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ORIGINAL RESEARCH

Discharge Readiness and Associated Factors Among Patients with Coronary Heart Disease After Stent Implantation: A Cross-Sectional Single Center Study

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Aim: The aim of this study is to describe the readiness of hospital discharge of patients with coronary heart disease (CHD) who have undergone coronary stent implantation and explore its influencing factors.

Methods: This is a cross sectional single center study. Convenient sampling was used to select patients who underwent coronary stent implantation in the Cardiovascular Department of a tertiary hospital in Chengdu from October 2021 to April 2022 as the research subjects. Data were collected using the General Information Questionnaire, which included domains such as uncertainty in illness, the quality of discharge teaching, perceived social support, and health locus of control. The Readiness for Hospital Discharge Scale (RHDS) was used to assess readiness for hospital discharge. Multiple regression adjusted for relevant confounders was used to determine the associations.

Results: A total of 276 questionnaires were distributed, and 263 valid questionnaires were collected. The average item score of RHDS is 7.66 ± 1.13. Multiple regression analysis indicated that the influential factors of RHDS of patients who underwent coronary stent implantation included: deliver skill (β = 0.43), marital status (β = 0.12), living alone (β = −0.14), inconsistency (β = −0.22) and household income per capita (β = −0.12) (all $P<0.05$). The RHDS score of patients with CHD after coronary stent implantation were at a moderate level.

Conclusion: Discharge readiness was significantly associated with delivery skill, marital status, living alone, inconsistency of information, and household income per capita. The present study highlights the need for improved educational interventions and tailored discharge planning.

Keywords: percutaneous coronary intervention, readiness of hospital discharge, uncertainty in illness, social support from family, discharge teaching

Introduction

Coronary heart disease (CHD) has become the most important disease that endangers human health.[1–5] According to the global disease burden survey data, CHD ranks first among the global causes of death, with China being one of the countries with the heaviest burden of cardiovascular disease. It is estimated that there are 330 million current patients with cardiovascular disease in China, including 11.39 million with CHD.[6] Percutaneous Coronary Intervention (PCI) is one of the safest and most effective treatment methods for revascularization of CHD. In 2018, the number of PCI cases in China was over 910,000, ranking first in the world, with 1.46 stents implanted per capita. The estimated number of stents for the year was around 1.33 million. In 2020, the number of PCI cases in China exceeded 1 million. With the rapid development of PCI in China, the hospitalization time of patients is gradually shortening, leading to patients not fully

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mastering the knowledge and skills required for disease self-management when discharged, thereby increasing the risk of readmission. Multiple studies have shown that patients after PCI face the risk of early unplanned readmission, which can undermine patients' confidence in self-management, increase medical costs, and worsen clinical outcomes.[7–9] Therefore, identifying preventable high-risk readmission patients after PCI is crucial.

Discharge readiness, as a predictive factor for post-discharge outcomes, has become an important indicator for evaluating the quality of medical care in medical institutions. Multiple studies have shown that inadequate discharge readiness increases the risk of early unplanned readmission, emergency treatment rates, and difficulties in health management response.[10–13] Discharge readiness when provided by nurses before hospital discharge can help prepare patients after PCI and their family members to safely transition between hospital and home.

On the other hand, care transition which is defined as hospital discharge or movement from one health care setting to another, are currently a major concern of health care providers and policy makers. The transition theory deals with the process of change and adaptation during transitions, which may help to understand how patients adapt to the new health status after PCI and what factors influence their readiness for discharge.[14] Additionally, demography data, such as age, social isolation, income, education level, and health literacy have been identified as factors associated with the patient's ability to understand discharge instructions.[15–18]

Although there have been extensive studies on the influencing factors of discharge readiness in recent years, there are few studies on the discharge readiness of patients with CHD after stenting, and the influencing factors involved are limited to demography characteristics and the quality of discharge guidance, which cannot fully reflect the influencing factors of discharge readiness of this group.

The aim of this study is to explore the influence of demography data, disease-related data, illness uncertainty, family support, health locus of control and quality of discharge teaching on the discharge readiness of CHD after stenting under the guidance of transition theory.

Methods

Study Design and Data Collection

A cross-sectional survey was conducted on CHD who underwent stent implantation in the Cardiovascular Department of a tertiary hospital with 4300 beds located in the city of Chengdu, Southwest China. The inclusion criteria include: ① meeting the diagnostic criteria for CHD by WHO and the International Society of Cardiology; ② Those who are ≥18 years old and voluntarily participate in this study; ③ Patients who have undergone stent implantation successfully. Exclusion criteria include: ① individuals with cognitive or mental disorders; ② Those with severe damage to the functions of malignant tumors and other important organs (liver, lungs, kidneys); ③ Transfer to another medical institution for further treatment after discharge.

Enrollment Process

Using convenience sampling, the participants who met the inclusion criteria were recruited from October 2021 to April 2022. According to Kendall's sample size calculation principle, the sample size should be 5–10 times the number of variables.[19] This study included 31 independent variables, encompassing demographical and disease-related characteristics (15 variables), uncertainty in illness (4 dimensions), quality of discharge teaching (3 dimensions), discharge readiness (3 dimensions), perceived social support (3 dimensions), and health locus of control (3 dimensions). Consequently, the minimum sample size required was 155. To account for potential invalid samples, the sample size was increased by 20%, resulting in a minimum of 186 participants. In total, 276 questionnaires were distributed, and 263 valid responses were collected.

Measurements

Demographical and Disease-Related Characteristics

The content includes: age, gender, ethnicity, place of residence, whether living alone, marital status, education level, work status, medical expense payment method, family income, caregiver after discharge, planned admission, length of hospitalization, times of stent implantation, and the number of stent implanted.

Mishel Uncertainty in Illness Scale (MUIS)

Mishel developed the scale based on the theory of disease uncertainty to evaluate the uncertainty level of patients' disease, treatment, and hospitalization related events.[20] The scale consists of four dimensions: inconsistency, complexity, ambiguity, and unpredictability, with a total of 33 items. Each item is scored using the Likert 5-point method, with "strongly disagree" being recorded as 1 point and "strongly agree" being recorded as 5 points. Among them, item 15 is not scored, while items 6, 7, 10, 12, 21, 25, 27, 28, and 30–33 are scored in reverse. The sum of the scores in each dimension is the total score of the scale, and the higher the score, the higher the level of disease uncertainty of the patient. The Cronbach's α of the English version of the scale ranges from 0.65 to 0.95. The content validity index (CVI) of the Chinese version of the scale is 0.90. The Cronbach's α of the overall scale is 0.90, which is similar to the English version.[21]

Revised Family Support Scale (PSS-Fa)

This scale was developed by Procidano and Heller in 1983 to assess individuals' perceived satisfaction with support, information, and feedback from family members.[22] In 2011, Yang sinicized it according to China's national conditions.[23] The Chinese version of the scale consists of 15 items, with the answer to each item being "yes" or "no". The answers "yes" and "no" are scored as 1 and 0 respectively; Items 3, 13, 14, and 15 are scored in reverse. The total score is 0–15 points, and the higher the score, the higher the level of family support. Cronbach 'α of this scale is 0.90.

Multidimensional Health Locus of Control Scales (MHLC Scales)

This scale was developed by Wallston et al in 1978 to assess people's attribution attitudes towards their own health status from the perspective of psychological control.[24] The scale is divided into three dimensions: internal control source (items 1, 6, 8, 12, 13, 17), external authoritative person control source (items 3, 5, 7, 10, 14, 18), and opportunity/fate control source (items 2, 4, 9, 11, 15, 16). Each item is assigned a score of 1–6 points using the Likert 6-point method, from "strongly disagree" to "strongly agree", without measuring the total score of the table Each dimension has a score of 6–36 points, and the higher the score of this dimension, the more it indicates that it is a source of dominant health psychological control. Cronbach 'α of this scale ranges from 0.655 to 0.705, with content validity ranging from 0.90 to 0.94.

Quality of Discharge Teaching Scale (QDTS)

The scale was developed by Weiss in 2006 and includes three dimensions: content needed, content received, and the delivery of discharge teaching, a total of 24 items.[12] It is a rating scale with 11 rating levels ranging from 0 to 10 for each item. The total score of the scale is the sum of the scores of content received dimension and delivery of discharge teaching dimension. The higher the total score, the higher the quality of discharge teaching. The Cronbach's α coefficient of the English version of the overall scale is 0.92, and the Cronbach's α coefficients for each dimension range from 0.85 to 0.93. The Cronbach's α coefficient of the Chinese version of the overall scale is 0.92, Cronbach's α coefficient for each dimension ranges from 0.92 to 0.96, indicating comparable reliability to English version. The content validity (CVI) of the Chinese version of the scale is 0.83. Weiss, the creator of the scale, suggested using the content gap dimension, which is the difference between content received and content needed (such as gap 1=1b-1a), instead of the content needed dimension.

Readiness of Hospital Discharge Scale (RHDS)

Weiss developed the RHDS based on Meleis' theory of intermediate transition period. The scale includes four dimensions: Personal Status, Knowledge, Coping Ability, and Expected Support, with a total of 23 items.[20,25] This scale is a rating scale with 11 rating levels ranging from 0 to 10 for each item. Among them, item 1 is a yes or no question and answer without scoring, while items 3 and 6 are scored in reverse. The total score of the scale is obtained by adding up the scores of each item. The higher the score, the better the readiness for discharge. The content validity (CVI) of the original English scale was 0.97, and the Cronbach of the overall scale α 0.93, Cronbach's α for each dimension ranges from 0.82 to 0.90. The content validity (CVI) of the Chinese version of the scale is 0.97, and the Cronbach α of the overall scale is 0.89, Cronbach's α for each dimension ranges from 0.78 to 0.96. The validity and reliability between the English version and the Chinese version are consistent.

Statistical Analysis

The SPSS 25.0 statistical software was used for analysis. Continuous values were described using means and standard deviations (SDs), while discrete values were presented using frequencies and percentages or medians and interquartile ranges (IQRs). The results were reported as mean ± standard deviation for normally distributed data, medians and interquartile ranges for data that deviated from normal distribution and percentages for nominal and ordinal scale data. The assessment of distribution was based on the Shapiro–Wilk test. Measurement data were described using mean ± standard deviation or medians and interquartile ranges, depending on whether they conformed to a normal distribution. The choice of specific statistical tests was justified based on data distribution: the *t*-test was used for comparing the means of two groups with normally distributed data; the Mann–Whitney test was applied for comparing differences between two independent groups with non-normally distributed data; one-way analysis of variance (ANOVA) was used to compare means among three or more groups with normally distributed data; Pearson correlation analysis was employed to explore relationships between variables with normally distributed data; and Spearman correlation analysis was used for exploring relationships between variables with non-normally distributed data.

Multiple linear regression was used to identify the influencing factors of discharge readiness of patients with CHD after stent implantation. For the inclusion in the regression model, variables were selected through a thorough literature review and expert consultation to ensure that they comprehensively cover the aspects of discharge readiness. Statistical assumptions for each test, such as normality, linearity, and homoscedasticity, were checked and met to validate the use of the regression model. The analysis used the significance level $p < 0.05$.

Ethical Consideration

This study was approved by the Biomedical Ethics Committee of West China Hospital, Sichuan University.

Results

Demographic and Disease-Related Characteristics

The participants were mainly male (69.2%); The mean age is 64.7 ± 12.98 years, and the majority of residents are in cities (63.1%); the median hospitalization duration is 3 days; More details can be found in Table 1.

Table 1 The Comparison of Patients and Disease-Related Characteristics with Their RHDS Mean Scores (n = 263)

Variable	n(%)	Score on RHDS (M±SD)	*P*
Gender			0.088
Male	182(69.2)	7.74±1.14	
Female	81(30.8)	7.48±1.10	
Ethnic group			0.020
Han ethnicity	241(91.6)	7.71±1.22	
Minority	22(8.4)	7.12±1.15	
Residence			0.386
City	166(63.1)	7.71±1.11	
Rural area	97(36.9)	7.58±1.17	
Living Alone			0.001
Yes	31(11.8)	6.89±1.20	
No	232(88.2)	7.76±1.07	
Marital status			0.020
Married	215(84.8)	7.74±1.13	
Single/Divorced/Widowed	48(15.2)	7.32±1.09	

(*Continued*)

Table 1 (Continued).

Variable	n(%)	Score on RHDS (M±SD)	*P*
Education level			0.434
Middle school or below	159(60.4)	7.61±1.11	
High school/technical secondary school	47(17.9)	7.61±1.11	
Post-secondary school or above	57(21.7)	7.83±1.21	
Working state			0.318
Employed	73(27.8)	7.80±1.13	
Unemployed	36(13.7)	7.76±1.19	
Retired	154(58.6)	7.57±1.11	
Per capita household income (RMB)			0.020
≤2000	73(27.7)	7.78±0.95	
2001~4000	102(38.8)	7.41±1.20	
≥4000	88(33.5)	7.85±1.15	
Caregiver after discharge			0.131
Yes	235(89.4)	7.70±1.12	
No	28(10.6)	7.35±1.22	
Planned admission			0.571
Yes	187(71.1)	7.68±1.12	
No	76(28.9)	7.60±1.18	
Times of stent implantation			0.253
1	182(69.2)	7.62±1.44	
2	72(27.4)	7.67±1.06	
≥3	9(3.4)	8.26±1.44	
Number of stent implanted			0.500
1	85(32.3)	7.54±1.14	
2~3	127(48.3)	7.73±1.15	
≥4	51(19.4)	7.69±1.11	
Hospitalization duration			0.070
Age			0.067

Abbreviations: RHDS, readiness of hospital discharge scale; RMB, ren min bi; n, number; M±SD, mean ± standard deviation.

MHLC, Family Support, Uncertainty Levels, QDTS, and RHDS

The scores of various dimensions of MHLC in participants, from high to low, are: External HLC, Internal HLC, and Chance HLC (Table 2). It showed that the HLC for respondents was the most from External HLC (44.5%), followed by Internal HLC (31.9%).

The family support scale scores of respondents is ranged from 4 to 15, with mean score of 13.32 ± 1.64, among which, 93.2% cases had high family support, with only one patient having low family support.

The mean score of illness uncertainty is 83.40 ± 9.94, which is at a moderate level; The mean score of each dimension is ranked from high to low as follows: unpredictability, uncertainty, inconsistency, and complexity (Table 2). A total of 49 patients (18.6%) had a low level of illness uncertainty, 214 patients (81.4%) had a moderate level, and no high level patients.

The average score of discharge teaching quality is 7.74 ± 1.29, the average scores for content received, the delivery of discharge teaching, and content gap were shown in Table 2. A total of 49.0% of cases were defined as having a moderate quality of discharge teaching, and 43.3% of patients as having a good quality of discharge teaching.

A total of 228 (86.7%) patients selected "yes" (ready for back to home) for the first dichotomous question. The average discharge readiness score of cases is 7.66 ± 1.13, and the average scores of Personal Status, Knowledge, Coping Ability, and Expected Support dimension were depicted in Table 2.

Table 2 Scores of MHLC, Family Support, Uncertainty Levels, QDTS, and RHDS

	Scores (M±SD)
MHLC	
External	26.01 ± 4.15
Internal	25.17 ± 4.53
Chance	18.16 ± 6.21
Family Support	13.32 ± 1.64
Illness uncertainty	83.40 ± 9.94
Unpredictability	3.11 ± 0.48
Uncertainty	2.72 ± 0.35
Inconsistency	2.34 ± 0.36
Complexity	2.30 ± 0.42
QDTS	7.74 ± 1.29
Content received	6.93 ± 1.96
Delivery of discharge teaching	7.86 ± 1.32
Content gap	−1.38 ± 1.67
RHDS	7.66 ± 1.13
Personal Status	7.61 ± 1.37
Knowledge	7.36 ± 1.48
Coping Ability	7.84 ± 1.40
Expected Support dimension	8.15 ± 1.52

Abbreviations: RHDS, readiness of hospital discharge scale; MHLC, multidimensional health locus of control scale; MUIS, mishel's uncertainty in illness scale; QTDS, quality of discharge teaching scale; M±SD, mean ± standard deviation.

Correlation of RHDS and Other Variables

Mono-factor analysis showed that ethnicity, residential status, marital status, household income, Internal HLC, inconsistency, uncertainty in illness, quality of discharge teaching and various dimensions had an effective on RHDS scores, with statistically significant differences ($P<0.05$), as shown in Tables 1 and 3.

Associated Factors for RHDS

Multiple linear regression analysis showed that teaching skills, inconsistency, living alone, marital status, and household income are factors affecting RHDS. Adjusting *R2* indicates that five variables collectively explain 32.0% of the total variance in the mean score of discharge readiness. Among them, teaching skills and marriage are positive influencing factors for discharge readiness, while inconsistency, household income (2001–4000 yuan/month/person) and living alone are negative influencing factors for discharge readiness in CHD after coronary stenting; teaching skills are its biggest influencing factor (β= 0.430), referring to Table 4 for details.

Discussion

Discharge Readiness of CHD After Coronary Stenting

The mean score of RHDS is 7.66 ± 1.13, which is at a moderate level (7–7.9 points), consistent with the research on acute coronary syndrome patients in China (7.25 ± 1.09), but higher than the research among elderly patients in Ireland (6.99 ± 1.33).[26,27] This may be due to the differences in RHDS among different studies and disease types, after stent implantation, most patients felt that they were ready for discharge. In this study, the results show that 86.7% of patients are prepared for discharge, whereas 75.7% of patients had high discharge readiness (RHDS score >7), this may be due to patients overestimate their discharge readiness, misunderstandings or desire to return home leading to report false information.[28,29] It indicates that healthcare providers need to further evaluate the patient's discharge readiness from different dimensions and provide targeted interventions to improve the patient's discharge readiness.

Table 3 Correlations Between RHDS and Variables (n = 263)

Variables	Discharge Readiness
Family support	0.036
MHLC	
Internal	0.145*
Powerful Others	0.108
Chance	−0.044
MUIS	
Inconsistency	−0.270**
Ambiguity	−0.053
Complexity	−0.115
Unpredictability	−0.046
Uncertainty	−0.138*
QTDS	
Content received	0.310**
Content gap	0.208**
Delivery	0.470**
Total	0.476**

Notes: *$P < 0.05$; **$P < 0.01$.
Abbreviations: RHDS, readiness of hospital discharge scale; MHLC, multidimensional health locus of control scale; MUIS, mishel's uncertainty in illness scale; QTDS, quality of discharge teaching scale.

Table 4 Multiple Stepwise Regression Analysis Results of the Total Score of Discharge Readiness of Patients

Variables	*B*	*SE*	*β*	t	*P*	Adj.*R2*	*F*
Constant	5.228	0.622	–	8.402	0.000	0.320	25.608*
Teaching Skills	0.370	0.045	0.430	8.279	0.000		
Inconsistency	−0.096	0.023	−0.216	−4.200	0.000		
Living alone	0.483	0.187	−0.138	2.588	0.010		
Marital status	0.361	0.154	0.123	2.345	0.020		
Income status[a]	−0.270	0.119	−0.116	−2.261	0.025		

Notes: [a]2001-4000 yuan/month/person; Durbin Watson value=1.775; *$P < 0.001$.
Abbreviations: B, coefficient; se, standard error; β, standardized coefficient; t, t-value; P, P-value; Adj.R2, adjusted R-squared; F, F-statistic.

Factors Affecting Discharge Readiness

Marital Status

Marriage is a positive influencing factor on the discharge readiness of CHD after stenting. Married patients have closer family relationships and wider social networks, thus they can access more social support resources.[30] At the same time, marital support can improve patients' ability to effectively cope with diseases.[31] In addition, cohabitation with a spouse can also encourage or strengthen patients' adoption of healthy lifestyles, promote healthy behavior, and treatment compliance, helping to control disease symptoms and improve disease prognosis.[32–34] Therefore, nursing staff should evaluate the social support system of CHD after stenting, and encourage patients non-married to actively seek help from other social resources, such as family members, friends, colleagues, patients, and religious groups. At the same time, healthcare providers should also provide illness counseling and emotional support to promote a smooth transition from hospital back to home.

Household per Capita Monthly Income

Household per capita monthly income of 2000–4000 yuan/month/person negatively affects the RHDS of CHD patients after stenting. These patients have lower readiness for discharge compared to both lower-income (≤2000 yuan/month/person) and higher-income (>4000 yuan/month/person) groups. Middle-income patients might have lower health literacy than lower-income groups due to less exposure to targeted health education programs. They may also lack the financial resources of higher-income groups to invest in health-enhancing activities and private healthcare services, increasing their health concerns. Sociological perspectives suggest that middle-income patients face unique stressors and perceived barriers to accessing quality healthcare, which can detract from their focus on health management and reduce their readiness for discharge.

Residence Status

Living alone is a risk factor for patients' discharge readiness. Multiple studies have shown that patients who live alone have lower discharge readiness scores than those who do not live alone, which is consistent with the results of this study and may be related to the lower social support of patients living alone compared to those living alone.[12,28,35–38] The results suggest that for patients living alone, nursing staff should pay special attention to the patient before discharge, help mobilize social support networks such as other family and friends of the patient, guide the patient to utilize community medical resources, or provide continuous nursing services such as follow-up, to help the patient smoothly pass the transition period and enhance their confidence in self-management.

Illness Uncertainty

Lack of or inconsistent information is a risk factor for discharge readiness. The study has shown that the less patients have knowledge about disease rehabilitation, the higher level of illness uncertainty, the lower health-related quality of life, and the more obvious anxiety and depression.[39] Therefore, patients with lack of information exhibit poor perception of readiness for discharge.

Quality of Discharge Teaching

The research results show that there is a positive correlation between teaching skill and discharge readiness in CHD after stenting. Weiss et al showed that teaching skill is a strongest positive influencing factor on patient readiness for discharge.[12] Bobay et al found that there was a strong correlation between teaching skill and various dimensions of discharge readiness.[40] In this study, the teaching skill score was higher than the contents received score, and the knowledge difference was negative. This suggests that when conducting discharge teaching, attention should be paid to both the teaching skill and a vivid and easy to understand and remember way, as well as the patient-centered principle to understand the true health related needs of patients. At the same time, attention should be paid to patients' ability to understand and master the contents of discharge teaching, and the "Teach-Back Method" should be adopted to let patients retell the contents of teaching in their own way, so as to ensure that they master the contents of discharge teaching and promote the transition of patients' safety and improve patients' readiness for discharge.[41]

Limitations

The sample of this study is only from a tertiary hospital with good medical conditions. To comprehensively understand the overall level of discharge readiness of CHD after stent implantation in China, a multicenter stratified sampling survey is needed. This study only measured the patient's readiness for discharge, and subsequent studies can also evaluate the readiness of the patient's family or caregivers. It can also be included in a comparative study of the patient's readiness for discharge from the perspective of medical care, and evaluate the patient's readiness for discharge after stent implantation from multiple perspectives. The use of convenience sampling can introduce selection bias, potentially impacting the validity and representativeness of the findings. Moreover, as a cross-sectional study, it should be acknowledged that this research cannot determine causality between the studied variables and discharge readiness. This study used a self-designed general data scale and mature scales used domestically and internationally to measure the influencing factors of patients' discharge readiness. The factors that can be explored are relatively limited. At the same time, this study used quantitative research, and qualitative research methods can be used in the future to explore the influencing factors of patients' discharge readiness more comprehensively. On

the basis of understanding the influencing factors of CHD after stenting for discharge readiness, intervention research can be carried out to construct an improvement plan for discharge readiness and a continuous family care plan.

Conclusion

The preparation for discharge of CHD after stent implantation is at a moderate level, among which the dimension of social support is the best, while the dimensions of their own state and disease knowledge are slightly worse, and further strengthening is needed. The discharge readiness of CHD after stent implantation is influenced by various factors, including residential status, marital status, household income, lack or inconsistency of information, and teaching skills. Healthcare providers should consider implementing targeted educational programs to enhance patients' understanding of their condition, providing consistent and clear information, and improving the overall quality of discharge teaching. Additionally, strategies to strengthen social support networks and tailor discharge planning to individual patient circumstances could further enhance discharge readiness.

Abbreviation

CHD, coronary heart disease; MUIS, Mishel's Uncertainty in Illness Scale; MHLCS, Multidimensional Health Locus of Control Scales; RHDS, Readiness of Hospital Discharge Scale; PCI, Percutaneous Coronary Intervention; PSS-Fa, Revised Family Support Scale; QDTS, Quality of Discharge Teaching Scale; CVI, content validity; SDs, standard deviations.

Data Sharing Statement

The data used to support the findings of this study are available from the corresponding author upon request.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by the Ethics Committee of West China Hospital, Sichuan University [2021(984)]. Written informed consent was obtained.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare no conflicts of interest in this work.

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