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Revealing the Conceptual Definition of FrailtyA Qualitative Study

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Abstract

Aim: The aim of this study was to uncover the conceptual definition of frailty from content experts.

Methods and participants: This was a qualitative study with in-depth interviews. Informants were recruited by purposive sampling. Twenty-seven informants who had rich experience with elderly care were interviewed.

Results: Three domains emerged as the conceptual definition of frailty. The three domains were physical, mental, and social. With the decline in bodily function, some elderly's daily needs have to be partially taken care of, or they may be substantially or even completely dependent. The physical domain was further divided into lung deficiency, blood deficiency, kidney deficiency, spleen deficiency, sarcopenia, osteoporosis, and joint pain. This was a reflection of elements in traditional Chinese medicine. The mental domain included emotion and mood. The social domain included both social support and social activities.

Conclusion: There were three domains in the conceptual definition of frailty, namely, physical, mental, and social. Cultural elements were reflected in the physical domain through the traditional Chinese medicine.

Keywords: The elderly; Frailty; Conceptual definition; Qualitative study

Introduction

The term frailty first appeared in the late 1960s. Rockwood K et al. [1] described in a cross-sectional survey of elderly people in the community that the characteristic of frail elderly people was the excessive or inappropriate response to an adverse event. The concept of frailty was formally introduced in the 1978 US Federal Council on Aging (FCA). Frailty was described as the existence of a variety of cumulative health problems and the need for long-term support services to address the daily life of elderly people [2]. Experts from Europe and the United States reached a consensus on the meaning of frailty as follows: "Frailty was a clinical symptom with multiple causes, characterized by decreased strength and endurance, decreased physiological function, and increased susceptibility to dependency and death" [3]. As China has the largest elderly population in the world, urgent attention has been directed towards frailty.

Frailty is common in the elderly population, and a US study [4] showed that in the elderly population over the age of 65, there was an incidence of frailty ranging from 7% to 12%, and for people 80 years of age and older, frailty affects more than one-third of this population. The incidence of frailty in women was higher than that in men (8% *vs* 5%), and the incidence in blacks was higher than in Caucasians (13% *vs* 6%). If we did not provide timely interventions, frail individuals would essentially deteriorate, which would place a very large burden on the individual, family and society [5]. Frailty has been associated with falls, cognitive impairment, disability, hospitalization, institutionalization, and death [7-10], as well as adverse responses to chemotherapy [11], surgical intervention [12] and emergency department discharge [13]. Frailty is a precursor to disability in elderly individuals and an intermediate stage between self-care and death. Compared with elderly people without frailty, the average risk of death in frail elderly people increased from 15% to 50% [14].

There is to date no clear consensus regarding the definition of frailty [15]. The most frequently used definition is the "phenotype of frailty". However, other definitions have been proposed, each with its own strengths and weaknesses [16]. In addition to assessing physical functioning, many researchers believe that frailty definitions should also include domains such as cognition, mood, and other aspects of mental health [17,18]. Frailty definitions should be validated in a wide variety of cultural, economic, ethnic, and clinical settings [19] and demonstrate the predictive validity of frailty for adverse outcomes [20,21]. The operational definition by Fried et al. [21] the "phenotype of frailty", has been used in numerous studies. The strength of this narrow definition is that it has been shown to predict adverse outcomes such as death, hospitalization, and activities of daily living (ADL) disability. However, if frailty is defined in terms of physical losses alone, this will be the sole focus for identifying frail older people [23]. This definition has come under criticism as it may not reflect a fully multidimensional definition of frailty; for example, it excluded measures of cognition and mental health, which were putatively important additional markers in frailty. The Frailty Index is a frailty rating scale based on the principles of the accumulation of deficits and their association with frailty. Despite this scale satisfying the concepts of what frailty is, its suitability in the clinical setting, where time pressures may lead to less acceptability among clinicians and patients, remains debatable. In addition, the weighting of particular variables may also need to be considered, as certain deficits may be more closely associated with adverse outcomes than others [24].

Design

This study comprised qualitative research with in-depth interviews, mainly using Giorgi's [24] qualitative research data analysis method to analyse the data. Interviews were characterized by an open and flexible conversation, with the interviewee controlling the direction and content of the conversation [26]. This qualitative research aimed to understand people's life experiences and to explore the nature of people's experiences [27,28].

Aim

The purpose of this study was to reveal the conceptual definition of frailty in a Chinese context from experts in elderly care.

Ethical Considerations

The study was approved by the Ethics Review Committee of Guangzhou Medical University. Full explanations were given to the informants about the study's purpose and research procedures. The informants were informed that participation was voluntary and anonymous, and they could withdraw from the study at any time. The informants' personal data were confidential and would not be disclosed to any member other than the research team. After the verbal consent of the interviewees, the interview began.

Sampling and Informants

Informants were recruited by purposive sampling. Experts included clinical experts (doctors, nurses and academics), care workers and elderly people. The respective inclusion criteria were as follows:

The clinical experts (1) have been engaging in elderly related medical, nursing, scientific research, or teaching; (2) either have been working in Chinese medicine or Western medicine clinical facilities in the past 5 years in the field of geriatrics or have been participating in research with elderly individuals; and (3) have attained an undergraduate level degree or above.

The care workers (1) have been taking care of elderly people for more than 5 years. (2) Their job was paid by the elderly person's family members, or (3) they were working in a hospital.

The elderly people were (1) aged 65 years old and above and (2) staying in the hospital during the period of data collection.

The exclusion criteria were as follows:

(1) Those with severe visual and hearing impairments, which could have made communication very difficult, and

(2) Patients with severe senile dementia.

The interview recording stopped when the data were saturated; that is, no new information was being obtained and information was duplicated, and data analysis no longer presented new topics. In total, 27 informants participated in the study.

Data Collection

Data were collected by simultaneous recording, and the audio-recorded conversations (verbatim) were transcribed. When the interview started, subsequent questions were open-ended questions about the debilitation associated with getting old that had been identified from the literature were raised for the interviewees. Active listening was employed in the entire interview process. The interview guide is presented in Tables 1 and 2. Taking into account the nature of the work of the interviewees, participants determined the interview length. Each interview was conducted for 20-40 minutes, and the interview site was in a hospital or university office. The environment was private, comfortable and quiet and free from outside interference.

For clinical experts (doctors, nurses, care workers, etc.)
1. What thoughts or images come up when you hear 'elderly'?
2. What changes do you observe? (Probing if needed: what will occur in the physical and functional performance of the frail elderly person? What are the psychological, emotional and spiritual changes in the debilitated elderly person?)
3. What is your experience in communicating with elderly people? With debilitated elderly people? What is your feeling towards the communication? (Probing if needed: what are the main difficulties and stresses?)
4. How difficult or easy is it for elderly people to get help if needed?
5. What is the social ability of the frail elderly person? What is the general environment around them? What are the effects of the surrounding environment on them?
6. Anything else you want to share with me before we end the interview?

Table 1: Interview guide.

For elderly people
1. What changes in you have your noticed as you are getting older? What impact has it had on your life?
2. How about your appetiteIs your diet balanced? Does your weight change? Why is it so specific, appetite only?
3. What activities do you usually participate in?
4. Are there friends and neighbors that you trust and rely on? Will they help you when you ask them for help?
5. Please describe your living environment; are you satisfied with your current living conditions? What changes do you expect to receive?

6. Anything else you want to share with me before we end the interview?

Table 2: Interview guide.

Results

Among the 27 informants who participated in the study, there were 7 doctors working in Chinese medicine hospitals, 6 doctors working in Western medicine hospitals, 5 nurses working in Chinese medicine hospitals, 3 nurses working in Western medicine hospitals, two care workers and 4 elderly individuals.

Interviews with those practicing traditional Chinese medicine had drawn a framework of frailty, which was consistent with the results of interviews with those practicing Western medicine. There was no conflict between the two in terms of the classification and symptoms of frailty. Frailty of the elderly was mainly manifested in three domains: physical, mental, and social. The overall frailty of the body manifested itself in poor management of health/illness. In addition, the physical aspect was also associated with a decline in self-care ability and decreased walking ability. Coupled with the decline in the body's function, some elderly people's daily needs have to be partially taken care of, or they may be substantially or even completely dependent. Specific physical frailty can be divided into lung deficiency, blood deficiency, kidney deficiency, spleen deficiency, sarcopenia, osteoporosis, and joint pain. Among them, the lung deficiency and blood deficiency in traditional Chinese medicine was apparent as decreased tolerance of activities and shortness of breath; the spleen deficiency manifested as malnutrition, weight loss and constipation; and the kidney deficiency resulted in increased nocturia, changing sleeping patterns, fatigue, and declines in cognitive ability. Mental frailty included both emotion and mood. Emotion was characterized by anxiety and depressive states; mood was characterized by loneliness. Social frailty included both social support and social activities. Social support was characterized by a lack of companionship and communication; social activities were characterized by reduced outings and prolonged bed rest (Figure 1).

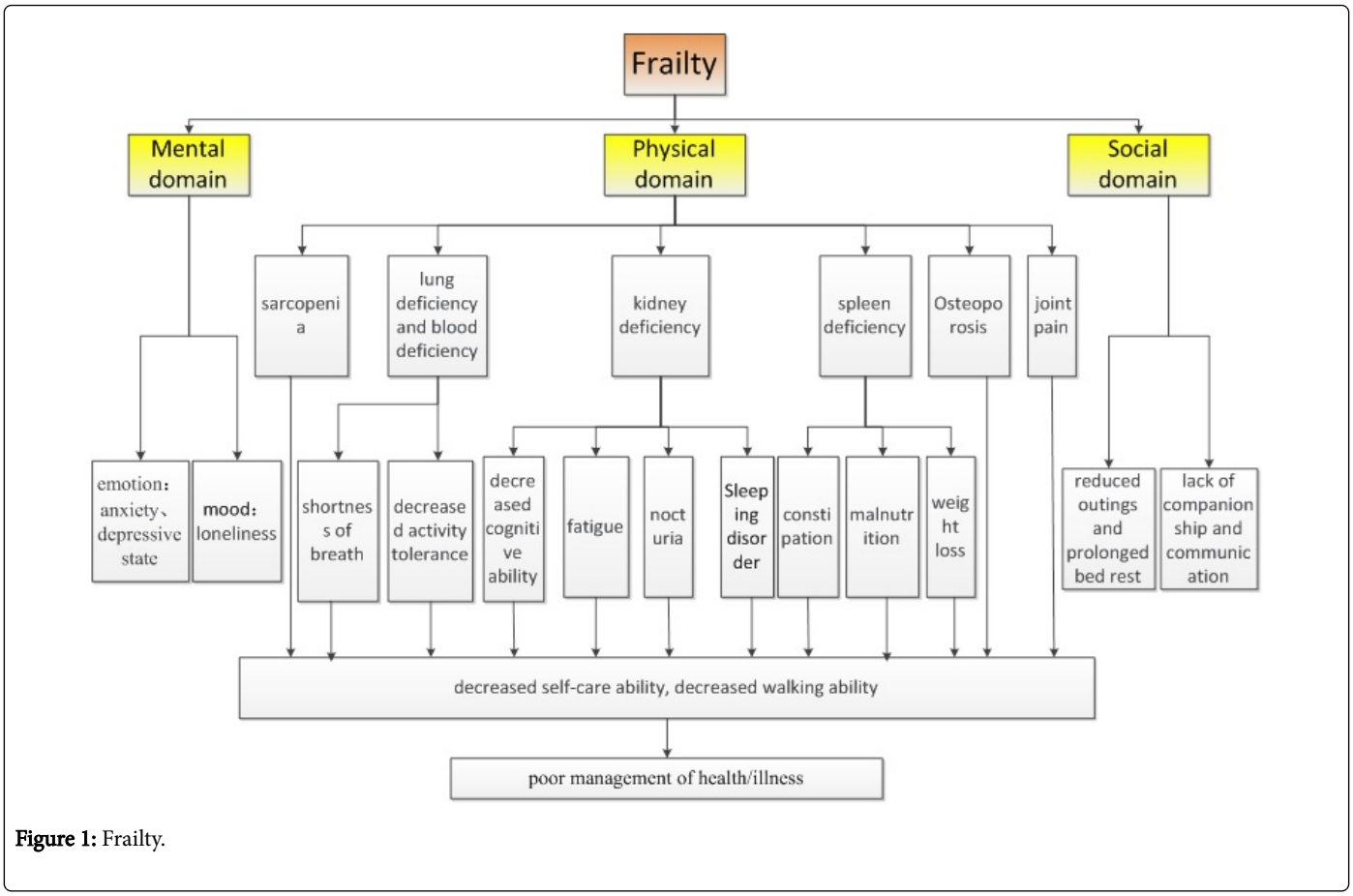

Figure 1: Frailty.

Data Analysis

Analysis of the verbatim transcripts of the 27 interviews identified a list of descriptive expressions that were categorized under segments, while further interviews revealed only variations in the existing segments without the emergence of other new findings. Descriptive expressions that conveyed common meanings were grouped and categorized into segments. Researchers further examined the unifying meanings of the descriptive expressions; overlapping and vague expressions were reduced and modified into more precise terms, while extraneous descriptions were eliminated. At the end, a total of 226 descriptive expressions were identified and categorized under 17 coded

segments (Table 3) after a systematic process of comparison and pattern identification.

Examples of descriptive expressions	Coded segments
The elderly are easy to forget, and the calculation questions that can be done before are not right now.... Communicating with them often has different levels of difficulty, and their ability to understand problems declines. When they do painting clock experiment, more or less there will be some mistake.	Seg1 decreased cognitive ability
The elderly usually participate in activities that are reduced, and they are short of breath after the activities... After walking, climbing stairs, there will be symptoms of wheezing and palpitation, and they need more time to rest.	Seg2 decreased activity tolerance, shortness of breath
Older people tend to have some negative emotions, such as negative, irritating... They are prone to inferiority, and lack of confidence in many things leads them to dare not try. At the same time, they lack interest in many things, have negative emotions, often feel persistent fatigue, and fear death.	Seg3 depressive state
Some elderly people are lying in bed for a long time due to illness or because of their dependence, which prevents them from doing some daily activities. This situation will lead to disuse atrophy, muscle loss, muscle cells are getting smaller. The reaction of shrinking and stiffness will exist, that is, the arms and legs are relatively thin, the muscles are few, the joints are stiff, and the muscle tension is very high.	Seg4 sarcopenia

Table 3: Descriptive expressions and coded segments.

Physical Domain

Kidney deficiency: Kidney deficiency was a congenital deficiency, and included kidney Yin deficiency and kidney Yang deficiency. It was characterized by increased nocturia, long and clear urine, and disordered sleep patterns. The movement was sweaty, the waist and knees were sore, the fatigue was often, and the cognitive ability was reduced.

"Kidney, Chinese medicine believes that it is the main bone marrow, the general kidney deficiency patients show that the waist and knees are sore, feel no strength. The main bone, from the Chinese medicine point of view, is similar to osteoporosis, fractures, which are often treated from the kidney; the marrow, the brain is the sea of the marrow, and it is considered to be the nerve center, a primitive nerve, and there are similarities, so after kidney deficiency, memory has declined in all aspects. Nocturia is increased, but some people will also show more urination during the day. Chinese medicine believes that kidney function is declining or kidney is not solid." (S20)

Spleen deficiency: Spleen deficiency is a physiological phenomenon of an acquired nature, mainly characterized by decreased appetite, malnutrition, and weight loss. Gastrointestinal peristalsis was weakened, resulting in constipation.

"The symptoms of spleen deficiency in the elderly are not good appetite, the appetite is weak, the gastrointestinal function is weakened, the digestion is not good, the eating is less, and the stool is less, there will be some cases of dry and hard stools, constipation, especially in traditional Chinese medicine clinics, many elderly people see constipation, and many diseases can be treated from the spleen." (S21)

Lung deficiency and blood deficiency: The symptoms of lung deficiency in the elderly were unfavorable lungs, cough, expectoration, chest tightness after exercise, shortness of breath, palpitation, and decreased activity tolerance.

Blood deficiency results in loss of Yin and blood in the body. Qi was closely related to blood, and blood deficiency easily caused Qi deficiency, resulting in a lack of vitality.

"Lung deficiency, that is, lack of Qi in the heart and lungs, some chronic cough, shortness of breath after activities, often feel flustered and palpitations." (S17)

"Blood deficiency, hemoglobin and red blood cell counts are normal after blood tests, but the elderly are pale and slightly yellow, and the blood support effect is reduced." (S20)

Poor management of health/illness: The overall health status was poor, and the ability of elderly people to resist external evils has been reduced, resulting in repeated infections and repeated hospitalizations. This overall state is often related to a variety of chronic diseases, and a variety of drugs were needed to maintain a balanced state.

" From the perspective of Chinese medicine, the debilitating performance of the elderly is mainly based on deficiency, congenital kidney deficiency, spleen and stomach deficiency, and lung Qi deficiency. The coexistence of multiple diseases is the basis, and a state of phlegm and blood stasis and dampness is combined. The patient will feel that the disease will be aggravated without taking medicine. Taking medicine may help the patient's condition and seeing the doctor and nurse have a sense of security. Of course, our doctors will also give the patients dialectical treatment according to their specific conditions." (S18)

Decreased self-care ability: Self-care ability was declined, due to disease restrictions or degradation of abilities. The elderly had insufficient self-confidence, fear of accidents, a need for people to partially take care of them, or even relied entirely on their children or care workers.

"They are not willing to communicate with others, they are willing to rest. The ability to take care of themselves is declining and they need to be taken care of by others. These are the manifestations of the decline and aging of the body. It is easy to rely on others and feel that they are physically weak in doing these things. Feeling tired, they feel that they have no ability or strength to do these jobs. And doing these exercises can cause problems, such as chest tightness and shortness of breath. In fact, he wants to do it, but he feels that he has no ability to do this again." (S2)

Decreased walking ability: The ability to walk was reduced, manifested as slow gait, unstable walking, and risk of falling.

"The elderly are in poor health. The most important thing is to prevent falls. Falling is a common phenomenon in the lives of the elderly. It may be related to unstable walking and poor balance. They need to use crutches to maintain balance, and they like to walk along the bed or anything else that can hold. They are especially careful when they walk, fearing that they will fall." (S1)

Osteoporosis and joint pain: "There are more patients with joint pain. They say that this is an old problem. Generally, there is definitely a degenerative joint. We are also beginning to pay attention to the problem of osteoporosis, especially in postmenopausal women and older men. We will routinely test bone mineral density and muscle strength." (S15)

Sarcopenia: Regarding sarcopenia, elderly people stayed in bed for long periods of time, and the reduced activity could lead to muscle loss, decreased muscle strength, and decreased muscle tone.

"We have seen this situation in our geriatric ward particularly. They come from the community home for the elderly. The reaction of shrinking and stiffness will exist, that is, the arms and legs are relatively thin, the muscles are few, the joints are stiff, and the muscle tension is very high." (S16)

Mental domain: The elderly people had multiple diseases, and they were hospitalized repeatedly, which was likely to be negatively viewed. Lack of children to accompany them would make them feel loneliness. Lack of confiding in others and reduced social activities all led to negative emotions, such as anxiety and depressive state.

"There will be a feeling of loneliness, which is easy to depress and anxious. Especially when you are young, you can do everything. If you are old, you can't do anything. Some chronic diseases are easy to repeat, and it will make him feel that the disease does not end. Sometimes it is suddenly catching a cold or pneumonia and returning to the disease state, even worse than the original situation, the elderly are prone to such negative thoughts. Even if the old man has a fracture, staying in bed for a long time, they will be negative about the disease state." (S19)

"The age is older, their self-confidence is declining. The change of internal factors has caused some psychological changes. For example, it will produce a sense of frustration and will be powerless for some things. Not as confident as before, more helpless. In addition, the elderly will have some anxiety, nervousness, and lack of confiding." (S20)

Social Domain

On the one hand, the elderly individuals lacked children to accompany them and communicate with them, they stayed in bed for a long time, and they rarely went out to participate in activities; on the other hand, their social ability declined and participation in social activities were reduced, which would accelerate the process of frailty.

"The amount of activity is reduced, and they rarely go to activities, often stay at home and are not willing to go out. Do nothing at home, or do very little, go to the community to buy food, take a walk, basically no activity. Poor health state, unstable walking, poor communication skills, all aspects will lead to his unwillingness to socialize, the more he does not participate in social activities, the more likely he is to cause disuse syndrome." (S21)

Discussion

The results of the study showed weight loss, decreased activity tolerance, fatigue, decreased walking ability, and sarcopenia consistent with the definition of Fried's frailty phenotype [22]. Decreased cognitive ability, poor management of health/illness, decreased self-care ability, psychological anxiety, depressive state, decreased social activity, and malnutrition were consistent with the Edmonton Frailty Scale by Rolfson et al. [28]. Compared with previous studies, the physical frailty of this study was associated with increased content of shortness of breath, sleeping disorder, constipation, nocturia, osteoporosis and joint pain; mental frailty with increased content of loneliness; and social frailty with increased content of the lack of companionship and communication. The study pointed out that the emotional loneliness of the elderly and the community environment were important factors influencing the progress of frailty.

The results of the study attributed the main manifestations of the elderly individuals' physical frailty to TCM deficiency and the ability to resist external evils decreased. Jiangsu's famous Chinese medicine practitioner Yu [29] advocated that solid Ben Peiyuan, when sick, eliminated evil. Zhang, et al. [30] conducted an investigation on the deficiency syndrome of the elderly, and based on the dialectic of viscera, combined with the dialectic of Qi as well as Yin and Yang, it was concluded that all the visceral frailty increased with age. The findings from this study emphasized the importance of TCM deficiency in accelerating the decline of the elderly and were also in line with Zhang et al. [30] research.

Older people liked to stay in bed, reduced their outing activities, had a lack of exercise and were prone to disuse atrophy. Decreased physical activity leads to muscle weakness and bone fragility; decreased oxygen throughput, decreased arterial size, increased clotting ability, and altered blood lipid levels; metabolic inefficiency, decreased glucose transporters, obesity, and Type II diabetes; and immunologic decay [32]. Loss of movement capacity, in turn, frequently accelerated declines in other systems, which in turn provides feedback on the ability to move [33]. Receptor sites were downregulated, hormonal and growth factors diminished, nutritional cues were lost, circulatory competence deteriorated, sleep became disrupted, depression looms, and a whole cascade of catabolic events occurred [32]. The decrease in the number of skeletal muscles led to a decrease in bone cell activity, and the decrease in muscle mass and bone density also occurred simultaneously, so the probability of osteoporosis was three times that of the normal population. In the establishment of Fried's frailty phenotype, sarcopenia was a focus in the theory of frailty circulation, defined as an age-related decrease in muscle strength and an increase in muscle tone, muscle loss, which occurred sharply after age 50. Evans et al. [32] pointed out that sarcopenia was the core pathological basis of frailty, and several studies have shown that sarcopenia is an important component of frailty [34-39]. Muller [39] pointed out that a casted limb or an individual at bedrest had been shown to exhibit a decrease in muscle strength at the rate of 1% per day, at least during a 70-day observation period.

The mental frailty of the elderly was characterized by anxiety, a depressive state, and loneliness. Feng, et al. [40] believed that the risk of depression in debilitated elderly was 2.3 times that of a normal elderly person, and Fillit et al. [41] proposed that frailty was a transitional period from a situation in which the elderly were completely capable of self-care to when self-care was limited. Older people could self-perceive the multifaceted changes in this stage of the body. If the changes were maladaptive, this could lead to anxiety and

depression in the elderly. The elderly lacked the people to confide in, and subjectively felt isolated and alienated from others or society. We recommend that psychological interventions be carried out in a timely manner for elderly people with mental frailty. Children should be involved and spend more time with the elderly family members. If necessary, ask a psychologist to consult. Nurses should pay attention to the elderly's physical frailty, social frailty, and mental frailty while improving the language communication and social skills of the elderly person through the use of proper discharge and admission health education methods. Establish a good interactive relationship with the elderly, pay attention to their needs and social communication, and promptly intervene to reduce the loneliness and social withdrawal of debilitated elderly individuals.

The social frailty of the elderly was characterized by a decrease in social activities and a lack of companionship and communication. The elderly individuals had poor overall health status, repeated infections, and repeated hospitalizations. On the one hand, it potentially affected the perception of the self-health status of the elderly people and became one of the sources of psychological stress; on the other hand, physical discomfort reduced the scope of the self-care ability of the elderly people and the opportunity to contact the outside world. This limited the ability of the elderly individuals to play a normal social and family role, and ultimately led to mental frailty in the elderly [43].

Strengths and Limitations of the Method

The study interviewees were employees of two tertiary hospitals and a university in Guangzhou. We did not interview the research subjects in other regions, and thus, there were restrictions on the geographical area. There was a certain bias in the choice of the sample because the selected elderly were hospitalized patients. In future research, the sample size could be increased in the context of a multicenter research project.

The researchers used the interdisciplinary perspective to minimize the bias in the whole process of data analysis [44,45]. Three researchers (XYX, YHJ, GY) from different professional backgrounds participated in the whole process of coding, classifying and refining themes to ensure the integrity and relevance of the topics.

Conclusion

The results of this study showed that the framework for defining frailty in elderly individuals included three domains: physical domain, mental domain, and social domain. The physical theme was characterized by TCM deficiency. We have emphasized that frailty was a clinical syndrome with multiple causes. It was characterized by TCM deficiency, mental frailty, and social frailty. Cultural elements were evidenced. Elderly individuals have been more susceptible to dependence and death, and we advocated conventional screening for frailty in the elderly, especially over 70 years of age. Older people need to do some aerobic exercise in their lives, such as Baduanjin Exercise and Tai Chi. At the same time, it was necessary to strengthen nutrition, cultivate a positive attitude and improve the quality of sleep. Although this study had certain limitations, it provided a way of thinking and reference for the study of the frailty of elderly people under the syndrome differentiation of TCM, and filled the gap in the qualitative research of this debilitating condition.

References

1. Rockwood K, Fox RA, Stolee P, Robertson D, Beattie BL (1994) Frailty in elderly people: An evolving concept. CMAJ 150: 489-495.
2. Xi X, Guo G, Sun J (2015) Advances in research on evaluation tools and applications of frail elderly. Chinese Journal of Geriatrics 20: 5993-5996.
3. Morley JE, Abbatecola AM, Argiles JM, Baracos V, Bauer J, et al. (2011). Sarcopenia with limited mobility: An international consensus. J Am Med Dir Assoc 12: 403-409.
4. Collard RM1, Boter H, Schoevers RA, Oude Voshaar RC (2012) Prevalence of frailty in community-dwelling older persons: A systematic review. J Am Geriatr Soc 60: 1487-1492.
5. Bandeen-Roche K, Seplaki CL, Huang J, Buta B, Kalyani RR, et al. (2015) Frailty in older adults: A nationally representative profile in the United States. J Gerontol A Biol Sci Med Sci 70: 1427-1434.
6. Auyeung TW, Lee JS, Kwok T, Woo J (2011) Physical frailty predicts future cognitive decline-a four-year prospective study in 2737 cognitively normal older adults. J Nutr Health Aging 15: 690-694.
7. Mitnitski A, Fallah N, Rockwood MR, Rockwood K (2011) Transitions in cognitive status in relation to frailty in older adults: A Comparison of three frailty measures. J Nutr Health Aging 15: 863-867.
8. Rodríguez-Mañas L, Féart C, Mann G, Viña J, Chatterji S, et al. (2013) Searching for an operational definition of frailty: A delphi method based consensus statement. The frailty operative definition-consensus conference project. J Gerontol A Biol Sci Med Sci 68: 62-67.
9. Theou O, Rockwood K (2012) Should frailty status always be considered when treating the elderly patient? Aging Health 8: 261-271.
10. Hurria A, Togawa K, Mohile SG, Owusu C, Klepin HD, et al. (2011) Predicting chemotherapy toxicity in older adults with cancer: A prospective multicenter study. J Clin Oncol 29: 3457-3465.
11. Makary MA, Segev DL, Pronovost PJ, Syin D, Bandeen-Roche K, et al. (2010) Frailty as a predictor of surgical outcomes in older patients. J Am Coll Surg 210: 901-908.
12. Hastings SN, Purser JL, Johnson KS, Sloane RJ, Whitson HE, et al.(2008) Frailty predicts some but not all adverse outcomes in older adults discharged from the emergency department. J Am Geriatr Soc 56: 1651-1657.
13. Shamliyan T, Talley KMC, Ramakrishnan R, Kane RL (2013) Association of frailty with survival: A systematic literature review. Ageing Res Rev 120: 719-736.
14. Rockwood K, Hogan DB, MacKnight C (2000) Conceptualisation and measurement of frailty in elderly people. Drugs Aging 17: 295-302.
15. Van-Kan GA, Rolland Y, Bergman H, Morley JE, Kritchevsky SB, et al. (2008) The I.A.N.A. task force on frailty assessment of older people in clinical practice. J Nutri Health Aging 12: 29-37.
16. Avila-Funes JA, Amieva H, Barberger-Gateau P, Le-Goff M, Raoux N, et al. (2009) Cognitive impairment improves the predictive validity of the phenotype of frailty for adverse health outcomes: The three-city study. J Am Geriatr Soc 57: 453-461.
17. Bergman H, Ferrucci L, Guralnik J, Hogan DB, Hummel S, et al. (2007) Frailty: An emerging research and clinical paradigm-issues and controversies. J Gerontol Ser A: Biol Sci Med Sci 62: 731-737.
18. Avila-Funes JA, Aguilar-Navarro S, Melano-Carranza E (2008) Frailty, an enigmatic and controversial concept in geriatrics. The biological perspective. Gac Med Mex 144: 255-262.
19. Robinson TN, Eiseman B, Wallace JI, Church SD, McFann KK, et al. (2009) Redefining geriatric preoperative assessment using frailty, disability and co-morbidity. Ann Surg 250: 449-455.
20. Sundermann S, Dademasch A, Rastan A, Praetorius J, Rodriguez H, et al. (2011) One-year follow-up of patients undergoing elective cardiac surgery assessed with the comprehensive assessment of frailty test and its simplified form. Interact CardioVasc Thorac Surg 13: 119-123.
21. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, et al. (2001) Frailty in older adults: Evidence for a phenotype. J Gerontol A Biol Sci Med Sci 56: 146-157.

22. Gobbens RJ, Luijkx KG, Wijnen-Sponselee MT, Schols JM (2010) Toward a conceptual definition of frail community dwelling older people. Nursing Outlook 58: 76-86.
23. Wou F, Conroy S (2013) The frailty syndrome. Medicine 41: 13-15.
24. Giorgi A (1997) The theory, practice, and evaluation of the phenomenological method as a qualitative research procedure. Journal of Phenomenological Psychology 28: 235-260.
25. Kvale S, Brinkmann S (2009) Interviews: Learning the craft of qualitative research interviewing. Sage Publications, London.
26. Merleau-Ponty M (1996) Phenomenology of perception. Routledge & Keganpaul, London.
27. Parse RR (2001) Qualitative inquiry: The path of sciencing. Boston: Jones and Bartlett Publishers.
28. Rolfson DB, Majumdar SR, Tsuyuki RT, Tahir A, Rockwood K (2006) Validity and reliability of the edmonton frail scale. Age Ageing, 35: 526-529.
29. Yu G (2001) On the deficiency of the elderly. Traditional Chinese Medicine of Jiangsu 22: 1-3.
30. Zhang R, Wu Z, Hua R (1986). Preliminary discussion on senile deficiency syndrome. Journal of Traditional Chinese Medicine 25: 54-56.
31. Bortz WM (2002) A conceptual framework of frailty: A review. J Gerontol 57: 283-288.
32. Evans WJ, Paolisso G, Abbatecola AM, Corsonello A, Bustacchini S, et al. (2010) Frailty and muscle metabolism dysregulation in the elderly. Biogerontology 11: 527-536.
33. Tinetti ME, Inouye SK, Gill TM, Doucette JT (1995) Shared risk factors for falls, incontinence, and functional dependence. Unifying the approach to geriatric syndromes. JAMA 273: 1348-1353.
34. Cruz-Jentoft AJ, Baeyens JP, Bauer JM, Boirie Y, Cederholm T, et al. (2010) Sarcopenia: European consensus on definition and diagnosis: Report of the European working group on sarcopenia in older people. Age and Ageing 39: 412-423.
35. Fielding RA, Vellas B, Evans WJ, Bhasin S, Morley JE, et al. (2011) Sarcopenia: An undiagnosed condition in older adults. current consensus definition: Prevalence, etiology, and consequences. International working group on sarcopenia. J Am Med Dir Assoc 12: 249-256.
36. Morley JE, Vellas B, Van-Kan GA, Anker SD, Bauer JM, et al. (2013) Frailty consensus: A call to action. J Am Med Dir Assoc 14: 392-397.
37. Muscaritoli M, Anker SD, Argiles J, Aversa Z, Bauer JM, et al. (2010) Consensus definition of sarcopenia, cachexia and pre-cachexia: Joint document elaborated by special interest groups (SIG) "cachexia-anorexia in chronic wasting diseases" and "nutrition in geriatrics". Clin Nutr 29: 154-159.
38. Von-Haehling S, Morley JE, Anker SD (2012) From muscle wasting to sarcopenia and myopenia: Update 2012. J Cachexia Sarcopenia Muscle 3: 213-217.
39. Muller EA (1970) Influence of training and of inactivity on muscle strength. Arch Phys Med Rehabil 51: 449-462.
40. Feng L, Nyunt MS, Feng L, Yap KB, Ng TP (2014) Frailty predicts new and persistent depressive symptoms among community-dwelling older adults: Findings from Singapore longitudinal aging study. J Am Med Dir Assoc 15: 77-76.
41. Fillit H, Butler RN (2009) The frailty identity crisis. J Am Geriatr Soc 57: 348-352.
42. Gayman MD, Turner RJ, Cui M (2008) Physical limitations and depressive symptoms: Exploring the nature of the association. J Gerontol B Psychol Sci Soc Sci 63: S219-S228.
43. Curtin M, Fossey E (2007) Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. Australian Occupational Therapy Journal, 54: 88-94.
44. Guba EG (1981) Criteria for assessing the trustworthiness of naturalistic inquiries. ECTJ 29: 75-91.