

A multidisciplinary approach to the use of artificial intelligence for natural weight loss as an adjunct to the Plantago Ovata plant in integrative and complementary health practices

Un enfoque multidisciplinario para el uso de inteligencia artificial para la pérdida de peso natural como complemento de la planta Plantago Ovata en prácticas de salud integrativas y complementarias

Olhar multiprofissional do uso da inteligência artificial para emagrecimento natural como coadjuvante à planta Plantago Ovata em práticas integrativas e complementares em saúde

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The aim of this study was to explore the application of artificial intelligence in evaluating the properties of the Plantago ovata (Psyllium) as a weight-loss aid through a systematic literature review. The research seeks to identify and analyze relevant studies demonstrating the effectiveness of psyllium in weight loss and how AI can be used to interpret this data efficiently and innovatively. The research, the result of a reflective study, covered the period from 2019 to 2024, using references from scientific articles found on specialized platforms such as SciELO, Google Scholar, LILACS, and the Virtual Health Library; with the descriptors: "Artificial Intelligence," "Plantago Ovata," "Psyllium," "Weight Loss," and "Integrative and Complementary Practices." Psyllium was found to be an effective adjuvant in the weight loss process, demonstrating benefits in promoting satiety and regulating intestinal transit. Several clinical and observational studies included in the review showed a significant reduction in body weight and abdominal circumference among participants who used Psyllium.

Descriptors: Artificial Intelligence; Plantago Ovata; Weight Loss; Integrative and Complementary Practices; Interdisciplinary Team.

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Resumén

El objetivo de este estudio fue explorar la aplicación de la inteligencia artificial en la evaluación de las propiedades de la planta *Plantago ovata* (Psyllium) como coadyuvante para la pérdida de peso mediante una revisión sistemática de la literatura. La investigación busca identificar y analizar estudios relevantes que demuestren la eficacia del psyllium en la pérdida de peso y cómo la IA puede utilizarse para interpretar estos datos de forma eficiente e innovadora. La investigación, resultado de un estudio reflexivo, abarcó el período comprendido entre 2019 y 2024, utilizando referencias de artículos científicos disponibles en plataformas especializadas como SciELO, Google Scholar, LILACS y la Biblioteca Virtual de Salud; con los descriptores: "Inteligencia Artificial", "Plantago Ovata", "Psyllium", "Pérdida de Peso" y "Prácticas Integrativas y Complementarias". Se demostró que el psyllium es un coadyuvante eficaz en el proceso de pérdida de peso, demostrando beneficios en la promoción de la saciedad y la regulación del tránsito intestinal. Varios estudios clínicos y observacionales incluidos en la revisión mostraron una reducción significativa del peso corporal y la circunferencia abdominal entre los participantes que usaron Psyllium.

Descriptores: Inteligencia Artificial; Plantago Ovata; Pérdida de Peso; Prácticas Integrativas y Complementarias; Equipo Interdisciplinario.

Resumo

Objetivou-se explorar a aplicação da inteligência artificial na avaliação das propriedades da planta *Plantago ovata* (Psyllium) como coadjuvante no emagrecimento, por meio de uma revisão sistemática da literatura. A pesquisa busca identificar e analisar estudos relevantes que demonstrem a eficácia do Psyllium na perda de peso e como a IA pode ser utilizada para interpretar esses dados de maneira eficiente e inovadora. A pesquisa, fruto de um estudo de reflexão, abrangeu o período de 2019 a 2024, utilizando referências de artigos científicos encontrados em plataformas especializadas, como: SciELO, Google Acadêmico, LILACS e Biblioteca Virtual em Saúde; com os descritores: "Inteligência Artificial", "Plantago Ovata", "Psyllium", "Emagrecimento" e "Práticas Integrativas e Complementares". Verificou-se que o Psyllium é um coadjuvante eficaz no processo de emagrecimento, demonstrando benefícios na promoção da saciedade e na regulação do trânsito intestinal, diversos estudos clínicos e observacionais incluídos na revisão mostraram uma redução significativa no peso corporal e na circunferência abdominal entre os participantes que utilizaram o Psyllium.

Descritores: Inteligência Artificial; Plantago Ovata; Emagrecimento; Práticas Integrativas e Complementares; Equipe Interdisciplinar.

Introduction

The search for effective and safe methods for weight loss is a constant in the health area. Among the various medicinal plants studied, *Plantago ovata*, known as Psyllium, stands out for its properties that promote satiety and regulate intestinal transit. With the advancement of technology, artificial intelligence (AI) has proven to be a powerful tool for analyzing large volumes of data, enabling a deeper and more detailed understanding of the properties and effects of medicinal plants¹.

Artificial intelligence (AI) is a field of computer science dedicated to the development of systems and algorithms capable of performing tasks that traditionally require human intelligence. These systems are designed to simulate human cognitive processes, such as learning, reasoning, perception, decision-making, and natural language processing. In healthcare, AI is used for disease diagnosis, personalization of treatments, drug discovery, and analysis of large clinical data sets to identify trends and improve patient outcomes².

This work aims to reflect on the effectiveness of Psyllium as an adjuvant in weight loss and explore how AI can be used to analyze and interpret this data, offering a

comprehensive and updated view on the topic. The justification for this research lies in several factors that highlight the relevance and the need to deepen knowledge about the application of artificial intelligence (AI) in the evaluation of the properties of the plant *Plantago ovata* (Psyllium) as an adjuvant in weight loss.

First, obesity and being overweight are global public health problems associated with a series of medical complications, including cardiovascular disease, type 2 diabetes, and various types of cancer. The search for effective and safe methods for controlling body weight is, therefore, a priority in the health field. The use of medicinal plants such as psyllium, known for its satiety-promoting and intestinal transit-regulating properties, offers a natural and potentially beneficial alternative for weight loss. AI has proven to be a powerful tool in analyzing large volumes of data, allowing a more detailed and accurate understanding of the effects of different health interventions. It can identify hidden patterns in the data, predict outcomes, and personalize interventions in ways that traditional analysis methods cannot³.

This research is justified by the urgent need to find effective solutions for body weight control, the opportunity



to apply advanced technologies such as artificial intelligence to improve data analysis and interpretation, and the potential contribution to clinical practice and future research in the field of integrative and complementary health practices (PICS).

The importance of using artificial intelligence (AI) for knowledge on the use of *Psyllium* and the benefit of this plant for healthy weight loss as an integrative and complementary practice in health promotion is highlighted. Therefore, the guiding research question for this study was how artificial intelligence can be used to evaluate the effectiveness of the plant *Plantago ovata* (*Psyllium*) as an adjuvant in weight loss, based on an interdisciplinary reflection.

Methodology

This reflective research, conducted between 2019 and 2024, used theoretical references from journals and scientific articles located on specialized websites. These references were searched in the Scientific Electronic Library Online (SciELO) and Latin America and Caribbean Health Sciences Literature (LILACS) databases, using the BIREME Virtual Health Library (VHL) data platform. The inclusion criteria were full-text publications in Portuguese and English, using specific descriptors and consulting renowned databases. This ensures a comprehensive and rigorous approach, strengthening the validity and reliability of the findings and contributing to evidence-based practice in the use of *psyllium* as an adjunct to weight loss and the application of AI in health data analysis. The health descriptors used were: "Artificial Intelligence," "Plantago ovata," "Weight Loss," "Integrative and Complementary Practices," and "Interdisciplinary Health Team".

Results and Discussion

Considering that aesthetic care is intrinsically related to quality of life and the promotion of well-being, aesthetic procedures are not restricted to improving aesthetics alone, since, in addition to improving appearance, they also help restore the individual's quality of life, promoting health in the context of treating and preventing aging, as well as chronic and organic diseases⁴.

Integrative and complementary health practices (PICS) have been gaining increasing space in primary care and public health, offering a holistic and patient-centered approach. When observed from the nurse's perspective and the perspective of integrative medicine, these practices are valued as complementary resources that promote the physical, mental, and emotional well-being of individuals⁵.

Nurses play a fundamental role in health promotion and care, and their work in PICS is marked by comprehensive and humanized care. They have the responsibility to understand the individual needs of each patient and offer personalized care, integrating traditional nursing practices with complementary approaches, such as acupuncture, herbal medicine, and auriculotherapy, among others. The nurse acts as an educator, guiding patients on the various treatment options available and promoting autonomy and

self-care⁶.

Nursing always seeks, through technical-scientific knowledge, to meet human needs focused on health, well-being, comfort, and prevention of various diseases, thus enabling a correlation between nursing and aesthetics in a unified perspective. This opens up entrepreneurial opportunities for nurses, as it provides the chance to apply their skills and competencies autonomously and independently⁷.

In public health, integrative medicine stands out as an inclusive and effective approach to health promotion and disease prevention. It recognizes the importance of the interaction between body, mind, and spirit in the healing process and seeks to integrate different therapeutic modalities, both conventional and complementary, into public health programs. In this context, nurses play a strategic role in implementing health policies that value the inclusion of PICS in health services, promoting equity in access to health care, and contributing to improving the population's quality of life⁸.

Plantago ovata, also known as *psyllium*, is a herbaceous plant of Mediterranean origin, belonging to the *Plantaginaceae* family. Its seeds are rich in soluble fiber, especially mucilage, which gives it beneficial properties for the gastrointestinal tract. *Plantago ovata* is recognized for its ability to promote a feeling of fullness, aiding in appetite control and, consequently, weight loss. This plant has functional properties, such as the ability to retain water, forming a viscous gel that facilitates intestinal transit and contributes to the balance of bacterial flora. Its soluble fibers act as prebiotics, stimulating the growth of beneficial bacteria in the intestine. These characteristics give the plant a relevant role in promoting digestive health and body weight control^{9,10}.

Several scientific studies have demonstrated the positive effects of *Plantago ovata* on weight loss and overall health. Its ability to prolong satiety, combined with regulating intestinal transit, makes it a valuable ally in weight loss diets. Its prebiotic potential contributes to maintaining intestinal flora and preventing diseases related to dysbiosis, such as obesity and metabolic syndrome¹⁰.

The application of artificial intelligence to analyze the efficacy of *Plantago Ovata*, employing machine learning algorithms and data analysis techniques to identify relevant patterns and correlations. These investigations have revealed the ability of artificial intelligence to examine various variables related to weight loss and the plant's action, providing adequate knowledge for understanding the underlying mechanisms^{9,10}.

In artificial intelligence, SPIRIT-AI provides specific recommendations for the inclusion of essential elements in clinical trial protocols using AI, ensuring a detailed and standardized description of the methods and procedures used. These guidelines aim to improve the transparency and replicability of studies, facilitating the interpretation and critical evaluation of results. In turn, CONSORT-AI establishes guidelines for the preparation of clinical trial reports, providing guidance on the structure and content that should



be included to ensure a clear and complete presentation of results. This includes information on study design, data analysis methods, primary and secondary outcomes, as well as ethical issues and potential study limitations. Both guidelines are essential to promote transparency, quality, and consistency in the conduct and reporting of clinical trials with AI, facilitating the interpretation and comparison of results, as well as informed clinical decision-making¹⁰.

There are significant advantages, including the identification of complex interactions between *Plantago Ovata* compounds and the metabolic processes of the human body, the prediction of outcomes based on patterns identified in large data sets, and the personalization of recommendations according to the individual characteristics of each patient. Considering that the essence of nursing practice is care, professionals in this area must defend health policies that ensure access to quality treatment. In this way, the health team directly or indirectly involved in preventing harm in patient care is an important professional category to ensure safe care for the population assisted^{10,11}.

Conclusion

The study's conclusion points to the promising application of artificial intelligence in the analysis and interpretation of data related to the use of the plant *plantago ovata* (Psyllium). Machine learning algorithms were effective in identifying patterns of consumption and response to Psyllium, as well as in predicting long-term weight loss results. AI also made it possible to identify subgroups of patients who showed better responses to treatment with Psyllium.

By adopting artificial intelligence as an ally in weight loss assistance, nurses can benefit from these technologies' ability to process large volumes of data, identify patterns, and provide personalized guidance for each individual. This allows for a more precise and individualized approach to planning and monitoring weight loss programs, considering

each patient's unique characteristics, such as medical history, lifestyle, and personal preferences.

The plant *Plantago ovata* (Psyllium) is an effective weight-loss aid, and artificial intelligence has proven to be a valuable tool for analyzing and interpreting data in this area. Future studies should focus on rigorous clinical trials and the advanced application of AI techniques to expand and corroborate current findings, contributing to evidence-based practice in the use of medicinal plants for weight management.

The use of artificial intelligence in healthcare does not replace the expertise and sensitivity of healthcare professionals. Technology should be seen as a complementary tool that assists professionals in decision-making and providing quality, patient-centered care. Therefore, given the advancement of artificial intelligence in healthcare, multidisciplinary teams have the challenge and opportunity to integrate these innovations into their clinical practice, always aiming for the well-being and safety of patients, and remaining essential protagonists in healthcare¹¹.

Combating obesity encompasses at least two main categories: overcoming everyday challenges, such as discrimination, nutritional re-education, and psychological disorders, as well as behavioral changes, which include regular medical check-ups, physical activity, and healthy eating. A high prevalence of this condition has been observed among nurses, associated with the lack of regular physical activity and healthy eating habits. This is why hospitals should be concerned about this issue. More effective actions are needed, such as educational campaigns, encouraging healthy eating in the workplace, promoting work activities, early detection of chronic diseases, among others, to contain and reduce adult obesity in Brazil, minimize gender inequality, and improve the human capital of workers^{12,13}.

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