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ORIGINAL ARTICLE

Influencing factors of readiness for discharge of elderly patients with osteoporotic vertebral compression fractures

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ABSTRACT

Objectives: This study aims to investigate the current status of discharge readiness in elderly osteoporotic vertebral compression fractures (OVCFs) patients and to analyze the factors influencing it, providing a basis for the development of personalized discharge plans and interventions.

Patients and methods: Between January 2025 and April 2025, a total of 356 elderly OVCF patients (141 males, 215 females; mean age: 72.9±8.4 years; range, 60 to 98 years) were included. The following data were collected: general information, the Readiness for Hospital Discharge Scale (RHDS), and the Quality of Discharge Teaching Scale (QDTS). Univariate and multivariate linear regression analyses were employed to further analyze factors related to discharge readiness and the correlation between discharge readiness and the quality of discharge guidance.

Results: The mean total score of discharge readiness of elderly OVCF patients was 87.53±16.90, and the mean score of each item was 7.30±1.41. The quality of discharge guidance was 166.16±25.95 and the mean score of each item was 6.92±1.08. Discharge readiness of elderly OVCF patients was positively correlated with the quality of discharge guidance ($r=0.354$, $p<0.001$). Multiple linear regression showed that sex, age, length of stay in hospital, marital status, comorbidities, admission mode, and quality of discharge guidance were independent factors of discharge readiness in elderly OVCF patients ($p<0.05$).

Conclusion: The readiness for discharge and the quality of discharge guidance of elderly OVCF patients need further improvement. Healthcare professionals should strengthen the patients' readiness for discharge as early as possible after admission according to the patient's actual conditions, to help them smoothly achieve the transition from hospital to home.

Keywords: Elderly patients, influencing factors, osteoporosis, readiness for discharge, vertebral fracture.

Osteoporosis is a systemic skeletal disease characterized by decreased bone mass and destruction of bone microarchitecture, leading to increased fracture risk.[1] Osteoporotic vertebral compression fracture (OVCF) is the most serious complication of osteoporosis, affecting 30 to 50% of individuals over 50 annually, with a prevalence of 12% in those aged 50 to 79 years.[2-4] Notably, about one-third of OVCF patients are symptomatic[5] with acute or chronic pain, disability, and even an increased risk of death, significantly impacting their quality of life, mental health, and imposing financial burdens on families.[6,7] After surgery, patients remain at risk of new OVCF, with incidences ranging from 5.5 to 52.0%.[8,9]

Healthcare reforms prioritizing reduced hospitalization duration shift recovery management to home settings,[10] making discharge readiness assessment critical for elderly OVCF patients. Defined as clinicians' holistic evaluation of patients' physiological, psychological, and social capacity for safe transition to home/society,[11] discharge readiness significantly influences long-term recovery. Evidence confirms its role in reducing complications and readmissions.[12]

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However, research on discharge readiness in elderly OVCF patients remains limited. In the present study, we aimed to systematically investigate its status and influencing factors to inform clinical practice.

PATIENTS AND METHODS

This single-center, descriptive, cross-sectional study was conducted at The Third People's Hospital of Chengdu, Department of Orthopedics between January 2025 and April 2025. In our institution, we have a separate department, namely Geriatric Orthopedics, as a specialty which has long been focusing on the clinical diagnosis, treatment, and research of OVFC and other diseases in elderly. Using the convenience sampling method, we recruited 356 elderly OVCF patients (141 males, 215 females; mean age: 72.9±8.4 years; range, 60 to 98 years). Inclusion criteria were as follows: patients meeting the diagnostic criteria of the 2021 Expert Consensus on the Diagnosis and Treatment of Osteoporotic Vertebral Compression Fractures; age ≥60 years; being conscious and able to cooperate with the study; being volunteer to participate in this study. Exclusion criteria were as follows: combination of other serious diseases (e.g., malignant tumor, serious cardiovascular and cerebrovascular diseases) and presence of cognitive dysfunction or psychiatric diseases. During the data collection period, if a patient was readmitted to the hospital, following the principles of research design, only the data collected from his first admission were used to avoid data duplication, thus ensuring the accuracy and validity of the research data. Written informed consent was obtained from each patient. The study protocol was approved by The Third People's Hospital of Chengdu Ethics Committee (Date: 10.01.2025, No: 2024-S-384). The study was conducted in accordance with the principles of the Declaration of Helsinki.

According to Ni et al.,[13] the sample size was required to be five to 10 times the independent variable, and there were 22 variables involved in this study, including 12 general information questions, three dimensions of the Readiness for Hospital Discharge Scale (RHDS), and three dimensions of the Quality of Discharge Teaching Scale (QDTS). Considering 10% invalid questionnaires, the sample size of this study was between 121 and 242 cases. The final inclusion of 356 cases in this study fulfilled the sample size requirement.

Measurement tools

General information questionnaire

Based on the literature review and group discussion, the researcher designed a general information questionnaire containing age, sex, ethnicity, marital status, place of residence, payment method of medical costs, residence status, education status, family per capita monthly income, length of stay in hospital, reason for discharge, disease course, date of the first hospitalization, comorbidities, date of the surgery, and admission mode.

Readiness for Hospital Discharge Scale

The scale was developed by Wess and Piacentine[14] to assess the readiness of hospitalized patients at discharge. Subsequently, Lin et al.[15] systematically translated, revised, and refined the original scale to ensure cross-cultural adaptation. This process integrated the cultural differences between Eastern and Western contexts and incorporated an analysis of empirical test data, ultimately resulting in the Chinese version of the RHDS. The Chinese RHDS was utilized in this study and encompasses three dimensions: personal status (3 items: 1- Feeling unwell or in pain? 2- How do you feel about your energy? 3- How energetic you feel?), adaptive capacity (5 items: 4- Ability to take care of your body when discharged from hospital, 5- Knowledge of the need to take care of oneself after being discharged from the hospital and returning home, 6- Ability to manage daily life at home, 7- Ability to take care of oneself at home, 8- Degree to which you can perform medical care at home), and expected support (4 items: 9- The extent of emotional support available after discharge, 10- The amount of assistance available for personal care after discharge, 11- The amount of assistance available for activities at home after discharge, 12- The amount of assistance available for medical care needs after discharge). Each item on the scale was scored on a 0-10 scale, leading to a cumulative total score of 120, where higher scores indicate greater readiness for discharge. Readiness for discharge was quantitatively assessed by calculating the mean of all item scores and categorized into four levels: low (mean score <7), medium (7-7.9), high (8-8.9), and very high (≥9).[16]

Quality of Discharge Teaching Scale

The scale was developed by Weiss et al.[17] The Chinese version of QDTS used in this study was translated and adapted by Wang et al.[18] This scale consists of 24 items across three dimensions, content needed before discharge (6 items: 1a- Self-care information you need, 2a- The information you need

to regulate your emotions, 3a- Medical Disposal Information you need, 4a- The medical handling exercises you need, 5a- The information you need to seek help, 6a- Information your carer need), content actually obtained (6 items: 1b- Self-care information you obtained, 2b- The emotional regulation information you obtained, 3b- Information on medical dispositions you obtained, 4b- Medical disposal exercises you obtained, 5b- The help-seeking information you obtained, 6b- Information obtained by your carer), and teaching skills and effectiveness (12 items: 7- Information provided to address your concerns and questions, 8- Nurses listen to your concerns, 9- The nurse will respect your religious beliefs or values, 10- How do you like to be instructed by the nurse, 11- Nurses instruct in a way that enables you to understand the instruction, 12- The nurse will check or demonstrate to make sure you have the information, 13- Consistency of information provided by nurses and other health workers, 14- The timing of the nurse's instruction is appropriate, 15- Choosing to coach when the carer is able to be present, 16- Nurses will help you improve your self-confidence, 17- Know what to do in an emergency, 18- Reduced anxiety about returning home from hospital discharge), for assessing the quality of discharge guidance. Each item is rated on a scale ranging from 0 - 10, with higher scores indicating better patient assessments of the quality of discharge instructions. The levels of assessment are categorized as follows: low (mean item score <7), medium (7-7.9), high (8-8.9), and very high (≥9).

Data collection

The questionnaire survey in this study was conducted by four orthopedic nurses, each of whom possessed over five years of clinical experience. Prior to conducting the survey, the researchers received uniform training to ensure standardization and consistency in the distribution of the questionnaire, instructions for completing it, and the data collection process. In terms of patient screening, the researchers accessed the medical record system using the unique hospitalization numbers and selected study participants in strict accordance with the established inclusion criteria.

This study employed a face-to-face survey, and data collection was carried out on the day the patients were discharged from the hospital. Before implementation, the researchers strictly adhered to ethical standards, providing a detailed explanation of the study's purpose and significance to the patients and their families. In addition, the researchers explained the way to fill in the questionnaire, precautions, and privacy protection measures to ensure that patients comprehended the content of the survey. For patients who were unable to complete the questionnaire independently, a uniformly trained researcher conducted interviews. The researcher recorded the responses orally to ensure the completeness and accuracy of the data collection.

Statistical analysis

Statistical analysis was performed using the IBM SPSS version 24.0 software (IBM Corp., Armonk, NY, USA). Continuous data were presented in mean ± standard deviation (SD) or median (min-max), while categorical data were presented in number and frequency. When normality and the chi-square test assumptions were met, differences between the two groups were analyzed using the independent samples t-test, while comparisons among multiple groups were performed using one-way analysis of variance (ANOVA). Inter-group comparisons were made with the chi-square test. Multivariate linear regression analyses were employed to explore factors influencing readiness for discharge. The Spearman correlation analysis was used to examine associations between discharge readiness and quality of discharge instructions, as key continuous variables violated normality assumptions. A p value of <0.05 was considered statistically significant.

RESULTS

General information of participants

Of a total of 356 patients included in the study, the number of female patients was significantly higher ($p<0.001$). In terms of education status, the overall education status of the patients was low, with 251 cases (70.51%) with primary school education or below, while only 6.18% of the patients had a college education or above. Regarding marital status, 73.88% of the patients were married. Demographic data of the study population are summarized in Table I.

Current status of the Readiness for Hospital Discharge Scale scores

The total score of RHDS of elderly OVCF patients ranged from 32 to 112, with a mean score of 87.53±16.90 (Figure 1a). The scores for each dimension were as follows: 16.99±3.75 points for personal status, 35.49±11.85 points for adaptive capacity, and 35.05±5.21 points for expected support. The mean score for each item was 7.30±1.41 (Table II).

TABLE I
Univariate analysis of readiness for discharge in elderly OVCF patients

Variables	Number of cases		RHDS score		
	n	%	Mean±SD	t/F value	*p*
Age (year)				8.226	<0.001
60-69	144	40.45	91.17±15.20		
70-79	133	37.36	87.05±17.10		
≥80	79	22.19	81.67±17.95		
Sex				2.185	0.030
Male	141	39.61	89.93±15.50		
Female	215	60.39	85.95±17.62		
Ethnicity				–0.650	0.519
Han	321	90.17	87.37±17.25		
Others	35	9.83	88.97±13.45		
Education level				1.093	0.352
Primary school or below	251	70.51	86.94±16.79		
Junior high school	57	16.01	87.07±18.20		
High school	26	7.30	89.23±15.14		
University or above	22	6.18	93.41±16.49		
Marital status				–3.098	0.002
Unmarried/divorced/widowed	93	26.12	92.91±18.92		
Married	263	73.88	89.16±15.85		
Payment method of medical costs				1.264	0.220
Medical insurance	336	94.38	87.81±16.87		
Self-financed	20	55.62	82.80±17.23		
Family per capita monthly income/Yuan				1.144	0.321
<2000	77	21.63	85.42±19.78		
2000-5000	187	52.53	87.40±15.90		
>5000	92	25.84	89.55±16.22		
Geographic area of housing				1.066	0.287
Urban	206	57.87	88.34±16.25		
Rural	150	42.13	86.41±17.76		
Residence status				–0.181	0.856
Living alone	63	17.70	87.17±16.24		
Not living alone	293	82.30	87.60±17.07		
Length of stay in hospital/Day				6.823	0.001
<7	96	26.97	89.74±17.89		
7-13	181	50.84	89.00±15.65		
≥14	79	22.19	81.46±17.23		
Whether first hospitalization				2.692	0.007
Yes	192	53.93	84.90±18.57		
No	164	46.07	89.77±15.03		
Disease course/Day				3.538	<0.001
≤7	302	84.83	88.84±16.38		
>7	54	15.17	80.15±18.00		
Reason for discharge				–0.944	0.346
Physician advice	321	90.17	87.25±16.65		
Voluntary request	35	9.83	90.09±19.13		
Comorbidities				–4.246	<0.001
Yes	144	40.45	82.90±17.83		
No	212	59.55	90.67±15.52		
Admission mode				4.266	<0.001
Outpatient	287	80.62	89.36±15.97		
Emergency	69	19.38	79.91±18.59		
Whether surgery				–0.791	0.430
Yes	320	89.89	87.29±17.15		
No	36	10.11	89.64±14.56		

OVCF: Osteoporotic Vertebral Compression Fractures; RHDS: Readiness for hospital discharge scale; SD: Standard deviation.

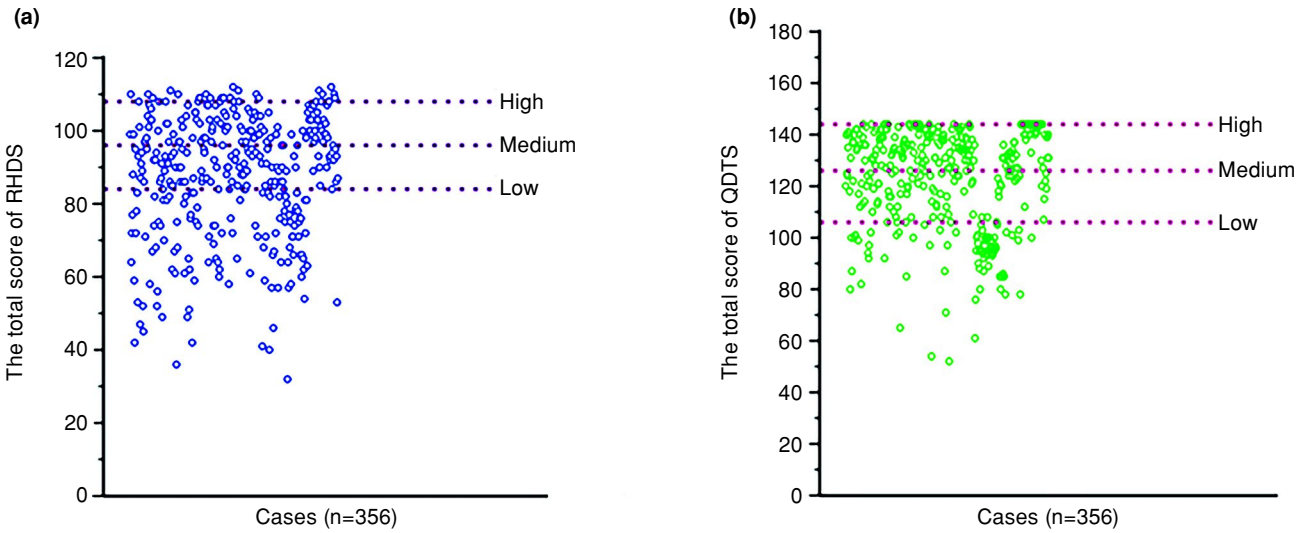

FIGURE 1. Distribution of total and entry mean scores of discharge readiness and quality of discharge guidance for 356 elderly OVCF patients. **(a)** Distribution of total score of RHDS; **(b)** Distribution of total score of QDTS.
RHDS: Readiness for hospital discharge scale; QDTS: Quality of Discharge Teaching Scale.

The total score range for the QDTS ranged from 60 to 198 with a mean score of 166.16±25.95 (Figure 1b). Breakdown scores for each dimension were as follows: 43.17±9.06 for needed content, 38.23±8.61 for obtained actually content, and 84.76±12.00 for instructional l skills and effectiveness. The average score for individual items was 6.92±1.08 (Table III).

TABLE II
Total scores of discharge readiness and different ranges of scores for each dimension in elderly OVCF patients

	Full scores	Actual scores	Item mean scores
RHDS dimension	n	Mean±SD	Mean±SD
Personal status	30	16.99±3.75	5.66±1.25
Adaptive capacity	50	35.49±11.85	7.09±2.37
Expected support	40	35.05±5.21	8.77±1.29
Total scores	120	87.53±16.90	7.30±1.41

OVCF: Osteoporotic Vertebral Compression Fractures; RHDS: Readiness for hospital discharge scale; SD: Standard deviation.

TABLE III
Total scores of quality of discharge guidance and different ranges of scores for each dimension in elderly OVCF patients

	Full scores	Actual scores	Item mean scores
QDTS dimension	n	Mean±SD	Mean±SD
Content needed	60	43.17±9.06	7.19±1.51
Content actually obtained	60	38.23±8.61	6.37±1.44
Teaching skills and effectiveness	120	84.76±12.00	7.06±1.00
Total scores	240	166.16±25.95	6.92±1.08

OVCF: Osteoporotic Vertebral Compression Fractures; QDTS: Quality of Discharge Teaching Scale; SD: Standard deviation.

TABLE IV
Multiple linear regression analysis for factors affecting discharge readiness in elderly OVCF patients

Variables	B	SE	β	t	*p*	95% CI
Constant	63.609	11.210	-	5.674	<0.001	41.559~85.659
Sex	–4.065	1.665	–0.118	–2.442	0.015	–7.339~–0.790
Marital status	4.329	1.861	0.113	2.326	0.021	0.668~7.989
Number of hospitalizations	–2.818	1.654	–0.083	–1.704	0.089	–6.070~0.435
Disease course	–0.130	4.499	–0.003	–0.029	0.977	–8.979~8.720
With other chronic diseases	5.868	1.757	0.171	3.339	0.001	2.412~9.324
Admission mode	–10.567	4.094	–0.247	–2.581	0.010	–18.619~–2.515
QDTS	0.194	0.052	0.181	3.754	<0.001	0.093~0.296
Age (year)						
60-69	Reference					
70-79	–1.741	1.778	–0.050	–0.979	0.328	–5.239~1.757
≥80	–5.859	2.181	–0.144	–2.686	0.008	–10.149~–1.569
Length of stay in hospital (day)						
<7	Reference					
7-13	–1.536	1.864	–0.046	–0.824	0.410	–5.202~2.129
≥14	–8.072	2.241	–0.199	–3.602	<0.001	–12.480~–3.664

OVCF: Osteoporotic vertebral compression fractures; SE: Standard error; CI: Confidence interval; QDTS: Quality of Discharge Teaching Scale.

TABLE V
Multiple linear regression analysis for factors affecting discharge readiness in elderly OVCF patients

Dimension	QDTS	Content needed	Content actually obtained	Teaching skills and effectiveness
RHDS	0.354**	0.231**	0.324**	0.454**
Personal status	0.311**	0.243**	0.311**	0.339**
Adaptive capacity	0.271**	0.165*	0.249**	0.377**
Expected support	0.281**	0.184**	0.210**	0.370**

OVCF: Osteoporotic Vertebral Compression Fractures; QDTS: Quality of Discharge Teaching Scale; RHDS: Readiness for hospital discharge scale; * p<0.05; ** p<0.001.

Factors influencing the Readiness for Hospital Discharge Scale scores

The results of the univariate analysis indicated that age, sex, marital status, length of stay in hospital, date of the first hospitalization, disease course, comorbidities, and admission mode were significantly associated with readiness for discharge among elderly OVCF patients (p<0.05), Table I. To further investigate the independent impact of each factor on discharge readiness, this study employed multiple linear regression analysis. The findings revealed that sex, marital status, comorbidities, age, admission mode, length of stay in the hospital, and total QDTS score were all independent predictors of discharge readiness (p<0.05) (Table IV).

Correlations between RHDS and QDTS scores

The Spearman correlation analysis was employed to investigate the correlation between discharge readiness and the quality of discharge instructions. The results revealed a significant and positive correlation between the total score of RHDS and the total score of QDTS in elderly OVCF patients (r=0.354, p<0.001). Furthermore, the dimensions of needed content, actually obtained content, and instructional skills and effectiveness of the QDTS displayed a positive correlation with the total score of RHDS (p<0.001) (Table V). More interestingly, a notable linear relationship was observed between the total RHDS scores and the total QDTS scores (Figure 2).

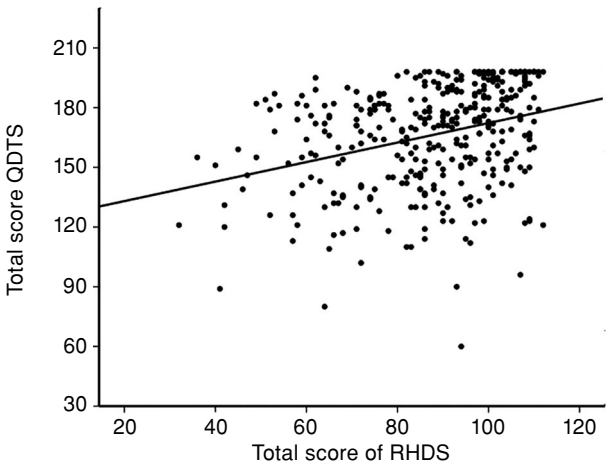

FIGURE 2. Discharge guidance quality and discharge readiness were significant for a linear relationship.
QDTS: Quality of Discharge Teaching Scale; RHDS: Readiness for hospital discharge scale.

DISCUSSION

In the present study, we concentrated on elderly patients with OVCF to meticulously investigate the existing status of their discharge readiness, the factors affecting it, and its association with the quality of discharge instructions. Our study findings revealed that the average total score of RHDS was 87.53, ranging from 32 to 112, suggesting a moderately high overall level, yet leaving room for improvement. Among them, the relatively low score of personal status dimension (16.99±3.75 points) may be attributed to the shortening of the hospitalization cycle, which caused some patients to meet the clinical discharge criteria, but not yet reach the self-expectation in terms of wound pain control, or limb function recovery, and the high score of adaptive capability dimension may be attributed to the structured rehabilitation guidance and psychological interventions provided during hospitalization, which helped the patients to build up their post-discharge life Confidence. Previous studies have also pointed out that health education and rehabilitation training during hospitalization can effectively enhance patients' adaptive abilities and reduce readmission rates.[19]

The analysis of the QDTS showed that patients had an average total score of 166.16 points (total score of 60-198 points). Specifically, the dimension with the highest score (84.76±12.00 points) was related to guidance skills and their effectiveness, indicating a certain level of effectiveness in clinical bed guidance practices. However, the low score on the dimension of "actually obtained content" (38.23±8.61 points) reflects that the patients' grasp of the guidance content is inadequate. This issue may be linked to the low literacy level of the study population (with 70.51% having primary school and below), suggesting that we need to provide discharge instructions according to the literacy level of the patients and make them understand the instructions in a clear and accessible manner. Moreover, employing the "feedback teaching" technique, where patients or their family members repeat the content of the explanation given by the healthcare personnel,[20] so that the healthcare worker can verify that the patient understands the information.[21]

In the current study, univariate analysis demonstrated that age, sex, marital status, length of stay in hospital, date of the first hospitalization, disease course, comorbidities, and admission mode were significantly associated with readiness for discharge. Subsequent multiple linear regression analyses identified that sex, marital status, comorbidities, admission mode, age, length of stay in the hospital, and total QDTS score were independent factors on readiness for discharge.

Patients with longer disease courses exhibit lower readiness for discharge, potentially due to the prolonged nature of their condition, which fosters worries and fears regarding disease progression and prognosis. This situation can lead to negative emotions, such as anxiety and depression. Specifically, OVCF patients often experience persistent pain, which adversely impacts their sleep, mood, and appetite, and may contribute to physical fatigue and weakness. These distresses can diminish patients' attitudes and confidence regarding their post-discharge lives, making them feel that it is difficult to cope with post-discharge challenges, thus reducing readiness for discharge.

Age is an important influence on discharge readiness in elderly OVCF patients, which is consistent with the findings of Wong et al.[22] in a study of hip arthroplasty patients. With the accelerating aging of the population, the prevalence of osteoporosis is increasing every year.[23] Among the elderly, self-care, memory, and adaptability to new circumstances often diminish. The pain and functional limitations linked to osteoporotic fractures further compound the challenges they face, impacting their preparedness for hospital discharge.

Female patients exhibited significantly lower readiness for discharge compared to males. Estrogen plays a crucial role in enhancing osteoblast activity and inhibiting osteoclast bone resorption.[24] Following menopause, as ovarian function declines in women, estrogen levels plummet, causing an increase in osteoclast activity that surpasses bone formation. This imbalance accelerates bone loss and heightens the risk of osteoporosis. Conversely, androgens in males have a protective effect on bone, although their decline is gradual in middle-aged and older men, exerting a lesser impact on bone mass.[25] Several studies have indicated that the prevalence of spinal fractures in Chinese women over 80 years old can reach 36.6%, with the risk of refracture following osteoporotic spinal fractures in women being over four times higher than those without spinal fractures.[26] Therefore, we should pay full attention to the issue of discharge readiness of female patients and provide relevant discharge instructions to mitigate the risk of refracture.

Married patients tend to have a higher readiness for discharge, largely due to the emotional support, caregiving, and rehabilitative oversight provided by their spouses in daily interactions.[27] Living with a spouse has also been shown to help motivate patients to adopt healthier lifestyles and promote better behavior and treatment adherence.[28,29] Therefore, while providing discharge instructions to elderly OVCF patients, caregivers should evaluate their social support and encourage unmarried or widowed patients to actively seek assistance from family, friends, or colleagues, facilitating a seamless shift from hospital to home life.

In addition, patients with comorbidities of multiple chronic diseases usually show lower readiness for discharge, indicating that multimorbidity may compound the intricacy of health management, necessitating the formulation of tailored intervention strategies. For this group of patients, their treatment regimens are more complex, requiring them to balance the treatment and management of multiple conditions, which undoubtedly increases the difficulty of self-care. To illustrate, OVCF patients with diabetes not only need to pay attention to fracture healing during rehabilitation but also need to strictly control their blood glucose levels to prevent complications such as glucose fluctuations affecting fracture healing or infections. These patients need more medical resources and family support to maintain disease management after discharge, otherwise their readiness for discharge would be seriously affected.

Patients admitted on an emergency basis often present with urgent and severe conditions, having encountered a sudden health crisis in a condensed timeframe. This abrupt onset may leave them psychologically unprepared and lacking sufficient knowledge about their illness and the post-discharge rehabilitation program, leading to a diminished readiness for hospital discharge. Conversely, patients admitted electively typically benefit from time to familiarize themselves with the medical condition and associated information before admission, resulting in clearer treatment expectations and recovery prospects, thus fostering a heightened readiness for discharge from the hospital.

Our study demonstrated that the length of stay in the hospital was an independent factor affecting patients` readiness for discharge, which aligns with previous findings.[12,30,31] A long hospital stay may result in increased dependency, rendering patients overly reliant on the hospital environment while diminishing their familiarity with family and social contexts. This situation can lead to heightened anxiety or fear, as well as a lack of self-confidence, all of which can negatively influence readiness for discharge. The average length of stay is considered a key indicator of healthcare services quality and hospital management.[32,33] With the implementation of accelerated rehabilitation surgical concepts, patients' length of stay in hospital is gradually decreasing.[34] Shorter hospital stays present additional challenges during the transition period; consequently, caregivers must progressively explain discharge-related considerations to patients throughout their hospital stay to facilitate their preparation for discharge.[35]

The correlation between readiness for discharge and the quality of discharge instructions among elderly OVCF patients revealed a positive association, where the quality of discharge instructions was not only positively correlated with but also independently influenced readiness for discharge, in line with previous studies.[29,36] Discharge instructions, integral to holistic care, serve as a fundamental requirement ensuring patients` adherence to medical recommendations and successful recovery post-discharge.[37] As the responsibility for care shifts from healthcare providers to patients and their caregivers upon

discharge, the provision of comprehensive discharge instructions becomes essential to facilitate a smooth transition from hospital to home.[38]

Nonetheless, this study has several limitations. We only used a self-administered general information questionnaire and a quantitative study to investigate the factors influencing discharge readiness in elderly OVCF patients, and the factors explored were relatively limited. In addition, our sample came from a tertiary hospital in Chengdu with good medical conditions, so the results may be less representative. In the future, we would use qualitative research methods to more comprehensively analyze the factors influencing discharge readiness in elderly OVCF patients. We would also conduct a stratified sampling of hospitals to ensure a representative sample.

In conclusion, our study results indicate that both readiness for discharge and the quality of discharge instructions for elderly patients with osteoporotic vertebral fractures require further enhancement, as these factors significantly impact patient outcomes following discharge. Healthcare professionals should prioritize the following groups for intervention: age ≥80 years, comorbid chronic diseases, length of stay in hospital ≥2 weeks, emergency admissions, and unmarried or widowed female patients. After admission, their preparation for discharge should be strengthened as early as possible to help them make a smooth transition from hospital to home.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Conceived and designed the study: L.C.; Performed the formal analysis and investigation, supported: L.C., S.L., Y.L., Y.Y.; Was also responsible for data curation: L.C.; Wrote the original draft, and reviewed and edited the manuscript: R.L.; Also contributed to visualization: R.L.; Supervised the project: Y. L.; Acquired funding and administered the project: L.C.

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