



FACTORS RELATED TO DEPRESSION AMONG ELDERLY PATIENTS WITH
PRESSURE ULCER IN WENZHOU, CHINA

LINMIN ZHUGE

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR MASTER DEGREE OF NURSING SCIENCE
(INTERNATIONAL PROGRAM)
IN ADULT NURSING PATHWAY
FACULTY OF NURSING
BURAPHA UNIVERSITY

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LINMIN ZHUGE : FACTORS RELATED TO DEPRESSION AMONG ELDERLY PATIENTS WITH PRESSURE ULCER IN WENZHOU, CHINA.

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The occurrence of pressure ulcer can bring a great burden to patients, families, hospitals, and society. Providing care for patients with pressure ulcer requires extra physical and mental effort, which leads to anxiety, tension, and pain in patients. The purpose of this study was to examine the factors related to depression among elderly patients with pressure ulcers in Wenzhou, China. A simple random sampling method was used to recruit the sample of 128 elderly patients with pressure ulcers in the Second Affiliated Hospital of Wenzhou Medical University (WMU) in Wenzhou, China. Research instruments included questionnaires to gather data for demographic information, the Beck Depression Inventory-II (BDI-II), the Appraisal of Self-care Agency Scale-Revised (ASAS-R), the Mental Health Literacy Scale (MHLS) and the Multidimensional Scale of Perceived Social Support (MSPSS). Data were collected during the period of July to December 2023. Descriptive statistics and Pearson's product moment correlation coefficients were used to analyze the data.

The results revealed that the sample had mild depression 18.75% and severe depression 5.47%. For correlation analysis, depression after pressure ulcer was significantly correlated with social support ($r = -.439, p < .001$) and self-care ability ($r = -.465, p < .001$). While mental health literacy was not significantly correlated with depression after pressure ulcer.

The findings suggest that nurses and other health care providers should apply these study results to develop proper interventions or program aimed at reducing the incidence of depression in patients with pressure ulcers by focusing on social support and self-care ability.

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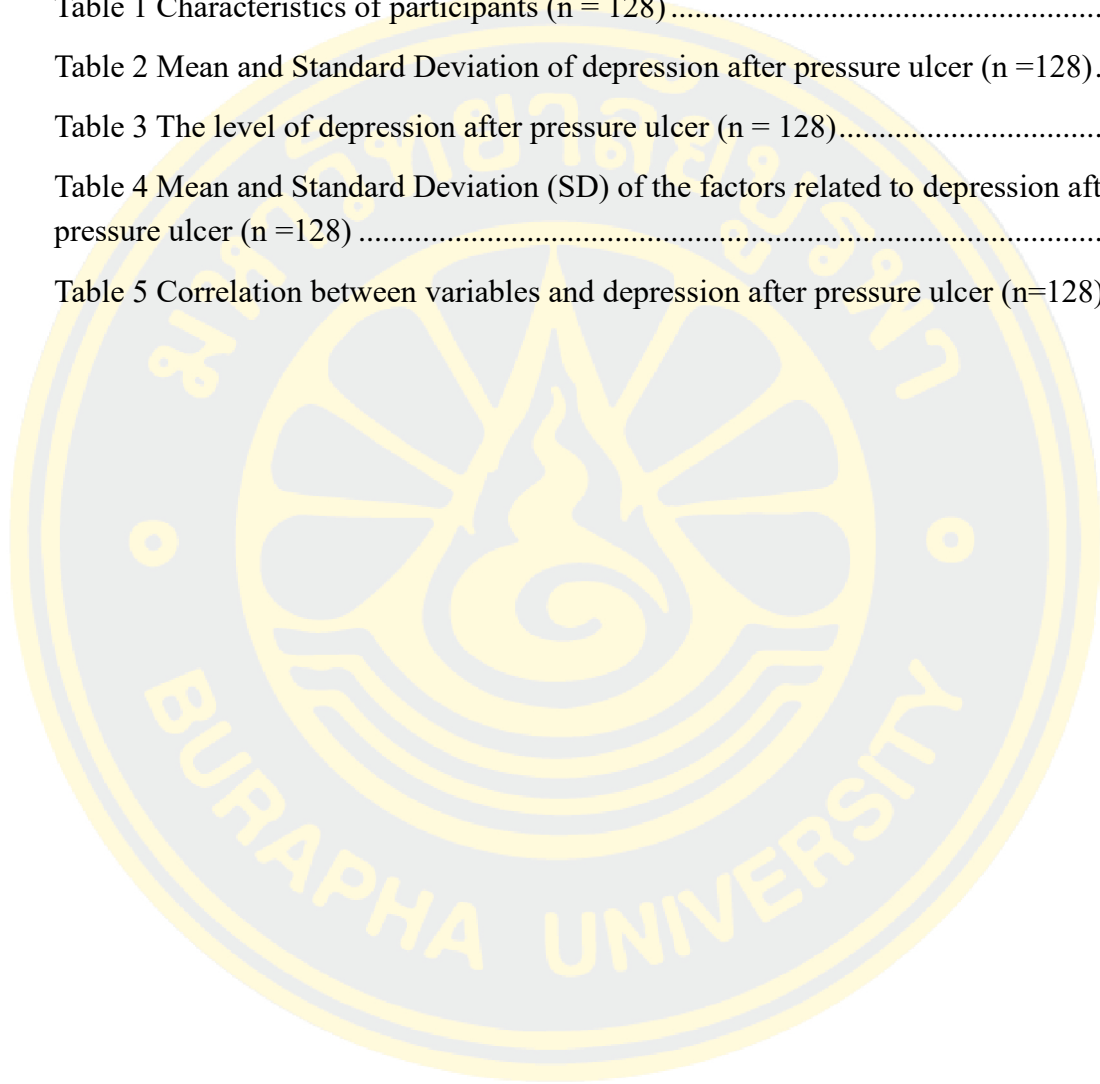
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CHAPTER 1

INTRODUCTION

Statements and significance of the problems

Pressure ulcer/injury (PU/PI) is defined as local damage to the skin and soft tissue due to intense or prolonged pressure, typically occurring over bony protrusions (Artico, Marco Piredda, et al., 2020). It can present as intact skin or partially open ulcers, accompanied by redness or suppleness skin, dark wound beds, or bloody discharge (Adi, Subrata, & Sumarno, 2019). According to recent epidemiology data in the United States, the annual incidence was estimated at 1 in 1 to 3 million (Nussbaum et al., 2018). Despite increased preventive measures in hospitals and nursing facilities, pressure ulcer remains a significant burden on individuals and society (Moore, Patton, Avsar, Mcevoy, & O'Connor, 2020).

The prevalence of pressure ulcer varies greatly across different regions, countries, and departments. For instance, the prevalence of pressure ulcer in a general hospital in Norway's capital was 14.9% (Børsting et al., 2018). However, the overall prevalence rate of pressure ulcer was lower than reported in previous researches, which ranged from 0%-3.49% in the 25 hospitals in different areas of Guangdong Province in China (Zhou & Jia, 2016a). In addition, the prevalence rate of an in-hospital pressure ulcer study in an Indonesian hospital is comparable to that of the Chinese study and rather low, which is about 3.6% (Amir, Tan, Halfens, Lohrmann, & Schols, 2017).

In various studies, the prevalence rate of pressure ulcer may differ considerably across clinical departments. According to 1999 National pressure ulcer Prevalence Survey, the incidence of pressure ulcer in intensive care units (ICUs) is 21.5%, which is much higher than the average prevalence rate 7.1% during hospitalization (Borojeny, Albatineh, Dehkordi, & Gheshlagh, 2020). In addition, in a

study on the prevalence and rate hospital-acquired pressure injuries (HAPIs) in pediatric patients, the prevalence rate of pressure ulcer in general pediatric units was only 0.57%, and 65.6% HAPIs were in Stage 1 and Stage 2 (Rasmus & Bergquist-Beringer, 2017). However, in intensive care units, a study found that the incidence of pressure ulcer in severely ill infants and children was as high as 27% (Patricia & Scheans, 2015).

The occurrence of pressure ulcer can bring a great burden to patients, families, hospitals, and society. Providing care for patients with pressure ulcer requires extra physical and mental effort, which leads to anxiety, tension, and pain in patients. In the past, the treatment of pressure ulcer patients mainly focused on physical treatment, while ignoring the mental health of pressure ulcer patients. In recent years, the mental health of pressure ulcer patients has gradually attracted the attention of doctors. Therefore, it is of great significance to analyze the risk of post-pressure ulcer mental health in different patients after hospitalization and to follow up the susceptible population with targeted intervention.

Depression is one of the most common mental health problems in patients with pressure ulcer. According to research by Linda Dallam, eighteen of 37 pressure ulcer patients who completed the Beck Depression Inventory .In addition were found to be depressed(Zhou & Jia, 2016b). Generally speaking, negative emotions (including depression) will lead to a decrease in the speed of pressure ulcer wound recovery (Charalambous et al., 2018), which is the result of a combination of many factors. Depression can lead to slow healing of pressure ulcer, but it can't be ignored that pressure ulcer can also lead to an increase in the prevalence of depression in patients (Fok & Wong, 2003).

However, it is still unclear to know the risk factors of depression. With the in-depth study of pressure ulcer in various countries, an improved understanding of the relative risk factors of depression will enable us to treat pressure ulcer better.

According to literature review, a large number of studies have shown that self-care

ability, mental health literacy and social support are closely related to the occurrence of depression (Akbulut, Ozer, Saritas, & Yilmaz, 2021; Almeida & Osvaldo, 2014; Devendorf, Bender, & Rottenberg, 2020; Gariepy, Honkaniemi, & Quesnel-Vallee, 2016; Patel et al., 2019).

Self-care abilities linked to depression. For chronic conditions such as pressure ulcer, especially those with depression, patient care must include ongoing self-care abilities to help patients gain the ability and confidence to perform daily healthy activities (Bodenheimer, 2002; Chen, Chen, Huang, Yan, & Zhu, 2022). In addition, the care of pressure ulcer has always been a burden for both patients and healthcare providers. Patients need self-care abilities to prevent or reduce pressure ulcer and not refer to psychological problem such as depression (Ledger, Worsley, Hope, & Schoonhoven, 2020). Therefore, self-care abilities would relate to depression among pressure ulcer patients.

Mental health literacy is related to depression. Generally speaking, people with higher scores on mental health literacy have fewer negative emotions and are correspondingly less likely to suffer from depression. However, patients' mental health literacy scores will decline after pressure ulcer, which will may lead to the incidence of depression. Some studies have shown that the score of the mental health part of the SF- 36 scale in the non-pressure ulcer group is 77.33, while that in the pressure ulcer group is only 61.60. At the same time, the total score of self-esteem scale of pressure ulcer patients is also significantly lower than that of the control group (Lourenco, Blanes, Salomé, & Ferreira, 2014) Hence, mental health literacy would consider be the significant factor regarding to depression among pressure ulcer patients.

Social support may also be involved in depression. The impact of social support from family and friends or the professional environment on long-term status after pressure ulcer varies from study to study (Tramonti, Gerini, & Stampacchia, 2015). Le Fort suggested that social support (including through adherence to medical

follow-up) for patients after spinal cord injury could help patients prevent pressure ulcer (Fort, Lefèvre, Kieny, Perrouin-Verbe, & Ravaud, 2020). In addition, a large number of studies have reported the correlation between the protection of social support for depression. According to Geneviève Gariépy's study, different sources of social support vary at different stages of life. For example, parental support is most important in children and adolescents, while adults and older adults rely more on spouses, followed by family and then friends (Gariépy et al., 2016). Therefore, this study aims to investigate the relationship between social support and preoperative comfort in elderly.

It is still controversial whether pressure ulcer are mainly caused by the patient's own factors or caused by medical staff. According to China's latest census, the proportion of the population aged 60 and above is 18.7%, and the aging process has accelerated significantly. These are all pressing issues that directly impact on the nursing of pressure ulcer. A nationwide survey report (including from November 2015 to June 2016, 18 hospitals (6 tertiary and 12 Grade II)) showed a 0.77% incidence of pressure ulcer among 19,530 patients in 213 wards (J. Li, Xinjuan, Zhen, Xinmei, & Cheng, 2018). In a report describing the 10-year prevalence of pressure injuries in a tertiary hospital in China, the 10-year overall prevalence of pressure ulcer was 0.59% (5,838/986,404). From 2009 to 2018, the rate increased from 0.19% to 1.00% (EAPC = 22.46%). The incidence of hospital-acquired PI was 0.13%. Prevalence increased with age ($P < 0.001$) and was significantly higher in men than in women ($P < 0.001$). PI patients were more widely distributed in ICU (20.58%), cardiovascular medicine (11.73%), gastroenterology (10.18%) and OR (8.29%) (Zhao et al., 2021).

Having all aforementioned issues in mind, the impact of different risk factors on depression is usually filtered based on what the researcher is interested in. In order to provide advice for care policymakers to consider this issue, it is also necessary to formulate comprehensive to regulate the practice of traditional medicine through the Department of Health or the national government. In turn, it can also help

the society to alleviate medical disputes and reduce the pressure on social medical insurance.

Research objectives

1. To describe depression in hospitalized patients.
2. To investigate the related factors of depression in hospitalized patients, including self-care ability, mental health literacy, social support.

Research hypotheses

Self-care ability, mental health literacy, social support related to depression in hospitalized patients

Scope of research

The purpose of this study was to describe the depressive status and its associated factors in hospitalized patients with pressure ulcer. These patients were inpatients at the Second Affiliated Hospital of Wenzhou Medical University. Data was collected from July 15 to December 31, 2023.

The independent variables were self-care ability, mental health literacy and social support, while the dependent variables were depression.

Conceptual framework

The conceptual framework model used in this study develop from the review literature. Some of the variables in the model components (self-care ability, mental health literacy and social support) were selected for investigation based on supporting evidence. Self-care ability was negatively correlated with depression (Ledger et al., 2020). Mental health literacy and social support was negatively associated with depression(Gariepy et al., 2016). A Diagram of the study conceptual framework is shown in Figure 1.

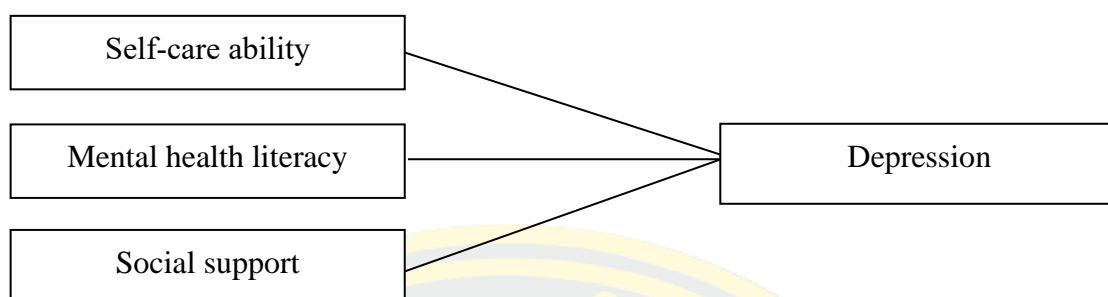


Figure 1 Conceptual framework

Definition of terms

Pressure ulcer/injury is defined as local damage to the skin and soft tissue due to intense or prolonged pressure and usually occurs in bony protrusions (Artico, Piredda, et al., 2020). It can manifest as intact skin or partially open ulcers, accompanied by redness or suppleness skin, dark wound beds, or bloody discharge (Adi et al., 2019).

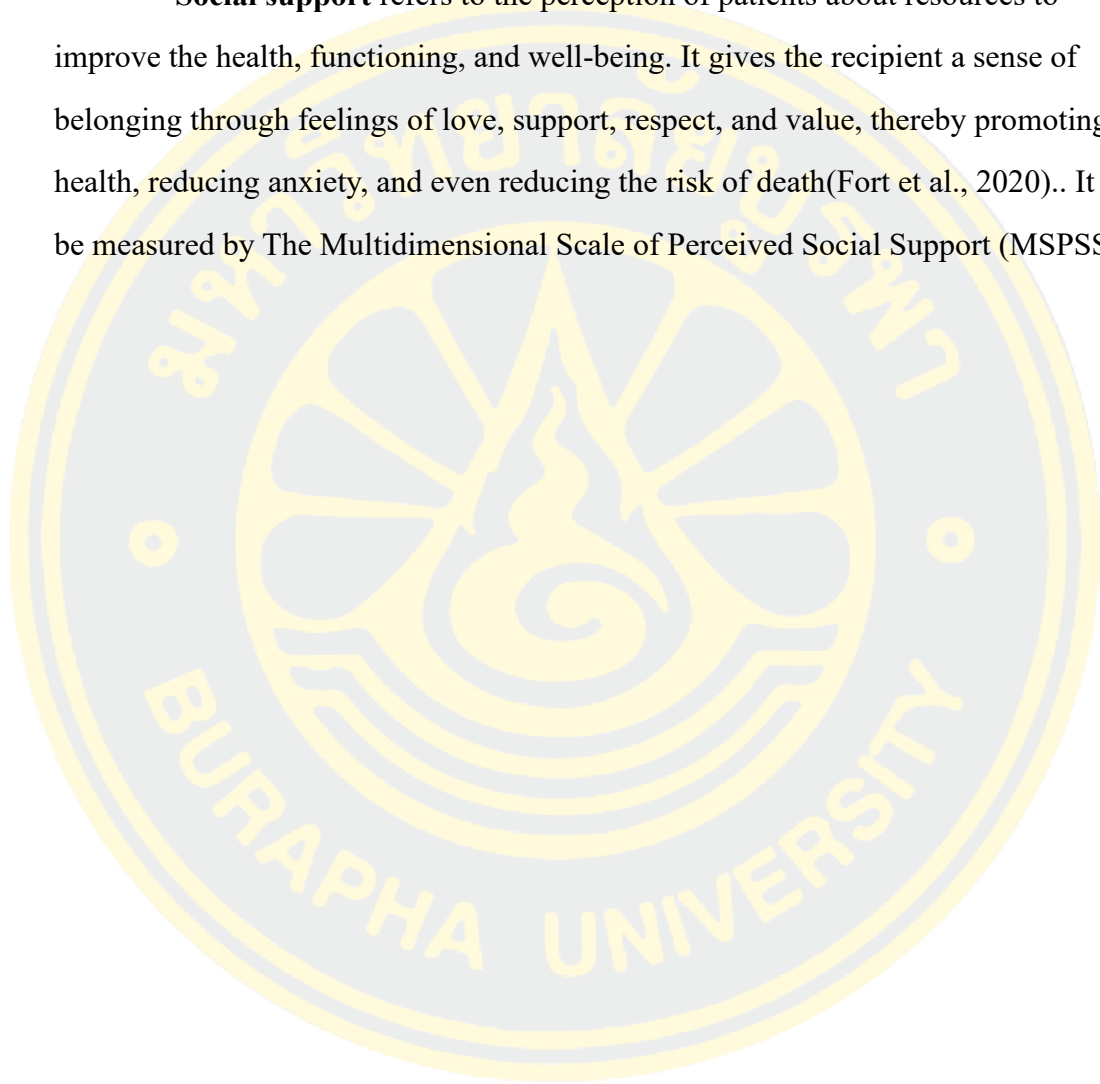
Depression is defined here as a mood disorder that develops gradually in hospitalized patients after a pressure ulcer and is characterized by persistent feelings of sadness and/or an inability to experience happiness (McCarron, Shapiro, Rawles, & Luo, 2021). This section was assessed by the Beck Depression Inventory-II (BDI-II) (Steer, Rissmiller, & Beck, 2000).

Self-care ability refers to the knowledge of self-concept, self-nursing responsibility, self-care skills, and health knowledge level. The self-care ability of the patients was assessed by using the Appraisal of Self-care Agency Scale-Revised (ASAS-R) (H.-H. Wang & Laffrey, 2000).

Mental health literacy (MHL) refers to knowledge and attitudes about mental health that help individuals recognize, manage, and prevent mental health disorder (Nguyen Thai & Nguyen, 2018). There are six components including the ability to identify specific disorders or different types of psychological distress; knowledge and belief about risk factors and causes; awareness and belief in self-help interventions; knowledge and belief about the availability of professional help;

attitudes conducive to recognition and appropriate help-seeking; and how to seek mental health information. It will be measured by mental health literacy scale (MHLS)(Suwanwong et al., 2024).

Social support refers to the perception of patients about resources to improve the health, functioning, and well-being. It gives the recipient a sense of belonging through feelings of love, support, respect, and value, thereby promoting health, reducing anxiety, and even reducing the risk of death(Fort et al., 2020).. It will be measured by The Multidimensional Scale of Perceived Social Support (MSPSS)



CHAPTER 2

LITERATURE REVIEWS

This chapter will conduct a literature review based on relevant literature research, linking the subjects of this study (pressure ulcer patients in the Second Affiliated Hospital of Wenzhou Medical University, China) and three related factors.

This section includes:

1. Concept of pressure ulcer
 - 1.1 Definition of pressure ulcer
 - 1.2 Prevalence of pressure ulcer
 - 1.3 Etiology of pressure ulcer
 - 1.3.1 Interface pressure
 - 1.3.2 Shearing force
 - 1.3.3 Frictional force
 - 1.3.4 Moisture and clotting mechanisms
 - 1.3.5 Inflammation phase
 - 1.4 Diagnosis of pressure ulcer
2. Effects of pressure ulcer
 - 2.1 Effects on patient
 - 2.2 Effects on family
 - 2.3 Effects on hospital
 - 2.4 Effects on society
3. Factors associated with depression in pressure ulcer patients
 - 3.1 Self-care ability
 - 3.2 Mental health literacy
 - 3.3 Social support
4. Summary

Concept of pressure ulcer

1. Definition of pressure ulcer

The third and latest editions (2019) of the "International Guidelines for the Prevention and Treatment of Pressure Ulcer/Injury" define pressure ulcer/injury as the local damage to the skin or the underlying tissue due to pressure or the combination of pressure and shear. Pressure ulcer involves damage to skin and soft tissues, including epithelium, dermis, and subcutaneous tissues, such as fat or muscle. Pressure ulcer is caused by long-term mechanical deformation of the soft tissue between the body's internal rigid anatomical structures (bone, cartilage, tendons) and external rigid support surfaces (such as mattresses or seats), or contact with medical and other equipment (such as the rigid objects lost on the bed"). VanGilder et al. found that pressure ulcer usually occur in acute care settings. Fecal incontinence and mobility are risk factors for pressure ulcer (Bergquist-Beringer & Gajewski, 2011; Rowling, 1961; VanGilder, Lachenbruch, Algrim-Boyle, & Meyer, 2017).

2. Prevalence of pressure ulcer

Historical data show that people have known the existence of pressure ulcer since ancient Egypt (Torrance, 1983) NPUAP records that the incidence of pressure ulcer in long-term care is 2.3%–28%, in acute care it is 10%–18%, in residential care it is more than 29%, and in rehabilitation care it is 0%–6% (Mavroeides, 2024). However, in China, the prevalence of pressure ulcer in hospitalized patients and hospital-acquired pressure ulcer (HAPU) is significantly lower than that reported abroad. According to a recent large-sample meta-analysis, the overall prevalence of pressure ulcer in inpatients was 1.67%, and the prevalence of HAPU was 0.68% (Yanxia Guo et al., 2018). In addition, the prevalence of males was 1.19%, and the prevalence of females was 0.69%, which was significantly higher than that of females. Among Chinese nursing homes, the prevalence of pressure ulcer can reach 4.8%, which is significantly higher than the average (Wei et al., 2021). Moreover, the incidence of pressure ulcer also showed significant regional differences, 3.98% in

South China and 0.56% in North China. Among them, it was worth noting that the incidence of pressure ulcer in ICU patients was the highest, reaching 18.76%. In the ICU of Wenzhou, the prevalence of pressure ulcer has reached 23.5%(X. Jiang et al., 2020)

3. Etiology of pressure ulcer

The development of pressure injury is multifactorial. This process is divided into two phases, one is the initial injury phase and the other is the prolonged inflammatory phase (Hajhosseini, Longaker, & Gurtner, 2020). The four main factors of initial injury phase implicated are interface pressure, shear, friction, and moisture.

3.1 Interface pressure

The tissues affected will need a certain time to recover any area damaged by pressure, although the natural healing effects of reactive hyperemia. Usually, when external forces become excessive and exceed the capillary pressure within the tissue. Then sustained high pressure leads to decreased capillary blood flow, tissue ischaemia, hypoxic tissue damage, and finally, necrosis (Vecin & Gater, 2022). These processes are most strongly at work where bony or cartilaginous prominences have only a thin soft-tissue covering. So, the sites of predilection for decubitus ulcers are the cutaneous surfaces over the coccyx, spinous processes, heels, ankles, and elbows.

3.2 Shearing force

Shearing force is two forces of equal size and opposite direction in two parallel planes which are very close to each other (M.-N. Wang et al., 2019). In fact, soft tissue is a kind of complex gel. When this gel is squeezed, it spreads sideways, some of the pressure is converted into the shearing force. Any shearing force is generally considered as more damaging than normal point pressure, and this force may stretch and rupture some weak blood vessels. The pressure under the shear force needed to occlude the blood vessels is greatly reduced. Thus, less time may be needed at a given load for producing a significant injury (Liao, Burns, & Jan, 2013).

3.3 Frictional force

There are two main types of friction we must to realize: static and kinetic. Kinetic friction can also be described as sliding friction. Clinically, it can cause superficial ulcers such as heel blisters after excessive walking, by eroding skin. But kinetic friction can't cause blood vessel trauma or thrombosis. Static friction prevents sliding between two surfaces. In clinical, the surfaces usually indicate to buttocks/sacral area and the bed surface. All too frequently, this force may cause their particular twisting or torsion distortion of soft tissues. In general, frictional forces may lead to the formation of intraepidermal blisters, which in turn lead to superficial skin erosion, initiating or accelerating pressure ulceration(Kottner et al., 2020).

3.4 Moisture and clotting mechanisms

The body soft tissues are largely composed of water, which are viscoelastic. When interface pressure, shearing pressure and friction pressure are applied to skin and its subcutis, there is a gradual sideways flow of interstitial fluids, ground substance gel and fat cells. Normally, if the pressure is removed, the elasticity of the tissues will return to their original positions. If a very high point pressure or a long-time pressure apply to soft tissue, the tissue fluids will not have time to migrate through the tissue interstices. In consequence, the tensile strength of the tissues is exceeded, and a laceration occurs. When most of the interstitial fluids, ground substance gel, fat cells, and others tissues have migrated away from the point pressure region, the empty vessels and fibers will become a cohesive semisolid plaque. Under continuing pressure, this semisolid plaque will gradually thin out. However, in time, normal proteolytic debridement will weaken the surrounding tissues and the compressed tissue may begin to rupture(Gethin, Cowman, & Kolbach, 2015).

In the physiological state, pressure forces will prevent movement of blood and the number of damaged micro-vessels will increase. after this trauma occurs, the blood will try to block each leak. As a result, under the pressure, each microthrombus will have enough time to mature into a firm and organized fibrin clot. Heightened

coagulability of the blood and the lack of oxygen in the tissues, swiftly produced multiple microthrombi, hypercapnic acidosis, tissue necrosis, and finally, pressure injury caused.

3.5 Inflammation phase

In the second phase, inflammation plays an important role in wound healing. This phase includes initial inflammatory phase, proliferative phase, and final remodeling and maturation phase. Upon initial injury, the inflammatory signaling molecules immediately increased, which regulated interactions between cells, growth factors, extracellular matrix, and a variety of proteases and their inhibitors. However, excessive inflammation will lead to serious tissue damage and postpone wound healing (Landén, Li, & Stähle, 2016)

4 Diagnosis of pressure ulcer

With the in-depth study of pressure ulcer in various countries, an improved understanding of the relative risk factors of pressure ulcer and the development of a comprehensive pressure ulcer risk assessment scale will enable us to prevent pressure ulcer better (Coleman et al., 2013). Definitions of pressure ulcer staging can be obtained according to the pressure ulcer Quick Reference Guide prepared by EPUAP in 2014. (I) Stage 1: Intact skin, non-blanchable erythema usually localised over a bony prominence; (II) Stage 2: Partial thickness skin loss presenting as a shallow ulcer. May also present as an intact or open serum-filled blister; (III) Stage 3: Full thickness skin loss which may show exposed subcutaneous fat. However, bone, tendon or muscle is not visible; (IV) Stage 4: Full thickness tissue loss with exposed bone, tendon or muscle; (V) Unstageable: Full thickness tissue loss in which the base of the ulcer is covered by slough or eschar so depth unknown; (VI) Suspected deep tissue injury: Purple or maroon localised discoloration of intact skin or blood-filled blister due to damage of underlying soft tissue (Ferris, Price, & Harding, 2019).

Effects of post-pressure ulcer depression

1. Effects on patient

Post-pressure ulcer depression includes the effects of both pressure ulcer and depression on patients, respectively.

The presence of pressure ulcer affects patients in many ways (Dealey, Posnett, & Walker, 2012). For example, pressure ulcer are painful to patients and can produce foul smells(Howell, Loera, Tickner, Maydick-Youngberg, & Kirkland-Kyhn, 2021). Sometimes pressure sores can ooze a lot, especially in the early stages of inflammation, requiring frequent dressing changes. Therefore, this will reduce the patient's quality of life(J. Jiang et al., 2024). In addition, pressure ulcer have been identified as proximate causes that increase the risk of death in patients In short, pressure ulcer have a significant impact on health burden, quality of life, social interactions, pain and discomfort, and length of hospital stay; once infected, they can cause sepsis (causing cardiac arrest) and may even lead to death(Fischer, Maleitzke, Eder, Ahmad, & Braun, 2021).

For patients, depression can lead to low mood, and a large number of studies have shown that the suicide rate of depressed patients is significantly higher (Mccarron et al., 2021).

2. Effects on family

Pressure ulcer can place a serious financial burden on the patient's family. According to statistics, in the UK, the cost of additional treatment for pressure ulcer patients was 1214-14108 pounds, and it was positively related to the severity of the patient's pressure ulcer (Dealey, Posnett, & Walker, 2012). In China, this cost is likely to increase in the future as the population ages. In addition, if there is a patient with pressure ulcer at home, care needs to be handled by a dedicated person. Especially for family members who lack professional knowledge, the psychological or physical attack of the patient and the emotional gap will further affect the enthusiasm of family members(Faith et al., 2013; Will Evers, 2001). The patient's depression, in turn, will

cause family members to spend more time and energy to care for the patient's emotions.

3. Effects on hospital

Pressure ulcer management is a basic duty of nurses. As one of the medical staff who have been with patients for the longest time, nurses are often the first to understand the pain and various discomforts of patients. The incidence of pressure ulcer is also often used as one of the indicators to assess the quality of care. Clinically, Clinically, nursing care after the occurrence of pressure ulcer will greatly increase, which will increase the workload of doctors and nurses, reduce the turnover rate of hospital beds, and also make the already scarce medical resources (doctors and nurses) even more scarce. At present, there are many similar situations in China. Every year, medical care disputes caused by pressure ulcer emerge in an endless stream.

4. Effects on society

Pressure ulcer impose a heavy financial burden on the medical system. According to the results of the Touche-Ross survey, the cost of treating pressure ulcer in the United Kingdom is estimated to be 18-321 million pounds per year, while prevention costs are estimated to be 1.8-7.55 million pounds. Bennett explored the cost of treatment for each pressure ulcer patient from 1,064 pounds (grade 1 pressure ulcer) to 10,551 pounds (grade 4 pressure ulcer), which is equivalent to a total annual cost of 140-2.1 million pounds, or 4% of total medical expenditures, most of which are spent on nursing time(Bennett, Dealey, & Posnett, 2004). Similarly, pressure ulcer are considered the third most expensive disease in the Netherlands, not because of the cost of medication or surgical intervention, but because of long-term hospitalization and the need for intensive care(Zoccali et al., 2023).

Factors associated with depression in pressure ulcer patients

1. Self-care ability

There was a significant negative correlation between good self-care ability and the prevalence rate of post-pressure ulcer depression. Generally speaking, people with stronger Self-care ability have less care dependency and have more independent activities, while more activities can increase the speed of blood circulation and reduce the pressure ulcer-prone areas of the body, such as buttocks and feet. At the same time, having good self-care ability means having less dependence on external support and help. This can reduce the influence of the external environment on one's emotional value and other aspects, and can also reduce significant fluctuations in emotions and the occurrence of depression(Tang, Wei, Kong, & Lu, 2024). With Self-care ability, patients will have less pressure from family, society and economy, so as to reduce the occurrence of depressive symptoms.

Overall, the health status based on the EQ-5D questionnaire was worse compared to another cross-sectional study in advanced elderly, with a substantial proportion of subjects reporting pain/discomfort, mobility difficulties, and anxiety/depression (Boyer et al. 2022). We believe that good self-care ability of people who are susceptible to pressure ulcer, which has an obvious effect on their prevention of the post-pressure ulcer depression.

2. Mental health literacy

There was a significant negative correlation between mental health literacy and the prevalence of post-pressure ulcer depression. A healthy state can help patients get healthy faster. On the contrary, low mental health literacy makes people in a state of mental stress for a long time, which will lead to slow wound healing and an increase in the prevalence of pressure ulcer. Good mental health enables people to deal with various pressures in life with a more positive attitude, adopt correct values, beliefs and attitudes towards problems, and reduce the incidence of anxiety and depression(Jafari et al., 2024).

Many studies have shown that the wound healing rate of patients with negative emotional states such as stress and pain is much slower than that of hospitalized patients with good mental state. According to Bosch and his colleagues and Doering (Doering, Moser, Lemankiewicz, Luper, & Khan, 2005) and his colleagues, this is mainly because depression can disrupt the process of wound healing. Kiecolt Glaser and colleagues reported that the wound healing rate in the normal mood group was 24% faster than that in the experimental group (Kiecolt-Glaser, Marucha, Mercado, Malarkey, & Glaser, 1995). At the same time, studies have reported that residents of long-term care facilities with pressure ulcer also scored significantly lower on the mental health and role emotion subscale than residents without pressure ulcer (Souza et al., 2015). In addition, in Vitor Ângelo Carlucio Galhardo study, the pressure ulcer group scored lower in the 36-item short form health survey questionnaire (SF-36) area of all items related to mental health of health-related quality of life (HRQoL) than the control group (Ângelo, Galhardo, Magalhaes, Blanes, & Ferreira, 2010).

3. Social support

Social support was significantly inversely associated with post-pressure ulcer depression. The impact of social support from family and friends or the professional environment on long-term post-pressure ulcer status varies from study to study (Tramonti et al., 2015). Strong social support can directly alleviate the impact of stress on individuals and prevent the development of mental health problems (Chen et al., 2022). For example, after the large earthquake in Wenchuan, China, it was found that the level of social support is positively correlated with the incidence rates of depression and anxiety (Yi Guo et al., 2015).

Pressure ulcer is an understudied problem in home care. In a cross-sectional survey of patients admitted to a home care facility, BA Ferrell, et al. (Ferrell, Josephson, Norvid, & Alcorn, 2000) found that in a total sample of 3,048 patients, 9.12% had pressure injuries: 37.4% had more than 1 ulcer, and 14.0% had 3 or more

ulcers. Multiple ulcers. About 30% of these subjects were at risk of developing new pressure ulcer. Decompression devices and other wound care strategies appear to be underutilized and are often applied indiscriminately. They believe there is a great need for pressure ulcer prevention and treatment in the home care setting. Care and support from family and friends is very important in the prevention and treatment of pressure ulcer in patients.

Economic evidence supports the use of pressure redistribution foam mattresses for early prevention in the emergency department to effectively prevent pressure ulcer early and reduce the incidence of pressure ulcer, thereby improving the health of older patients and saving hospitalization costs (Teague et al., 2011). In addition, a large number of studies have reported the correlation between the protection of social support for depression. According to Geneviève Gariépy's study, different sources of social support vary at different stages of life. For example, parental support is most important in children and adolescents, while adults and older adults rely more on spouses, followed by family and then friends (Gariépy et al., 2016).

Summary

In summary, pressure ulcer is a common traumatic disorder of the skin that affect not only the patients who suffered long-term bedridden, but also the family caregivers of those patients who may vulnerable to perform the role as caregivers for a long time. In addition, a large number of studies have shown that the length of hospital stay and nursing knowledge are closely related to the occurrence of pressure ulcer. However, there have been few direct studies about the depression. It is still unclear to know the risk factors of depression. A large number of studies have shown that self-care ability, mental health literacy and social support are closely related to the occurrence of depression. Presently, it has become clear that hospital-based care needs to focus on the psychological well-being of the patient rather than only on the

patient's wound itself in order to offer the continuous and professional mental health care to patients, family, and society.

In addition, there are limited studies on self-care ability, mental health literacy and social support in Chinese patients with depression. This emphasized the need to develop an evidence-base in order to evaluate and improve the physical, mental and financial support that given to patients and family caregivers in China. This study focuses on the correlation factors of depression in Wenzhou, China, which has guiding significance for the future nursing work. The results of the study on the effect of self-care ability, mental health literacy and social support on depression are also worth discussing. Our research has implications for improving the adequacy of mental health care services to understand, support and meet the needs of people with pressure ulcer and their families, while improving the quality of life of people with pressure ulcer and addressing gaps in this area in Wenzhou, China.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter introduced research methods, including research design, research setting, population and sample, research instruments, quality of instruments, protection of human subjects, data collection procedures and data analysis.

Research design

The design of this study was a descriptive correlation study. The dependent variables (DV) of this study were pressure ulcer and depression, and the independent variables (IV) were self-care ability, mental health literacy and social support.

Setting of the study

The study will be conducted in pressure ulcer inpatients at the Second Affiliated Hospital of Wenzhou Medical University (WMU) in Wenzhou, China. The hospital's services for patients include ultrasonography, daily pressure ulcer care and rehabilitation. The hospital is open Monday to Friday from 8:00 am to 12:00 am and 1:30 pm to 5:00 pm. The average daily flow of patients in the Second Affiliated Hospital is about 3000 person per day.

Population and sample

Population

The Target population in this study was pressure ulcer inpatients at the Second Affiliated Hospital of Wenzhou Medical University (WMU) in Wenzhou, China. The average daily flow of patients in the Second Affiliated Hospital is about 3000 person per day.

Sample was pressure ulcer inpatients at the Second Affiliated Hospital of Wenzhou Medical University (WMU) in Wenzhou, China and selected based on the inclusion criteria:

1. All patients diagnosed by physician as pressure ulcer
2. Be able to read, write and understand Chinese
3. Patients with undiagnosed depression prior to PU diagnosis
4. No other mental illnesses
5. No cognitive disturbance until could not provide information
6. Aged ≥ 60

Sample size

The sample size in this study was calculated by using Tabachnick and Fidell's formula (2007) as follows:

$N \geq 104 + m$ (where m is a number of independent variables). Based on this formula, the sample size for this study was least 107. In this study, 20% of the attrition rate was used 21 subjects therefore 128 participants were recruited.

Sampling technique

The simple random sampling method was used in this study. The researcher searched for eligible patients who met the inclusion criteria. The researcher assigned each client a number on a small piece of paper and mix it in a box. The researcher randomly picked up a number until reach the target number of sampling.

Research instruments

Data was collected by using five questionnaires, which include the Demographic questionnaire, the Appraisal of Self-care Agency Scale-Revised (ASAS-R), the Beck Depression Inventory-II (BDI-II), the mental health literacy scale (MHLS) and the Multidimensional Scale of Perceived Social Support (MSPSS). The details of variables and the questionnaires are as follows:

1. General information

This part of the content was collected through the Demographic questionnaire, which was developed by the researchers. It has two parts: demographic (for patients) and pressure ulcer and depression record (for researchers). Demographic asked about age, education, marital status, occupation, family type, family economic status, place of residence and primary caregiver. For pressure ulcer and depression record, it will be documented by the researcher. These data include the past history of depression and treatment, and the past history of pressure ulcer, as well as some past history related to pressure ulcer, such as history of skin allergy, history of hypertension, diabetes, history of long-term bed rest caused by diseases such as cerebral infarction and cerebral hemorrhage, history of trauma, surgery, etc.

2. Depression

This Beck Depression Inventory-II (BDI-II) was used to measure depression (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), Wang et al., introduced this scale to China and did a back-translation process (Z. Wang et al., 2011). The BDI-II has been applied in the assessment of depression in various disease populations and the general population. It is a 21-item scale, with each item ranging from 0 to 3, and total scores ranging from 0 to 63, with higher scores indicating greater depressive tendencies. The total score can be divided into the following six levels

These ups and downs are considered normal: 1-10 points.

Mild mood disturbance :11-16 points.

Borderline clinical depression:17-20 points.

Moderate depression:21-30 points.

Severe depression:31-40 points.

Extreme depression: over 40 points.

The internal consistency of the BDI-II was high (coefficient alpha = 0.90), and its total score was not significantly related to sex, age, or ethnicity (Steer et al., 2000). And the Chinese version of Beck Depression Inventory-II could be reliably

used to assess depression symptoms as a self-administered inventory. Its Cronbach coefficient was 0.94. The intercorrelations of 21 items range from 0.18 to 0.71 and item total correlations range from 0.56 to 0.82. The test-retest coefficient was 0.55 ($P < 0.05$)

3. Self-care ability

The Appraisal of Self-Care Agency Scale-Revised (ASAS-R) scale was used to measure self-care behavior (Sousa et al., 2010). Guo et al. (2017) introduced this scale to China and did a back-translation process. It is a 15-item scale that measures one's general and specific capabilities to engage in self-care (e.g., I am able to get the information I need) as well as self-care behaviors (e.g., I have changed some of my old habits in order to improve my health). It has three subscales, 1) having power for self-care, six items, 2) developing power for self-care, five items and 3) lacking power for self-care, four items. Subscale 3 was negative and needs a reverse score. Each item uses a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree), with summated scores ranging from 15 to 75 and higher average scores indicating greater self-care. The overall ASAS-R had a Cronbach's alpha of .89 in previous research. The Chinese version of the ASAS-R had a Cronbach's alpha of .89.

4. Mental health literacy

This part uses the mental health literacy scale (MHLS), which was developed by Jung et al. (Jung, von Sternberg, & Davis, 2016). The scale is suitable for assessing the level of mental health literacy of adult groups. The Chinese version was translated by a research team composed of a psychology professor and 8 postgraduate students for measuring Mental Literacy (Ming, Chen, & Wang, 2021). MHLS consists of 22 items with 3 dimensions: mental health knowledge (items 1-10), beliefs (items 11-18) and resources (items 19-22).

The knowledge dimension is the forward question and the belief dimension is the reverse question. Both knowledge and belief dimensions were answered in the

form of Likert scale and "don't know". Six options were set: "strongly agree", "agree", "uncertain", "disagree", "strongly disagree" and "don't know".

Dichotomous scoring method is adopted, that is, for positive questions, choose "strongly agree" and "agree" and count for 1 point; for reverse questions, choose "strongly disagree" and "disagree" and count for 1 point; for other questions, count for 0 point. For the resource dimension, "Yes" equals 1 point, and "No" equals 0 point. The total score is the sum of the scores of each item, and the score ranges from 0 to 26. The higher the score is, the higher the mental health literacy level is.

MHLS has been verified to have good reliability and validity(Ming et al., 2021). The Cronbach's α coefficients of internal consistency of the scale were 0.83, and the Cronbach's α coefficients of mental health knowledge, belief and resources were 0.76, 0.77 and 0.84, respectively.

5. Social Support

The Multidimensional Scale of Perceived Social Support (MSPSS)(Zimet, Powell, Farley, Werkman, & Berkoff, 1990) was used to measure the level of social support. Chou (2000) introduced this scale to China and did a back-translation process. The scale consists of 12 items which can be divided into 3 subscales: Support from family (items 3, 4, 8, and 11), support from friends (items 6, 7, 9, and 12), and support from significant others (items 1, 2, 5, and 10) such as neighbors, professional medical staff. Patients were requested to rate each item on a 7-point Likert scale (1 = very strongly disagree to 7 = very strongly agree). The total score of the perceived social support ranges from 12 to 84 points, with a higher average score indicating higher social support(Dahlem, Zimet, & Walker, 1991). The scoring of the multidimensional scale of perceived social support is based on the guideline of Zimet et al. (1990). The level of social support among GI cancer patients was described as following

For total mean scores of social supports

Scores from 12 to 36 were considered low-level social support

Scores from 36.1 to 60 were considered moderate level social support³⁵

Scores from 60.1 to 84 were considered a high-level social support

For family, friends, and significant others subscale mean scores

Scores from 4 to 12 were considered low-level social support

Scores from 12.1 to 20 were considered moderate level social support

Scores from 20.1 to 28 were considered high-level social support

The internal consistency coefficient (Cronbach's alpha) for the Chinese version of the MSPSS scale was .89, which showed good reliability in China.

Quality of instruments

For validity, since all the scales used in this study had already been validated and used in previous studies on patients with pressure ulcer. The researchers used all these scales without modification. And the Chinese versions of the MHL scale, the ASAS-R scale, the BDI-II scale and the MSPSS scale have already test for their validity.

For reliabilities, all of questionnaires had been tested for the internal consistency reliability with 30 persons who had similar characteristics with the sample. All measurements was used if they had Cronbach's alpha coefficients at least .8(Liu, Li, & Lian, 2008).

Cronbach's alpha coefficients of the MHL scale = .803

Cronbach's alpha coefficients of the ASAS-R scale = .804

Cronbach's alpha coefficients of the BDI-II scale = .811

Cronbach's alpha coefficients of the MSPSS scale = .933

For reliabilities, all of questionnaires had been tested for the internal consistency reliability with 128 persons who had similar characteristics with the sample.

Cronbach's alpha coefficients of the MHL scale = .811

Cronbach's alpha coefficients of the ASAS-R scale = .822

Cronbach's alpha coefficients of the BDI-II scale = .817

Cronbach's alpha coefficients of the MSPSS scale = .918

Protection of human subjects

This research was about human rights. Approval for human subjects was obtained from the Burapha University Ethics Committee on Human Research (BUU EC) and Institution Review Board (IRB) of the second affiliated hospital of WMU. The data collection process began once the researchers had obtained permission from the relevant authorities.

During data collection, pressure ulcer patients who met the inclusion criteria informed and documented about the study and its confidentiality and voluntary nature. They had the right to withdraw from the study at any time if they voluntarily participate in the study. In addition, they assured that refusing to participate did not affect the services they received.

All participants had a clear understanding of study details and data collection procedures. The researcher or research assistant provided an information sheet, informed consent and explained the research objectives, methods, procedures and benefits of this study. Participants were not asked to provide their names. Participants are patients who volunteered to participate in this study. Voluntary participants signed a consent form prior to data collection. The researcher or research assistant explained all the details of each section of the questionnaire.

The anonymity and confidentiality of participants was respected. Only codes were used and all information collected from participants was kept confidential and used for research purposes only. Results are reported as group data. All data is stored using a password in a specific file that only researchers can access. Data was destroyed after one year of study.

Data collection procedures

The data collection procedure in this study was as follows:

1. After approval by BUU EC, the letter from BUU School of Nursing was sent to the President of WMU Second Affiliated Hospital in Wenzhou, China and the IRB Committee.
2. The researcher, after obtaining permission from the hospital IRB and the director, introduces himself to the director and staff involved in the therapeutic care of pressure ulcer patients, included head nurses, nurse practitioners, and physicians. The researcher explained the research purpose and procedures to them. The researchers then asked them to collaborate on data collection and explain the details of the study, such as the purpose of the study, study sample, inclusion criteria for participants, data collection methods, and how the questionnaires were distributed to participants.
3. The researcher arrived at the hospital before the official time on weekdays (Monday to Friday). Researchers searched the registry to find clients who met study inclusion criteria. The researchers will then use convenience sampling techniques to recruit participants.
4. The researcher introduced himself to the patient and inform them of the research, purpose, data collection and human rights protection. If patients volunteered to participate in the study, the researchers asked them to sign a consent form for signature verification.
5. Participants answered the self-reported questionnaire through the WeChat app while waiting for the service. The total time was about 30 minutes.
6. Once submitted by the participant, the researcher checked the integrity of the data.

Data analysis

Data were entered into the SPSS 26 statistical program and analyzed. The alpha level for statistical significance was set to .05. The data analysis is mainly divided into the following four parts:

1. The description of the variables (independent and dependent variables) will be analyzed by descriptive statistics.

2. Using Pearson product moment correlation coefficient and partial correlation coefficient to explore the relationship between depression and self-care ability, mental health literacy, and social support.

3. The intensity correlation coefficients are interpreted according to Burn and Grove (Burn & Grove, 2013).

Weak relationship	0.00 to < 0.30	0.00 to < - 0.30
Moderate relationship	0.30 to 0.50	- 0.30 to - 0.50
Strong relationship	> 0.50	> - 0.50

CHAPTER 4

RESULTS

The purpose of this study was to investigate the factors influencing the occurrence of depression after pressure ulcer in adults. These factors included three elements: mental health literacy, self-care ability, and social support. Data were collected from 128 pressure ulcer inpatients in the Second Affiliated Hospital of Wenzhou Medical University, China. The research results were divided into the following four parts:

Part I: Demographic characteristics of adults with the occurrence of depression after pressure ulcer

Part II: Descriptive information on depression after pressure ulcer

Part III: Factors related to depression after pressure ulcer

Part IV: Correlation results of all studied variables

Part I: Demographic characteristics of the sample

Table 1 showed that 72.66% of the patients were male, and 54.7% of them were over 75 years old. The average BMI level was 20.30, and 7.81% exhibiting overweight status. In addition, the majority (54.68%) live in rural areas. 78.13% of the patients were married or cohabiting with their spouses, and most people (58.60%) only accepted the primary education, only a few people (3.61%) received undergraduate education. A total of 61.24% of individuals report having no religious beliefs, whereas 38.76% identify as having religious beliefs. The average annual household income of 31.25% of the patients was less than 25,000 yuan. For patients, the primary caregiver during hospital stay was their spouse in 45.31% of cases. The majority of individuals have experienced illness for a duration of less than one month, with most of them presenting with low-grade pressure ulcers, including suspected

deep tissue injury and stage 1 ulcers. In addition, 53.12% do not smoke and 64.84% do not drink alcohol. In addition, 31.25% of the patients were diagnosed with diabetes, 41.41% with hypertension and 19.53% with heart disease. The demographic characteristics of the study participants are shown in Table 1.

Table 1 Characteristics of participants (n = 128)

Characteristics	Frequency	Percentage (%)
Gender		
Male	93	72.66
Female	35	27.34
Age (M=75.64, SD=8.88, Range=60-100)		
60-74	58	45.3
75-89	60	46.9
≥90	10	7.8
BMI (M=20.30, SD=4.39, Range=13.11-48.33)		
<18.49	47	36.72
18.50-23.90	67	52.34
24.00-27.90	10	7.81
≥28.00	4	3.13
Religion		
Yes	49	38.28
No	79	61.72
Place of Residence		
Rural	70	54.68
Urban	58	45.32
Marital status		
Married	100	78.13
Not married	28	21.87

Table 1 (Continue)

Characteristics	Frequency	Percentage (%)
Education level		
Illiterate	11	8.59
Primary school	75	58.60
Middle school	26	20.31
High school	11	8.59
Bachelor's degree	5	3.91
Average annual household income		
<25000 RMB	40	31.25
25000-50000 RMB	19	14.84
50000-100000 RMB	49	38.28
>100000 RMB	20	15.63
PI duration (month)		
0-1	87	67.44
1-6	28	21.71
6-12	5	3.88
≥12	9	6.97
Grade		
Unstageable	15	11.63
Subspected deep tissue injury	47	36.43
Stage 1	32	24.81
Stage 2	27	20.93
Stage 3	6	4.65
Stage 4	2	1.55
Primary caregiver		
Spouse	58	45.31
Child	43	33.60
Other	27	21.09

Table 1 (Continue)

Characteristics	Frequency	Percentage (%)
Smoking		
Yes	60	46.88
No	68	53.12
Alcohol drinking		
Yes	45	35.16
No	83	64.84
Diabetes		
Yes	40	31.25
No	88	68.75
Hypertension		
Yes	53	41.41
No	75	58.59
Heart disease		
Yes	25	19.53
No	103	80.47

Part II: Descriptive information on depression after pressure ulcer

As show in Table2, the highest score of the patients with pressure ulcer was 32, the lowest score was 7, and the average score was (17.91±5.347).

Table 2 Mean and Standard Deviation of depression after pressure ulcer (n =128)

variables	Maximum	Minimum	Mean	SD
Depression	32	7	17.91	5.347

The higher the score, the more severe the depression. Generally, according to the Baker Depression Inventory score, depression is divided into four levels: 0-13

is healthy, 14-19 is mild depressive symptoms, 20-28 is moderate depressive symptoms, and > 28 is severe depressive symptoms. In this study population, 35.16% of patients had depressive symptoms. In addition, most of the depressed patients (18.75%) belonged to mild depression, and a small part (5.47%) belonged to severe depression. As shown in Table 3.

Table 3 The level of depression after pressure ulcer (n = 128)

variables	Frequency	Percentage (%)
Depression		
Yes	45	35.16
No	83	64.84
Degree of depression		
No depressive symptoms	83	64.84
Mild depressive symptoms	24	18.75
Moderate depressive symptoms	14	10.94
Severe depressive symptoms	7	5.47

Part III: Factors related to depression after pressure ulcer

This study examined three factors associated with depression after pressure ulcer, including mental health literacy, social support, and self-care ability. The results showed that the average score of mental health literacy was 9.23(SD=3.018), the average score of social support was 55.62(SD=8.198), and the total score of self-care ability was 51.09 (SD=5.475). As shown in Table 4

Table 4 Mean and Standard Deviation (SD) of the factors related to depression after pressure ulcer (n =128)

variables	Possible range	Actual range	Mean	SD
Depression	0-63	7-32	17.91	5.347
Social support	12-84	37-75	55.62	8.198
Self-care ability	5-75	38-64	51.09	5.475
Mental health literacy	0-22	3-17	9.23	3.018

Part IV: Correlation results of all studied variables

Pearson correlation test was used to investigate the relationship between self-care ability, mental health literacy, social support and depression after pressure ulcer. The normal distribution of data is proved by regression residuals, Q-Q plots and scatter plots.

According to the correlation, social support and self-care ability were significantly negatively correlated with depression after pressure ulcer ($r=-.439$, $p<.001$; $r=-.465$, $p<.001$). However, mental health literacy levels were not associated with depression after pressure ulcer, as shown in Table 5.

Table 5 Correlation between variables and depression after pressure ulcer (n=128)

Variables	r	p-value
1. Self-care ability	-.465**	< .001
2. Mental health literacy	-0.036	.341
3. Social support	-.439**	< .001

CHAPTER 5

CONCLUSION AND DISCUSSION

The study's limitations, recommendations for further research, and implications for nursing are all covered in this chapter, which also summarizes and discusses the study's findings.

Summary of the research

1. The results showed that 72.66% of the patients were male, and 54.7% of them were over 75 years old. The average BMI level was 20.30, and 7.81% exhibiting overweight status. In addition, the majority (54.68%) live in rural areas. 78.13% of the patients were married or cohabiting with their spouses, and most people (58.60%) only accepted the primary education, only a few people (3.61%) received undergraduate education. A total of 61.24% of individuals report having no religious beliefs, whereas 38.76% identify as having religious beliefs. The average annual household income of 31.25% of the patients was less than 25,000 yuan. For patients, the primary caregiver during hospital stay was their spouse in 45.31% of cases. The majority of individuals have experienced illness for a duration of less than one month, with most of them presenting with low-grade pressure ulcers, including suspected deep tissue injury and stage 1 ulcers. In addition, 53.12% do not smoke and 64.84% do not drink alcohol. In addition, 31.25% of the patients were diagnosed with diabetes, 41.41% with hypertension and 19.53% with heart disease.

2. The highest score of the patients with pressure ulcer was 32, the lowest score was 7, and the average score was (17.91 ± 5.347) .

3. The higher the score, the more severe the depression. Generally, according to the Baker Depression Inventory score, depression is divided into four levels: 0-13 is healthy, 14-19 is mild depressive symptoms, 20-28 is moderate depressive symptoms, and > 28 is severe depressive symptoms. In this study population, 35.16% of patients had depressive symptoms. In addition, most of the depressed patients (18.75%) belonged to mild depression, and a small part (5.47%) belonged to severe depression.

4. This study examined three factors associated with depression after pressure ulcer, including mental health literacy, social support, and self-care ability. The results showed that the average score of mental health literacy was 9.23(SD=3.018), the average score of social support was 55.62(SD=8.198), and the total score of self-care ability was 51.09 (SD=5.475).

5. Social support and self-care ability were significantly negatively correlated with depression after pressure ulcer ($r = -.439, p < .001$; $r = -.465, p < .001$). However, mental health literacy levels were not associated with depression after pressure ulcer.

Discussions

1. The patients with pressure ulcer was (17.91 ± 5.347), this result indicated a significant variation in pressure ulcer scores among individuals. From the patients' perspective, those with lower scores may possess a more optimistic and positive disposition, coupled with effective psychological adjustment capabilities. Such individuals tend to approach their condition with an open-minded attitude and maintain confidence in their treatment and rehabilitation processes. For instance, some patients perceive pressure ulcer as a minor challenge within the rehabilitation journey and believe that, with the assistance of healthcare professionals and their own active participation, they can achieve swift recovery. Patients exhibiting elevated scores may possess sensitive personality traits, rendering them susceptible to anxiety. The pain, limited mobility, and adverse emotional states associated with pressure ulcer, coupled with apprehensions regarding future quality of life, are exacerbated. For instance, certain patients may encounter feelings of helplessness and despair stemming from the prolonged healing process of pressure ulcer and the potential necessity for extended bed rest.

Regarding the severity of the condition, it is important to note that the underlying primary diseases and the severity of pressure ulcer among the participants in our sample exhibit significant variability. Patients with lower depression scores tend to present with milder pressure ulcer, typically characterized by early-stage lesions that are small in size and shallow in depth. These conditions generally exert a lesser impact on daily functioning and are associated with relatively reduced physical

pain. Conversely, patients with higher depression scores often experience more severe pressure ulcer, which may include extensive infections and chronic, non-healing wounds. Such conditions frequently result in considerable physical pain and distress, which can contribute to the development of depression.

According to reports, the incidence rate of depression associated with pressure ulcers is 48.65%(Dallam et al., 1995). Other studies have similarly indicated that patients with pressure ulcers exhibit a higher incidence of depression(Q. Li, Song, Shen, Zhang, & Tian, 2024; Suttipong & Sindhu, 2012). In our study, 35.16% of patients demonstrated symptoms of depression, with the majority (53.33%) experiencing mild depression and a minority (15.56%) experiencing severe depression. This incidence is comparatively lower than that reported in other literature. The demographic characteristics of our study reveal that older patients constitute a larger proportion of the sample. Owing to their distinct physical and mental attributes, these patients may not prioritize quality of life to the same extent as younger individuals. Consequently, the psychological impact of developing pressure ulcers may be less pronounced in this demographic. Furthermore, the majority of pressure ulcers observed in the study manifested within 1 month and were of an acute nature, potentially preceding the onset of depression. Simultaneously, the majority of individuals with pressure ulcers are diagnosed with either suspected deep tissue injury or stage 1 ulcers, neither of which necessitate debridement. Consequently, patients typically experience minimal pain, resulting in a relatively minor impact on their subjective well-being. Notably, 45.31% of these patients are married, which allows them to receive substantial psychological support, whether they are hospitalized or at home. The majority of patients exhibit a normal BMI, and research indicates that maintaining an optimal nutritional status may contribute to the prevention and management of depression(Kris-Etherton et al., 2020; Opie et al., 2017).

These findings may elucidate the observed low incidence and mild symptomatology of depression following pressure ulcers in the participants of this study. Despite international campaigns to raise awareness and education, the prevention of pressure ulcer remains an essential area for healthcare providers and a patient safety concern(Steen, Khan, Ansell, Sanchez, & Ray, 2017). During our study,

we found self-care ability, mental health literacy and social support play the important role in the prevalence rate of pressure ulcer.

2. Self-care ability: Self-care ability refers to the knowledge of self-concept, self-nursing responsibility, self-care skills, and health knowledge level. An inductive analysis of the data revealed three major themes, all of which may be related to patient adherence to pressure ulcer prevention and management techniques (Ledger et al., 2020). As show in ASAS-R, People were less likely to get pressure ulcer and to suffer depression the higher their score was. During the pressure ulcer risk chat, patients expressed that they did not always feel as though their concerns were taken into consideration. Based on our experience, when developing strategies to prevent pressure ulcer, it is important to make appropriate plans for the individual and seek the consent and opinion of the patient. Self-care appears to be a crucial factor for patients during the recovery phase. Furthermore, based on the risk factors previously discussed, which may affect the individual's postoperative mental and physical quality of life, some recipients might develop anxiety and depression (Akbulut et al., 2021). In our study, we found when we reasonably negotiate with patients to develop ways to prevent pressure ulcer, patients will be more cooperative with our program, and effectively increase the efficiency of communication between patients and nurses, thus greatly reducing the incidence of pressure ulcer and depression. Thus, it is important that we educate patients who have pressure ulcer so that they are aware of the condition's basics and know exactly how to treat or prevent it. Become more conscious of your own nursing needs.

3. Mental health literacy (MHL): MHL refers to knowledge and attitudes about mental health that help individuals recognize, manage, and prevent mental health disorders (Jorm et al., 1997). According to the World Health Organization, health is being in good bodily, mental, and social health goes beyond simply being free from illness or disability (Demyttenaere, Bruffaerts, Villa, & Chatterji, 2004). Mental health issues among different social groups have grown in importance as a public health concern in China in recent years. As an important factor affecting mental health, mental health literacy has been paid more and more attention by scholars at home and abroad (Jorm, 2000). According to Jorm, mental health literacy is made up of six different components: (1) understanding mental health disorders; (2) knowing

where to look for mental health information; (3) understanding risk factors and causes; (4) understanding self-treatment; (5) understanding the availability of professional help; and (6) having attitudes that support understanding and appropriate help-seeking (Jorm et al., 1997). The concept of mental health literacy (MHL) emerged inside the health literacy (HL) domain and needs to be interpreted within that framework. In the last few years, knowledge of HL has expanded to become a more comprehensive concept that is seen to be essential to raising individual health outcomes, reducing population health disparities, and changing the way health systems and health policy are developed (Parker, 2012). Based on our research, the majority of patients considered the likelihood of depression and pressure ulcer was inversely related to the MHL score.

However, we found that there was no significant statistical difference. This may be because the number of patients is not enough and the statistical area is relatively limited. Moreover, when scoring young and elderly patients, the lack of cooperation of the elderly led to inaccuracy. In our study, we found that for some young patients who are in high mental health literacy are better able to handle a wide range of challenges with composure. Patients who possess high mental health literacy are less likely to experience depression and pressure sores because they can stay in a positive frame of mind and interact with doctors, nurses and other patients more effectively. In the event that pressure ulcer has already developed, they can also be better treated to prevent depression from starting and spreading. Consequently, we propose that we perform MHL scores on a regular basis for individuals who have pressure ulcer. We can provide family members, physicians, and nurses with advice on how to better care for and assist patients who have poor MHL scores. Psychologists may even be invited to provide counseling to certain patients. To confirm the validity of the scoring system, we will assess more patients from several regional hospitals.

4. Social support (SS): SS is also essential for patients with pressure ulcer and depression. The most important defense against stressful life events is SS(Hannan, Alce, & Astros, 2016; Raina et al., 2004; Stewart, Umar, Tomenson, & Creed, 2014) . By reducing the consequences of detrimental psychosocial outcomes like depression, anxiety, low self-efficacy, stress, and social isolation or loneliness, a

sufficient amount of SS enhances mental health (Denis, Callahan, & Bouvard, 2015; Hamza, Sadat, Yim, & Chinna, 2015). The quantity of support that one receives from others through encounters is known as social support. Support can come in three forms: informational, practical, or emotional (e.g., empathy, practical help, counsel)(Fleury, Keller, & Perez, 2009). It could be measured by The Multidimensional Scale of Perceived Social Support (MSPSS). pressure ulcer is an understudied problem in SS. Social support has been shown to play a significant role in patients with spinal cord injury(Fort et al., 2020). Negative support experiences in the event of a spinal cord injury may result in unhealthy coping strategies and a host of other health issues. Early social support relationships are thought to have an impact on health, with couples identifying difficulties following their first treatment session(Manns & May, 2007). Spinal cord injuries are known to cause irreversible nerve damage and serious complications, such as paraplegia or paralysis of both legs. Extended bed rest resulting from spinal cord injury may cause a notable rise in the prevalence of pressure ulcer. According to our research, people with spinal cord injuries receive enough care and support from their family, ward physicians, or nurses. They will be mentally prepared to handle the challenges posed by paralysis. Rather than abandoning medical care and recovery. This group of persons will be far less likely to experience pressure sores if they have strong social support. With everyone's help and mine, even if they have experienced pressure ulcer, the chance of depression will be significantly decreased and the pressure ulcer cure rate will rise. Therefore, social support plays an important role in patients with pressure ulcer.

Implications of the study

This study analyzed the related factors of depression in patients with pressure ulcer. In recent years, depression patients have been increasing, and our study found that the incidence of depression in patients after pressure ulcer has also increased year by year. It's a problem that's easy to overlook. Depression after patients with pressure ulcer will lead to further deterioration of physical and mental health. Our research aims to provide better treatment for clinical patients, reduce the incidence of depression in patients with pressure ulcer, and reduce the burden on clinicians and caregivers.

Limitations of the study

Patients from Wenzhou Medical University's Second Affiliated Hospital were included in this study, which has significant restrictions and a limited scope for data collecting. The data range is narrow, which may not represent the whole situation. Therefore, more verification is required as there may be significant limitations in the generality of the research conclusions.

Recommendations for future study

For further study, clinical data should be collected from multiple hospitals in different regions to avoid data skew. The amount of data and factors also need to be greatly increased to obtain more scientific research results.

Conclusion

This study focused on the influencing factors of depression in patients with pressure ulcer in the second affiliated hospital to Wenzhou medical university, and found that social support and self-care ability had significant effects on depression in patients with pressure ulcer, while mental health literacy had no significant effects on depression after pressure ulcer. This study will help caregivers apply the results of this study to reduce the risk of depression in patients with pressure ulcer.

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APPENDICES



APPENDIX A

Questionnaire

Part 1: The Demographic data questionnaire

Direction: Please read the questions in part 1 carefully and give an honest answer.

Please choose the answer as follow by tick or write down your answers in the space provided.

The Demographic Questionnaire (English Version)

NO. _____ Name:

Please tell me about your personal information. The questions are below.

I. General information	
Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
Age	_____ Years old
Religion	<input type="checkbox"/> Buddhism <input type="checkbox"/> Christian <input type="checkbox"/> Other
Education level	<input type="checkbox"/> Primary School <input type="checkbox"/> Junior high school <input type="checkbox"/> Some High School <input type="checkbox"/> High School <input type="checkbox"/> Bachelor's Degree <input type="checkbox"/> Master's Degree <input type="checkbox"/> Ph.D. or higher <input type="checkbox"/> Trade School
Marital status	<input type="checkbox"/> Unmarried <input type="checkbox"/> Married <input type="checkbox"/> Divorced <input type="checkbox"/> Widowed
Occupation	<input type="checkbox"/> Employed
	<input type="checkbox"/> Healthcare personnel
	<input type="checkbox"/> Public officer of the state
	<input type="checkbox"/> Commercial staff
	<input type="checkbox"/> Labor
	<input type="checkbox"/> Builder <input type="checkbox"/> Factory worker <input type="checkbox"/> Sanitation worker <input type="checkbox"/> Farmer
<input type="checkbox"/> Unemployed	<input type="checkbox"/> No occupation <input type="checkbox"/> Retired

Family member	
Main caregiver	
Annual family income (yuan)	<input type="checkbox"/> Less than 25,000 <input type="checkbox"/> 25,000~50,000 <input type="checkbox"/> 50,000~100,000 <input type="checkbox"/> More than 100,000
Living place	<input type="checkbox"/> Urban <input type="checkbox"/> Rural
Healthcare payment scheme	<input type="checkbox"/> Urban residents under the medical insurance system <input type="checkbox"/> New rural cooperative medical care system <input type="checkbox"/> Out-of-pocket medical <input type="checkbox"/> Others
Duration of pressure ulcer	<input type="checkbox"/> Within 1 month <input type="checkbox"/> 2~3 months <input type="checkbox"/> 3~6 months <input type="checkbox"/> 6-12 months <input type="checkbox"/> > 11 year
pressure ulcer stage	<input type="checkbox"/> Stage 1 <input type="checkbox"/> Stage 2 <input type="checkbox"/> Stage 3 <input type="checkbox"/> Stage 4 <input type="checkbox"/> deep tissue injury <input type="checkbox"/> Unstageable
Source of pressure ulcer education	<input type="checkbox"/> TV <input type="checkbox"/> Network <input type="checkbox"/> Newspaper <input type="checkbox"/> Hospital <input type="checkbox"/> Others
Primary caregiver during hospitalization	<input type="checkbox"/> Spouse <input type="checkbox"/> Parents <input type="checkbox"/> Children <input type="checkbox"/> nursing assistant <input type="checkbox"/> none <input type="checkbox"/> Others
Primary care giver after discharge	<input type="checkbox"/> Spouse <input type="checkbox"/> Parents <input type="checkbox"/> Children <input type="checkbox"/> nursing assistant <input type="checkbox"/> none <input type="checkbox"/> Others
II. Health information (To be collected by the researcher from the medical record)	
Weight/Height	___kg / ___m BMI
Braden scores	Admission day: ___ points Discharge day: ___ points Present: ___ points
ADL scores	Admission day: ___ points Discharge day: ___ points Present: ___ points
Smoking status	<input type="checkbox"/> Currently smoking <input type="checkbox"/> Never smoked <input type="checkbox"/> Ex-smoking for less than 1 year <input type="checkbox"/> Ex-smoking for more than 1 year
Alcohol consumption	<input type="checkbox"/> Less than 150g <input type="checkbox"/> 150~300g <input type="checkbox"/> More than 300g <input type="checkbox"/> No alcohol use

	<input type="checkbox"/> Ex-alcohol use for less than 1 year <input type="checkbox"/> Ex-alcohol use for more than 1 year
Comorbidities	<input type="checkbox"/> None <input type="checkbox"/> Hypertension <input type="checkbox"/> Diabetes <input type="checkbox"/> Hyperlipidemia <input type="checkbox"/> Heart diseases <input type="checkbox"/> Others
history of pressure ulcer	<input type="checkbox"/> No <input type="checkbox"/> yes
History of depression	<input type="checkbox"/> No <input type="checkbox"/> yes
History of skin allergy	<input type="checkbox"/> No <input type="checkbox"/> yes
capacity for action	<input type="checkbox"/> in bed <input type="checkbox"/> 1-2 times/day <input type="checkbox"/> > 3times/day <input type="checkbox"/> often

Part 2: The Beck's Depression Inventory (BDI-II)

The Beck's Depression Inventory (BDI-II)			
Please answer completely truthfully how you felt based on the following words. For each question, you can only choose one of the four options that best fits your actual situation and feel, and tick the corresponding small box.			
Number	Question	Score	Tick
1	I do not feel sad.	0	
	I feel sad	1	
	I am sad all the time and I can't snap out of it.	2	
	I am so sad and unhappy that I can't stand it.	3	
2	I am not particularly discouraged about the future.	0	
	I feel discouraged about the future.	1	
	I feel I have nothing to look forward to.	2	
	I feel the future is hopeless and that things cannot improve.	3	
3	I do not feel like a failure.	0	
	I feel I have failed more than the average	1	

	person.		
	As I look back on my life, all I can see is a lot of failures.	2	
	I feel I am a complete failure as a person.	3	
4	I get as much satisfaction out of things as I used to.	0	
	I don't enjoy things the way I used to.	1	
	I don't get real satisfaction out of anything anymore.	2	
	I am dissatisfied or bored with everything.	3	
5	I don't feel particularly guilty.	0	
	I feel guilty a good part of the time.	1	
	I feel quite guilty most of the time.	2	
	I feel guilty all of the time.	3	
6	I don't feel I am being punished.	0	
	I feel I may be punished.	1	
	I expect to be punished.	2	
	I feel I am being punished.	3	
7	I don't feel disappointed in myself.	0	
	I am disappointed in myself.	1	
	I am disgusted with myself.	2	
	I hate myself.	3	
8	I don't feel I am any worse than anybody else.	0	
	I am critical of myself for my weaknesses or mistakes.	1	
	I blame myself all the time for my faults.	2	

	I blame myself for everything bad that happens.	3	
9	I don't have any thoughts of killing myself.	0	
	I have thoughts of killing myself, but I would not carry them out.	1	
	I would like to kill myself.	2	
	I would kill myself if I had the chance.	3	
10	I don't cry any more than usual.	0	
	I cry more now than I used to.	1	
	I cry all the time now.	2	
	I used to be able to cry, but now I can't cry even though I want to.	3	
11	I am no more irritated by things than I ever was.	0	
	I am slightly more irritated now than usual.	1	
	I am quite annoyed or irritated a good deal of the time.	2	
	I feel irritated all the time.	3	
12	I have not lost interest in other people.	0	
	I am less interested in other people than I used to be.	1	
	I have lost most of my interest in other people.	2	
	I have lost all of my interest in other people.	3	
13	I make decisions about as well as I ever could.	0	
	I put off making decisions more than I used	1	

	to.		
	I have greater difficulty in making decisions more than I used to.	2	
	I can't make decisions at all anymore.	3	
14	I don't feel that I look any worse than I used to.	0	
	I am worried that I am looking old or unattractive.	1	
	I feel there are permanent changes in my appearance that make me look unattractive.	2	
	I believe that I look ugly.	3	
15	I can work about as well as before.	0	
	It takes an extra effort to get started at doing something.	1	
	I have to push myself very hard to do anything.	2	
	I can't do any work at all.	3	
16	I can sleep as well as usual.	0	
	I don't sleep as well as I used to.	1	
	I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.	2	
	I wake up several hours earlier than I used to and cannot get back to sleep.	3	
17	I don't get more tired than usual.	0	
	I get tired more easily than I used to.	1	
	I get tired from doing almost anything.	2	
	I am too tired to do anything.	3	

18	My appetite is no worse than usual.	0	
	My appetite is not as good as it used to be.	1	
	My appetite is much worse now.	2	
	I have no appetite at all anymore.	3	
19	I haven't lost much weight, if any, lately.	0	
	I have lost more than five pounds.	1	
	I have lost more than ten pounds.	2	
	I have lost more than fifteen pounds.	3	
20	I am no more worried about my health than usual.	0	
	I am worried about physical problems like aches, pains, upset stomach, or constipation.	1	
	I am very worried about physical problems and it's hard to think of much else.	2	
	I am so worried about my physical problems that I cannot think of anything else.	3	
21	I have not noticed any recent change in my interest in sex.	0	
	I am less interested in sex than I used to be.	1	
	I have almost no interest in sex.	2	
	I have lost interest in sex completely.	3	

Part 3: The Appraisal of Self-Care Agency Scale-Revised

The Appraisal of Self-care Agency Scale-Revised (ASAS-R)

Please answer completely truthfully how you felt based on the following words. For each question, you can only choose one of the five options (ranging from 1 (strongly disagree) to 5 (strongly agree)) that best fits your actual situation and feel, and tick the corresponding small box.

Factor/item	Score	Tick
1. As circumstances change, I make the needed adjustments to stay healthy.	1	<input type="checkbox"/>
	2	<input type="checkbox"/>
	3	<input type="checkbox"/>
	4	<input type="checkbox"/>
	5	<input type="checkbox"/>
2. If my mobility is decreased, I make the needed adjustments.	1	<input type="checkbox"/>
	2	<input type="checkbox"/>
	3	<input type="checkbox"/>
	4	<input type="checkbox"/>
	5	<input type="checkbox"/>
3. When needed, I set new priorities in the measures that I take to stay healthy.	1	<input type="checkbox"/>
	2	<input type="checkbox"/>
	3	<input type="checkbox"/>
	4	<input type="checkbox"/>
	5	<input type="checkbox"/>
4. I often lack energy to care for myself in the way that I know I should.	5	<input type="checkbox"/>
	4	<input type="checkbox"/>
	3	<input type="checkbox"/>
	2	<input type="checkbox"/>
	1	<input type="checkbox"/>

5. I look for better ways to take for myself.	1	
	2	
	3	
	4	
	5	
6. When needed, I manage to take time to care for myself.	1	
	2	
	3	
	4	
	5	
7. If I take a new medication, I obtain information about the side effects to better care for myself.	1	
	2	
	3	
	4	
	5	
8. In the past, I have changed some of my old habits in order to improve my health.	1	
	2	
	3	
	4	
	5	
9. I routinely take measures to insure the safety of myself and my family.	1	
	2	
	3	
	4	
	5	
10. I regularly evaluate the effectiveness of things that I do to stay	1	

healthy.	2	
	3	
	4	
	5	
11. In my daily activities I seldom take time to care for myself.	5	
	4	
	3	
	2	
	1	
12. I am able to get information I need, when health is threatened.	1	
	2	
	3	
	4	
	5	
13. I seek help when unable to care for myself.	1	
	2	
	3	
	4	
	5	
14. I seldom have time for myself.	5	
	4	
	3	
	2	
	1	
15. I am not always able to care for myself in a way I would like.	5	
	4	

	3	
	2	
	1	

Part 4: Multicomponent mental health literacy measure

Directions: Please select the extent to which you agree with the following statements.

Please state your opinion clearly and tick "√" after the corresponding options.

1-18 Strongly agree Not sure Disagree Strongly disagree Don't know

Questions 19-22 are yes or no

number	title	totally agree	agree	Not Sure	disagree	totally disagree	I have no idea
1	Counseling is a helpful treatment for depression.						
2	A person with schizophrenia may see things that are not really there.						
3	Attending peer support groups helps recovery from mental illness.						
4	Unexplained physical pain or fatigue can be a sign of depression.						
5	Cognitive behavioral therapy can change the way a person thinks and reacts to stress.						
6	A person with bipolar disorder may show a dramatic change in mood.						
7	Taking prescribed medications for mental illness is effective.						
8	When a person stops taking care of his or her appearance, it may be a sign of depression.						

9	Drinking alcohol makes symptoms of mental illness worse.						
10	A person with anxiety disorders has excessive anxiousness or fear.						
11	A highly religious/spiritual person does not develop mental illnesses.						
12	Depression is a sign of personal weakness.						
13	Mental illness is a short-term disorder.						
14	Recovery from mental illness is mostly dependent on chance or fate.						
15	Mental illness will improve with time, even without treatment.						
16	Recovering from a mental illness is the same as being cured.						
17	A person can stop hoarding whenever he/she wants to.						
18	A person with depression will get better on his or her own without treatment.						
		YES	NO				
19	I know where to go to receive mental health services.						
20	I know where to get useful information about mental illness.						
21	I know how to get the number of a suicide prevention hotline.						
22	I know how to contact a mental health clinic in my area.						

Part 5: The Multidimensional scale of perceived social support

The Multidimensional Scale of Perceived Social Support (MSPSS) (Appendix 5)

Please choose an appropriate answer from each question according to your actual situation.

In the options: 1 means very strongly disagree; 2 means moderately disagree; 3 means slightly disagree; 4 means neutral; 5 means slightly agree; 6 means moderately agree; 7 means very strongly agree.

Item	1	2	3	4	5	6	7
1. There is a special person who is around when I am in need.							
2. There is a special person with whom I can share my joys and sorrows.							
3. My family really tries to help me.							
4. I get the emotional help and support I need from my family.							
5. I have a special person who is a real source of comfort to me.							
6. My friends really try to help me.							
7. I can count on my friends when things go wrong.							
8. I can talk about my problems with my family.							
9. I have friends with whom I can share my joys and sorrows.							
10. There is a special person in my life who cares about my feelings.							
11. My family is willing to help me make decisions.							
12. I can talk about my problems with my friends.							

1. BDI-II

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王振

----- 原始邮件 -----

发件人：Linmin Zhuge <zhugelinmin@126.com>

日期：2022年06月24日周日 晚上8:00

收件人：wangzhen@smhc.org.cn

主题：(无主题)

尊敬的教授：

您好！

我是泰国东方大学和温州医科大学合作的国际大学在读研究生。非常抱歉打扰您！





因为硕士毕业论文的需要，我可以使用您的汉化版第二版贝克抑郁量表吗？

非常感谢您的支持！


诸葛林敏

温州医科大学附属第二医院

2.ASAS-R scale

求汉化版ASAS-R量表使用权     |  安全浏览模式

发件人: Linmin Zhuge <zhugelinmin@126.com>

收件人:  guolina09 <guolina09@126.com>

时 间: 2022年06月14日 11:21 (星期二)

发送状态: **发送成功** [查看详情](#)

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尊敬的教授:

您好!

我是泰国东方大学和温州医科大学合作的国际大学在读研究生。非常抱歉打扰您!

因为硕士毕业论文的需要, 我可以使用您的汉化版ASAS-R量表吗?

非常感谢您的支持!

诸葛林敏
温州医科大学附属第二医院

回复: 求ASAS-R量表     |  安全浏览模式

发件人: Linmin Zhuge <zhugelinmin@126.com>

收件人:  郭丽娜 <guolina09@126.com>

时 间: 2022年06月15日 08:20 (星期二)

发送状态: **发送成功** [查看详情](#)

 投资必读! 黄金、股指、港美股交易规则揭秘 [免费了解](#)

非常感谢您! 郭老师!

 诸葛林敏

邮箱: zhugelinmin@126.com

--- 回复的原件 ---

发件人 郭丽娜 <guolina09@126.com>

发送日期 2022年06月15日 07:36

收件人 zhugelinmin <zhugelinmin@126.com>

主题 Re: 求ASAS-R量表

请查看附件, 附件中的文章中包含量表的中英文版本。

Request ASAS-R scale use right     |  安全浏览模式


发件人: Linmin Zhuge <zhugelinmin@126.com>

收件人: vsousa <vsousa@kumc.edu>

时 间: 2022年06月14日 11:28 (星期二)

发送状态: **发送不成功** [查看详情](#)

 [翻译成中文](#)

 axi-交易黄金、股指、港美股 [免费了解](#)

Dear Professor:

I am Linmin Zhuge, a postgraduate student in an international university cooperating with BUU University of Thailand and WMU. I'm sorry to bother you. May I use your ASAS-R scale for my master's thesis? Thank you very much for your support!

LinminZhuge
2022.06.14

3.The Chinese psychological literacy scale (汉化心理素养量表)

发件人 82387213@qq.com<82387213@qq.com>

人

发送日期 2022年07月08日 09:54

日期

收件人 [zhugelinmin](mailto:zhugelinmin@126.com) <zhugelinmin@126.com>

人

主题 Re: Re: 征求汉化版多元心理健康素养量表应用授权申请

林敏同学，你好！

当然可以，多元心理健康素养量表见附件。

祝科研顺利！

明志君

82387213@qq.com

发件人： [陈祉妍](#)

发送时间： 2022-07-07 20:03

收件人： [明志君](#)

主题： Re: 征求汉化版多元心理健康素养量表应用授权申请

2022-07-07 17:32:45 "[Linmin Zhuge](#)" <zhugelinmin@126.com> 写道：

尊敬的教授：

您好！

我是泰国东方大学和温州医科大学合作的国际大学在读研究生。非常抱歉打扰您！

因为硕士毕业论文的需要，我可以使用您的汉化版多元心理健康素养量表吗？

非常感谢您的支持！

诸葛林敏

温州医科大学

学附属第二医院

4.MSPSSscale

Dear Linmin Zhuge,

You have my permission to use the Multidimensional Scale of Perceived Social Support (MSPSS) in your research. I have attached the original English language version of the scale (with scoring information on the 2nd page), a document listing several of the articles that have reported on the reliability and validity of the MSPSS, and a chapter that I wrote about the scale. Also attached is a Thai translation, which you may find helpful (and 2 published papers about the translation).

I hope your research goes well.

Best regards,

Greg Zimet

Gregory D. Zimet, PhD, FSAHM

Professor of Pediatrics & Clinical Psychology

Co-Director, IUPUI Center for HPV Research

Division of Adolescent Medicine | Department of Pediatrics

Pronouns: He/Him/His

410 W. 10th Street | HS 1001

Indianapolis, IN 46202

+1.317.274.8812 tel

From: Linmin Zhuge <zhugelinmin@126.com>

Sent: Monday, June 13, 2022 11:33 PM

To: Zimet, Gregory D <gzimet@iu.edu>

Subject: [External] Request the right to use MSPSS scale

Dear Professor :

I am Linmin Zhuge,a postgraduate student in an international university cooperating with BUU University of Thailand and WMU. I'm sorry to bother you. May I use your MSPSS scale for my master'sthesis? Thank you very much for your support !

LinminZhuge

2022.06.14





Participant Information Sheet

Research protocol code:

(A research code will be assigned by the Burapha University Institutional Review Board Office upon completing the submission)

Research Title: Factors Related to Depression among Elderly Patients with Pressure Ulcer in Wenzhou, China

Dear participants,

I am Linmin Zhuge, a student in Master of Nursing Science (International Program) Faculty of Nursing, Burapha University Thailand. I am conducting research entitled “Factors related to depression among elderly patients with Pressure ulcer in Wenzhou, China”. Pressure ulcers is a common clinical chronic refractory wound with high morbidity in elderly patients. The occurrence of pressure ulcers will bring huge burden to patients, families, hospitals and society. Providing care for patients with pressure ulcers requires additional physical and mental effort, which can lead to anxiety, tension and pain in patients. However, older adults with pressure ulcers have a lower quality of life than others. Understanding the depression status and its predictors in elderly hospitalized patients with pressure ulcers can provide targeted interventions for elderly patients with pressure ulcers. It aims to improve the quality of life of elderly patients with pressure ulcers. In order to better understand the factors affecting quality of life among older adults with pressure ulcer, with your voluntarily participating in the study, it will take time about 30-60 minutes to answer five questionnaires. These questionnaires include:

1. The Demographic data questionnaire
2. The Beck's Depression Inventory (BDI-II)

3. The Appraisal of Self-Care Agency Scale–Revised
4. Multicomponent mental health literacy measure Chinese version
5. The Chinese version of multidimensional scale of perceived social support

During the study period, you have the right not to answer questions, and you also have the right to refuse to participate in the project at any time, and the refusal will not affect your access to medical services. Any information collected in this study, including your identity, will be kept confidential. Your name will not be used but replaced with a code number. The research results will be presented as a group of participants, and no specific information of any individual participant will be disclosed. All data will be accessible only to researchers, who will destroy them one year after publishing the results. If you wish, you will receive further explanation about the nature of the study after the study is completed.

This research will be conducted under the direction of Linmin Zhuge and supervised by her primary advisor, Assistant Professor Pornchai Jullamate. Should you have any questions or require further information, please contact Ms. Zhuge via mobile phone at +86-13566222611 or via email at zhugelinmin@126.com (please note that the original document mentions "and/or" another email address; verification is needed to ensure accuracy). Alternatively, you may contact Assistant Professor Jullamate at pornchai@buu.ac.th. For additional inquiries, you can also reach out to the Burapha University Institutional Review Board (BU-IRB) at +66 38 102 620. We appreciate your cooperation and support. A copy of this agreement will be provided to you for record-keeping purposes.

Linmin Zhuge

Master's degree student

Adult Nursing Pathway

Faculty of Nursing, Burapha University, Thailand in collaboration with
School of Nursing, Wenzhou Medical University, China



เอกสารแสดงความยินยอม
ของผู้เข้าร่วมโครงการวิจัย (Consent Form)

รหัสโครงการวิจัย :

(สำนักงานคณะกรรมการพิจารณาจริยธรรมในมนุษย์ มหาวิทยาลัยบูรพา เป็นผู้ออกรหัสโครงการวิจัย)

โครงการวิจัยเรื่อง**Factors related to depression among elderly patients with Pressure ulcer in Wenzhou, China**

ให้คำยินยอม วันที่ เดือน พ.ศ.

Before giving my signature below, I have been informed by researcher, Mrs. Linmin Zhuge, about the purposes, method, procedures, benefits and possible risks associated with participation in this study thoroughly, and I understood all of the explanations. I consent voluntarily to participate in this study. I understand that I have the right to leave the study any time I want, without fearing that it might affect the medical services I will receive.

The researcher Mrs. Linmin Zhuge has explained to me that all data and information of the participants will be kept confidential and only be used for this study. I have read and understood the information related to participation in this study clearly and I am signing this consent form.

SignatureParticipant

(.....)

MHESI 8137/1360



Graduate School, Burapha University
169 Longhaad Bangsaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

July 13th, 2023

To: The director of the Second-Affiliated Hospital of Wenzhou Medical University,

Enclosure: 1. Certificate ethics document of Burapha University
2. Research Instruments (Try-out)

On behalf of the Graduate School, Burapha University, I would like to request permission for Mrs. Linmin Zhuge to collect data for testing the reliability of the research instruments.

Mrs. Linmin Zhuge, ID 63910208, a graduate student of the Master of Nursing Science program (International Program) in Adult Nursing Pathway, Faculty of Nursing, Burapha University, Thailand, was approved her thesis proposal entitled: "Factors Related to Depression Among Elderly Patients with Pressure Ulcer in Wenzhou, China" under supervision of Assoc. Prof. Dr. Jinjutha Chaisena Dallas as the principle advisor. She proposes to collect data from 30 patients with pressure ulcer who age at least 50 years old. Participants will be recruited from various departments of the Second-Affiliated Hospital of Wenzhou Medical University. The data collection will be carried out from July 15-August 15, 2023. In this regard, you can contact Mrs. Linmin Zhuge via mobile phone +86-1356-6222-611 or E-mail: zhugelmin@126.com

Please do not hesitate to contact me if you need further relevant queries.

Sincerely yours,

nw1 รังสิโยภาส

(Assistant Professor Dr. Montana Rungsiyopas)
Vice-Dean for Academic Affairs
Acting of Dean of Graduate School, Burapha University

Graduate School Office

Tel: +6638102700 ext. 701, 705, 707

E-mail: grd.buu@go.buu.ac.th

http://grd.buu.ac.th

分节符(连续)



MHESI 8137/1361



Graduate School, Burapha University
169 Longhaad Bangsaen Rd.
Saensuk, Muang, Chonburi
Thailand, 20131

July 13th, 2023

To: The director of the Second Affiliated Hospital of Wenzhou Medical University,

Enclosure: 1. Certificate ethics document of Burapha University
2. Research Instruments

On behalf of the Graduate School, Burapha University, I would like to request permission for Mrs. Linmin Zhuge to collect data for conducting research

Mrs. Linmin Zhuge, ID 63910208, a graduate student of the Master of Nursing Science program (International Program) in Adult Nursing Pathway, Faculty of Nursing, Burapha University, Thailand, was approved her thesis proposal entitled: "Factors Related to Depression Among Elderly Patients with Pressure Ulcer in Wenzhou, China" under supervision of Assoc. Prof. Dr. Jinjutha Chaisena Dallas as the principle advisor. She proposes to collect data from 128 patients with pressure ulcer who age at least 50 years old. Participants will be recruited from various departments of the Second Affiliated Hospital of Wenzhou Medical University. The data collection will be carried out from August 15, 2023 to October 31, 2023. In this regard, you can contact Mrs. Linmin Zhuge via mobile phone +86-1356-6222-611 or E-mail: zhugelinmin@126.com

Please do not hesitate to contact me if you need further relevant queries.

nb
incerely yours,
lum6

(Assistant Professor Dr. Montana Rungsiyopas)
Vice-Dean for Academic Affairs
Acting of Dean of Graduate School, Burapha University

Graduate School Office
Tel: +6638102700 ext. 701, 705, 707
E-mail: grd.buu@go.buu.ac.th
http://grd.buu.ac.th

分节符(连续)

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9570moulani(https://e-sign.buu.ac.th/verify)





Please type or write with readable handwriting

GRD-109(Eng)
(Try out)

Graduate School Burapha University

Request form for issuing a requesting letter for data collection(Tryout)

To Dean of Graduate School

I am(Mr./Mrs./Ms.) Mrs.Linmin Zhuge Student ID#.....63910208.....
 Doctoral degree Master degree plan O A O B Study type O Full-time O Part-time
 Program.....Master of Nursing Science (International Program)Major/Pathway Adult Nursing...
 Faculty.....Faculty of Nursing Telephone.....+86-13566222611 E-mail zhugelinmin@126.com
 Doctoral dissertation/Master thesis/IS Title:.....
 Factors Related to Depression among Elderly Patients with Pressure Ulcer in Wenzhou,China
 Principal advisor name Assistant Prof.Dr.Jinjutha Chaisena Dallas.....
 Astot

I would like to request for issuing a requesting letter for data collection (Try out):

By issuing to (name of the director of Institute/University/Organization)
 ...The Second Affiliated Hospital of Wenzhou Medical University(WMU)in Wenzhou,China to collect data.
 Institute/University/Organization/Department/Division
 ...The Second Affiliated Hospital of Wenzhou Medical University(WMU)in Wenzhou,China to collect data.
 To collect data from(details of participants and sample size).....
Participants are 30 cases of patients with Pressure Ulcer,age at least 50 years old.Participants will be
 recruited from various departments of the Second Affiliated Hospital of Wenzhou Medical University(WMU)in
 Wenzhou,China.
 Duration of data collection:from date...15st July 2023.....to...15st August 2023.....
 My contact information:#.phone number.+86-13566222611 Email:zhugelinmin@126.com...

With this request,I have enclosed documents.....2.....copies


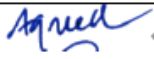

- 1)A copy of proof of ethical approval from Burapha university, and
- 2)Research instruments

Please be informed accordingly,

Student's name.....Linmin Zhuge.....

(.....Mrs.Linmin Zhuge.....)

Date...30...Month...June...Year...2023.....

Principal advisor acknowledged	Dean of Faculty/College acknowledged	Dean of Graduate School approved
 (Signed)..... (Assoc. Prof. Dr. Jinjutha Chaisena -Dallas) 2023 Date.....	 (Signed)..... (Assoc. Prof. Dr. Pornchai Jullamate) Date..-3.. JUL. 2023.	 Agreed NOHim Assist. Prof. Dr. Montana Rungsiyopas → Vice Dean for Academic Affairs Acting of Dean of Graduate School Date..... July 2023



Please type or write with readable handwriting

Graduate School Burapha University

GRD-109(Eng)
(Main Study)

Request form for issuing a requesting letter for data collection(Main Study)

To Dean of Graduate School

I am(Mr./Mrs./Ms.) Mrs. Linmin Zhuge. Student ID# 63910208
 Doctoral degree Master degree plan A B Study type Full-time Part-time
 Program.....Master of Nursing Science (International Program)Major/Pathway Adult Nursing
 Faculty.....Faculty of Nursing Telephone.....+86-13566222611 E-mail zhugelinmin@126.com
 Doctoral dissertation/Master thesis/IS Title:.....

Factors Related to Depression among Elderly Patients with Pressure Ulcer in Wenzhou,China.
 Principal advisor name.....Assistant Prof.Dr.Jinjutha Chaisena Dallas.....




I would like to request for issuing a requesting letter for data collection (Main Study):

By issuing to (name of the director of Institute/University/Organization)
 ...The Second Affiliated Hospital of Wenzhou Medical University(WMU)in Wenzhou,China to collect data.
 Institute/University/Organization/Department/Division
 ...The Second Affiliated Hospital of Wenzhou Medical University(WMU)in Wenzhou,China to collect data.
 To collect data from(details of participants and sample size).....
Participants are 128 cases of patients with Pressure Ulcer,age at least 50 years old.Participants will be
 recruited from various departments of the Second Affiliated Hospital of Wenzhou Medical University(WMU)in
 Wenzhou,China.
 Duration of data collection:from date.....15 August 2023.....to 31s*October 2023.....
 My contact information:#.....phone number..+86-13566222611 Email:zhugelinmin@126.com.....
 With this request,I have enclosed documents.....2...copies

- 1)A copy of proof of ethical approval from Burapha university,and
- 2)Research instruments

Please be informed accordingly,

Student's name...Linmin Zhuge.....
 (.....Mrs.Linmin Zhuge.....)
 Date...30...Month...June...Year...2023.....

Principal advisor acknowledged	Dean of Faculty/College acknowledged	Dean of Graduate School approved
 (Signed)..... (Assoc. Prof. Dr. Jinjutha Chaisena Dallas) Date.....	 (Signed)..... (Assoc. Prof. Dr. Pornchai Jullamate) Date...3...	 Agreed q16%0 รังสีเอม Assist. Prof. Dr. Montana Rungsiyopas → We-Dean for Academic Affairs → Acting of Dean of Graduate School Date... Jwly . 2023.



温州医科大学附属第二医院温州医科大学附属育英儿童医院医学伦理委员会 AF/SW-01-3.0

涉及人的生物医学研究伦理审查批件

Ethics Committee Approval Letter of Biomedical Research Involving Humans

批件号 Approval NO.: 伦审(2023-K-118-02)

项目名称 Study Title	中国温州老年压力性溃疡患者抑郁的相关因素分析		
项目来源 Source	自选课题		
受理号 Acceptance Number	2023-K-118-02		
主要研究者 Principal Investigator	诸葛林敬	承担科室 Responsible Department	胃肠肿瘤科
审查类别 Category of Review	复审	审查方式 Type of Review	快速审查
审查日期 Date of Review	2023年8月3日	审查地点 Location of Review	/
审查文件清单 Items Reviewed	1. 复审申请表 2. 试验方案(版本号: V1.2; 版本日期: 2023.07.27) 3. 知情同意书(版本号: V1.2; 版本日期: 2023.07.27)		
审评意见 Evaluation	批准		
审查决定 Decision	委员会对该项目的审查决定为: <input checked="" type="checkbox"/> 批准 (Approval)		
主任委员签字 Chair Signature			
签发日期 Date of issue	2023年8月3日		
医学伦理委员会 Stamp of EC	医学伦理委员会盖章		
批件有效期 Period of Validity	自本医学伦理委员会初始审查批准之日起一年内启动。逾期未启动的, 本批件自行废止。		
年度/定期跟踪审查 Continue Review	审查频率为该研究批准之日起每12月一次, 首次请于2024年8月2-日前1个月递交研究进展报告。 医学伦理委员会有根据实际进展情况改变跟踪审查频率的权利。		
声明 Statement	本医学伦理委员会的职责、人员组成、操作程序及记录遵循《涉及人的生物医学研究伦理审查办法》、《涉及人的健康相关研究国际伦理准则》、《赫尔辛基宣言》、GCP和ICH-GCP等国际伦理指南和国内相关法律法规。		

地址: 浙江省温州市龙湾区温州大道东段1111号 · 电话: 0577-85676879 · 邮编: 325000

**注意事项:**

1. 请遵循我国相关法律、法规和规章中的伦理原则。
2. 请遵循经本医学伦理委员会批准的临床研究方案、知情同意书、招募材料等开展本研究，保护受试者的健康与权利。对研究方案、知情同意书和招募材料等的任何修改，均须得到本医学伦理委员会审查同意后方可实施。
3. 在本院发生的SAE/SUSAR以及研发期间安全性更新报告须按照NMPA/GCP最新要求及时递交本医学伦理委员会，国内外其它中心发生的SAE/SUSAR需定期汇总、评估后递交本医学伦理委员会。
4. 根据报告情况，本医学伦理委员会有权对其评估做出新的决定。
5. 自今日起，无论研究开始与否，请在跟踪审查日到期前1个月提交研究进展报告。
6. 申办方应当向组长单位医学伦理委员会提交中心研究进展报告汇总：当出现任何可能显著影响研究进行或增加受试者危险的情况时，请申请人及时向本医学伦理委员会提交书面报告。
7. 研究纳入了不符合纳入标准或符合排除标准的受试者，符合中止研究规定而未让受试者退出研究，给予错误治疗或剂量，给予方案禁止的合并用药等没有遵从方案开展研究的情况：或可能对受试者的权益或健康以及研究的科学性造成不良影响等违背GCP原则的情况，请申办方、监查员或研究者提交违背方案报告。
8. 申请人暂停或提前终止临床研究，请及时提交暂停或终止研究报告。
9. 完成临床研究，请申请人提交结题报告。
10. 凡涉及中国人类遗传资源采集标本、收集数据等研究项目，必须获得中国人类遗传资源管理办公室批准后方可在本中心开展研究。
11. 凡经本医学伦理委员会批准的研究项目在实施前，申请人应按相关规定在国家卫健委药审中心等临床研究登记备案信息系统平台登记研究项目相关信息。



BIOGRAPHY

NAME Linmin Zhuge

DATE OF BIRTH 31 August 1978

PLACE OF BIRTH Wenzhou, Zhejiang Province, China

PRESENT ADDRESS Department of Gastrointestinal Oncology, The Second
Affiliated Hospital of Wenzhou Medical University,
Zhejiang, China

POSITION HELD Head nurse, Gastrointestinal oncology

EDUCATION Graduated from Zhejiang Chinese Medicine University in
2005, bachelor's degree

