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Assessment and Improvement of Nutritional Knowledge among Hospitalized Cancer Patients: Gaps, Sources, and Educational Strategies

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Abstract

This study explores the nutritional knowledge, its acquisition, and assessment among hospitalized cancer patients, revealing significant gaps and the influence of demographic factors. The research identifies the predominance of informal and unreliable sources for nutritional information, such as internet searches and peer advice, highlighting the inadequacy in patient education provided by healthcare professionals. Additionally, the study addresses the lack of validated assessment tools for evaluating patients' nutritional knowledge, emphasizing the need for comprehensive and accessible educational resources and standardized measurement instruments. The findings advocate for an integrated approach involving personalized nutritional guidance and the development of validated tools to improve cancer patients' nutritional knowledge and health outcomes.

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*Correspondence: qiuyan2003716@hhu.edu.cn**Keywords:** cancer patients, nutritional knowledge, assessment tools, educational resources, healthcare professionals, patient education.

1. Introduction

Malignant tumors are a type of consumptive disease, and due to the characteristics of the disease itself and the adverse reactions of anti-tumor treatments, patients with malignant tumors generally have a high risk of malnutrition [1][2][3][4][5]. Malnutrition can affect the wound healing of tumor patients after surgery, prolong hospital stay, increase hospitalization

costs, and severe malnutrition is also a risk factor for increased hospital infections. According to surveys, the nutritional risk and malnutrition rates of tumor patients range from 36% to 70%, and about 40% of tumor patients die from malnutrition and its complications rather than from cancer itself. It is evident that the occurrence of malnutrition seriously affects the prognosis of cancer patients, reducing their survival time [6][7][8][9][10]. The occurrence of nutritional risk seriously affects the prognosis of cancer patients, leading to a decrease in their quality of life and survival time. The nutritional awareness level of hospitalized tumor patients plays a significant role in disease treatment, reducing hospital stay, extending survival time, and improving the quality of life. This article will summarize the relevant studies on the cognitive level of nutritional knowledge among hospitalized cancer patients, in order to provide a basis for subsequent targeted nutritional health education and nutritional support to improve their level of awareness [11][12][13][14][15].

2. Current status of nutritional knowledge among hospitalized cancer patients

Studies have shown that the nutritional knowledge scores of cancer patients are at a low level. In a survey on the nutritional knowledge of young patients with head and neck tumors, the overall pass rate among young patients was 58.47%, and only 4.85% were aware of the "Chinese Dietary Guidelines," indicating a generally low level of nutritional knowledge [16][17][18][19][20]. In a survey on the nutritional awareness of hospitalized patients with digestive system malignant tumors, the control group had an average level of awareness [21][22][23][24][25]. The nutritional knowledge and application among patients with digestive system tumors were not ideal. Previous research found that most patients in oncology departments have misconceptions about diet. Therefore, nutritional education for hospitalized patients with malignant tumors should be given sufficient attention, and targeted nutritional education should be conducted early for these patients to correct the nutritional misconceptions caused by lack of knowledge [26][27][28][29][30].

3. Factors affecting the nutritional knowledge of hospitalized cancer patients

3.1. Demographic factors

i. Educational level. The relationship between the structure of knowledge and the awareness of nutritional support treatment is close; the higher the level of knowledge, the higher the proportion of awareness. The comprehensive nutritional knowledge score of patients increases with the improvement of educational level; the higher the educational level, the higher the level of nutritional awareness. In surveys on the awareness of nutritional support among cancer patients and their families, the awareness of nutritional support treatment among hospitalized cancer patients and their families was positively correlated with educational level, because patients with higher educational and cultural levels have stronger abilities in reading comprehension and actively seeking health information, and exhibit better compliance with medical advice compared to patients with lower cultural levels [31][32][33][34][35]. Therefore, nutritional education should be tailored to the individual, adopting personalized health education methods for patients of different cultural levels, and for patients with lower cultural levels, language that is understandable and simultaneously vivid and clear should be used [36][37][38][39][40].

ii. Economic status. Patients from families with higher per capita monthly income have higher levels

of nutrition-related knowledge than those from families with lower monthly income, likely because patients from higher-income families pay more attention to health-related knowledge, have more channels to acquire disease knowledge, and access more medical services. iii. Place of residence. Patients living in urban areas have higher nutritional knowledge scores than rural residents, as those living in rural areas have lower cultural levels and lower demand for nutritional knowledge. iv. Age. Older patients have poorer ability to accept and understand disease knowledge, so elderly patients have a lower level of nutritional awareness. Elderly hospitalized patients have a higher risk of nutritional problems. Many scholars have also found that the incidence of nutritional risk in elderly (≥ 65 years old) cancer patients is significantly higher than in younger and middle-aged patients. Age affects the ability of cancer patients to acquire nutritional knowledge and needs, leading to the occurrence of nutritional risks. v. Gender. Gender is one of the reasons affecting the condition of nutritional knowledge, beliefs, and behaviors, with women having better nutritional attitudes than men. Several studies have found that the scores of nutritional knowledge, beliefs, and behaviors in men are significantly lower than in women, which is related to the responsibilities women bear in the family and their greater concern for quality of life. In a survey of nutritional knowledge among Shanghai cancer patients in the recovery period, there was no difference in nutritional knowledge scores between men and women. These differences in studies may be related to regional economic and cultural development differences. It is evident that due to demographic differences, the level of nutritional awareness among cancer patients varies, so it is essential to provide personalized guidance based on the different cultural and economic backgrounds of patients. Some people found that after implementing personalized nutrition in patients with lung cancer and diabetes, the patients' nutritional awareness was effectively improved.

3.2. Other factors

3.2.1. Related to the low level of nutritional awareness among medical staff

There is a contradiction between the high demand of patients to acquire nutritional knowledge from medical staff and the low level of nutritional knowledge among medical staff. Previous research has shown that medical staff have a low rate of awareness of nutritional knowledge related to cancer. The top three sources of nutritional knowledge for medical personnel are work experience, reading professional books and journals, and learning in school. Most nursing interns have not mastered simple nutritional assessment and survey knowledge, and less than 50% of nursing interns can calculate the BMI index. The acquisition of nutritional knowledge by medical staff is mostly due to the summarization of experience, rather than relying on school education and continuing medical education, resulting in a lack of scientific and professional levels in the nutritional awareness of medical staff. This will affect the nutritional risk screening, care, and education for patients to a certain extent. Therefore, improving the nutritional awareness of medical staff is an important task urgently needed to be completed by hospitals and related disciplines.

3.2.2. Related to the ways in which hospitalized cancer patients acquire nutritional knowledge

Research has found that the methods through which hospitalized cancer patients acquire nutritional knowledge are relatively limited. Most of the knowledge is obtained through internet searches, lacking authoritative and reliable sources

of nutritional information. Multiple studies have also found that about one-third of the nutritional knowledge of hospitalized cancer patients is passed down from elders, about one-third is acquired through exchanges with fellow patients, and less than one-third is obtained through online searches or reading relevant materials. The lack of diverse channels for acquiring nutritional knowledge will inevitably affect the level of nutritional awareness among patients. Surveys also show that doctors are the second largest source of nutritional knowledge for cancer patients, with most patients expressing trust in medical staff and hoping that they can provide professional guidance on nutrition. Therefore, this underscores the importance and necessity of medical staff having a good grasp of nutritional knowledge.

4. Nutritional knowledge assessment tools for hospitalized cancer patients

Currently, surveys on the nutritional awareness levels of hospitalized cancer patients mostly use self-made questionnaires, which lack validation of reliability and validity. The current Digestive System Cancer Nutritional Knowledge, Attitude, and Practice Questionnaire (DCNKAPQ) consists of 24 items in the knowledge dimension, with a Cronbach's alpha coefficient of 0.93 and a test-retest reliability of 0.81. However, this questionnaire is only applicable to patients with digestive system tumors, and its applicability to other cancer patients has not yet been studied. There is a lack of effective and widely recognized assessment tools for evaluating the nutritional knowledge of cancer patients.

5. Conclusion

The study highlights the significant challenges and gaps in the nutritional knowledge among hospitalized cancer patients. The findings underscore the pressing need for diverse, authoritative, and accessible sources of nutritional information to improve patient outcomes. The reliance on informal sources such as internet searches and advice from non-professionals underscores the urgent need for healthcare professionals to assume a more proactive role in providing reliable and comprehensive nutritional education. Furthermore, the lack of universally recognized and validated assessment tools for measuring nutritional knowledge in this patient group calls for immediate attention to develop and standardize such instruments. Addressing these issues is critical for enhancing the nutritional well-being and overall quality of life of cancer patients, underscoring the integral role of nutritional education and support in cancer care.

Statements and Declarations

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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