

Cultural Eating Practices among Jordanians

Hiba Bawadi^{1*}, Zaid Al-Hamdan², Hala Bawadi², Omar Ershidat³, Fwzieh Hammad¹, Lana Agraib¹

¹Department of Nutrition and Food Technology, Jordan University of Science and Technology, Irbid, Jordan; ²Faculty of Nursing, Applied Science University, Amman, Jordan; ³Al-Balqa Applied University, Amman, Jordan.

Email: *hbawadi@just.edu.jo

Received January 21st, 2012; revised April 23rd, 2012; accepted April 30th, 2012

ABSTRACT

Culture has an enormous impact on individuals' food choices and practices. This research aimed to screen cultural eating practices among Jordanians. Jordanian adults (N = 4750) completed a survey with regard to common eating practices in Jordan. Practices were classified into 4 themes, namely regular eating practices (7 practices), seasonal eating practices (4 practices), eating practices in social occasions (6 practices), and eating practices in religious occasions (10 practices). Interestingly, most nutritional practices during Ramadan and Eids (religious occasions) were agreed upon from 100% of the participating sample. In conclusion, culture in Jordan has a huge influence on eating practices and food choice. Negative culture's influence over eating practices may exist, thus increasing awareness about unhealthy eating practices related to culture is necessary.

Keywords: Jordan; Culture; Eating Practices

1. Introduction

Culture is defined as a group of several attributes including learned and shared behaviors, customs, traditions, ethnicity, language, religious belief, and beliefs regarding health and illness [1].

Culture has huge influence over individuals' food choices [2]. Moreover, it influences individuals' views about health and disease [3,4]. Dietitians should understand the food habits, preference and practices in cultural occasions and holidays in order to provide best nutritional counseling for their clients. Taking into account the cultural impact when giving nutrition advice will let clients realize that their values are being appreciated, which will directly impact adherence to dietary regimens and recommendations. Thus, gaining cultural competence by dietitian is a key toward provide quality nutritional counseling and improved health outcomes [5, 6]. Gaining cultural competence among health care providers can be challenging if no enough literature is available. This research highlights some culturally eating habits and practices among Jordanians, which may enable non-Jordanian dietitians in societies with Jordanian immigrants to deliver effective nutritional care.

2. Materials and Methods

2.1. Survey

A list of common nutrition-related cultural practices in

Jordan was reviewed and prepared by three nutrition PhD degree holders. Practices were written in a survey format and categorized into 4 themes: 1) regular eating practices; 2) seasonal eating practices; 3) eating practices in religious occasions; and 4) eating practices in social occasions. The survey was self-administered and consisted of two sections; the first section contained questions about demographic characteristics and cultural eating practices. Each practice had a response of a "yes" or a "no". The survey was tested on 100 individuals to clarify any ambiguous items. Screened cultural eating practices are listed below:

Theme 1: Regular eating practices

- Thyme and olive oil dip is essential part of my daily breakfast
- I eat bread on every meal
- I do not combine fish and yoghurt in one meal; combination is harmful to health
- I use olive oil in highest amounts as compared to other oils
- I take a nap after lunch almost everyday
- I do not use a spoon when I eat *mansaf*, I use my hands instead (*mansaf* is a dish made of lamb cooked in a sauce of fermented dried yogurt and served with rice)
- I eat raw onion with dishes prepared with lentil.

Theme 2: Seasonal eating practices

- We cook dishes made with lentil mostly in winter
- I drink *sahlab* only during cold weather (*Sahlab* is beverage made from milk and orchid flour)

*Corresponding author.

- We cook *khobaizeh* (Mauve) leaves mostly in spring
- I drink hot cinnamon tea only in winter.

Theme 3: Eating practices in social occasions

- We serve dates and Arabic coffee in funeral receptions
- We serve *mansaf* in wedding receptions
- We serve Turkish coffee at the end of people visit—a sign that a visit is ended
- When I serve Arabic coffee, I pour the first cup and drink it in front of the guests—a sign that the coffee is safe to drink
- When inviting people for dinner at home, and after they are done, I insist on guests to have more—a sign of generosity
- When inviting people for dinner at home, I offer very large portions (larger than actually needed)—a sign of generosity.

Theme 4: Eating practices in religious occasions

- My family cook *mansaf* in the first day of Ramadan
- I drink *tamer hindi* (cold drink prepared by infusing *Tamarindus indica* dried pulp); *kharoub* (cold drink made from carob beans) and *sous* (cold drink prepared by extracting dried roots of *Glycyrrhiza glabra*) only in Ramadan
- My daily Breakfast during the whole month of Ramadan must include soup
- I eat *qatayef* (pan cake-like sweet stuffed in cheese or nuts and dipped in sugar syrup) on daily bases for the whole month of Ramadan
- All people including the very poor eat red meat on *Eid aladha* (*Eid aladha* is Muslim holiday which follows the annual Islamic pilgrimage)
- I eat *fseekh* (dried, salted fish) on breakfast of *Eid alfeter* (*Eid alfeter* is a three-day Muslim holiday that marks the end of Ramadan)
- My family make dates cookies on *Eid alfeter*
- My family always cook meat containing dishes each Friday (Friday is the Muslims' weekly holiday)
- I and all family members gather on Friday dinner
- I usually eat *hummos* (chickpeas dip) and *falafel* (chickpeas patties) on breakfast each.

2.2. Data Collection

A random sample of households in different geographical areas that represent all cities in the kingdom of Jordan in Jordan was selected. Data collection was done trained research assistants. Assistants were all at the senior level of nutrition major, and were all enrolled in community nutrition class. Upon receiving 4 hours lectures about “gaining cultural competence in community nutrition”, each assistant was assigned a neighborhood for data collection. Only one survey per household was completed. A representative sample of 4750 Jordanians from was

obtained. Participants were 1) aged 18 - 70 years; and 2) born and raised up in Jordan. Individuals who were eligible and willing to participate signed a consent form that explained the objectives of the study.

3. Statistical Analysis

The Statistical Package for Social Sciences software (SPSS, version 11.5, Chicago, Inc.) was used for data processing and analysis. Characteristics of subjects' variables were described using frequency distribution.

4. Results

As presented in **Table 1**, participants who completed the survey were females (70%), young (80% were less than age of 40 years), educated (82% received more than 12 years of education), and coming from middle class families (40% have monthly income of between 300 to 500 JD). **Table 2** represents 7 regular eating practices. Interestingly, 100% of the participants reported that they do not combine fish and yoghurt in one meal. Three out of 7 practices were common in at least 85% of participants; namely, “thyme and olive oil dip is essential part of my daily breakfast”, “bread is a major component of my three meals every day”, “olive oil is the most used vegetable oil in my meals”. Less common practices (common

Table 1. characteristics of the study sample.

Variable	n (%)
Gender	
Male	1384 (29.1)
female	3366 (70.9)
Age	
<40	4215 (88.7)
>40	535 (11.3)
Education	
≤12 years	855 (18)
>12 years	3895 (82)
Income (JD*)	
<150	245 (5.2)
150 - 299	876 (18.4)
300 - 500	1888 (39.7)
>500	1741 (36.7)
Residency	
Urban	1300 (27.4)
Rural	3450 (72.6)

*JD is Jordanian Dinar and is equal 1.4 USD.

Table 2. Regular eating practices.

	Practice	Yes (n %)	No (n %)
1	Thyme and olive oil dip is essential part of my daily breakfast.	4196 (88.3)	554 (11.7)
2	I eat bread on every meal.	4222 (88.9)	528 (11.1)
3	I do not combine fish and yoghurt in one meal; combination is harmful to health.	4750 (100.0)	0.0 (0.0)
4	I use olive oil in highest amounts as compared to other oils.	4410 (92.8)	340 (7.2)
5	I take a nap after lunch almost everyday.	3105 (65.4)	1645 (34.6)
6	I do not use a spoon when I eat <i>mansaf</i> ¹ , I use my hands instead.	3190 (67.2)	1560 (32.8)
7	I eat raw onion with dishes prepared with lentil.	3577 (75.3)	1173 (24.7)

¹*Mansaf* is dish made of lamb cooked in a sauce of fermented dried yogurt and served with rice.

among 65% - 75% of the participants) include “I take a nap after lunch every day”, I do not use a spoon when I eat *mansaf*, I use my hands instead”, and “I eat raw onion with dishes made with lentil”.

Jordanians reported that they eat special food items in cold weather like lentil (92%), *sahlab* (73%), and cinnamon tea (67%). However, mauve is mostly consumed in spring (68%); data presented in **Table 3**. Cultural eating practices in social occasions were very apparent. **Table 4** shows that 86% of the participants reported that they serve dates and Arabic coffee in funeral receptions, and about 83% reported that they serve *mansaf* in wedding receptions. When serving Arabic coffee, 73% of participants reported that they pour the first cup and drink it in front of the guests as a sign that coffee is safe to drink. In regular guests visits, 90% of participants reported that they serve Turkish coffee at the end of the visit as a sign that the visit is ended. When Jordanians invite people on dinner, and as a sign of generosity, they (93%) offer large portions, and they (91%) keep insisting on people to have more.

Religious occasions appear to have very strong impact on eating practices. For example, several practices were reported by 100% of the participants. These practices include “my family cook *mansaf* in the first day of Ramadan”, “I drink *tamer hindi* and *kharoub* and sous only in Ramadan”, “my daily breakfast during the whole month of Ramadan must include soup”, “I eat *qatayef* on daily bases for the whole month of Ramadan”, “I eat red meat on *eid aladha*”, and “my family make dates cookies on *eid Alfeter*”. About 63% of the participants reported that they eat *fseekh* on breakfast on *eid Alfeter*. On Fridays (Muslims holiday) 81% of participants have *hummos* and falafel in breakfast and about 94% reported that

Table 3. Seasonal eating practices.

	Practice	Yes (n %)	No (n %)
1	We cook dishes made with lentil mostly in winter.	4364 (91.9)	386 (8.1)
2	I drink <i>Sahlab</i> ¹ only in cold weather.	3486 (73.4)	1264 (26.6)
3	We cook <i>khobaizeh</i> (Mauve) leaves mostly in spring.	3241 (68.2)	1509 (31.8)
4	I drink hot cinnamon tea only in winter.	3195 (67.3)	1555 (32.7)

¹*Sahlab* is beverage made from milk and orchid flour.

Table 4. Eating practices in social occasions.

	Practice	Yes (n %)	No (n %)
1	We serve dates and Arabic coffee in funeral receptions.	4104 (86.4)	646 (13.6)
2	We serve <i>Mansaf</i> ¹ in wedding receptions.	3945 (83.1)	805 (16.9)
3	We serve Turkish coffee at the end of people visit—a sign that a visit is ended.	4284 (90.2)	466 (9.8)
4	When I serve Arabic coffee, I pour the first cup and drink it in front of the guests—a sign that the coffee is safe to drink.	3471 (73.1)	1279 (26.9)
5	When inviting people for dinner at home, and after they are done, I insist on guests to have more—a sign of generosity.	4341 (91.4)	409 (8.6)
6	When inviting people for dinner at home, I offer very large portions (larger than actually needed)—a sign of generosity.	4423 (93.1)	327 (6.9)

¹*Mansaf* is dish made of lamb cooked in a sauce of fermented dried yogurt and served with rice.

all family members attend the family dinner which must include meat; data presented in **Table 5**.

5. Discussion

In this section, we aimed to investigate the impact of cultural eating practices on health and disease. Bread dipped in olive oil and dried thyme is previously reported as a main component in Jordanians breakfast. It was reported that Jordanians believe that dishes made from dried thyme and olive oil enhance alertness [7]. Thyme was shown to have antimicrobial, antifungal activities [8] and remedy for many respiratory diseases [9]. Olive oil has been widely used in Jordanian diet for cooking traditional dishes [10]. The average per capita consumption of olive oil in Jordan is 4.6 Kg per year [11]. Olive oil may have several health attributes like the content of phenols that have high antioxidant activity, which intern inhibit

Table 5. Eating practices in religious occasions (Ramadan and Eids).

	Practice	Yes (n %)	No (n %)
1	My family cook <i>mansaf</i> ¹ in the first day of Ramadan ² .	4750 (100.0)	0.0 (0.0)
2	I drink <i>tamer hindi</i> ³ ; <i>kharoub</i> ⁴ and <i>sous</i> ⁵ only in Ramadan.	4750 (100.0)	0.0 (0.0)
3	My daily Breakfast during the whole month of Ramadan must include soup.	4750 (100.0)	0.0 (0.0)
4	I eat <i>qatayef</i> ⁶ on daily bases for the whole month of Ramadan.	4750 (100.0)	0.0 (0.0)
5	All people including the very poor eat red meat on <i>Eid aladha</i> ⁷ .	4750 (100.0)	0.0 (0.0)
6	I eat <i>fseekh</i> ⁸ on breakfast on <i>eid alfeter</i> ⁹ .	4750 (100.0)	0.0 (0.0)
7	My family make dates cookies on <i>Eid alfeter</i> .	4750 (100.0)	0.0 (0.0)
8	My family always cook meat containing dishes each Friday.	4461 (93.9)	289 (6.1)
9	I and All family member attend Friday dinner.	4490 (94.5)	260 (5.5)
10	I usually eat <i>Hummos</i> ¹⁰ and <i>falafel</i> ¹¹ on breakfast each.	3856 (81.2)	894 (18.8)

¹*Mansaf* is dish made of lamb cooked in a sauce of fermented dried yogurt and served with rice; ²Ramadan is the Islamic month of fasting; ³*Tamer hindi* is cold drink prepared by infusing *Tamarindus indica* dried pulp; ⁴*Kharoub* is cold drink made from carob beans; ⁵*Sous* is cold drink prepared by extracting dried roots of *Glycyrrhiza glabra*; ⁶*Qatayef* is a sort of sweet crepe filled with cheese or nuts; ⁷*Eid aladha* "Festival of Sacrifice" is Muslim holiday which follows the annual Islamic pilgrimage; ⁸*Fseekh* is a form of dried, salted fish; ⁹*Eid alfeter* is a three-day Muslim holiday that marks the end of Ramadan; ¹⁰*Hummos* is chickpeas dip; ¹¹*Falafel* is chickpeas patties.

Low-density lipoprotein (LDL) oxidation, platelet aggregation, scavenge superoxide and other reactive oxygen species (ROS) [12,13]. Olive oil also have antimicrobial activity [14], and anti-aging effects [15]. Another food item that is consumed on daily bases is bread. Bread is cheap in price because of the Jordanian government subsidy to wheat prices which preserve bread prices to steady low prices.

Interestingly, all participants reported that they do not combine fish and yogurt in one meal. This practice stemmed from an old common myth stated that combining fish and yogurt may have poisonous effect. Taking a nap after lunch was common in 65% of participants. Despite the documented health benefits of napping on improving sleep quality [16] and enhancing alertness and performance [17], naps immediately after mealtime may distract the digestion process [18].

Mansaf is the national dish of Jordan made of rice and lamb and is a sign of a social community gathering [19]. As reported previously, *mansaf* is served on wedding receptions and on the first day of Ramadan. The traditional way of eating *mansaf* is with hands. This may be a

threat of pathogens transmission given the fact that people eating *mansaf* share same plate. Increase awareness about hands hygiene as a primary mechanism to control the transmission of pathogens is needed [20-22].

Jordanian cuisine includes many dishes made with lentil [10]. Jordanians enjoy the taste of raw onion with dishes made if lentil. Onion is a strong antioxidant [23], anti-coagulant [24]. Other health effect of onion is that it reduces fasting blood sugar [25] lowers arterial blood pressure [26], and increases bone density in both pre- and post-menopausal women [27]. Lentil and other foods such as *sahlab* and hot cinnamon tea were reported to be foods consumed mainly in cold weather. Several researchers documented an impact of seasonal variation on dietary intake [28,29]. Lentil is a good source of fiber, protein, folate, zinc, iron, and magnesium and low in fat [30]. Dishes prepared with lentil are common in many developing countries [31]. Hot drinks like *sahlab* and cinnamon are consumed only in winter and cold weather. Hot drinks are believed to warm the bodies in cold weather [32]. On the other hand, Jordanians eat cooked mauve leaves only in spring. Mauve is a green leafy plant that is widely used in Mediterranean and European countries [33,34] and contains high amounts of antioxidants; phenols, flavonoids, carotenoids, and tocopherols [33].

Like individuals in other cultures, Jordanians have special foods that are served in different social occasions, such as wedding and funeral reception. Arabic coffee (*sadah*) and Turkish coffee are the most common types of coffee in Jordan. Turkish coffee is usually served at the end of social gatherings; in colloquial Arabic is called "the goodbye" coffee means guests are not supposed to stay longer after Turkish coffee is being served.

Arabic coffee is served in funeral receptions. Cultural traditions associated with Arabic coffee is that person serves the coffee should pour the first cup and drink it in front of the guests as a sign that the coffee is safe to drink. This has become more of a tradition and several people practice it without knowing the rational (showing coffee is safe) behind it. Guaranteeing safety of guests is part of the Arab and Bedouins hospitality. Another distinguished feature of the Arab hospitality is generosity. Jordanians overfeeds their guests by offering large portion size of food. When guests finish eating, Jordanians do insist on guests to have more foods. This practice negatively impacts the health of individuals being invited especially if they are being advised to follow low caloric diets.

Islam is the main religion in Jordan. Islamic holiday is Friday and Islamic festivals are *eid alfeter* and *eid aladha*. Common eating practices on Friday include having *hummos* and *falafel* on breakfast and having meat on dinner. *Hummos* and *falafel* are common in Jordan [7] because of their affordable price and preferred taste [35]. On the other hand, the consumption of meat in Jordan is

low due to its relatively high cost [36]. High meat consumption during the season of *eid aladha* is a common practice among all Jordanians regardless the socioeconomic class. *Eid aladha* is called feast of sacrifice in which all financially capable families sacrifice an animal and distribute its meat according to the law mentioned in the Holly Quran; one third is given for the scarifying family, one third is given to their relatives and one third is given to poor families.

Jordanians also exhibit special eating practices during the month of Ramadan. Cold drinks of *tamer hindi* (made from *Tamarindus indica* dried pulp), *kharoub* (made from carob beans), and *sous* (made from dried roots of *Glycyrrhiza glabra*) are hallmarks of Ramadan in Jordan. Selling these types of cold drinks is considered a small seasonal business in Jordan. Health precautions regarding the hygiene and food safety should be highlighted especially that these drinks are prepared at homes and sold in the streets. Other health precautions include the impact of *Tamarindus indica* on increasing the bioavailability of aspirin [37]. Liquids in general are important parts of Ramadan cuisine in Jordan in order to alleviate the dehydration symptoms associated with Ramadan fasting. Jordanians families include different types of soups in their daily breakfast in Ramadan. With regard to desserts, a special type of dessert called *qatayef* is sold only in Ramadan. All participants in this study sample reported that they eat *qatayef* on daily bases during the months of Ramadan. Ramadan fasting is supposed to offer a golden opportunity for individuals to shed any extra weight they have, however, due to excessive calories associated with high sugar content of Ramadan drinks and *qatayef*, individuals end up with no weight loss or even some weight gain.

First day after Ramadan is *eid al feter*. On *eid alfeter* Muslims tend to eat foods they usually could not eat in Ramadan. A good example of this is *fseekh* (dried fish preserved in salt). People who like *fseekh* cannot eat it during the whole month of Ramadan because of its strong odor and the high content of salt which aggravates thirst.

In conclusion, culture does influence eating habits and practices of Jordanians. The percentage of individuals practicing the listed habits ranged from 67% - 100%. This influence was either 1) positive; such including lots of liquids on meals of the Muslims fasting month; 2) negative; such as sharing a plate and using hands when eating *mansaf*; and 3) neutral or induce no harm or benefit; such as avoiding the combination of yogurt and fish on one meal.

6. Acknowledgements

Authors would like to thank the volunteers participated

in this study. Deep appreciation to students of "Community Nutrition" class; spring 2007. Thanks are also due to Ms. Amal Dwairy who helped in data entry of this study.

REFERENCES

- [1] College of Registered Nurses of Nova Scotia, "Position Statement: Promoting Culturally Competent Care," College of Registered Nurses of Nova Scotia, Halifax, 2006.
- [2] T. Barer-Stein, "You Eat What You Are: People, Culture, and Food Traditions," Firefly Books, Willowdale, 1999.
- [3] K. P. Sucher and P. G. Kittler, "Food and Culture," Wadsworth, Belmont, 2007.
- [4] L. C. Libard, A. Namageyo-Funa, L. Jack and E. Gregg, "Views from Within and Beyond: Illness Narratives of African-American Men with Type 2 Diabetes," *Diabetes Spectrum*, Vol. 17, No. 4, 2004, pp. 219-224. [doi:10.2337/diaspect.17.4.219](https://doi.org/10.2337/diaspect.17.4.219)
- [5] K. Bhui, "Culture, Religion and Health Care," *International Journal of Integrated Care*, Vol. 10, 2010, pp. 57-59.
- [6] B. Mak, J. Woo, A. Bowling, F. Wong and C. Hing, "Health Care Prioritization in Ageing Societies: Influence of Age, Education, Health Literacy and Culture," *Health Policy*, Vol. 100, No. 2, 2011, pp. 219-233. [doi:10.1016/j.healthpol.2010.08.015](https://doi.org/10.1016/j.healthpol.2010.08.015)
- [7] M. Kenawi, "Chemical Composition, Nutritional Value, and *in-Vitro* Protein Digestibility of Three Traditional Breakfast Foods in Jordan," *Plant Foods for Human Nutrition*, Vol. 58, No. 3, 2003, pp. 1-6. [doi:10.1023/B:QUAL.0000041177.65248.b4](https://doi.org/10.1023/B:QUAL.0000041177.65248.b4)
- [8] A. Raal, U. Paaver, E. Arak, and A. Orav, "Content and Composition of the Essential Oil of *Thymus serpyllum* L. Growing Wild in Estonia," *Medicina*, Vol. 40, No. 4, 2004, pp. 795-800.
- [9] E. Vigo, A. Cepeda, O. Gualillo and R. Perez-Fernandez, "In-Vitro Anti-Inflammatory Effect of *Eucalyptus globulus* and *Thymus vulgaris*: Nitric Oxide Inhibition in J774A.1 Murine Macrophages," *Journal of Pharmacy and Pharmacology*, Vol. 56, No. 2, 2004, pp. 257-263. [doi:10.1211/0022357022665](https://doi.org/10.1211/0022357022665)
- [10] H. Bawadi and S. Al-Sahawneh, "Developing a Meal-Planning Exchange List for Traditional Dishes in Jordan," *Journal of the American Dietetic Association*, Vol. 108, No. 5, 2007, pp. 840-846. [doi:10.1016/j.jada.2008.02.016](https://doi.org/10.1016/j.jada.2008.02.016)
- [11] J. El-Qudah, "Dietary Intake of Selected Common Vegetable Foods and Their Total Carotenoids Determination," *American Journal of Agricultural and Biological Sciences*, Vol. 3, No. 4, 2008, pp. 729-733. [doi:10.3844/ajabssp.2008.729.733](https://doi.org/10.3844/ajabssp.2008.729.733)
- [12] T. Weinbrenner, M. Fito and R. de la Torre, G. T. Saez, P. Rijken, C. Tormos, S. Coolen, M. F. Albaladejo, S. Abanades, H. Schroder, J. Marrugat and M. I. Covas, "Olive Oils High in Phenolic Compounds Modulate Oxidative/Antioxidative Status in Men," *Journal of Nutrition*, Vol. 134, No. 9, 2004, pp. 2314-2321.
- [13] I. Leonauser, S. Dorandt, S. Willmund and J. Honsel, "The Benefit of the Mediterranean Diet," *European Jour-*

- nal of Nutrition*, Vol. 43, No. 1, 2004, pp. i31-i38.
- [14] E. Medina, A. de Castro, C. Romero and M. Brenes, "Comparison of the Concentrations of Phenolic Compounds in Olive Oils and Other Plant Oils: Correlation with Antimicrobial Activity," *Journal of Agricultural and Food Chemistry*, Vol. 54, No. 14, 2006, pp. 4954-4961. doi:10.1021/jf0602267
- [15] V. Solfrizzi, F. Panza, F. Torres, F. Mastroianni, A. Del Parigi, A. Venezia and A. Capurso, "High Monounsaturated Fatty Acids Intake Protects against Age-Related Cognitive Decline," *Neurology*, Vol. 52, No. 8, 1999, pp. 1563-1569. doi:10.1212/WNL.52.8.1563
- [16] H. Tanaka, K. Taira, M. Arakawa, C. Urasaki, Y. Yamamoto, H. Okuma, E. Uezu, Y. Sugita and S. Shirakawa, "Short Naps and Exercise Improve Sleep Quality and Mental Health in the Elderly," *Psychiatry and Clinical Neurosciences*, Vol. 56, No. 3, 2002, pp. 233-234. doi:10.1046/j.1440-1819.2002.00995.x
- [17] M. Takahashi, H. Fukuda and H. Arito, "Brief Naps during Post-Lunch Rest: Effects on Alertness, Performance, and Autonomic Balance," *European Journal of Applied Physiology and Occupational Physiology*, Vol. 78, No. 2, 1998, pp. 93-98. doi:10.1007/s004210050392
- [18] C. Emmanuel, H. Jan and G. Jean-Paul, "Medical Therapy for Gastroesophageal Reflux Disease," *Current Opinion in Gastroenterology*, Vol. 23, No. 4, 2007, pp. 434-439.
- [19] Jordan Tourism Board, 2010. <http://na2.visitjordan.com/visitjordan-na/Default.aspx?tabid=808>.
- [20] E. Scott and K. Vanick, "A Survey of Hand Hygiene Practices on a Residential College Campus," *American Journal of Infection Control*, Vol. 35, No. 10, 2007, pp. 694-696. doi:10.1016/j.ajic.2007.01.009
- [21] D. H. Tambekar, S. D. Shirsat S. R. Kakde and A. Ambekar, "Hand Hygiene and Health: An Epidemiological Study of Students in Amravati," *African Journal of Infectious Diseases*, Vol. 3, No. 1, 2009, pp. 26-30.
- [22] J. Barker, D. Stevens and S. F. Bloomfield, "Spread and Prevention of Some Common Viral Infections in Community Facilities and Domestic Homes," *Journal of Applied Microbiology*, Vol. 91, No. 1, 2001, pp. 7-21. doi:10.1046/j.1365-2672.2001.01364.x
- [23] A. M. Nuutila, R. Puupponen-Pimiä, M. Aarni and K. M. Oksman-Caldentey, "Comparison of Antioxidant Activities of Onion and Garlic Extracts by Inhibition of Lipid Peroxidation and Radical Scavenging Activity," *Food Chemistry*, Vol. 81, No. 4, 2003, pp. 485-493. doi:10.1016/S0308-8146(02)00476-4
- [24] K. Yamada, A. Naemura, N. Sawashita, Y. Noguchi and J. Yamamoto, "An Onion Variety Has Natural Antithrombotic Effect as Assessed by Thrombosis/Thrombolysis Models in Rodents," *Thrombosis Research*, Vol. 114, No. 3, 2004, pp. 213-220. doi:10.1016/j.thromres.2004.06.007
- [25] C. G. Sheela, K. Kumud and K. T. Augusti, "Anti-Diabetic Effects of Onion and Garlic Sulfoxide Amino Acids in Rats," *Planta Medica*, Vol. 61, No. 4, 1995, pp. 356-357. doi:10.1055/s-2006-958099
- [26] U. Kalus, G. Pindur, F. Jung, B. Mayer, H. Radtke, K. Bachmann, C. Mrowietz, J. Koscielny and H. Kiesewetter, "Influence of the Onion as an Essential Ingredient of the Mediterranean Diet on Arterial Blood Pressure and Blood Fluidity," *Arzneimittel-Forschung/Drug Research*, Vol. 50, No. 9, 2000, pp. 795-801.
- [27] E. M. Matheson, A. G. Mainous and M. A. Carnemolla, "The Association between Onion Consumption and Bone Density in Perimenopausal and Postmenopausal Non-Hispanic White Women 50 Years and Older," *Menopause*, Vol. 16, No. 4, 2009, pp. 756-759. doi:10.1097/gme.0b013e31819581a5
- [28] G. Joachim, "The Influence of Time on Dietary Data: Differences in Reported Summer and Winter Food Consumption," *Nutrition Health*, Vol. 12, No. 1, 1997, pp. 33-43. doi:10.1177/026010609701200104
- [29] D. R. Shahar, N. Yerushalmi, F. Lubin, P. Froom, A. Shahar and E. Kristal-Boneh, "Seasonal Variations in Dietary Intake Affect the Consistency of Dietary Assessment," *European Journal of Epidemiology*, Vol. 17, No. 2, 2001, pp. 29-33. doi:10.1023/A:1017542928978
- [30] D. C. Mitchell, R. Frank, T. J. Hartman and J. M. Curran, "Consumption of Dry Beans, Peas, and Lentils Could Improve Diet Quality in the US Population," *Journal of the American Dietetic Association*, Vol. 109, No. 5, 2009, pp. 909-913. doi:10.1016/j.jada.2009.02.029
- [31] D. Thavarajah, P. Thavarajah A. Sarker and A. Vandenberg, "Lentils (*Lens Culinaris Medikus* Subspecies *Culinaris*): A Whole Food for Increased Iron and Zinc Intake," *Journal of Agricultural and Food Chemistry*, Vol. 57, No. 12, 2009, pp. 5413-5419. doi:10.1021/jf900786e
- [32] E. M. Glaser, "The Effects of Cooling and of Various Means of Warming on the Skin and Body Temperature of Men," *Journal of Physiology*, Vol. 109, No. 3-4, 1949, pp. 66-379.
- [33] L. Barros, A. M. Carvalho and I. C. Ferreira, "Leaves, Flowers, Immature Fruits and Leafy Flowered Stems of *Malva Sylvestris*: A Comparative Study of the Nutraceutical Potential and Composition," *Food and Chemical Toxicology*, Vol. 48, No. 6, 2010, pp. 1466-1472. doi:10.1016/j.fct.2010.03.012
- [34] K. Abak and A. Düzenli, "Use of Some Wild Plants as Vegetables in Turkey," *Acta Horticulturae*, Vol. 242, 1989, pp. 107-114.
- [35] M. Abdullah and A. Amr, "A Study of Some Chemical and Physical Changes in Soybean Oil and Palmolein during Falafel Frying," Thesis in University of Jordan, Amman, 1999.
- [36] WHO (World Health Organization), MOH (Ministry of Health) and MOA (Ministry of Agriculture), "Nutrition in Jordan: A Review of the Current Nutritional Trends and Major Strategic Directions of the National Food and Nutrition Policy," WHO, Amman, 2006.
- [37] A. Mustapha, I. A. Yakasai and I. A. Aguye, "Effect of *Tamarindus indica* L. on the Bioavailability of Aspirin in Healthy Human Volunteers," *European Journal of Drug Metabolism and Pharmacokinetics*, Vol. 21, No. 3, 1996, pp. 223-226. doi:10.1007/BF03189717