Empowering Menopausal Women: Computer Nursing Diagnosis Intelligent Systems and Patient Education

Abstract

Menopause is a significant life stage for women that bring about various physical and emotional changes, necessitating specialized healthcare. Computer Nursing Diagnosis Intelligent Systems (CNDIS) have emerged as a revolutionary tool in menopausal women's health care. This article explores the impact of CNDIS in enhancing the diagnosis and treatment of menopausal health concerns. By employing advanced algorithms and artificial intelligence, CNDIS provides accurate and efficient diagnoses, individualized treatment plans, enhanced patient education, and ongoing monitoring and follow-up care. The benefits of CNDIS include improved efficiency and accuracy, enhanced healthcare provider collaboration, and continuity of care. However, challenges such as data privacy and system refinement need to be addressed. CNDIS, when integrated effectively, holds tremendous potential to transform menopausal women's health care, ensuring personalized and comprehensive care for this important phase in a woman's life.

Keywords: Menopausal women • Computer nursing • Patient education

Hassan Sherif*

The Hospital of Shenzhen Technology University, Shenzhen, Guangdong, China

*Author for correspondence:
HassanSh578@gmail.com

Introduction

Menopause is a natural biological process that marks the end of a woman's reproductive years. However, it can also bring about significant physical and emotional changes, making menopausal women vulnerable to various health concerns. To address the unique needs of menopausal women, healthcare providers are increasingly turning to innovative technologies, such as Computer Nursing Diagnosis Intelligent Systems [1]. These intelligent systems employ advanced algorithms and artificial intelligence to enhance the accuracy and efficiency of diagnosing menopausal health issues. In this article, we will explore how CNDIS can revolutionize menopausal women's health care and improve patient outcomes.

The pathophysiological mechanism of menopause is generally believed to be the imbalance of neurotransmitters, hormones, cytokines, etc., caused by the hypothalamic-pituitary-ovarian axis or adrenal dysfunction caused by the decrease of estrogen levels in the body. In addition, studies have found that endocrine disorders are not the only cause of menopausal syndrome. In addition, it is also related to multiple factors such as family factors, cultural and social factors, psychological factors, and personality and behavior status. As the childbearing age increases, the number of ovarian follicles decreases. When the number of primordial follicles drops to an extremely low level, the key level of the feedback system will also decrease, and this series of endocrine changes occurs, disrupts the normal cyclical ovarian hormone secretion and ovulation [2], affects the highly coordinated interaction of ovarian hormones, pituitary gland and hypothalamus with normal menstrual cycle, and causes the hypothalamic-pituitary-ovarian axis to be confused. This damage involves the transition period of the normal ovulation cycle, until the woman's last menstrual period. In women during menopause, the number of follicles in the body is significantly reduced, and the remaining follicles are low in response to gonadotropin (Gn) or completely lose their response, so the frequency of ovulation is reduced. Aiming at the speed of feature extraction and recognition effect in behavioral intelligence diagnosis, combined with the characteristics of menopausal women's behavior patterns, this paper proposes the use of cross-layer convolutional neural networks to autonomously extract features. Combined with

91

Archiv. Nurs. Care. (2023) 6(4), 91–93

support vector machine multiclass behavior classification of nursing object behavioral intelligence, diagnosis programs are designed from the aspects of network structure, activation function, classification mechanism, and parameter selection [3].

The role of CNDIS in menopausal health care

Accurate and efficient diagnosis: CNDIS uses algorithms to analyze menopausal symptoms and medical history, providing healthcare professionals with precise and efficient diagnoses. By considering a broad range of factors, including physical symptoms, emotional well-being, lifestyle choices, and medical history, CNDIS helps identify potential health risks and provides personalized recommendations for treatment.

Individualized treatment plans: CNDIS considers the unique characteristics and needs of each menopausal woman to create personalized treatment plans. These plans can incorporate hormone therapy, lifestyle modifications, nutritional guidance, and psychological support [4]. By tailoring treatments to individual patients, CNDIS ensures that women receive the most appropriate care for their specific symptoms and concerns.

Enhanced patient education: CNDIS empowers menopausal women by providing them with reliable information about their health and treatment options. These intelligent systems offer educational resources, interactive tools, and personalized recommendations to help women better understand their symptoms and make informed decisions. By improving health literacy, CNDIS enables women to actively participate in their own care and take charge of their well-being.

Monitoring and follow-up care: CNDIS plays a vital role in monitoring menopausal women's health and tracking the effectiveness of treatment plans [5]. These systems can collect data on symptoms, medication adherence, and lifestyle factors, allowing healthcare providers to identify patterns and make necessary adjustments to optimize patient outcomes. Regular monitoring through CNDIS ensures that women receive timely interventions and continuous support throughout their menopausal journey.

Benefits of CNDIS in menopausal health care

Improved efficiency and accuracy: CNDIS significantly reduces the time and effort required for diagnosis, allowing healthcare professionals to focus more on patient care. By automating the collection and analysis of data, these systems minimize human error and enhance the accuracy of diagnoses. This efficiency translates into faster treatment initiation and better health outcomes for menopausal women [6].

Enhanced healthcare provider collaboration: CNDIS promotes interdisciplinary collaboration among healthcare providers involved in menopausal women's care. By providing a centralized platform for data sharing and communication, CNDIS facilitates seamless coordination between gynecologists, endocrinologists, psychologists, and other specialists. This collaborative approach ensures comprehensive and holistic care for menopausal women.

Continuity of care: CNDIS supports continuity of care by maintaining electronic health records and treatment plans accessible to healthcare professionals across different settings [7]. This feature enables smooth transitions between primary care providers, specialists, and even emergency care, ensuring that menopausal women receive consistent and coordinated care regardless of the healthcare facility they visit.

Challenges and future directions: While CNDIS holds great promise in revolutionizing menopausal women's health care, several challenges need to be addressed. These include data privacy concerns, technological limitations, and the need for ongoing system refinement and updates. Additionally, it is crucial to ensure that CNDIS remains a tool that augments healthcare providers' expertise rather than replacing the human touch and empathy that is essential in women's health care [8].

The remote diagnosis part can control the operation of the nursing bed by controlling the controller through wireless communication. The advantages of Bluetooth technology are low-power consumption and high security level, but the disadvantage is that the communication rate is lower than Wi-Fi, the wireless transmission distance is also lower than Wi-Fi, and Bluetooth communication is often a single-point pair [9]. For single-point communication, WiFi communication can realize data sharing through wireless routing to achieve the purpose of accessing the Internet. The nursing bed can also collect real time information through a camera and then

connect to the Internet through a wired way. In this way, the information of multiple nursing beds can be viewed remotely without going to the front of the nursing bed. This is extremely convenient for medical staff that needs to check the ward frequently. At the same time, the patient's family and friends can also check the patient's condition at any time within a certain authority. In the hospital, it is possible to design the basic information and health status of the patient filled in by the medical staff on the application, realize the electronic medical record, build a platform for patients and their families to understand the situation, and maximize the convenience of users [10].

Conclusion

Computer Nursing Diagnosis Intelligent Systems (CNDIS) have the potential to transform menopausal women's health care by improving diagnosis accuracy, personalizing treatment plans, enhancing patient education, and facilitating continuous monitoring. The network parameters, including learning rate, network weights, and thresholds, are selected. The model training and learning process is analyzed, and the back propagation algorithm process is described. The home care bed intelligent monitoring system designed in this paper can not only control the care bed to complete various posture changes, but also add the posture automatic detection function on this basis. The introduction of this function further improves the safety of the nursing bed, so that the nursing bed can realize autonomous control of posture changes. In addition, the system is equipped with a monitoring center component for the home care bed. Through the monitoring center, the posture of the care bed and the body condition information of the bedridden can be monitored in real time, video monitoring and remote diagnosis are realized, and the functions of the care bed are enriched. By leveraging advanced algorithms and artificial intelligence, CNDIS empower healthcare providers to deliver comprehensive, patient-centered care to menopausal women. As technology continues to evolve, it is imperative

to harness its potential while maintaining the human connection and empathy that is vital in women's health care. CNDIS, when integrated thoughtfully, can serve as a valuable tool in ensuring the well-being and quality of life for menopausal women.

References

1. El-Solh AA, Niederman MS, Drinka P. Nursing home acquired pneumonia: a review of risk factors and therapeutic approaches. *Current Medical Researchand Opinion*. 26, 2707–2714(2010).

2. Sarin J, Balasubramaniam R, Corcoran AM *et al.* Reducing the risk of aspiration pneumonia among elderly patients in long-term care facilities through oral health interventions. *J American Medical Directors Association. Current Medical Research Opinion*. 9,128–135(2008).

3. Marik PE, Kaplan D. Aspiration pneumonia and dysphagia in the elderly. 124,328–336(2003).

4. Mintz AH, Kestle J, Rathbone MP *et al.* A randomized trial to assess the efficacy of surgery in addition to radiotherapy in patientswithasingle brain metastasis. *Cancer*. 78,1470–1476(1996).

5. Zimm S, Wampler GL, Stablein D *et al.* Intracerebral metastases in solid-tumor patients: natural history and results of treatment. *Cancer*. 48,384–394(1981).

6. Grunfeld E, Coyle D, Whelan T *et al.* Family caregiver burden: results of a longitudinal study of breast cancer patients and their principal caregivers. *CMAJ*. 170,1795–1801(2004).

7. Brouwers MC, Chambers A, Perry J *et al.* Neuro-oncology Disease Site Group. Can surveying practitioners about their practices help identify priority clinical practice guideline topics? *BMC Health Serv Res*. 3,23-25(2003).

8. Lee ST, Lui TN, Chang CN *et al.* Prophylactic anticonvulsants for prevention of immediate and early postcraniotomy seizures. *Surg Neurol*. 3, 361–364(1989).

9. Patrick DM, Marra F, Hutchinson J *et al.* Per capita antibiotic consumption: How does a North American jurisdiction compare with Europe? *Clin Infect. Dis*. 39,11-17(2004).

10. Heberer T. Occurrence, fate, and removal of pharmaceutical residues in the aquatic environment: A review of recent research data. *Toxicol Lett*. 131,5-17(2002).