Psychological Health Analysis of Patients with Pressure Ulcers

Xinyun Zhang

Guangzhou Foreign Language School AP&AL Program, Guangzhou, Guangdong, China

18924323066@163.com

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Abstract: This paper analyzes the psychological health status of patients with pressure ulcers through a questionnaire survey conducted on hospitalized and home-bound patients. By statistically analyzing the data, we explored the correlation between the data and phenomena, classified patients by gender, and created various probability tables for psychological disorders based on age and disease duration. We also developed a predictive model for psychological disorders in pressure ulcer patients using simple software. Based on this, the author analyzed the underlying reasons and proposed directions and measures for healthcare professionals to focus on preventing psychological problems, which are of positive significance for the psychological health construction of clinical pressure ulcer patients.

1. Background of the Study

Since 1989, the prevalence of pressure ulcers in the United States has been investigated every year, and the results are 9.2%~15.5%, and the prevalence of hospital-acquired pressure ulcers is 5%~8.6% [1-5]. Whittington et al. [6-7] reported that the prevalence of pressure ulcers in Health Care Organizations (HCOs) in the United States was 14%~16%. Many countries or regions around the world have carried out a survey on the prevalence of pressure ulcers, which shows that pressure ulcers have become a global problem.According to the seventh national census data, as of November 1st, 2020, China's elderly population aged 60 and above has increased rapidly, indicating a future rise in the demand for anti-pressure ulcer measures. In addition, China has an annual average of approximately 12.5 million hospitalizations due to pressure ulcers. Excluding bedridden patients at home, which are not fully counted, every year there are up to 40 million people in China who are bedridden for a long time due to various illnesses, and the number of people at risk of pressure ulcers is up to 20 million. Furthermore, among 12 comprehensive hospitals in China, the incidence rate of pressure ulcers in adults is 1.58%. The current incidence rate of Stage III and IV pressure ulcers is between 13.47% and 14.58% of the total incidence rate.

With the advancement of technology, particularly the development of artificial intelligence in recent years, various anti-pressure ulcer devices have been continuously upgraded and have made significant progress. However, the psychological health of patients with pressure ulcers is often neglected by caregivers. Patients frequently experience psychological problems such as anxiety, damaged self-esteem (psychological shame), depression, and social integration issues. Improving the quality of life for pressure ulcer patients and addressing the prevention and elimination of psychological diseases is urgent.

2. Analysis of the Current Psychological Health Status and Causes of Pressure Ulcer Patients

2.1 Introduction to Pressure Ulcers

2.1.1 Definition of Pressure Ulcers

Pressure ulcers are defined as tissue necrosis and ulceration caused by long-term local pressure, resulting in sustained ischemia, hypoxia, and malnutrition. They can damage the epidermis, subcutaneous tissue, muscles, and even bones and joints, potentially leading to patient death.

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2.1.2 Sites and Contexts of Pressure Ulcers

The occurrence of pressure ulcers not only brings pain to patients, but also reduces their quality of life. Severe pressure ulcers often persist for a long time, and patients may have serious infection, systemic failure, and even endanger their lives [8].Pressure ulcers easily occur at bony prominences such as the sacrococcygeal area, heels, greater trochanter, scapula, and occipital region (Figure 3.1). The population at high risk of developing pressure ulcers includes long-term bedridden patients, such as those who have undergone surgery, suffered from fractures, paralysis, stroke, extensive burns, and those admitted to the ICU. A multi-center survey of pressure ulcers in comprehensive hospitals in China showed that the ICU, geriatrics, neurology, cardiology, respiratory, orthopedic, and general surgery departments are all high-risk areas for pressure ulcers.

2.1.3 Psychological Factors and Pressure Ulcers

Relevant studies indicate that psychological factors interac with overall physiological activities. Emotions such as fear and tension can weaken the body's "immune surveillance" function, leading to a decline in the patient's immune capabilities, thereby exacerbating the severity and progression of pressure ulcers. Conversely, positive psychological factors and a pleasant mood have therapeutic value and contribute to the patient's recovery. Therefore, emphasizing the study of the psychological aspects of pressure ulcer patients and providing effective psychological care are crucial elements in improving the quality of care. The sample cases are shown in Table 1.

Table 1: Sample cases

		Percentage	Male	Female	Total
		100.00%	580	420	1000
Age	18~39	19.69%	114	83	197
	40~59	33.71%	196	142	337
	60~69	19.06%	111	80	191
	70~79	16.26%	94	68	163
	Over 80	11.28%	65	47	113
Pathogenic site	Private part	68.65%	398	288	687
	Non-private part	31.35%	182	132	314

2.2 Validity of the Questionnaire Sample

To understand the psychological status of pressure ulcer patients, we conducted a questionnaire survey involving 1200 bedridden elderly patients in three hospitals and at home. The questionnaire sample covered patients of different ages, genders, affected areas, and disease durations, focusing mainly on anxiety, shame, depression, and other aspects (Figure 1).

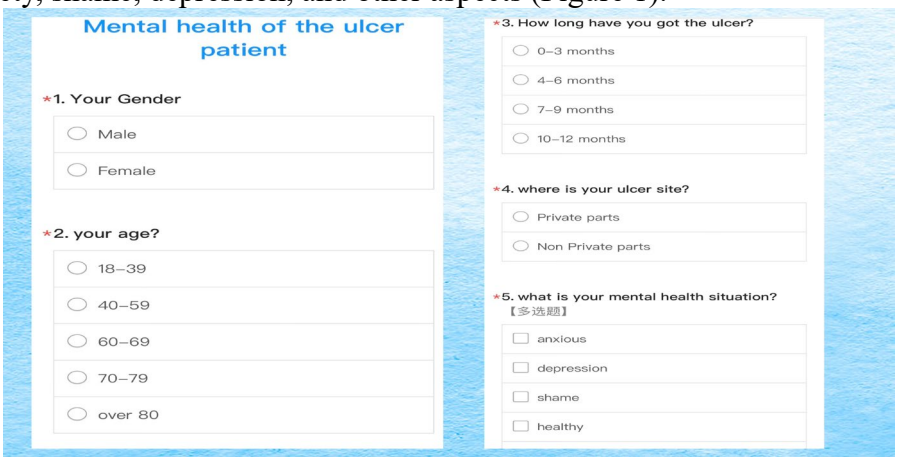

Figure 1: The questionnaires

To make the sample more representative, the gender and age of the questionnaire sample were based on the prevalence of pressure ulcers in 12 hospitals in China and the incidence of hospital-acquired pressure ulcers. We distributed 1200 questionnaires, and after data screening, we obtained 1000 valid questionnaires. The specific sample situation is shown in the table below:

2.3 Analysis of the Questionnaire Survey on the Psychological Status of Pressure Ulcer Patients

2.3.1 Analysis of the Current Situation of Anxiety Caused by Pressure Ulcers

2.3.1.1 Gender and Age Differences in Anxiety Caused by Pressure Ulcers

Table 2: Gender and Age Differences in Anxiety

		Percentage	Male	Anxiety population	Anxiety ratio	Female	Anxiety population	Anxiety ratio
		100%	580	397	68.44%	420	325	77.38%
Age	**18~39**	19.69%	114	74	65.00%	83	60	72.54%
	40~59	33.71%	196	147	75.00%	142	116	81.93%
	60~69	19.06%	111	75	68.00%	80	62	77.46%
	70~79	16.26%	94	60	64.00%	68	51	74.69%
	Over 80	11.28%	65	41	62.00%	47	36	75.98%

As shown in Table 2, the proportion of anxiety in females is higher than in males, with rates of 77.38% and 68.44%, respectively. The anxiety ratio for both genders peaks between the ages of 40-59, at 81.93% for females and 75% for males. The relationship between anxiety and age in both males and females exhibits a mid-high and low at both ends pattern. The anxiety difference among female pressure ulcer patients across different age groups is not significant, with the difference in anxiety ratio being within 10%. These data indicate that females are more prone to anxiety when facing pressure ulcers, with middle-aged individuals (40-59 years) being the most affected. The main reason for this situation is that individuals aged 40-59 are often the primary breadwinners for their families. In many families, males are the main source of economic income, and during the treatment period, they may be unable to work, leading to a decline in income and increased healthcare expenses, which in turn exacerbates the financial burden on the family. For females, the primary reasons for anxiety vary across different age groups, focusing on aesthetics, household burden, and economic issues, resulting in a relatively smaller difference in anxiety ratios. In the 40-59 age group, which often has both elderly parents and young children to care for, the inability to manage household chores due to pressure ulcers can lead to anxiety as they transition from being a household labor force to a patient needing care.

2.3.1.2 Age and Location Differences in Anxiety Caused by Pressure Ulcers

Table 3: Anxiety in male patients

		Percentage	Male	Anxiety population	Anxiety ratio	Number of people with private parts(ulcer)	Number of people with anxiety with private parts(ulcer)	The proportion of anxiety with private parts (ulcer)	Number of people with non private parts (ulcer)	Number of people with non private area anxiety	The proportion of people with non private area anxiety
		100.00%	580	397	68.44%	398	293	73.59%	182	104	57.17%
Age	**18~39**	19.69%	114	74	65.00%	78	65	82.89%	36	9	25.82%
	40~59	33.71%	196	147	75.00%	135	103	76.30%	61	44	71.19%
	60~69	19.06%	111	75	68.00%	76	52	68.53%	35	23	66.85%
	70~79	16.26%	94	60	64.00%	65	38	58.46%	29	22	77.06%
	Over 80	11.28%	65	41	62.00%	44	35	79.55%	21	6	27.14%

For males, as shown in Table 3, the highest anxiety proportion is observed in the 18-39 age group at 82.89% for private areas. Additionally, across all age groups, males with pressure ulcers in private areas exhibit higher anxiety levels than those with pressure ulcers in non-private areas, especially in the 18-39 and over 80 age groups. The main reasons for anxiety in males aged 18-39 with pressure ulcers in private areas are twofold: unmarried males worry about the impact on their marital prospects, while married males with young children face economic and household challenges, triggering anxiety. For males over 80, poor resistance and difficulty healing in private areas heighten worries about their condition and mortality.

Table 4: Anxiety in female patients

		Percentage	Female	Anxiety population	Anxiety ratio	Number of people with private parts(ulcer)	Number of people with anxiety with private parts(ulcer)	The proportion of anxiety with private parts (ulcer)	Number of people with non private parts (ulcer)	Number of people with non private area anxiety	The proportion of people with non private area anxiety
		100.00%	420	325	77.38%	288	220	76.30%	132	116	88.10%
Age	**18~39**	19.69%	83	60	72.54%	56	34	60.71%	27	26	96.30%
	40~59	33.71%	142	116	81.93%	97	72	74.23%	45	44	97.78%
	60~69	19.06%	80	62	77.46%	55	43	78.25%	25	19	75.72%
	70~79	16.26%	68	51	74.69%	47	34	72.54%	21	17	79.42%
	Over 80	11.28%	47	36	75.98%	33	26	78.79%	14	10	71.43%

For females, as shown in Table 4, the highest anxiety proportion is in the 40-59 age group at 97.78%, attributable to both physiological and psychological factors. Physiologically, women entering menopause are prone to anxiety, which is exacerbated by the pain of pressure ulcers. Psychologically, concerns about appearance and increased household burden are significant. The lowest anxiety proportion for females is in the 18-39 age group for non-private areas at 60.71%. Generally, the anxiety proportions for females across different age groups and affected areas do not vary significantly, with younger patients experiencing milder conditions, quicker recovery, and shorter disease duration, resulting in a lesser impact on their future lives.

In summary, individuals aged 40-59 are most prone to anxiety, with females more likely to experience anxiety across all age groups compared to males. For males, pressure ulcers in private areas are more likely to cause anxiety, whereas for females, non-private areas are more anxiety-inducing.

2.3.2 Analysis of Shame Caused by Pressure Ulcers

2.3.2.1 Gender and Age Differences in Shame Caused by Pressure Ulcers

Table 5: Gender and Age Differences in Shame

		Percentage	Male	Shame population	Shame ratio	Female	Shame population	Shame ratio
		100.00%	580	156	26.90%	420	389	92.62%
Age	**18~39**	19.69%	114	10	8.75%	83	80	96.72%
	40~59	33.71%	196	19	9.72%	142	137	96.77%
	60~69	19.06%	111	35	31.66%	80	73	91.20%
	70~79	16.26%	94	52	55.15%	68	59	86.41%
	Over 80	11.28%	65	40	61.13%	47	40	84.42%

As shown in Table 5, there are significant gender differences in the experience of shame, with fewer males (26.9%) experiencing shame compared to females (92.62%). The high prevalence of shame among females is primarily due to care from the opposite sex and a greater concern for appearance. For males, the proportion of shame increases with age, from 8.75% in the 18-39 age group to 61.63% in those over 80. As male patients age, the severity of their condition and the need for care increase, leading to a higher proportion of shame. In contrast, the proportion of shame among females decreases with age, although it remains high, with the lowest value still at 84.42%. Younger females are more concerned about their appearance, leading to higher levels of shame.

2.3.2.2 Age and Site Differences in Shame Caused by Pressure Ulcers

Male Patients:

Table 6: Shame in male patients

		Percentage	Male	Shame population	Shame ratio	Number of people with private parts(ulcer)	Number of people with shame with private parts(ulcer)	The proportion of shame with private parts (ulcer)	Number of people with non private parts (ulcer)	Number of people with non private area shamed	The proportion of people with non private area shamed
		100.00%	580	156	26.90%	398	137	34.41%	182	19	10.45%
Age	**18~39**	19.69%	114	10	8.75%	78	9	11.48%	36	1	2.79%
	40~59	33.71%	196	19	9.72%	135	17	12.59%	61	2	3.26%
	60~69	19.06%	111	35	31.66%	76	30	39.53%	35	5	14.43%
	70~79	16.26%	94	52	55.15%	65	46	70.77%	29	6	20.69%
	Over 80	11.28%	65	40	61.13%	44	35	79.55%	21	5	23.81%

According to the detailed statistics by age and affected body site shown in Table 6, the proportion of shame is higher for private areas than for non-private areas in male patients. For elderly males aged 80 and above, the proportion of shame in private areas reaches 79.55%. This is primarily because private areas require care, whereas some non-private areas can be self-managed, and there is no awkwardness due to the involvement of the opposite sex in non-private areas. The lowest proportion of shame for non-private areas is 2.79% among males aged 18-39. Many of these patients do not require special care, recover quickly, and have milder conditions, resulting in a lower proportion of shame.

Female Patients:

Table 7: Shame in female patients

		Percentage	Female	Shame population	Shame ratio	Number of people with private parts(ulcer)	Number of people with shame with private parts(ulcer)	The proportion of shame with private parts (ulcer)	Number of people with non private parts (ulcer)	Number of people with non private area shamed	The proportion of people with non private area shamed
		100.00%	420	389	92.62%	288	279	96.76%	132	110	83.54%
Age	**18~39**	19.69%	83	80	96.72%	56	54	96.43%	27	26	96.30%
	40~59	33.71%	142	137	96.77%	97	94	96.91%	45	43	95.56%
	60~69	19.06%	80	73	91.20%	55	53	96.45%	25	20	79.70%
	70~79	16.26%	68	59	86.41%	47	45	96.00%	21	14	65.40%
	Over 80	11.28%	47	40	84.42%	33	33	100.00%	14	7	50.00%

As shown in Table 7, the proportion of shame for private areas is higher than for non-private areas among female patients. However, for pressure ulcer patients aged 18-59, there is little correlation between the affected site and the proportion of shame. Most patients with private area ulcers can self-manage or are cared for by the same sex, reducing the psychological shame associated with appearance. Therefore, the proportions of shame for private and non-private areas are roughly equivalent. For women aged 70 and above, many long-term patients with private area ulcers cannot self-manage, necessitating unavoidable involvement of the opposite sex in care. Additionally, pressure ulcers often lead to unpleasant odors and a messy environment, maintaining a high level of shame. Women aged 70 and above show a significant decrease in concern for appearance, leading to a notable reduction in shame for non-private areas.

In summary, the proportion of shame among female patients is significantly higher than that among male patients. The proportion of shame in male patients with pressure ulcers increases with age, regardless of whether the affected area is private or non-private. In contrast, the proportion of shame in female patients with pressure ulcers decreases with age. There is little difference in the psychological shame between private and non-private areas across different age groups for female patients, but the proportion of shame for non-private areas decreases significantly with age. The main sources of post-shame psychology are threefold:

1) Psychological shame caused by care from the opposite sex.
2) Impact on physical appearance.
3) Influence on the surrounding living environment.

2.3.3 Analysis of the Current Situation of Depression Caused by Pressure Ulcers

2.3.3.1 Gender Differences in Depression Caused by Pressure Ulcers

Table 8: Gender Differences in Depression

		Percentage	Male	Depression population	Depression ratio	Female	Depression population	Depression ratio
		100.00%	580	142	24.48%	420	106	74.65%
Age	**18~39**	19.69%	114	23	20.14%	83	19	82.61%
	40~59	33.71%	196	57	29.15%	142	42	73.68%
	60~69	19.06%	111	27	24.43%	80	20	74.07%
	70~79	16.26%	94	21	22.27%	68	16	76.19%
	Over 80	11.28%	65	14	21.40%	47	9	64.29%

As shown in Table 8, the overall situation of depression caused by pressure ulcers is roughly the same for male and female patients, with the proportion of depression ranging from 19% to 29.67%. The proportion gradually increases with age, peaking for both genders at over 80 years old. This is mainly because elderly patients with pressure ulcers experience physiological decline due to brain degeneration, slowed thinking, a high proportion of severe cases, and many are unable to self-manage. In terms of care, the saying "a long illness makes a heartless son" applies, as there is less communication and care from relatives, leading to more pronounced depression in elderly patients.

2.3.3.2 Age and Site Differences in Depression Caused by Pressure Ulcers

Table 9: Depression in male patients

		Percentage	Male	Depression population	Depression ratio	Number of people with private parts (ulcer)	Number of people with depression with private parts (ulcer)	The proportion of depression with private parts (ulcer)	Number of people with non private parts (ulcer)	Number of people with non private area depression	The proportion of people with non private area depression
		100.00%	580	142	24.48%	398	106	26.62%	182	36	19.80%
Age	**18~39**	19.69%	114	23	20.14%	78	17	21.68%	36	6	16.76%
	40~59	33.71%	196	57	29.15%	135	45	33.33%	61	12	19.58%
	60~69	19.06%	111	27	24.43%	76	20	26.36%	35	7	20.20%
	70~79	16.26%	94	21	22.27%	65	15	23.08%	29	6	20.69%
	Over 80	11.28%	65	14	21.40%	44	9	20.45%	21	5	23.81%

According to the detailed statistics by age and affected body site shown in Table 9, the proportion of depression in males aged 80 and above is higher for private areas than for non-private areas. For those under 80, the opposite is true. This is mainly because younger patients who experience depression often do so due to the impact on their appearance, leading to social withdrawal and depression. In contrast, older patients with pressure ulcers in private areas are more likely to be unable to self-manage. The depression in female patients is shown in Table 10.

Table 10: Depression in female patients

		Percentage	Female	Depression population	Depression ratio	Number of people with private parts(ulcer)	Number of people with depression with private parts(ulcer)	The proportion of depression with private parts (ulcer)	Number of people with non private parts (ulcer)	Number of people with non private area depression	The proportion of people with non private area depression
		100.00%	420	106	25.24%	288	73	25.32%	132	33	25.06%
Age	**18~39**	19.69%	83	19	22.97%	56	8	14.29%	27	11	40.74%
	40~59	33.71%	142	42	29.67%	97	29	29.90%	45	13	28.89%
	60~69	19.06%	80	20	24.99%	55	16	29.12%	25	4	15.94%
	70~79	16.26%	68	16	23.43%	47	13	27.73%	21	3	14.02%
	Over 80	11.28%	47	9	19.00%	33	7	21.21%	14	2	14.29%

In summary, the proportions of depression are roughly the same for both genders. The main groups prone to depression are elderly patients over 80 years old who are bedridden for long periods, unable to self-manage, have severe damage to their appearance, and receive little care from relatives.

3. Probability Table and Prediction Model for Psychological Issues in Pressure Ulcer Patients

3.1 Probability Table for Psychological Issues

Based on the 1000 questionnaire responses analyzed in Chapter 2, the author compiled a probability table for psychological issues, as shown in Table 11.

This table allows users to look up the probabilities of anxiety, shame, depression, and other psychological issues in pressure ulcer patients based on gender, age, and affected site. This information can be used to target preventive measures and care strategies to avoid or reduce the occurrence of psychological issues.

3.2 Statistical Prediction Model for Psychological Issues

When creating the aforementioned table using Excel, the author leveraged the software's functions such as f(x) and nested tools to classify data hierarchically. By utilizing the relationships between data sets, the model minimizes the base data categories. It employs four parameters—gender, age, affected site, and psychological issues—to automatically recalculate the proportion of various psychological problems among pressure ulcer patients. As the use of this statistical model increases and the base sample size grows, the accuracy of predicting psychological issues is expected to improve correspondingly.

4. Psychological Care Strategies and Considerations for Pressure Ulcer Patients

4.1 Definition and Purpose of Psychological Care

Psychological care refers to the methods and approaches used by healthcare personnel to positively influence patients' mental activities through various psychological and medical techniques during the care process. The aim is to prevent and reduce psychological problems. The purpose of psychological care is to relax the tense mental state of pressure ulcer patients and enhance their body's resistance to disease through comforting language, stable emotions, friendly attitudes, and a pleasant environment.

4.2 Main Strategies for Psychological Care

Based on the statistical analysis of the survey results and the analysis of the causes of psychological problems, the main strategies include the following aspects:

4.2.1 Main Measures to Prevent and Reduce Anxiety

4.2.1.1 Creating a Warm and Homely Hospital Environment

Creating a good and comfortable environment is beneficial for improving physical and mental health and aiding patient recovery. Designing a quiet, comfortable living environment with appropriate lighting and harmonious room arrangements can reduce the likelihood of patient anxiety and enhance the effectiveness of psychological treatment.

4.2.1.2 Strengthening Communication as an Emotional Stabilizer

Pressure ulcers can cause physiological dysfunctions, leading to reduced emotional stability, increased suggestibility, and decreased self-control in patients, making them prone to negative reactions. A renowned Russian physician once said that the disease itself is not terrifying; what is terrifying is the fear, worry, and negative psychological state.

Both male and female pressure ulcer patients bear mental burdens and psychological pressure. Men often worry about the financial burden and potential sequelae of their illness. For such patients, it's crucial to communicate openly with them and their families about medical expenses, striving to be economical without waste during treatment. Women worry about whether their illness can be cured, its impact on their appearance, and fear being misled about the severity of their condition. They worry about not receiving satisfactory medical care and losing family support, or losing confidence in their recovery. Once these psychological issues arise, they are difficult to reverse.

Therefore, timely observation and providing care and concern are essential to change their negative attitudes. In nursing, patience, meticulousness, and a kind attitude are necessary. Answer questions without irritation, showing no disdain, and proactively explain the illness, treatment process, and outcomes to improve patients' understanding and stabilize their emotions. A healthy mind and optimistic emotions are crucial pillars in overcoming diseases.

4.2.2 Main Measures to Prevent and Reduce Shame

4.2.2.1 Respecting Patients' Privacy

For long-term bedridden pressure ulcer patients, most of whom are incontinent, it is common for them to wear no clothing on the lower body for convenience. During turning and massage, ensure private areas are not exposed. Operate under the covers whenever possible. If exposure is necessary, cover the patient's perineum with a towel or clothing before lifting the covers. This protects the patient's privacy and makes them feel their dignity is respected.

4.2.2.2 Same-Gender Care to Avoid Shame

Women experience significantly higher levels of psychological shame than men. Female patients have a stronger inherent self-esteem. For long-term severe patients, males often provide care due to strength requirements. Consider increasing auxiliary care equipment and providing same-gender care. Similar measures should be taken for male patients as well.

4.2.2.3 Maintaining Cleanliness and Introducing Medical Aesthetic Consultants

Pressure ulcer patients frequently contaminate their bedding due to wound exudate and incontinence. Caregivers should promptly clean, disinfect, and maintain hygiene to avoid embarrassment. For large-area pressure ulcers on non-private parts, caregivers should actively contact medical aesthetic personnel, communicate with the patient, explain the condition, and build confidence. Concurrently carry out scar prevention during pressure ulcer treatment.

4.2.3 Main Measures to Prevent and Reduce Depression

4.2.3.1 Establishing a Long-Term Family-Like Caregiver Relationship

Pressure ulcers are characterized by a long course of illness. The old saying goes, "A long illness tests filial piety." Family members should communicate more. Besides primary caregivers, family members should frequently visit and chat with the patient. The expressions and mental states of pressure ulcer patients cared for by non-relatives are not as vibrant as when their children talk with them. Hence, encourage more visits from children and family members to provide comfort and ensure the patient experiences familial joy.

4.2.3.2 Maintaining Social Interaction and Communication

Long-term pressure ulcer patients often become socially isolated, leading to depressive emotions. Foster good interpersonal relationships among patients. The hospital ward is a small community where patients can quickly integrate and build friendly relationships. Home-based patients should engage in activities based on their interests, such as listening to music, painting, watching TV, or listening to the radio. Patients who can go out independently or use a wheelchair should engage in daily outdoor activities.

4.2.3.3 Proactive Problem Solving

Actively assist patients in resolving their difficulties. Many patients with pressure ulcers have limited ability to care for themselves, which hinders their ability to live and work normally. They often experience feelings of loneliness, isolation, and helplessness, and some severely ill patients may even have suicidal thoughts. In such cases, it is crucial to seek the support and cooperation of the patient's family, friends, and relevant authorities. This support helps the patient feel they are not abandoned or forgotten and that they are still cared for and loved. Efforts should be made to cultivate the patient's resilience and strong will.

In conclusion, psychological care is conducted through the interactions between healthcare providers and patients. Establishing a good caregiver-patient relationship is key to the success of psychological care. This relationship should be based on mutual respect, trust, and cooperation. Strengthening psychological counseling for patients helps them maintain an optimistic and positive attitude towards life, thereby making pressure ulcer care more scientific and humane.

5. Limitations and Future Plans

This paper conducted a statistical analysis of the psychological conditions of pressure ulcer patients and established a statistical model. However, both the statistical analysis and the model have their limitations, which are primarily as follows:

- The basic data set for the model is relatively small and needs further expansion.
- The survey dimensions are limited to gender, age, and affected site, neglecting other factors such as disease duration and severity levels. Even within the same dimension, such as the affected site, it is only categorized into private and non-private areas without further subdivision by medical department.
- The psychological issue prediction registration form lacks sufficient detail.
- The model parameters need to be more diversified.

Moving forward, the author plans to develop a small application to increase the sample size for the statistical model, expand the base data set, and continually add classification parameters. This will help refine the model and improve the accuracy of predictions.

References

[1] Amlung S R, Miller W L, Bosley L M. The 1999 National Pressure Ulcer Prevalence Survey: A Benchmarking Approach [J]. Adv Skin Wound Care,2001,14(6):297-301.

[2] Vangilder C, Macfarlane G D, Meyer S. Results of Nine International Pressure Ulcer Prevalence Surveys 1989 to 2005[J]. Ostomy Wound Manage,2008, 54(2):40-54.

[3] VanGilder C, Amlung S, Harrson P, et al. Results of the 2008-2009 International Pressure Ulcer Prevalencetm Sur-vey and a 3-Year, Acute Care, Unit- Specific Analysis[J].Ostomy Wound Manage,2009,55(11):39-45.

[4] VanGilder C, MacFarlane G, Mayer S, et al. Body Mass In-dex, Weight, and Pressure Ulcer Prevalence:an Analysis of the 2006-2007 International Pressure Ulcer Prevalence(TM) Surveys[J]. J Nurs Care Quality, 2009, 24(2):127-135.

[5] VanGilder C, MacFarlane G D, Harrison P, et al. The De-mographics of Suspected Deep Tissue Injury in the United States:an Analysis of the International Pressure Ulcer Preva-lence Survey 2006-2009[J]. Adv Skin Wound Care,2010, 23(6):254-261.

[6] Whittington K T, Briones R. National Prevalence and Inci-dence Study: 6-Year Sequential Acute Care Data[J]. AdvSkin Wound Care,2004,17(9):490-494.

[7] Whittington K, Patrick M, Roberts J L. A National Study of Pressure Ulcer Prevalence and Incidence in Acute Care Hospitals[J]. J Wound Ostomy Continence Nurs, 2000,27 (4):209-215.

[8] Liu Hong, Fu Xiaoyue, Yu Xiaochen, et al. Research progress on risk factors assessment and prevention of pressure ulcers [J]. chinese nursing management, 2007,7 (2): 50-51.

Table 11: Summary of psychological status of patients with pressure ulcer

		Percentage	Male	Anxiety population	Anxiety ratio	Shame population	Shame ratio	Depression population	Depression ratio	Female	Anxiety population	Anxiety ratio	Depression population	Depression ratio	Shame population	Shame ratio	Total
		100.00%	580	397	68.44%	156	26.90%	142	24.48%	420	325	77.38%	106	25.24%	389	92.62%	1000
Age	**18~39**	19.69%	114	74	65.00%	10	8.75%	23	20.14%	83	60	72.54%	19	22.97%	80	96.72%	197
	40~59	33.71%	196	147	75.00%	19	9.72%	57	29.15%	142	116	81.93%	42	29.67%	137	96.77%	337
	60~69	19.06%	111	75	68.00%	35	31.66%	27	24.43%	80	62	77.46%	20	24.99%	73	91.20%	191
	70~79	16.26%	94	60	64.00%	52	55.15%	21	22.27%	68	51	74.69%	16	23.43%	59	86.41%	163
	Over 80	11.28%	65	41	62.00%	40	61.13%	14	21.40%	47	36	75.98%	9	19.00%	40	84.42%	113