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Dietary Issues Inpatients Face With Being Vegetarian:

An Integrative Review

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Abstract

This article reviews the literature from 1985 through 2010 on research related to the dietary issues vegetarian inpatients may encounter in the acute care setting. A thematic portrayal of vegetarianism in the context of the inpatient setting is described. Implications for future research and nursing practice are identified.

Keywords

inpatient health outcome; vegetarian diet; vegetarianism

PURPOSE AND PROBLEM

A growing number of patients are turning to vegetarianism as a diet-based therapy to manage symptoms and promote wellness.^{1,2} Although a vegetarian diet is included in the National Center for Complementary and Alternative Medicine's biologically based practice domain, little is known about relationships among vegetarian diet-based therapies and the management of symptoms and/or promoting wellness. The focus of this literature review is to determine dietary issues inpatients face with being a vegetarian. This article provides a review of the research literature from 1985 through 2010 describing dietary issues vegetarian inpatients may encounter in the acute care setting. Definitions of vegetarianism are included and the salient themes contained in the literature are discussed.

BACKGROUND AND SIGNIFICANCE

On the basis of a nationwide poll conducted by The Vegetarian Resource Group in 2009, approximately 3% of the US adult population (6–8 million people) consistently followed a vegetarian diet, stating that they never ate meat, fish, or poultry.³ About 1.4% of the US adult population was vegan^{4(p1627S)}—those who omit all animal products from their diets. With the number of vegetarians expected to increase during the next decade, there is evidence of a driving force for the increasing interest in vegetarian diets including the

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emergence of college courses on vegetarian nutrition and on animal rights; the proliferation of Web sites, periodicals, and cookbooks with a vegetarian theme; and the public's attitude toward ordering a vegetarian meal when eating away from home—hospitalization included.^{5(p1267)}

DEFINITIONS OF VEGETARIAN DIETS

Vegetarian diets are totally devoid of red or white meat. However, there are numerous non-meat diet variations. For example, some vegetarian diets are restricted to plant products (plant based) only, whereas others include eggs and dairy products. Another variation limits consumption to raw fruits, sometimes supplemented with nuts and vegetables. Others prohibit alcohol, sugar, caffeine, or processed foods.⁵⁻⁸ In the category of vegetarianism, there are a variety of labels and diets. These are shown in Table 1.

HISTORICAL DEVELOPMENT OF VEGETARIANISM

In the 1800s, Whorton contends many dietary puritans (vegetarians) generally held a holistic view of life in which the health of the spirit was dependent on the health of the body and that spiritual innocence required physical activity.^{16(p1103S)} According to Whorton,¹⁶ an intensified aversion of pain, coupled with evangelical religion's social gospel of sympathy for the "downtrodden and exploited," fueled an animal protectionist campaign in Britain that attacked the abuse of work animals, the practice of vivisection experiments, and the slaughter of animals for food. As scientific rigor became an aim of intellectuals during the 18th-century Enlightenment period, the investigation and the proof that plant-based diets were nutritionally adequate were studied.^{16(p1104S)}

The orthodox position of the benefits of a meat diet, however, eventually came under zealous attack in the United States, where a crusade to improve the health of the American public took a plant-based diet as a fundamental principle.^{16(p1104S)} In 1850, the American Vegetarian Society was organized by Samuel Wells and, at its inaugural meeting in 1855, coined the term "vegetarian," which immediately attracted ridicule from nonvegetarians.^{15,16} John Harvey Kellogg, a Seventh-Day Adventist as a young man, emphatically brought the vegetarian message to public attention with the development of updated scientific rationale.^{16(p1106S)}

The advocates of vegetable and cereal diets in the late 19th century were criticized and derided by their contemporaries, leading to the failure of vegetarian ventures.^{15(p1361)} Such failures elicited adverse criticism of the leaders of the vegetarian movement. Roe¹⁵ posited that the disapproval came from butchers and bakers, as well as from the medical profession, whose businesses and practices could suffer as a result of teaching vegetarianism.^{15(p1361)}

Today, ethical vegetarians who hold a philosophical, ideological, or spiritual framework with the focus being outward (toward other living creatures) lean toward the "alternative" lifestyle choices concerning diet that coexist with a range of other environmental behaviors, with some regarding vegetarianism as a "deviant" behavior to adopt.^{7(p427)}

GUIDING PRINCIPLES FOR STRUCTURING THE REVIEW

The integrative review method was used as this approach allows for accommodation of diverse methodologies (ie, clinical articles, experimental, and nonexperimental research). In contrast to a clinical review, the integrative review format has the potential to play a greater role in evidence-based practice for nursing.^{17(p546)}

This review was done in accordance with the procedure developed by Whittemore and Knafl¹⁷ to accomplish the thematic coding of the salient findings. The steps used in the integrative review, as described by Whittemore and Knafl, are shown in Table 2.

METHODS AND PROCEDURES FOR SELECTING THE LITERATURE

For the purposes of this literature review, the following databases were searched: CINAHL, Cochrane Library, PsycINFO, PubMed, and Social Sciences Citation Index. It was assumed in the exploration of the literature databases that publications of organizations related to this topic were included, for example, publications from the Agency for Healthcare Research and Quality, American Dietetic Association, American Hospital Association, and National Center for Complementary and Alternative Medicine, Physicians Committee for Responsible Medicine (PCRM), Food and Drug Administration, and the Vegetarian Resource Group. Keyword searches were conducted using the following terms: diet, dietary preferences, nutrition and hospitalization, inpatient dietary issues, well-being (life quality), and vegetarianism. A number of variants on the previous search words were used as well (eg, plant-based diets during hospitalization, vegetarian inpatients, meeting vegetarian dietary needs). Only peer-reviewed empirical journal articles were used. The period between 1985 and 2010 was searched. All articles reviewed were written in English and represented the fields of nursing, medicine, health policy, and [clinical] nutrition.

The concept “patient vegetarianism in an acute care setting” guided the article selection. Of the 1664 research articles reviewed, 25 were selected. Two texts were used because of the evidence-based content referenced by the authors of the 25 selected articles. In addition to the initial searches, recent empirical reviews concerning dietary issues of inpatient vegetarians, and related terms were also examined. This was done to further support developing definitions, as well as to provide evidence of adults who assume a vegetarian diet as a health behavior in both the spiritual sense and physical sense.

ANALYSES OF THE LITERATURE

Garrard’s¹⁸ Matrix method was used as a framework in reviewing each article. Garrard suggests the review matrix to include the following information: the author(s), title, journal or book, clinical articles, year of publication, country, purpose of the article, overall findings, principles, theoretical/methodological approach (implicit, explicit, or suggested), and sample characteristics. The process of the review consisted of (1) preliminary screening, article selection, and matrix entry by the first author, and (2) review of themes across the articles’ findings in the matrix by both authors. Upon review of each article, the gaps across the articles were then noted. A description of the themes representing “in-patient vegetarianism” is presented in the following section.

FINDINGS

Four thematic categories emerged from the reviewed literature: the attitudes, beliefs, and cultural norms of practicing vegetarians; health effects; perspectives of health care providers; and acute care initiatives related to vegetarianism.

Attitudes, beliefs, and cultural norms

Attitudes—The growth of vegetarianism in recent years has been encouraged by metaphysical, moral, and societal currents.^{16(p1108S)} Because a vegetarian diet is often labeled and selected as an *alternative* diet for moral or other nonscientific reasons, nutritional education of vegetarians remains a chief activity.^{16(p1103S)} Meat is a high-status food and is usually considered a central element of a meal in modern Western society^{9(p829)} with more women than men being vegetarian and meat reducers. These dietary behaviors are associated with certain beliefs and values (eg, health, environment, animal welfare).^{9(p835)} Motivations for adopting a vegetarian lifestyle and eating a plant-based diet are based on health (all domains), religious beliefs/tenets, morality, and environmental conservancy. Counterculture attitudes, departing from cultural tradition of meat intake, have been also cited as primary reasons for vegetarian diets.^{19,20}

Beliefs—In many cultures, diet is perceived as essential to good health and longevity, with poor diet associated with lower levels of health and even specific diseases.^{7(p424)} Practicing vegetarians, with comprehensive lifestyle changes, claim a plant-based diet as an intervention seems to be a cheap, physiological, and safe approach for the prevention and possible management of modern lifestyle diseases.^{21,22} Only as nutritional science expanded from the mid-20th century forward did vegetarianism acquire general recognition as a healthful dietary alternative.^{16(p1109S)} In 2006, a mail survey of 1000 Australian residents revealed the majority of respondents perceived there to be health benefits associated with the consumption of a plant-based diet.^{9(p828)} More recently, publicity given to cholesterol and saturated fats has similarly conditioned society to associate vegetarianism with health and has motivated nutritionists to study the health of vegetarian groups such as Seventh-Day Adventists and Trappist Monks.^{16(p1108S)}

Religiosity—Abstinence from the consumption of meat and animal products is an element of some religious practices including Buddhism, Seventh-Day Adventism, Hinduism, and Taoism.^{7,23} Islam is now the second largest religion of the world with 8 million followers in the United States^{21,24} and is estimated to exceed 15 million in 2025.^{25(p23)} During hospitalization, Muslims who sometimes adhere to a Kosher diet may choose vegetarian or seafood alternatives from the hospital menu as a viable option when Kosher meats are unavailable.^{24,26} Nurses must remain mindful that the same requests may be made of practicing Buddhists, Seventh-Day Adventists, Hindus, and Taoists who are hospitalized.

Environmental conservancy—For many vegans, nutritional choices center on taking better care of the Earth's resources and the environment, ethical issues about animal care, the use of antibiotics and growth stimulants for the production of animals, the threat of animal-borne diseases, and the health advantages of a plant-based diet. In addition, the

potential of allergies from dairy products and lactose intolerance have promoted the popularity of soy-based dairy substitutes.^{4(p1627S)}

Leuenberger et al²⁷ contend that food consumption greenhouse gas emissions and hence environmental impact arise from the agricultural production of meat. The vegetarian diet is, therefore, seen as an instrument to reduce the environmental impact and greenhouse gas emissions from food consumption. These researchers explain that the comparison of meat products with vegetarian alternatives is complicated, however, because vegetable and other products cannot always be one-to-one substitute meat.^{27(p1)} Furthermore, other authors have brought forth similar concerns of environmental impact and ecosystem health.^{7(p422)}

Cultural norms of vegetarians—In a nonexperimental and descriptive design, Hobbs⁸ cited that the vegetarian participants experienced relatively few challenges to eating raw foods. However, mainstream norms (the consumption of animal-based diets) create barriers to vegetarians' ability to access or meet their dietary needs. Sixty-five percent (n = 11) of subjects⁸ indicated that social pressures associated with eating a diet outside of the cultural norm made it difficult to adhere to a raw-foods diet. For instance, one subject stated, "I mean, it's difficult to socialize with people in our culture because most of the socializing is done over a meal."^{8(p275)}

In a mail survey, Lea et al⁹ explain that barriers to consumption of plant-based diets were attributed to the lack of dietary information, lack of desire of self or family to alter current diet, and lack of options when eating out were more important than intrinsic concerns (eg, concerns with the healthiness or taste of a plant-based diet).^{9(p833)} Another example of a barrier to the dietary needs of the culture of vegetarians not being met is the actual or perceived ignorance in relation to Islamic patients' vegetarian dietary needs by Western health care providers. The lack of focus on dietary practices was found to create a barrier and a deterrent to health care access on the part of Muslim women in rural areas.^{24(p85)} Therefore, nurses and other health care professionals need to integrate the social and culture care of patients by encouraging the consumption of home cooked meals in the hospital setting, especially if the health institution lacks the ability to prepare food according to the patient's traditions.^{24(p93)}

Health effects

Vegetarian diets have experienced an increase in popularity. The American Dietetic Association, in its *Position of the American Dietetic Association: Vegetarian Diets*²⁸ statement, concluded that appropriately planned vegetarian diets, including total vegetarian or vegan diets, are healthful and nutritionally adequate and may provide health benefits in the prevention and treatment of certain diseases (obesity, cardiovascular, cancer, human immunodeficiency virus/acquired immune deficiency syndrome, and type 2 diabetes).

Well-planned vegetarian diets are appropriate for all individuals during all stages of the lifecycle, including pregnancy, lactation, infancy, childhood, and adolescence, as well as for athletes.^{28(p1266)} Plant-based diets are associated with many measurable health benefits because of its higher content of fiber, folic acid, vitamins C and E, potassium, magnesium, and many phytochemicals and a fat content that is more unsaturated.^{4,5,20,29–31} Vegans also

have a higher consumption of whole grains, soy, and nuts, all of which provide significant cardioprotective effects.^{4(p1628S)}

According to Craig,⁴ vegans are thinner, have lower serum cholesterol and blood pressure, and enjoy a lower incidence of stroke and a lower risk of mortality from stroke and ischemic heart disease. However, bone mineral density and the risk of bone fracture may be a concern when there is inadequate intake of calcium and vitamin D.^{4(p1630S)}

Appleby et al³² conducted a longitudinal study of 6000 vegetarians and 5000 nonvegetarian control subjects recruited in the United Kingdom between 1980 and 1984, with a 12-year follow-up to compare the health effects of diets rather than other aspects of lifestyle. These researchers concluded that the health of vegetarians in the study was generally good and compared favorably with that of the nonvegetarian subjects.^{32(p525S)}

Obesity has become a global epidemic contributing to a wide variety of medical conditions including hypertension and cardiovascular disease, insulin resistance and type 2 diabetes, metabolic syndrome, dyslipidemia, gallstones, inflammation, osteoarthritis, respiratory problems (eg, asthma and sleep apnea), reproductive problems—including infertility—and certain cancers (prostate).^{33(p2007)} Vegetarian diets have been found to be efficacious for weight loss and cholesterol control.^{33,34}

Perceptions of health care professionals

Many health care professionals consider allopathic therapies as “conventional medicine”—the accepted standard for the diagnosis, treatment, and prevention of disease. However, there are a growing number of clinicians who classify dietary therapies as “alternative therapies.” As a society, the view of “good clinical care” is broadening to include attention to the importance of diet.^{29(p4)} It would make sense then to include nutritional education of vegetarians as an essential activity^{16(p1103S)} in the nutritional skill development of nurses.

Acute care initiatives

Ways to accomplish the goal of a *healthy-eating environment* is the aim of the American Medical Association and other groups’ calling for health-promoting foods to be served in hospitals to be role models of healthy food environments.^{35(p54)} Qualified food and nutrition professionals play key roles in ensuring that the needs of vegetarians are met in foodservice operations in hospitals.^{5(p1277)} More recently, hospitals that increased access to healthy foods, including plant-based diets, and this has resulted in positive publicity improved patient satisfaction, enhanced nutrition quality, and improved community relations. The Healthy Food Initiative of the PCRM, an organization that advocates vegan diets, calls for hospital food service to have a daily salad bar to include beans (protein). It is the current authors’ contention that inpatient institutions must create mechanisms to accommodate patients who are unable to access the location of a salad bar.

Furthermore, the PCRM recommends that fresh fruits and vegetables are readily accessible, as well as offering healthier versions of prepared food products, vegetarian meals, and soups. High-fat add-ons such as cheese or bacon should be optional, whole grains emphasized over refined grains, healthy world cuisine options be provided, and nutrition information at the

point of delivery be offered.^{35(p60)} Such recommendations of the PCRM point toward the need for reorientation of the hospital food service industry and the providers who have direct patient contact.

One additional benefit is envisioned to occur with the realignment of hospital food service options. In support of local communities, the use of fresh fruits and vegetables, if obtained from local farmers, would support the local infrastructure and enhance the community's development.

LIMITATIONS OF THE REVIEW

The specific health benefits of a vegetarian diet and also how to manage obtaining appropriate proteins and other nutrients from a plant-based diet were not included in this review. Further exploration of the interrelationship of vegetarian diets to inpatient health outcomes (eg, healing wounds, reduced prevalence of obesity, diabetes, hypertension) is needed.

RESEARCH IMPLICATIONS

1. Bodkin³⁰ suggests that the usefulness of alternative therapies, such as maintaining or offering diet-based therapies (vegetarian), should be investigated with the same scientific rigor as used for the investigation of allopathic (conventional) therapies.
2. Given the results of the review, the authors suggest that further empirical validation of nutritional content within nursing curricula, dietary enhancement activities for patient by nurses, and exploration of the impact of vegetarian guidelines are needed to improve the quality of care for practicing vegetarians and prevent drug interactions.
3. Further exploration of the interrelationship among attitudes, beliefs/cultural norms, health effects, perceptions of health care providers, and acute care initiatives in relation to plant-based diets is needed to provide evidence-based feedback to guide nursing practice outcomes.
4. Clarification of interrelationships among the attitudes, beliefs, and cultural norms of practicing vegetarians; health effects; perspectives of health care providers; and acute care initiatives related to vegetarianism could lead to the development of an empirical model to depict "patient vegetarianism in an acute care setting." Future research trials would then be able to further test the best practices in inpatient care to assure the needs of vegetarians are met.

IMPLICATIONS FOR NURSING PRACTICE

To discover practicing vegetarians' dietary preferences, nurses must perform individualized dietary assessments to facilitate culturally congruent care practices.^{24(p95)}

In addition, vegetarians may tend to avoid the use of health services^{36(p1174S)} believing, or having had previous experiences while hospitalized, of their dietary preferences going

unmet. Therefore, the authors recommend that health care professionals be knowledgeable and skilled in different dietary practices so they can adequately meet the needs of an increasingly diverse population in specific locales and make an effort to accommodate dietary restrictions by providing dietary-appropriate foods for inpatients.^{26(p62)} The following basic principles of holistic nursing practice³⁷ are relevant when caring vegetarian inpatients:

- Promoting personal control and patient empowerment by facilitating patients' food preferences.
- Recognizing that the inability to meet patients' dietary preferences may lead to delayed recovery from illness.
- Acknowledging that nurses must take an active role in the facilitation of patients' food preferences and reduce barriers in terms of vegetarian patients meeting dietary needs.

With the advent of serving a larger clientele of practicing vegetarians, in addition to the growing communities of Muslim, Buddhist, Hindu, and Seventh-Day Adventist clients in US acute care settings, and the lack of studies on meeting of dietary preferences, it is important to ascertain barriers to vegetarian patients' receiving their diet. Noted thus far has been the availability of food resources in hospitals (ie, fresh, not frozen processed foods, vegetables, and fruits; organically grown vegetables and fruits; vegetable-based broths for clear liquid diets; and nutritional replacement of gelatin or gelatin-based food items). Also studied have been the nutrition education needs of clients. It is interesting that the nutrition educational needs of nurses, specific to a vegetarian diet, and any degree of ambivalence to meeting dietary preferences have not been explored in the literature since a key nursing responsibility is to maintain the overall health of (vegetarian) patients in an acute care setting.

SUMMARY

With an increasing number of Americans adopting vegetarian lifestyles, nursing professionals will encounter more patients whose vegetarian dietary practices must be reconciled with the therapeutic diets required by a variety of disease conditions.^{20(p906)} Rashidi and Rajaram²⁶ assert that much stress has been placed on the health of the body without attention to the health of the whole person and that traditional Western care focuses primarily on bodily comfort and cure, in contrast to Eastern care, in which the emphasis is on body and mind well-being in the most integrated sense.^{26(p56)}

This review demonstrated that research on the effect on patient health outcomes when a practicing vegetarian's dietary preferences are met/unmet while hospitalized is absent in the literature. Several themes related to vegetarian patients, health effects, perceptions of health care providers, and acute care interventions were presented. Implications for inpatient nursing care are discussed.

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TABLE 1

Types of Plant-Based (Vegetarian) Diets

Labels	Definition
Cognitive vegetarian	Those who hold similar beliefs about meat and vegetarian diets, as do vegetarians, and have a lower red-meat consumption than the general population, but do not consider themselves to be semivegetarian or vegetarian. ^{9(p829)}
Ethical vegetarian	Those who are not vegetarian because of health reasons. Instead, they are vegetarians because they want to minimize cruelty and death in the world. They believe that good health as a result of a vegetarian diet and lifestyle is a pleasant side effect. ¹⁰
Flexitarian	“Flexitarian” is a term recently coined to describe those who eat a mostly vegetarian diet, but occasionally eat meat. Many people who call themselves “flexitarian” or “semi-vegetarian” have given up red meat for health reasons while others, for environmental reasons, only eat free-range or organic animals and animal products. ¹¹
Fruitarian	Includes a minimum of processed or cooked foods. It consists mainly of raw fruit (75%), fruit-like vegetables (eg, tomatoes, cucumbers), grains, and nuts. Fruitarians eat only plant foods that can be harvested without killing the plant. ¹²
Lacto-vegetarian	<i>Lacto-vegetarian</i> is used to describe a vegetarian who does not eat eggs, but does eat dairy products. Many Hindu vegetarians are lacto-vegetarians who avoid eggs for religious reasons while continuing to eat dairy. The prefix “lacto” comes from the Latin word for milk. ¹³
Macrobiotic vegetarian	A diet that excludes all meat, poultry, dairy produce, and eggs but at initial levels may include fish. ¹²
Ovo-vegetarian	Ovo vegetarian refers to people who do not eat meat or dairy products but do eat eggs. Many people are ovo-vegetarians because they are lactose intolerant. The prefix “ovo” comes from the Latin word for egg. ¹⁴
Ovo-lacto-vegetarian	This is the most popular form of vegetarianism. Ovo-lacto-vegetarians do not eat meat or flesh of any kind, but do eat eggs and dairy products. Sometimes ovo-lacto-vegetarians eat meat by-products (eg, fats, bonemeal, gelatin) and use animal-derived products (leather, etc). ¹²
Pescetarian	Diet excludes meat and fowl but includes fish (although factory-farmed fish are usually avoided). ¹²
Raw foodist	A diet described as an “uncooked” vegan diet, an “uncooked vegetable diet,” or “living foods diet.” ^{15(p272)}
Sproutarian	A diet composed of mostly sprouted seeds, grains, pulses, and rice. ¹²
Vegan	Omission of all animal products from the diet. ^{4(p1627S)}

TABLE 2**Steps of Review in Integrative Review Procedure**

1	Problem identification: Clear identification of the problem that the review is addressing and the review purpose. ^{17(p548)}
2	Literature search: To enhance the rigor of any type of review and avoid incomplete and biased searches. ^{17(p548)}
3	Data evaluation: To evaluate the overall quality of diverse primary sources. ^{17(p549)}
4	Data analysis: For a thorough and unbiased interpretation of the primary sources along with an innovative synthesis of the evidence. ^{17(p550)}
5	Presentation: To capture the depth and breadth of the topic and contribute to a new understanding of the phenomenon of concern and the implications for practice, research, and policy initiatives. ^{17(p552)}