatening cognitive evaluations, and patients with low stigma prefer beneficial/irrelevant cognitive evaluations and challenge cognitive evaluations. Targeted interventions should be carried out for different potential categories of stigma in stroke patients. The results of this study show that avoidance and yielding negative coping styles have a protective effect on the stigma of stroke patients, which is inconsistent with previous research results and needs further verification.

References

[1] Writing Committee of China Stroke Prevention and Control Report. Summary of the China Stroke Prevention and Control Report 2019[J]. Chinese Journal of Cerebrovascular Diseases, 2020, 17(05):272-281.
[2] Tang XJ, Huang Q, Zhu HP. Progress of research on stigma in stroke patients[J]. Chinese General Practice Nursing,2019,17(17):2091-2095.
[3] Deng CY, Zhao Y, Lu Q. Research progress of stigma in stroke patients[J]. Chinese Journal of Nursing, 2016,51(06):733-737.
[4] Goffman. Stigma: Notes on The Management of A Spoiled Identity[J].American Sociological Review, 1986,29(05):120-135.
[5] Kitara DL, Aloyo J. HIV/AIDS Stigmatization, the Reason for Poor Access to HIV Counseling and Testing (HCT) Among the Youths in Gulu (Uganda)[J]. Afr J Infect Dis. 2012;6(1):12-20.
[6] Deaux K, Reid A, Mizrahi K, et al. Parameters of social identity[J]. Journal of Personality & Social Psychology, 1995,68(68):280-291.
[7] Jones EE, Farina A, Hastorf A, et al. Social stigma: the psychology of marked relationships[M]. New York: Freeman and Company, 1984.
[8] Link BG, Phelan JC. Stigma and its public health implications. The Lancet, 2006,367(9509): 528.
[9] Rao D, Choi S W, Victorson D, et al. Measuring stigma across neurological conditions: the development of the stigma scale for chronic illness (SSCI)[J].Qual Life Res,2009,18(05):585-595.
[10] Molina Y, Choi S W, Cella D, et al. The stigma scale for chronic illnesses 8-item version (SSCI-8): development, validation and use across neurological conditions[J].Int J Behav Med, 2013, 20(03):450-460.
[11] Fife BL, Wright ER.The dimensionality of stigma: a comparison of its impact on the self of persons with HIV/AIDS and cancers[J]. J Healthy SOC Behave, 2000, 41 (01):50-67.
[12] Pan AW, Chung LI, Fife BL, et al. Evaluation of the psychometrics of the social impact scale: a measure of stigmatization[J].Int J Rehabil Res, 2007, 30 (03) :235-238.
[13] Zhu MF, Zhou HZ, Deng EY, et al. Development, reliability and validity testing of the Stigma Scale for Stroke Patients[J]. Journal of Nursing Science,2019,34(01):70-73.
[14] Zhu MF, Zhou HZ, Zhang WB, et al. The Stroke Stigma Scale: a reliable and valid stigma measure in patients with stroke[J].Clinical Rehabilitation,2019,33(11):1800.
[15] Folkman S, Lazarus RS, Dunkel-Schetter C, et al. Dynamics of a stressful encounter: cognitive appraisal, coping, and encounter outcomes[J]. Journal of personality and social psychology, 1986, 50(5): 992-1003.
[16] Chen HM. Study the relationship between poststroke fatigue and stigma in patients with ischemic stroke [D]. Yangzhou University, 2020.
[17] Bucki B, Spitz E, Baumann M. Emotional and social repercussions of stroke on patient-family caregiver dyads: Analysis of diverging attitudes and profiles of the differing dyads[J]. PLoS One. 2019,14(4): e0215425.
[18] Ge C, Zhang H, Zhu G, et al. Intervention study of Snyder's hope theory on the stigma of stroke in young and middle-aged patients: a randomized trial[J]. Ann Palliat Med. 2021,10(5):5721-5728.
[19] Kessler T A. The cognitive appraisal of health scale: Development and psychometric evaluation[J]. Research in Nursing & Health, 1998, 21(01): 73-82.
[20] Lin XH, Peng X, Zhang WX, et al. Survey on health perception evaluation and coping styles of renal transplant recipients[J]. Journal of Nursing Science, 2015, 30(18):9-12.
[21] Feifel H, Strack S, Nagy V T. Coping strategies and associated features of medically ill patients.[J]. Psychosomatic Medicine, 1987, 49(6): 616-625.
[22] Shen XH, Jiang QJ. Report on the 701 case test of the Chinese version of the Medical Coping Style Questionnaire[J]. Chinese Journal of Behavioral Medicine and Brain Science,2000(01):22-24.
[23] Wang Y, Liu HW, Zhang SH, et al. Correlation analysis of self-concept and stigma in 523 hospitalized stroke patients [J].Journal of Nursing(China), 2020,27 (21): 61-63.
[24] Tsang HW, Ching SC, Tang KH, et al. Therapeutic intervention for internalized stigma of severe

ISSN 2616-5791 Vol. 7, Issue 3: 48-57, DOI: 10.25236/AJMHS.2026.070307

mental illness: a systematic review and meta-analysis[J]Schizophr Res, 2016, 173(1/2): 45-53.
[25] Myers S B, Manne S L, Kissane D W, et al. Social–cognitive processes associated with fear of recurrence among women newly diagnosed with gynecological cancers[J].Gynecologic oncology, 2013(No.1):120–127.
[26] Tan JH. Correlation analysis between stigma and coping style in patients with schizophrenia[J]. Anhui Medical and Pharmaceutical Journal, 2019,23 (08): 1536–1538.