**Invited Review** 

### Human Nutrition and Dietetics: Understanding the Profession and Development Actions in Jordan

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Received on 1/7/2021 and Accepted for Publication on 29/8/2021.

#### **ABSTRACT**

In Jordan, human nutrition and dietetics are among the most developed allied health professions, but documented information regarding its current status is generally not available. The purpose of this article is to clarify the status of this profession in the country and to trace the developmental activities that have taken place over the past five decades. Currently, there have been remarkable transitions in health attributes among Jordanians as related to nutritional status since fifty years ago. This is manifested in rapid dietary, socio-economic, epidemiologic, and demographic shifts. Accelerated changes have occurred in general health and nutritional status trends, including a decline in the incidence of infectious diseases, increased life expectancy, a surge in all levels of education, rise in urbanization, mechanization and market globalization, decreased physical activity, diets have become denser in energy and richer in carbohydrates, fat, and animal foods. Concordant troubling trends have been recorded for rising morbidity and mortality of major nutrition-related chronic disorders, particularly cardiometabolic risks including diabetes, obesity, cardiovascular disease, dyslipidemia, hypertension, as well as cancer. Consistency with this transition, patterns of nutrition and dietetics profession services have increased steadily. There are 10 public and 17 private universities in Jordan. Six public and five private universities offer degrees in human nutrition. One offers a doctoral degree, four offer a master's degree, and all eleven universities offer bachelor's degrees in human nutrition and/or dietetics or both. In line with these changes, the human nutrition and dietetics profession has gained significant official recognition and legal status permitting certification or licensing and consultation and private practice. However, additional legislative and regulatory attributes, internships and inservice training programs, and national diet manuals are required for such progress to continue at a steady pace. Therefore, there is a need for an official body to shape the landscape of the profession of human nutrition and dietetics in accordance with international standards.

**Keywords:** Jordan; Human Nutrition; Dietetics; Nutritionist; Allied health professions; Nutrition transition, Nutrition education

### INTRODUCTION

The increasing progress of science has exacerbated the complexity of the health care system. This entails the collaboration of a team of health professionals who share their knowledge for the well-being of the individual and society (Mahan *et al.*, 2018). It is well appreciated that only through good teamwork that brings together the expertise of physicians, nurses, dieticians, and other allied health professionals can the best outcomes for the individual or the

community be obtained. In practice, nutritional therapy for patients is a three-dimensional responsibility of the departments of medicine, nursing, and nutrition (Ahmad, 2014).

Nutrition is central to physiological, biochemical, physical, and mental health (Mahan *et al.*, 2018). Good nutritional status is the desirable health-related goal (Dorner, 2019). The nutritional well-being of the individual and community is a primary concern of the profession of nutrition and dietetics (British Dietetic Association, 2014; Academy of Nutrition and Dietetics, 2020). Nutritionists and dietitians are the most professionally educated group whose main interest is the application of nutrition and dietetics to health care (Ahmad, 2014; Begum *et al.*, 2019).

Nowadays, the dietetics profession is well regulated in developed countries and many developing countries through formal bodies. Their main function is to regulate the practice of the profession and provide accreditation of nutrition education and training programs (Australian Bureau of Statistics 2013; British Dietetic Association, 2014). These bodies are also committed to urging the maximum use of nutrition science and technology, advocating high-quality nutritional care, and promoting the achievement of optimal health for the individual, group, and population (International Confederation of Dietetic Association, 2019)

A wide range of improvements in health care facilities has occurred in Jordan (Jordan Department of Statistics, 2020), with nutrition and dietetics progressing at a steady pace (Ahmad, 2014; Jordan Ministry of Health, 2019). In this article, we try to clarify the status of this profession in the country and to trace the developmental activities that have taken place over the past five decades. It is hoped that a review of this field of an important allied medical profession will enhance further interest in the role of nutrition and dietetics in health care service in Jordan.

### LITERATURE SEARCH

A literature search was conducted to clarify the status of the human nutrition and dietetics profession in Jordan and to trace the developmental activities that have taken place over the past five decades. The search was limited to the Arabic and English publications covering the last 50 years. Relevant articles were principally identified through an online search of PubMed, Medline, Science Direct, ADI, FAO, AGRIS, WHO databases, and PsycINFO. Google Scholar, Scopus, ResearchGate, Publons, and other databases were also used. Included articles were mainly original experimental, clinical, intervention, and review researches. Some related institutional and organizational publications were also consulted. For further search accuracy, the reference lists of works were checked for additional publications from the major databases.

# ABOUT THE HASHEMITE KINGDOM OF JORDAN

The Hashemite Kingdom of Jordan is an Arabic semiarid country located in the Middle East at 31 00 N, 36 00 E and borders Syria, Saudi Arabia, the Red Sea, Palestine, and Iraq. According to the World Data Atlas (2021), in 2019, the population of Jordan was 10,101,694 persons. In 2018, Jordan's surface area was at a level of 89,342 sq km, and Jordan's land area was at a level of 88,780 sq km. Land area is a country's total area excluding area under inland water bodies and exclusive economic zones. Jordan's agricultural land area fluctuated substantially in recent years, it tended to decrease from 11,000 sq km in 1969 to 10,218 sq km in 2018. Agricultural land refers to the share of land area that is arable, under permanent crops, and under permanent pastures. Between 1999 and 2018, the Jordan forest area remained stable at around 975 sq km.

Jordan ranks high in the human development index and has an upper-middle-income economy. The country has a well-diversified economic infrastructure from trade, finance, communications, transportation, mining, constructions, public utilities, and tourism. Besides, the well-built education and health sectors are managed, operated, and developed by private and governmental associations (World Data Atlas, 2021).

# HUMAN NUTRITION AND DIETETICS DISTINGUISHED

A distinction must be made between human nutrition and dietetics. However, they are closely related, both in teaching, research, and practices. Nutrition has recently emerged as the science of the twentieth century, and dietetics, which has had a dominant role for a long time in history, is now moving into the field of application (Todhunter, 1973). Thus, nutrition is concerned with the interrelationships between food and humans and what and why people need to eat in

quantitative terms of specific nutrients. Figure 1 shows the interrelationships among humans, food, nutrition, dietetics, and health. Dietetics is concerned with what people eat and what they should eat to meet their own needs, in terms of individual differences, age, health status, activity, cultural and psycho-social background, and all the factors that influence an individual's food choices and meal patterns. Figure 2 demonstrates the interrelationship between nutrition and dietetics.

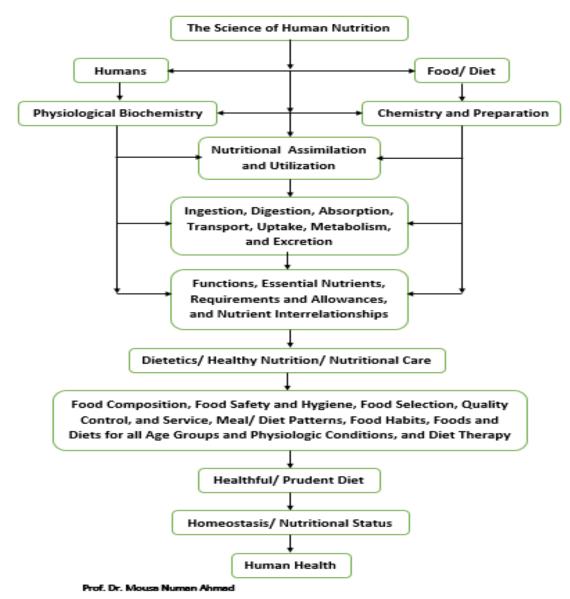


Figure 1. Humans, food, nutrition, dietetics, and health: Interrelationships.

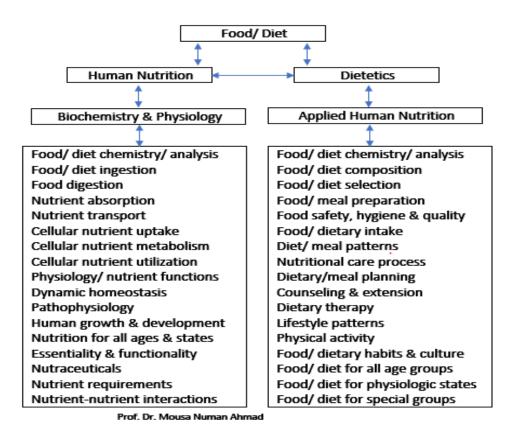


Figure 2. The interrelationship between nutrition and dietetics.

Tracing the history of the science of human nutrition leads to a well-defined genealogical line. It has obtained its pedigree from chemistry, biochemistry, anatomy, physiology, and the clinical medical sciences (Mahan *et al.*, 2018). This cross-fertilization has triggered a series of scientific breakthroughs, including identification of nutrients and working out their complex metabolic pathways, assimilation, and utilization, formulation of healthful diets, pinpointing the various forms of nutritional disorders, and understanding their etiology, pathogenesis, and clinical management (Insel *et al.*, 2011; Mahan *et al.*, 2018). Nutrition education, counseling, extension, food processing, safety, and hygiene have become additional components of

nutrition science. The factors that shaped the body of knowledge about human nutrition also influenced the formation of the basics of dietetics (Figures 1 and 2). Such areas have enough weight, either in the form of research or as action programs, to place this field very high in the prestigious hierarchy of the health sciences (British Dietetic Association, 2014, Academy of Nutrition and Dietetics, 2020).

### THE SCENE OF HUMAN NUTRITION AND DIETETICS EDUCATION IN JORDAN

Higher education in Jordan plays a major and remarkable role in the comprehensive development process at various

levels and fields. It is essential to enhance the economic, social, and knowledge levels of Jordanian citizens. That is, during the twenty years (during the reign of His Majesty King Abdullah II), higher education in Jordan has witnessed great progress in terms of the diversity of study programs and teaching and learning patterns that control both the quality and quantity, and expansion of higher education institutions (Jordan Ministry of Higher Education and Scientific Research, 2021). In the region as a whole, Jordan's educational role has become very effective, which is known for the high quality of its education system, a matter that made it the focus of attention and admiration in the region.

During the last two decades, higher education in Jordan has testified a prominent development as well as progress evidenced by the increasing number of institutions of higher education, enrolled students, faculty members, administrative and academic members; the size of expenditures, and the governmental financial support to this significant educational sector. The number of public universities, as a result, has reached (10), besides (17) universities that are private and (51) community colleges; this is in addition to the World Islamic Sciences and Education University (Ahmad, 2014; Bakri et al., 2020; Jordan Ministry of Higher Education and Scientific Research, 2021). Besides, the foreign universities operating in Jordan according to programs emanated from cooperation agreements between Jordan and foreign universities and programs of the Jordanian universities in various universities of neighboring Arab countries.

In Jordan, there are a total of 27 universities, 10 public, and 17 private universities (Jordan Ministry of Higher Education and Scientific Research, 2021). Tables 1 and 2 present respectively human nutrition and dietetics-affiliated programs offered in public and private universities in Jordan. Among the 27 universities, eleven offer bachelor's degrees in human nutrition and/or dietetics or both; these are 6 public and 5 private universities. Among the six public universities, the University of Jordan offers bachelor's, master's, and doctorate degrees in human nutrition and dietetics. It also offers a master's degree in public health/medical community nutrition. Jordan University of Science and Technology offers bachelor's and master's degrees in nutrition science. It also offers a master's degree in public health/ medical nutrition. Mutah University and Al-Balqa Applied University offer bachelor's and master's degrees in nutrition and food technology. Yarmouk University used to offer a bachelor's degree in public health/nutrition, but this program was discontinued in 1987. The Hashemite University, American University of Madaba, Petra University, Philadelphia University, and Applied Science University offer bachelor's degrees in clinical nutrition and dietetics. Jerash University offers a bachelor's degree in food and nutrition.

Table 1. Nutrition and dietetics-affiliated programs offered in public universities in Jordan.

University	School	Department	Program	Level	Year*
The University of Jordan	Agriculture	Nutrition & Food Technology	Nutrition & Food Technology	BSc1	1980
			Nutrition & Food Technology	Diploma <sup>1</sup>	1988
01001488			Nutrition & Food Technology	MSe <sup>1</sup>	1988
			Nutrition & Food Technology	MSc1,2	1988
			Nutrition & Food Technology	PhD¹	1996
			Nutrition & Food Technology	BSc	2007
			Human Nutrition & Dietetics	MSe	2007
			Human Nutrition & Dietetics	MSe <sup>2</sup>	2007
			Human Nutrition & Dietetics	PhD	2007
	Medicine	Community Medicine	Public Health/ Nutrition	MSc	2018
Jordan University of Science & Technology	Agriculture	Nutrition & Food Technology	Nutrition & Food Technology	BSc	1990
		1 ecnnology	Nutrition Science	$MSe^2$	2006
			Nutrition Science	MSe <sup>1</sup>	2006
			Nutrition Science	MSc	2017
	Medicine	Community, Public Health, & Family Medicine	Public Health/ Nutrition	MSe	1987
Yarmouk University	Medicine	Public Health & Allied Health Sciences	Public Health/ Nutrition	BSc³	1984
Hashemite University	Applied Medical Sciences	Clinical Nutrition & Dietetics	Clinical Nutrition & Dietetics	BSc	1999
Al-Balqa' Applied University	Technical Agriculture	Nutrition & Food Processing	Nutrition & Food Processing	BSc	2001
			Nutrition & Food Processing	MSc	2021
			Nutrition & Food Processing	MSe <sup>2</sup>	2021
	Huson	Nutrition & Food Processing	Nutrition & Food Processing	BSc	2017
	Zarqa	Allied Medical Sciences	Nutrition & Food Processing	BSc	2001
Mutah University	Agricultural Sciences	Nutrition & Food Technology	Nutrition & Food Technology	BSc	2002
			Nutrition & Food Technology	MSe	2017
			Nutrition & Food Technology	MSe <sup>2</sup>	2017

<sup>\*</sup>Start year of the program.

\*Most of the old joint programs are discontinued and replaced with specialized programs in nutrition or food.

<sup>&</sup>lt;sup>2</sup>Non-thesis programs with a comprehensive exam and mostly inactivated.

<sup>&</sup>lt;sup>3</sup> Discontinued and transferred in 1987 to Jordan University of Science & Technology as MSc program.

Year\* University School Department Program Level Applied Science Allied Health Food & Nutrition BSc 1992 Food & Nutrition Sciences Private University Clinical Nutrition & Clinical Nutrition & Pharmacy BSc 2019 Dietetics Dietetics Petra Private Pharmacy and Clinical Nutrition & Nutrition BSc 2000 University Medical Sciences Dietetics Clinical Nutrition & Clinical Nutrition & Philadelphia Private Science BSc 2020 University Dietetics Dietetics American University Nutrition & **Health Sciences** Nutrition & Dietetics BSc 2015 of Madaba Dietetics Jerash Private Food Science & Agriculture Food & Nutrition BSc 1993 University Nutrition

Table 2. Nutrition and dietetics-affiliated programs offered in private universities in Jordan.

# THE PROFESSION OF DIETETICS IN JORDAN

In line with the wide range of improvements in the health care service that have been achieved during the last five decades in Jordan, considerable interest has been given to nutrition and dietetics (Takruri et al., 1990; Ahmad, 2014). Until the 1970s, nutritional care has been delivered predominantly in hospitals and community health centers by physicians, nurses, and other nutritionally unqualified professionals. Practically, dietetics and food service was first introduced in 1973 when several nutritionists or dietitians have been appointed in several hospitals in the country (Takruri et al., 1990). These dietitians were the nucleus from which further developments in the field have arisen. In this regard, one of the most significant achievements was the establishment of the first department in nutrition and food technology at the University of Jordan in 1979. Starting from 1980, the department has introduced several programs that offer bachelor's, Diploma, master's, and doctorate degrees in human nutrition and dietetics, see table 1 (Jordan Ministry of Higher Education and Scientific Research, 2021). During the

past 30 years, many public and private universities have established separate nutrition departments offering bachelor's and/or master's degrees in nutrition and/or dietetics (Tables 1 and 2).

It appears that the understanding of dietetics and nutritional services in hospitals in Jordan has progressed steadily over the past five decades. Previous and subsequent studies in Jordan showed that many administrative, therapeutic, and preventive functions fall within the scope of the role of the dietician (Takruri et al., 1990; Ahmad, 2014). Table 3 shows the main functions of dieticians in hospitals in Jordan. It is noted that these functions are in line with those recommended by international professional organizations (Australian Bureau of Statistics, 2013; British Dietetic Association, 2014), although the extent to which the reported dietitian tasks are performed varies from hospital to hospital (Takruri et al., 1990; Ahmad, 2014). Today, Jordanian dietitians are viewed as competent, knowledgeable, professional, expert, well respected, and more involved in direct patients' care functions.

<sup>\*</sup>Start year of the program.

### Table 3. Hospital dietitians' tasks in Jordan<sup>1</sup>.

- ▶ Dietetic and patient-related tasks:
- Preparation and planning diets and meals.
- \* Preparation and dispensing special nutrition mixes and formulas.
- \* Assessment of nutritional status.
- Nutrition care planning and implementation.
- \* Nutrition counseling, extension, and education.
- \* Implementation of the nutritional care process.
- \* Dispensing physicians' diet orders.
- \* Nutrition care follow-up.
- ▶ Education and management-related tasks:
- \* Foodservice management duties.
- \* Foodservice personnel management.
- Quality control assurance of diets and meals.
- \* Development of cycle menus and meals.
- \* Nutrition education and training of health-related personnel.
- \* Nutrition education and training of foodservice personnel.
- \* Compilation and development of educational materials.
- \* Development of dietary department plans and programs.

<sup>1</sup>Source: Ahmad, 2014.

In Jordan, despite the significant developments recorded in higher education in nutrition and dietetics (Jordan Ministry of Higher Education and Scientific Research, 2021), the profession remained without legal cover until 1999. However, 20 years ago, it gained its legal status formally and publicly. This recognition was through the issuance of the 1999 rules, legislations, and regulations, and their amendments in 2005, 2009, 2018, and 2021 regulating the professional practice (Jordan Ministry of Health, 2005-2021). These rules mainly focus on education for work permit certification. Another step forward in this regard is the introduction of officially approved consultations and private practice of nutrition and dietetics across the country (Jordan

Ministry of Health, 2021). This type of practice is now subject to a variety of approved settings; nutritionists have offices or clinics within their homes, in office buildings and associated health buildings, or doctors' offices. These events are to some extent consistent with those that occurred in more developed countries.

### THE NUTRITIONAL AND HEALTH STATUS TRANSITION IN JORDAN

Jordan has recorded many impressive demographic, social, economic, and health indicators during the past five decades, providing clear evidence of a significant shift in morbidity and mortality trends (Jordan Department of Statistics, 1992-2020). These indicators include marked positive trends and improvements in key health indicators, infant mortality, maternal and under-five mortality, crude death rate, and life expectancy at birth. Demographics have changed dramatically during this period. The urban population has increased, while the rural population, including the Bedouins, has decreased.

In the last five decades, the available information about dietary patterns in Jordan indicates that this country has witnessed a considerable increasing trend in the average daily per capita energy and macronutrient intake (Alwan, 2006; Alwan and Kharabsheh, 2006; Jordan Department of Statistics, 1992-2020). The average daily energy intake has increased by 25-30% during this period. The contribution of carbohydrates to daily energy intake has decreased, while the contribution of fat to daily energy intake has increased. The protein intake has fluctuated around 10% of daily energy intake. Cereals are the major contributor to daily energy intake, exceeding half. Other contributors to daily energy intake are vegetable oils, sugars, vegetables and fruits, meat, milk, and eggs. Cereals, mainly wheat and rice, have constituted the highest amount of food consumed in Jordan, followed by fruits and vegetables (Jordan Ministry of Agriculture, 2005). The major fruits and vegetables consumed are tomatoes, potatoes, cucumber, citrus fruits, melons, and apples (Jordan Ministry of Agriculture, 2005; Jordan Department of Statistics, 2019). The consumption of poultry and milk has also increased.

Although the burden of disease due to infectious diseases is constantly declining, Jordan has witnessed an epidemiological transition characterized by an alarming increase in diet-related diseases, the most important of which are cardiovascular disease, obesity, diabetes mellitus, hypertension, dyslipidemia, and cancer (Alwan and

Kharabsheh, 2006, Ahmad and Haddad, 2015; Obeidat *et al.*, 2015; Ahmad *et al.*, 2020; Al-Badareen and Ahmad, 2021). These diseases are epidemic and are the main causes of death in Jordan with cardiovascular disease and cancer responsible for more than half of all deaths. Hypertension, coronary heart disease, and stroke are major cardiovascular diseases (Mahan *et al.*, 2018). More than 30% of Jordanians aged 25 years and over suffer from hypertension and about 85% of them are overweight or obese. At least 10% of the adult population has diabetes. The crude incidence rate of all types of cancers among Jordanians was 64.4 per 100 000 (63.1 for men and 65.7 for women), with breast and colorectal cancer being the most common types (Alwan & Kharabsheh, 2006).

Some reports indicate a marked increase in the number of public health problems related to micronutrients among some Jordanian populations (Serdula et al., 2014). These include iron deficiency anemia, deficiency of iodine, folate, vitamin A, vitamin D, and vitamin B12 (Al-Khatib, 2002; Barghouti et al., 2009; Jazzar et al., 2011; Mirmaran et al., 2012). As a food-based preventive approach to improve the micronutrient status of Jordanians, the national program for fortification of wheat flour with 9 Vitamins and Minerals was implemented in 2006 in cooperation with the World Health Organization (Jordan Ministry of Health, 2006). To counteract iodine deficiency and insufficiency, a similar national iodine treatment program was launched in 2002, through which iodization of table salt became mandatory at the factory level (Jordan Ministry of Health, 2002; WHO, 2012).

It is now clear that the above indicators of socioeconomic, demographic, nutritional, and epidemiological changes that have occurred in Jordan over the past five decades provide clear evidence of a significant shift in nutrition and health at a fast pace. This shift is a shift from a nutritionally inadequate diet based mostly on local foods to a diet rich in calories, sugars, refined carbohydrates, saturated fats, cholesterol, and salt with a corresponding shift in morbidity and mortality as a result of chronic disease. Consequently, nutrition-related diseases are increasing in Jordan to an alarming degree. This nutritional and health transition is fully consistent with what is happening worldwide (WHO, 2011; Mahan *et al.*, 2018). Gradual urbanization, mechanization, and globalization of food marketing and distribution in favor of increased availability and consumption of energy-dense foods are some of the reasons for this shift (Alwan, 2006; Alwan and Kharabsheh, 2006).

#### CONCLUSIONS

Nutrition and dietetics are an integral part of the health care service. The dietician is fundamental to the health care team and influences the medical nutritional care of individuals and groups to maintain their health. A remarkable shift in nutrition has occurred in Jordan in the past 50 years accompanied by changes in public health,

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particularly increased morbidity and mortality from dietrelated diseases. In Jordan, the face of the nutrition and dietetic profession and its practice has changed steadily during this period. It is formally regulated under certain rules and legislation for obtaining work permit certification and practicing private counseling and consultation. This is perhaps the most significant change that has occurred to this profession over the past five decades in Jordan. From 1980 to the present, six public universities and five private universities confer degrees in human nutrition. One offers a doctoral degree, four universities offer a master's degree, and all eleven universities offer a bachelor's degree in human nutrition and/or dietetics or both. However, additional legislative and regulatory features, internships, in-service training, and national diet guides are needed for this progress to continue at a steady pace. Thus, the need for an official body to shape the landscape of the profession of human nutrition and dietetics per international standards is justified.

#### **Conflict of interest**

The author declares that there are no conflicts of interest.

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# التغذية البشرية والحميات الغذائية: فهم المهنة وإجراءات التنمية في الأردن موسى نعمان أحمد 1

1 الجامعة الأردنية، قسم التغذية والتصنيع الغذائي، تغذية الإنسان والحميات، عمان 11942، الأردن.

تاريخ استلام البحث: 2021/7/1 وتاريخ قبوله: 2021/8/29.

### الملخص

في الأردن، تعد التغذية البشرية والحميات الغذائية من أكثر المهن الصحية المساندة تطوراً؛ ولكن المعلومات الموثقة المتعلقة بوضعها الحالى غير متوفرة بشكل عام، والغرض من هذه الورقة العلمية توضيح مكانة هذه المهنة في الدولة الأردنية، وتتبع الأنشطة التنموية التي تمت على مدى العقود الخمسة الماضية، ويوجد تحولات ملحوظة في السمات الصحية بين الأردنيين فيما يتعلق بالحالة التغنوية منذ خمسين عامًا، ويتجلى ذلك في التحولات الغذائية والاجتماعية والاقتصادية والوبائية والديموغرافية السربعة، وقد حدثت تغيرات متسارعة في اتجاهات الحالة الصحية والتغذوية العامة، بما في ذلك انخفاض معدل الإصابة بالأمراض المعدية، وزيادة متوسط العمر المتوقع، وارتفاع في جميع مستويات التعليم، وارتفاع في التحضر، والمكننة وعولمة السوق، وانخفاض النشاط البدني، وأصبحت النظم الغذائية اكثف في الطاقة واغنى في الكربوهيدرات والدهون والأطعمة الحيوانية، وتم تسجيل اتجاهات مقلقة متوافقة مع ارتفاع المراضة والوفيات من الاضطرابات المزمنة الرئيسية المرتبطة بالتغذية، ولاسيما مخاطر استقلاب القلب بما في ذلك مرض السكري والسمنة ومرض القلب والأوعية الدموية وعسر شحميات الدم وارتفاع ضغط الدم، وكذلك السرطان، وتوافقاً مع هذا التحول، ازدادت أنماط خدمات مهنة التغذية البشرية والحميات الغذائية باطراد، وبوجد في الأردن 10 جامعات حكومية و 17 جامعة خاصة، وتمنح ست جامعات عامة وخمس جامعات خاصة درجات علمية في تغذية الإنسان، وتقدم إحداها درجة الدكتوراه، وتقدم أربع جامعات درجة الماجستير، وتقدم جميع الجامعات الإحدى عشرة درجة البكالوريوس في التغنية البشرية و/ أو الحميات الغذائية أو كليهما .وتمشياً مع هذه التغييرات، اكتسبت مهنة التغنية البشرية والحميات الغذائية اعترافًا رسميًا كبيرًا ووضعًا قانونيًا يسمح بإصدار الشهادة أو الترخيص والاستشارة والممارسة الخاصة. ومع ذلك، وهناك حاجة إلى سمات تشريعية وتنظيمية إضافية وبرامج التدريب الداخلي والتدريب أثناء الخدمة وأدلة النظام الغذائي الوطنية من أجل استمرار هذا التقدم بوتيرة ثابتة. وبالتالي، وإن هناك ما يبرر الحاجة إلى وجود هيئة رسمية لتشكيل مشهد مهنة التغذية البشرية والحميات الغذائية وفقًا للمعايير الدولية.

**الكلمات الدالة:** الأردن، التغذية البشـرية، الحميات الغذائية، اختصـاصـي تغذية، المهن الصـحية المساندة، التحول التغذوي، التثقيف التغذوي.