

Nutrition programs of Higher Education in the Occupied Palestinian Territories: A descriptive snapshot

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Conceptualization of the study was done by BAE, MM. MM, GHS carried out research for this study. Data Analysis, tabulation, and writing of the manuscript was carried out by NB, MM, GHS, BAE. Initial reviews of the manuscript were carried out by NB, BAE. Final review of article was carried out by NB, BAE.

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Abstract

This report stresses the importance of promoting capacity building and training of nutritionists and dietitians as vital strategies in addressing nutrition-related health problems and improving health outcomes in occupied Palestinian territories (oPt). Higher education institutions play a vital role in this process. This report identifies degree-granting nutrition programs available in oPt in both Arabic and English by carrying out an electronic review of universities and college websites, department web links, and academic program homepages. Out of the 52 accredited institutions in the oPt, 10 offered nutrition degree programs of which four are located in the Gaza Strip and six in the West Bank. Nutrition-affiliated programs included bachelor's degrees in nutrition sciences and public health, health nutrition, nutrition and food technology, nutrition and dietetics, therapeutic nutrition, nutrition and food processing. Two universities offered a master's degree in clinical nutrition in addition to a bachelor's program. None of the selected educational institutions offered a doctoral degree program. The number of universities in oPt offering bachelor's degree in nutrition affiliated programs is relatively high compared to neighboring Arab countries. Additional development of graduate programs to strengthen the dietetics/nutrition profession in oPt is warranted.

Keywords: Occupied Palestinian Territories; Public health nutrition; higher education

Introduction

The occupied Palestinian territories (oPt), internationally recognized by the United Nations (UN), consists of the West Bank and Gaza Strip and is located on the eastern Mediterranean coast. According to the Palestinian Central Bureau of Statistics, the mid-year estimated population for 2021 is 3,120,448 in West Bank and 2,106,745 in Gaza Strip (Palestinian Central Bureau of Statistics, 2021b). Decades of conflict and political instability have resulted in significant sociodemographic geopolitical changes that have detrimentally affected various social determinants of health, public health indicators and outcomes; creating health disparities and disrupting efforts to improve public health care for the Palestinian population as a result of the Israeli military occupation (Basak, 2012; Rosenthal, 2021). This situation has led to severe malnutrition problems facing the most vulnerable sectors of the Palestinian communities, notably women and children, which has resulted in significant dependence on international food aid, increased public health and nutrition burdens, and food insecurity, particularly among women and preschool age children (Basu et al., 2018; Gordon & Halileh, 2013; Massad et al., 2016; Radi et al., 2009; Romano et al., 2019; Salti & Ghattas, 2016).

Malnutrition is defined as nutritional deficiencies, excesses, or imbalances as compared to the individual requirements (World Health Organization., 2020). In oPt, studies have previously indicated a double burden of malnutrition characterized by a coexistence of both over and undernutrition (Ejheisheh et al., 2021; Gordon & Halileh, 2013; Horino et al., 2020; Hussein et al., 2009; Jildeh et al., 2010; Khader et al., 2009; Mikki et al., 2010). A cross-sectional study conducted to assess factors associated with malnutrition among West Bank schoolchildren aged 5 to 16 years old indicated a coexistence of obesity and undernutrition

(Massad et al., 2016). Another study identified an alarming prevalence of anemia (35.8%), iron deficiency (40.3%) and iron deficiency anemia (26.0%) among Palestinian female adolescents in Gaza (Jalambo et al., 2018). Previous studies have indicated that the prevalence of obesity among Palestinian communities was high, especially among women (Abdeen et al., 2012; Abdul-Rahim et al., 2003; Stene et al., 2001). Other studies highlighted an increasing prevalence of overweight, underweight, and obesity among Palestinian school-age children and adolescents (Al-Lahham et al., 2019; Mikki et al., 2009). Public health nutrition-related problems in oPt highlight the need for qualified nutritionists, dietitians, and educational institutes to implement intervention plans, develop policies that help in health promotion and disease prevention to address existing and future anticipated public health nutrition problems in oPt, and improve nutritional health outcomes. The Middle East has been identified as a region with a considerable need for trained nutritionists and dietitians in order to address the escalating double burden of nutrition-related diseases, particularly for internally displaced individuals, refugees, and vulnerable populations of oPt (Damiri et al., 2018; Ghattas et al., 2020; Hwalla et al., 2016; Jebril et al., 2020; Kitamura et al., 2018; Rahim et al., 2014; Salti & Ghattas, 2016).

Capacity building and training of nutritionists and dietitians are necessary strategies in addressing nutrition-related health problems. Such strategies could help nutritionists and dietitians apply evidence-based nutrition education and recommended guidelines to promote a healthy lifestyle, mitigate nutrition deficiencies, and improve overall health outcomes for their respective communities, while considering local culture, religious beliefs, and social norms. White (2013) specifically highlighted this call-to-action for educational capacity and public health human resource needs to be guided through competency-based frameworks in oPt. Thus, the purpose of this brief report is to provide an updated snapshot of the Palestinian Higher

Education institutions that offer post-secondary nutrition education with the goal of emphasizing the role of training for future nutritionists and dietitians in oPt.

Methods

An inclusive list of universities was obtained from the Ministry of Education and Higher Education of the Palestinian National Authority website (Ministry of Education and Higher Education of the Palestinian National Authority, 2021). To identify all nutrition degree programs offered, an online review of universities and colleges' updated websites, department web links, and academic programs' homepages in oPt was performed in Arabic and English. The search was performed between December 2020 and March 2021. All Nutrition degree programs offered in oPt that require at least four years of completion were included and tabulated. Community and vocational colleges were also included. Given the nature of this review, no ethical oversight or approval was found to be necessary and therefore not acquired. For the purpose of this review, the oPt refers to the West Bank, including East Jerusalem, and the Gaza Strip.

Results

Table 1 includes the results of the electronic review. According to the latest summary 2019-report for the Palestinian Higher Education Sector, the number of accredited institutions in the oPt for the 2019/2020 academic year was 52 (16 traditional universities, 17 university colleges, 17 community colleges, and 2 open universities). Of these institutions, 33 were in the West Bank and 17 in Gaza Strip (not including the 2 open universities) (The Palestinian Ministry of Higher Education and Scientific Research, 2021a).

There are four types of educational institutions according to its administration in the oPt: governmental, UNRWA, private, and public. Governmental higher education institutions are managed and financed by the Palestinian National Authority and are under the Palestinian Ministry of Education and Higher Education supervision. The UNRWA higher education institutions are educational institutions managed and funded by the United Nations agencies, which grant diplomas and bachelor's degrees for students and provide vocational and technical training courses in their vocational training centers. Private higher education institutions are institutions operated and funded by various foundations and charities, religious associations, individuals, and companies. Public higher education institutions are non-profit and are run by local charities and non-governmental organizations and rely mainly on fundraising and partial government funding. Most of the public higher education institutions were mainly founded before establishing the Palestinian National Authority in 1994. According to this classification, the distribution of the higher education institutions in oPt includes 17 public, 17 private, 11 governmental, and 4 UNRWA-run institutions (The Palestinian Ministry of Higher Education and Scientific Research, 2021b).

Among the identified universities and colleges, ten offered nutrition degree programs (See Figure 1). Four of them are located in Gaza Strip (2 governmental, 1 public, and 1 private) and six in the West Bank (1 governmental and 5 public). In Gaza Strip, the nutrition-affiliated programs include bachelor's degrees for students except for Al-Azhar University, which offers both bachelor's and master's degrees in clinical nutrition. The three remaining institutions in the Gaza Strip, including Palestine Technical College, University of Palestine, and University College of Science and Technology, offer bachelor's degrees in nutrition sciences and public health, health nutrition, nutrition and food technology, respectively.

Similar to Gaza Strip, all universities identified in the West Bank offer bachelor's degrees except for An-Najah National University, which offers both bachelor's and master's degrees in nutrition and food technology. The five remaining universities in the West Bank, including Birzeit University, Palestine Polytechnic University, Hebron University, Al-Quds University, and Palestine Technical University (Kadoorie) offer bachelor's degrees in nutrition and dietetics, therapeutic nutrition, nutrition and food processing, public health nutrition, and food processing technology, respectively. None of the educational institutions identified above offered any doctoral degrees for these nutrition-affiliated programs. All universities and colleges identified in this review offer nutrition-affiliated programs that allow students to professionally address the nutrition, dietetics, and food processing needs and provide them with the practical skills needed to positively contribute to the oPt, both at the individual and community levels.

Discussion

According to the Palestinian Central Bureau of Statistics, the mid-year estimated population for 2021 is 3,120,448 in West Bank and 2,106,745 in Gaza Strip (Palestinian Central Bureau of Statistics, 2021a). The prevalence of obesity and overweight continue to be high in the oPt, which poses significant obstacles to the health of individuals and communities (Abdeen et al., 2012). Results of our review show a higher number of universities and colleges offering nutrition education programs in oPt compared to other neighboring Arab countries, such as Jordan and Egypt (Aboul-Enein & Bowser, 2015; Bakri et al., 2020). Despite having four institutions offering nutrition programs in Gaza and six in the West Bank, Palestinians continue to suffer from poor nutrition outcomes characterized by a double burden of undernutrition and obesity (Ejheisheh et al., 2021; Gordon & Halileh, 2013; Horino et al., 2020; Husseini et al.,

2009; Jildeh et al., 2010; Khader et al., 2009; Mikki et al., 2010). This reflects the challenges faced by nutritionists and dietitians in oPt as the public health and nutritional issue are not only resulting from the populations' dietary habits, but due to economic and political volatility and instability, which is creating these public health disparities and inequities (Rosenthal, 2021).

Previous studies have indicated several nutrition-related public health issues among Palestinians (Abdeen et al., 2007; Basak, 2012; Horino et al., 2020; Jalambo et al., 2018; Khader et al., 2009; Massad et al., 2012; Radi et al., 2009) (Abdul-Rahim et al., 2003; Badrasawi et al., 2020; Khader et al., 2009; Mikki et al., 2009). Anemia and overweight were the two forms of malnutrition common in the oPt, as highlighted by The Global Nutrition Report (Global Nutrition Report, 2018). Anemia rates in adult women of reproductive age, both pregnant and non-pregnant, were 29.4% in 2015. Among adults 18 years and older, 64% of males and 69.5% of females were overweight, and 26.2% of males and 38.8% of females were living with obesity in 2015 (Global Nutrition Report, 2018). Additionally, the prevalence of overweight and obesity were also studied by a recent systematic review of 38 articles in the oPt (Elessi & Albaraqouni, 2019). The prevalence of overweight and obesity were 15% and 6% among children, 30% and 18% among adults, and 40% and 49% among people with non-communicable diseases (Elessi & Albaraqouni, 2019). These rates are due to changes in physical activity, dietary habits, and shifting from traditional to western lifestyles. The combination of a low sedentary lifestyle with low consumption of fruits and vegetables, higher intake of diets rich in processed food, fat, and calories have been attributed to the high rates of obesity (Abdeen et al., 2012; Aboul-Enein et al., 2017; Mikki et al., 2009). Such negative health experiences and public health outcomes are due to several factors, including the long history of Israeli military occupation, conflict, geographic division of the country, and economic and political barriers. These barriers make delivering

nutrition programs or interventions in the oPt increasingly challenging (Giacaman et al., 2009; Jubran et al., 2005; United Nations, 2018).

A strategic review of food and nutrition security in oPt was prepared by the Palestine Economic Policy Research Institute (MAS) and funded by the World Food Programme (WFP) in 2017. The review highlights the crisis of food security among the Palestinian population, particularly in the Gaza Strip. As per recommendations, MAS and WFP insisted on the need of a gradual progressive sustainable change from the current scenario and away from conventional food assistance programs. In this regard, considering a possible promotion of progressive nutritional policies should have a fundamental component in sustainable local food production as a viable long-term solution that would help in achieving the Sustainable Development Goals 2030. In addition, this review, the authors discussed some opportunities for improving the status of nutrition in oPt. Among those opportunities was a need to raise nutrition awareness, advocate for physical activity and active lifestyles, and improve nutrition education. Their results show the need to emphasize the role of nutrition and food in preventing and treating diseases and maintaining overall health (United Nations, 2018). Thus, improving nutrition education by providing capacity building and training to nutritionists and dietitians on how to reach people and help them address nutrition-related health problems is vital. Applying evidence-based nutrition education and the recommended guidelines to promote a healthy lifestyle by dietitians and nutritionists could be one effective strategy to improve the nutrition status and overall health outcomes in Palestinian communities where refugees and other vulnerable populations reside.

Conclusion

A total of 10 universities in oPt offer bachelor's degree in nutrition affiliated programs. This is a relatively high number when compared to other neighboring Arab countries, particularly in light of the political and socio-economic public health challenges facing the oPt. Capacity building and the incorporation of different biomedical disciplines toward providing a comprehensive public health approach in addressing health disparities in the oPt continues to be warranted, as suggested by Zurayk et al. (2012). Working within a multi-disciplinary team should be considered as an efficient practice that could positively support the role of the nutritionist/dietitian with regards to the socio-economic and political challenges faced in the oPt. Additionally, it is worth mentioning the added value of developing graduate programs in oPt universities and the creation of a doctoral program to strengthen the dietetics/nutrition profession and associated fields. International educational collaboration and promoting regional Arab-with-Arab university partnerships could be a plausible long-term approach to building postgraduate capacities in nutrition, which would have a positive impact on public health nutrition associated outcomes for the Palestinian population.

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Table 1. List of nutrition-affiliated programs offered in selected universities in oPt

College/university	Location	Type	Program name	Degree(s) awarded
Al-Azhar University	Gaza city - Gaza Strip	Public	Clinical Nutrition	Bachelors and Masters
Palestine Technical College	Deir El Balah - Gaza Strip	Governmental	Nutrition Sciences and Public Health Program	Bachelors
University of Palestine	Al Zahra city - Gaza Strip	Private	Health Nutrition	Bachelors
University College of Science and Technology	Khan Yunis - Gaza Strip	Governmental	Nutrition and Food Technology	Bachelors
Birzeit University	Birzeit - West Bank	Public	Nutrition and Dietetics	Bachelors
Palestine Polytechnic University	Hebron - West Bank	Public	Therapeutic Nutrition	Bachelors
Hebron University	Hebron - West Bank	Public	Nutrition and Food Processing	Bachelors
Al-Quds University	Abu Dis (main campus) - West Bank	Public	Public Health Nutrition	Bachelors
An-Najah National University	Nablus - West Bank	Public	Nutrition and Food Technology	Bachelors and Masters
Palestine Technical University (Kadoorie)	Tulkarm - West Bank	Governmental	Food Processing Technology	Bachelors

Figure 1. Geographical location of nutrition-affiliated programs offered in selected universities in oPt

