



American University of Beirut
Faculty of Agricultural and Food Sciences

Healthy Earth, Healthy Food, Healthy People



Public Health Nutrition Research in the Middle East & Lebanon

Nahla Hwalla, PhD, RD, FAND

June 16, 2016

Who Are We?



Who Are We?



OUTLINE

- Nutrition related **NCDs** in the Middle East?
- **Determinants of NCDs** in the Middle East?
- **Effectiveness of nutrition intervention** in Lebanon?
- How spread is **malnutrition** in the Middle East?
- Why is **food insecurity** high in the Middle East, and **how is AUB tackling it?**
- What is **AUB's contribution** to PHN research?
- The **Way Forward**
- What are the **gaps, challenges and opportunities** for PHN research in the Middle East?



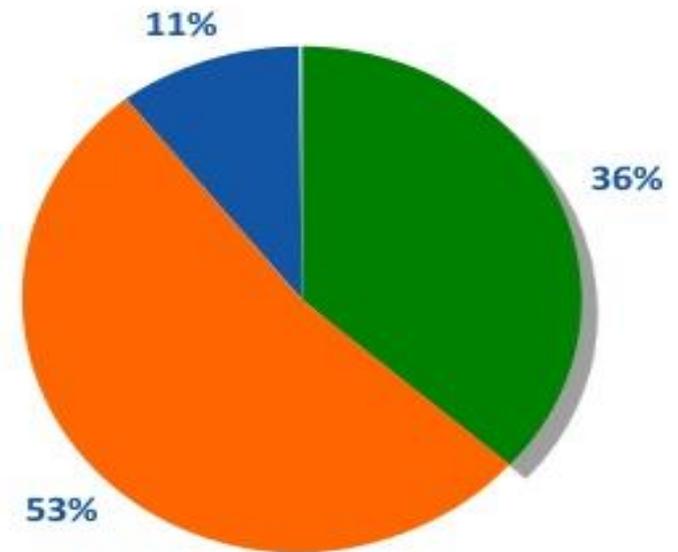
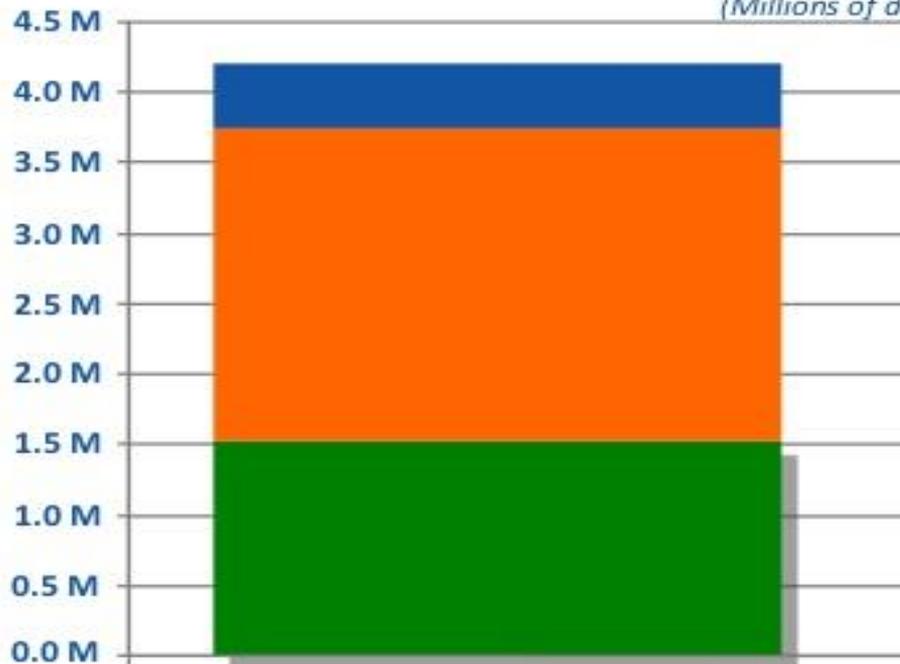
How spread are NCDs in the Middle East?



NCDs account for >50% of total deaths in EMR

Deaths in the Eastern Mediterranean Region

(Millions of deaths in 2008)

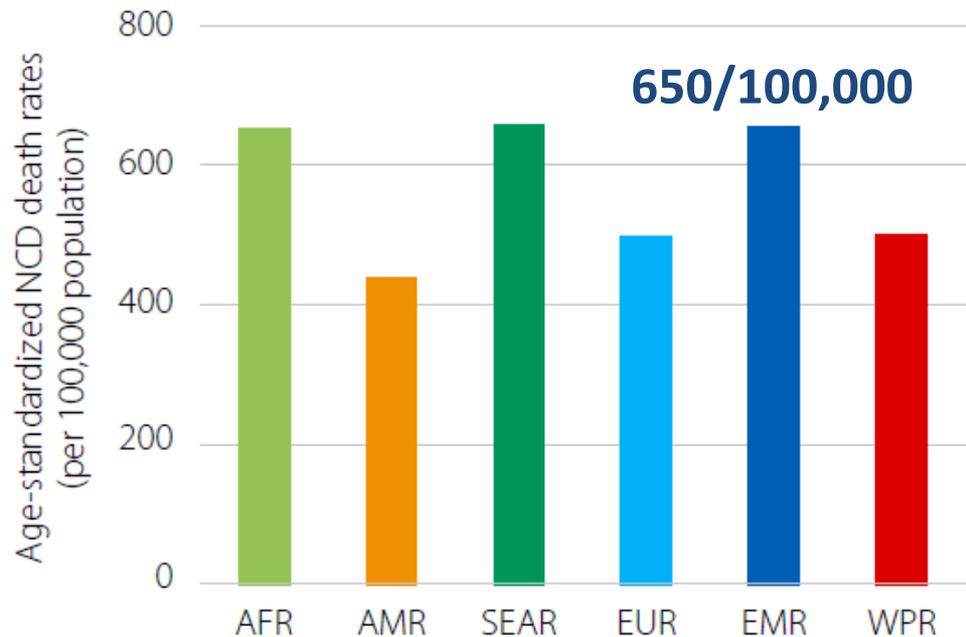


■ Communicable, maternal, perinatal and nutritional conditions ■ NCDs ■ Injuries



High NCD death rates in EMR

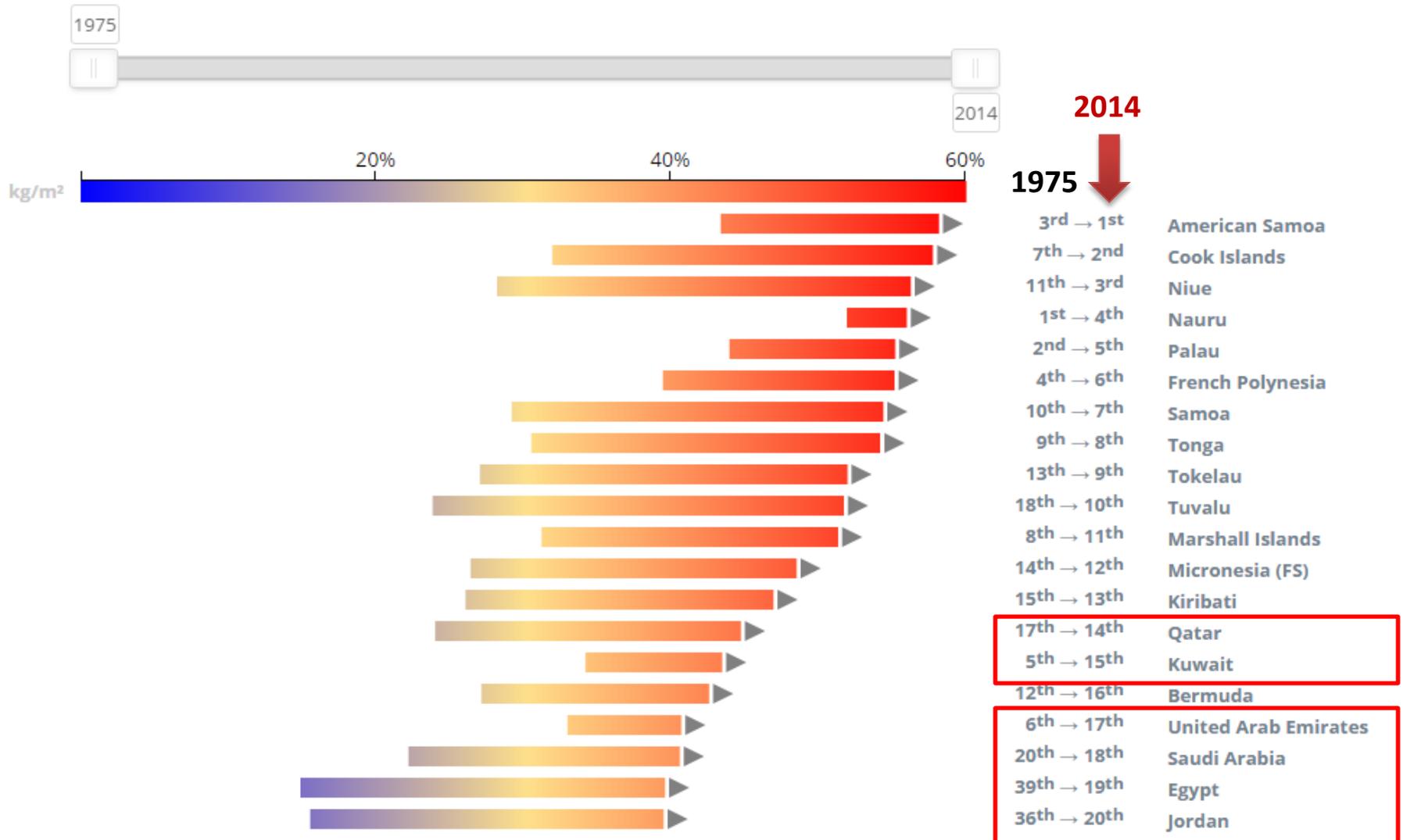
Fig. 1.2 Age-standardized NCD death rates (per 100 000 population), all ages, by WHO region, comparable estimates, 2012 (1)



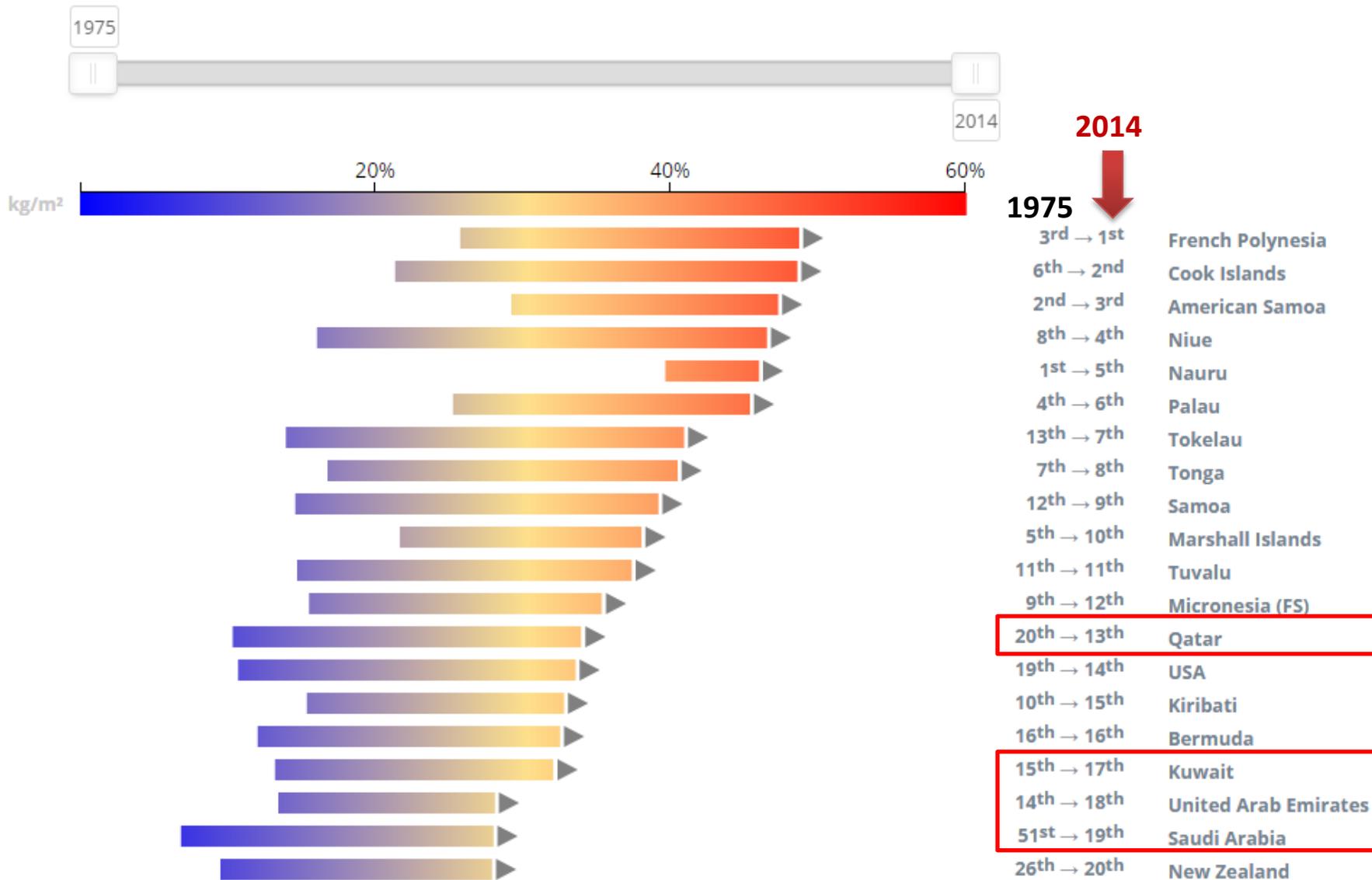
- Similar to Africa & South East Asia
- Higher than America, Europe & West Pacific



6 Middle Eastern countries in the top 20 for highest obesity among women (2014)



4 Middle Eastern countries in the top 20 for highest obesity among men (2014)



3 MENA countries in the top 10 diabetes worldwide

Table 2.1 Top 10 countries/territories for prevalence* (%) of diabetes (20-79 years), 2013 and 2035

COUNTRY/ TERRITORY	2013 (%)	COUNTRY/ TERRITORY	2035 (%)
Tokelau	37.5	Tokelau	37.9
Federated States of Micronesia	35.0	Federated States of Micronesia	35.1
Marshall Islands	34.9	Marshall Islands	35.0
Kiribati	28.8	Kiribati	28.9
Cook Islands	25.7	Cook Islands	25.7
Vanuatu	24.0	Saudi Arabia	24.5
Saudi Arabia	24.0	Vanuatu	24.2
Nauru	23.3	Nauru	23.3
Kuwait	23.1	Kuwait	23.2
Qatar	22.9	Qatar	22.8

**3 countries –*KSA, Kuwait & Qatar*–
are expected to remain in the top 10 in 2035**



CVD risk factors among adults in ME

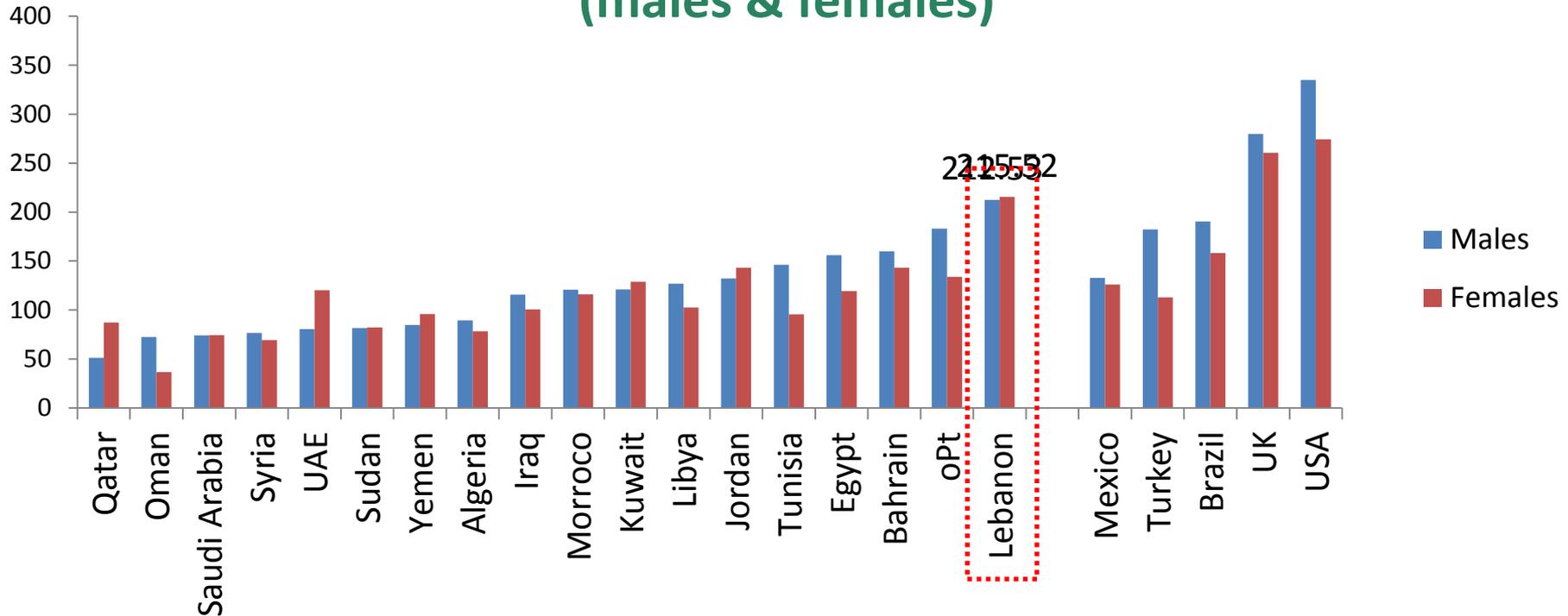
Country	Age (yrs)	High Cholesterol %	Hypertension %	High TG %	Low HDL %	MetS %
Bahrain	≥20	-	42.1	-	-	-
Egypt	≥25	24.2	26.3	-	-	-
Iran	≥19	-	36.25	46.6	48.9	23.3
Iraq	≥20	37.5	19.3	41.6	49.9	-
Jordan	≥18	23.1	30.2	43.6	62.9	36.3
Lebanon	18-65	36.9	31.2	35.3	49.3	25.4
Oman	≥20	50.6	21.5	18.7	75.4	21.0
UAE	≥20	-	20.8	-	-	39.6
Qatar	> 20		32.1			33.7
KSA	30-70	54	26.1	40.3	78.4	39.3
USA	≥20	13	24	24.3	30	23

- **MetS (%)** lowest in **Oman, Iran & Lebanon**
- **High TG & Low HDL (%)** = **most frequent components of MetS**

→ ethnic predisposition towards this type of dyslipidemia in the region



Cancer Incidence in MENA Region / 100,000 (males & females)



- **Lebanon: highest rates in MENA**, comparable to some developing countries
- Most common types: **lung cancers** (men) & **breast cancers** (women)
- ½ of cancers occur at **<55 yrs**, ~**10-20 yrs earlier** than in industrialized countries (notably breast cancer)
- Higher case-fatality rates (**70%**) in Arab countries vs. other regions (40-55%) due to **late diagnosis and inadequate access to health care**
- **Burden of cancer in MENA expected to rise** with progressively westernized lifestyles in several LMIC

WHO, 2009

WHO, 2010

Najjar & Easson, 2010

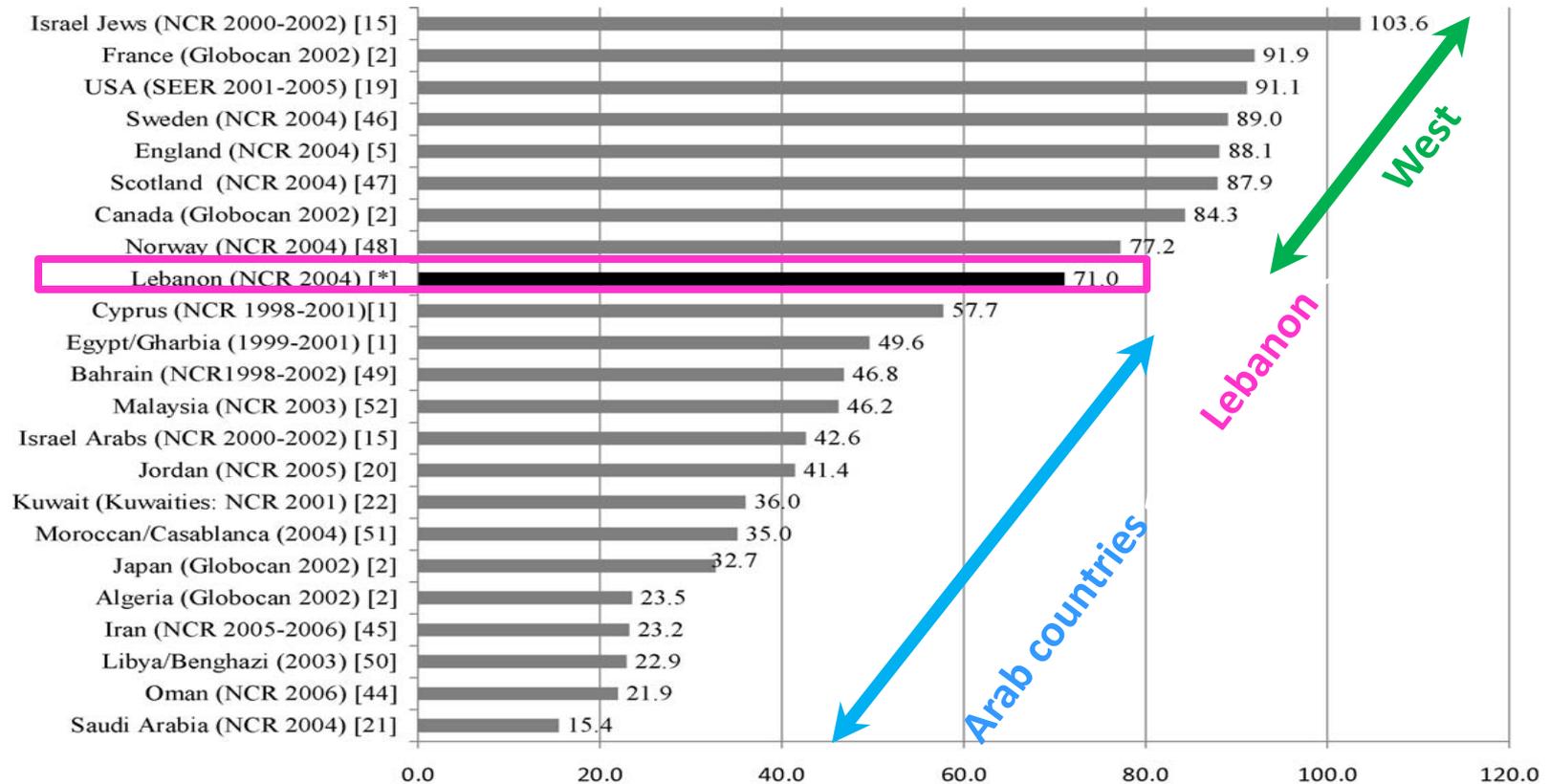
Lakkis et al., 2010

Abdul Rahim et al., 2014



BC incidence rates: Lebanon vs. West

Age-standardized incidence rate (/100,000) for BC in Lebanese females compared to other countries



Reference numbers are between square brackets []

[*] Source: Lebanese Ministry of Public Health - Epidemiological Surveillance Program - National Cancer Registry. May 2009

Lebanon: wide adoption of screening programs & better awareness of BC and its early signs → early diagnosis

Mission

Improving the health of the population in the Middle East through **NUTRITION**



STRATEGY

NCD Prevention & Management
through **Nutrition**



Research Focus

Community & PHN

- Generated periodic **databases** on **obesity** (1997 & 2009)
- Determined **NCDs risk factors** (**diet, obesity, MetS**)
- Studied **diet & NCDs**
- Examined **food & nutrition security**
- **Effectiveness of nutrition intervention**

Clinical

- Tested **high protein diet and obesity** (1989)
- Diet & **appetite hormones**
- Diet & **MetS**



2003

Prevalence and Covariates of Obesity in Lebanon: Findings from the First Epidemiological Study

Abla Mehio Sibai, Nahla Hwalla,† Nada Adra,† and Boushra Rahal**

OBESITY RESEARCH Vol. 11 No. 11 November 2003 1353

**1st nutritional
database - 1997**





2012

Nasreddine *et al.* *BMC Public Health* 2012, **12**:798
<http://www.biomedcentral.com/1471-2458/12/798>



RESEARCH ARTICLE

Open Access

Trends in overweight and obesity in Lebanon:
evidence from two national cross-sectional
surveys (1997 and 2009)

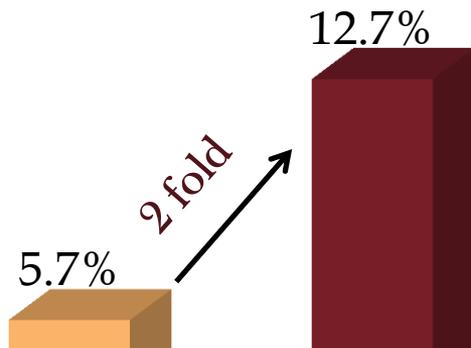
Lara Nasreddine^{1†}, Farah Naja^{1†}, Marie Claire Chamieh¹, Nada Adnan¹, Abla-Mehio Sibai^{2*} and Nahla Hwalla^{1*}

1st and 2nd
nutritional databases

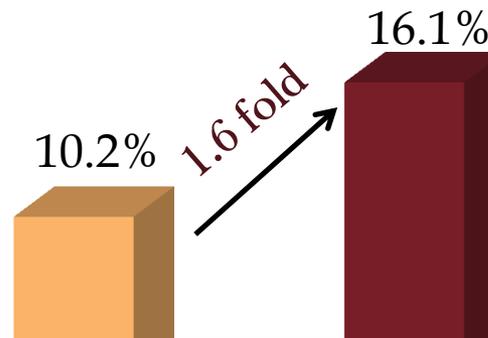


Increasing trend in obesity rates (%) in all age groups 1997 vs. 2009

Adolescents (10-19 yrs)

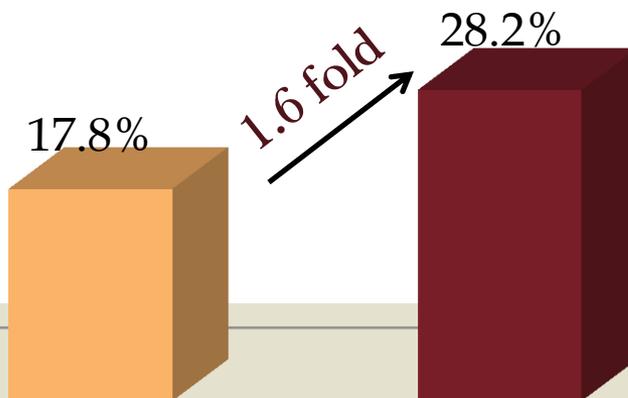


Children (6-9 yrs)



**In 20 years, obesity rates in USA doubled
among children & adolescents**

Adults (≥ 20 yrs)



Obesity 1997
Obesity 2009



(Determinants)

Nutrients **2014**, *6*, 1038-1062; doi:10.3390/nu6031038

OPEN ACCESS

nutrients

ISSN 2072-6643

www.mdpi.com/journal/nutrients

Article

Dietary, Lifestyle and Socio-Economic Correlates of Overweight, Obesity and Central Adiposity in Lebanese Children and Adolescents

Lara Nasreddine^{1,†,‡}, Farah Naja^{1,†,‡}, Christelle Akl¹, Marie Claire Chamieh¹, Sabine Karam¹, Abla-Mehio Sibai^{2,‡,*} and Nahla Hwalla^{1,‡,*}

Chamieh et al. *BMC Public Health* (2015) 15:279
DOI 10.1186/s12889-015-1605-9



RESEARCH ARTICLE

Open Access

Diet, physical activity and socio-economic disparities of obesity in Lebanese adults: findings from a national study

Marie Claire Chamieh¹, Helen J Moore², Carolyn Summerbell², Hani Tamim³, Abla Mehio Sibai^{4*} and Nahla Hwalla^{1*}



2014

2015

Findings:

Correlates of obesity in the Lebanese population

	Children & Adolescents (6-9 yrs)	Adults (≥20 yrs)
↑ Obesity	<ul style="list-style-type: none"> • Male gender • Maternal employment • Urban/capital residence • Sedentary time • ↑ intake of fast food & SSBs 	<ul style="list-style-type: none"> • ↑ energy intake • Age (30-60 yrs) • Family history • Marriage (males) • Low education
↓ Obesity	<ul style="list-style-type: none"> • Regular breakfast consumption • ↑ intake of milk/dairies & added fats/oils 	<ul style="list-style-type: none"> • ↑ SES (females) • Moderate-high physical activity (females) • Eating 3 regular meals/day (males)

→ Need for **culture-specific intervention strategies** for promotion of physical activity, healthy lifestyle & dietary practices

2008

CVD Prevention and Control (2008) 3, 83–90



ELSEVIER



www.elsevier.com/locate/precon

Prevalence and correlates of metabolic syndrome in an adult Lebanese population

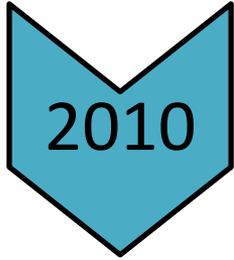
Abla-Mehio Sibai ^a, Omar Obeid ^b, Malek Batal ^b, Nada Adra ^b,
Dalia El Khoury ^b, Nahla Hwalla ^{b,*}

^a *Department of Epidemiology and Population Health, Faculty of Health Sciences,
American University of Beirut, Lebanon*

^b *Department of Nutrition and Food Science, Faculty of Agricultural and Food Sciences,
American University of Beirut, P.O. Box 11-0236, Riad El Solh, Beirut, Lebanon*

Received 25 January 2007; revised 15 May 2007; accepted 8 June 2007

Available online 6 August 2007



Metabolic Syndrome and Insulin Resistance in Obese Prepubertal Children in Lebanon: A Primary Health Concern

L. Nasreddine^a K. Ouaijan^a M. Mansour^a N. Adra^a D. Sinno^b N. Hwalla^a

^aDepartment of Nutrition and Food Science, Faculty of Agriculture and Food Sciences, American University of Beirut, and ^bDepartment of Pediatrics and Adolescent Medicine, American University of Beirut Medical Center, Beirut, Lebanon



Annals of Human Biology, March–April 2012; 39(2): 122–128
Copyright © Informa UK, Ltd.
ISSN 0301-4460 print/ISSN 1464-5033 online
DOI: [10.3109/03014460.2012.655776](https://doi.org/10.3109/03014460.2012.655776)

informa
healthcare

RESEARCH PAPER

Obesity is associated with insulin resistance and components of the metabolic syndrome in Lebanese adolescents

Lara Nasreddine^{1,*}, Farah Naja^{1,*}, Maya Tabet¹, Mohammad-Zuheir Habbal², Aida El-Aily¹, Chrystel Haikal¹, Samira Sidani¹, Nada Adra¹ & Nahla Hwalla¹

¹Department of Nutrition and Food Science, Faculty of Agricultural and Food Sciences, and ²Department of Pathology and Laboratory Medicine, Faculty of Medicine, American University of Beirut, Lebanon

Investigate further Diet & NCDs:

- **Nutrition Transition**
- **Dietary patterns**



Nutrition Transition in the Middle East paralleled by increased prevalence of NCDs

↓ physical activity

Nutrition Transition

- Economic growth
- Modernization
- Globalization of trade and marketing
- Rapid urbanization



High in:
F&V, legumes, whole grains, dairy, nuts and seeds



High in:
Processed foods, sugars, fats, alcohol, animal products, SFA, trans FA
Low in:
Milk, F&V

High prevalence of NCDs

Changes in food supply and intake



2010

Annals of
**Nutrition &
Metabolism**

Review

Ann Nutr Metab 2010;57:193–203
DOI: [10.1159/000321527](https://doi.org/10.1159/000321527)

Received: October 19, 2009
Accepted after revision: September 10, 2010
Published online: November 18, 2010

Nutrition Transition and Cardiovascular Disease Risk Factors in Middle East and North Africa Countries: Reviewing the Evidence

Abla Mehio Sibai^a Lara Nasreddine^b Ali H. Mokdad^c Nada Adra^b
Maya Tabet^b Nahla Hwalla^b

CVD risk factors paralleled change in lifestyle and a shift from traditional food habits

Trends in dietary pattern:

- consistent ↑ in total energy supply by ~730 kcal/capita/day (1970-2005)
- ↑ intake of fat and animal protein
- ↓ intake of CHO (whole grain cereals, fruits and veg.)

Dietary Patterns & NCD Risk Factors

2011

Public Health Nutrition: 14(9), 1570–1578

doi:10.1017/S136898001100070X

Dietary patterns and their association with obesity and sociodemographic factors in a national sample of Lebanese adults

2012

Naja et al. *Nutrition & Metabolism* 2012, 9:111
<http://www.nutritionandmetabolism.com/content/9/1/111>



Nutrition & Metabolism

RESEARCH

Open Access

Dietary patterns and odds of Type 2 diabetes in Beirut, Lebanon: a case–control study

2013

Eur J Nutr (2013) 52:97–105
DOI 10.1007/s00394-011-0291-3

ORIGINAL CONTRIBUTION

Association between dietary patterns and the risk of metabolic syndrome among Lebanese adults

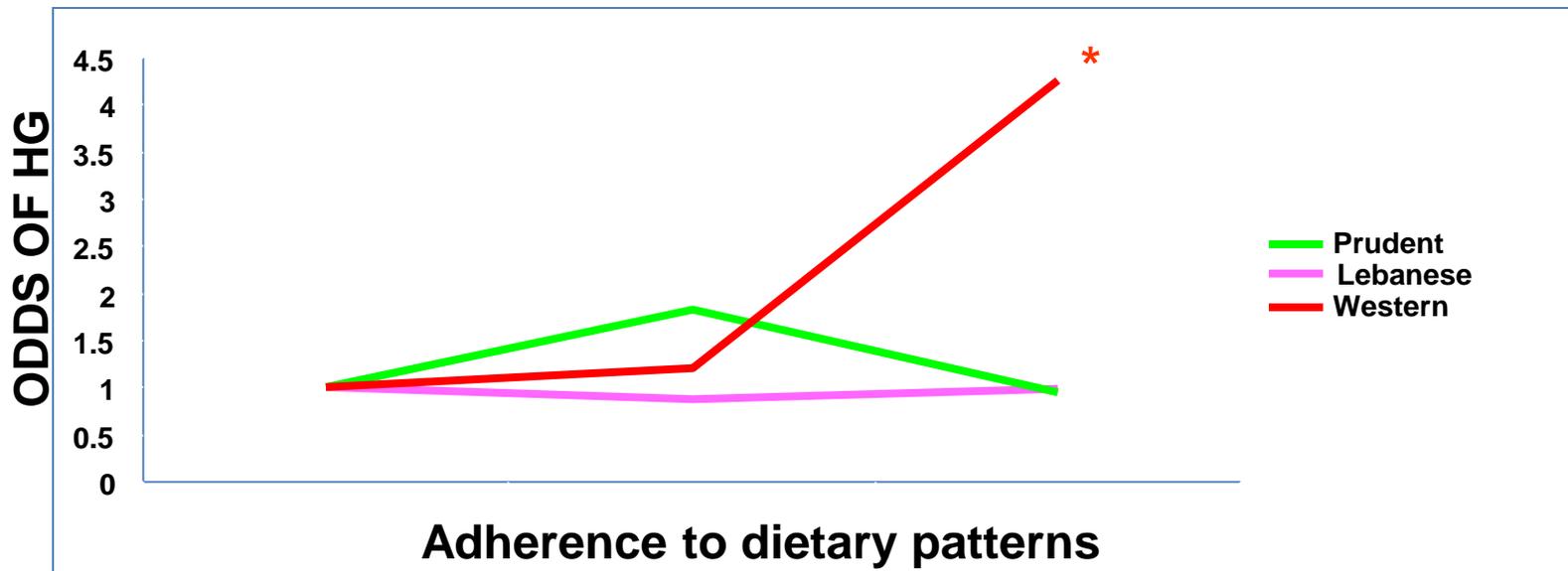
2014

DIETARY PATTERNS in CARDIOVASCULAR DISEASES PREVENTION and MANAGEMENT
Review of the Evidence and Recommendations for Primary Care Physicians in Lebanon

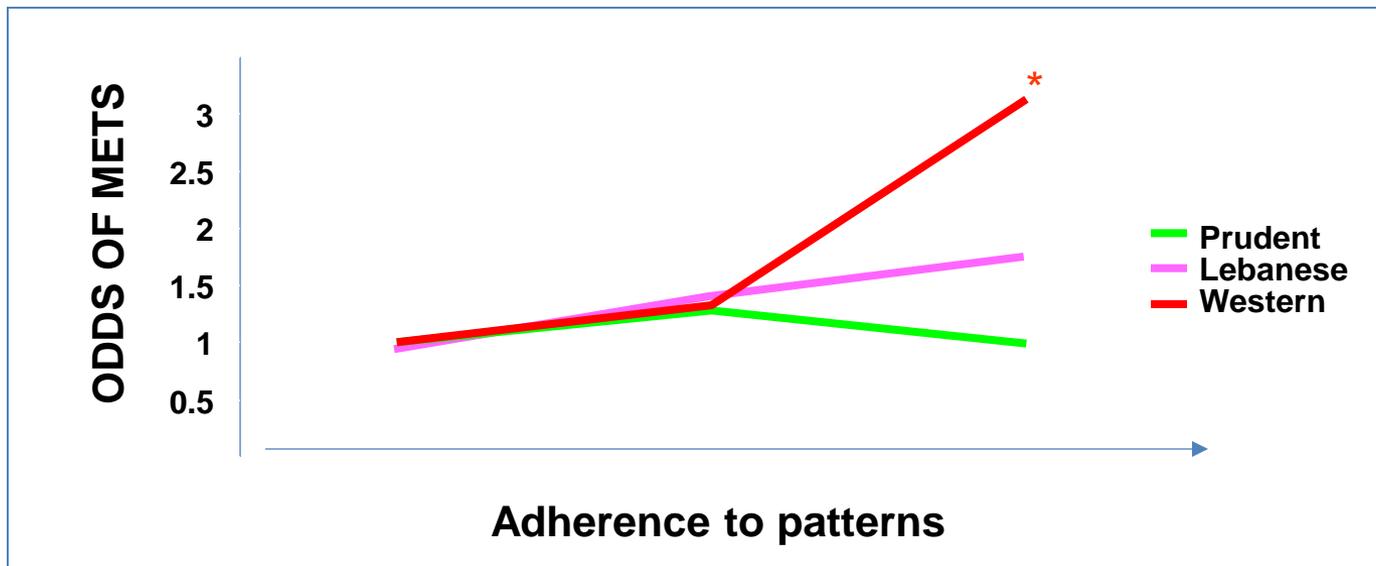
<http://www.lebanesemedicaljournal.org/articles/62-2/review5.pdf>



Western pattern Positively Associated with Hyperglycemia in Lebanon



Western Pattern Positively Associated with MetS in Lebanon



Western pattern associated with MetS among Lebanese adults



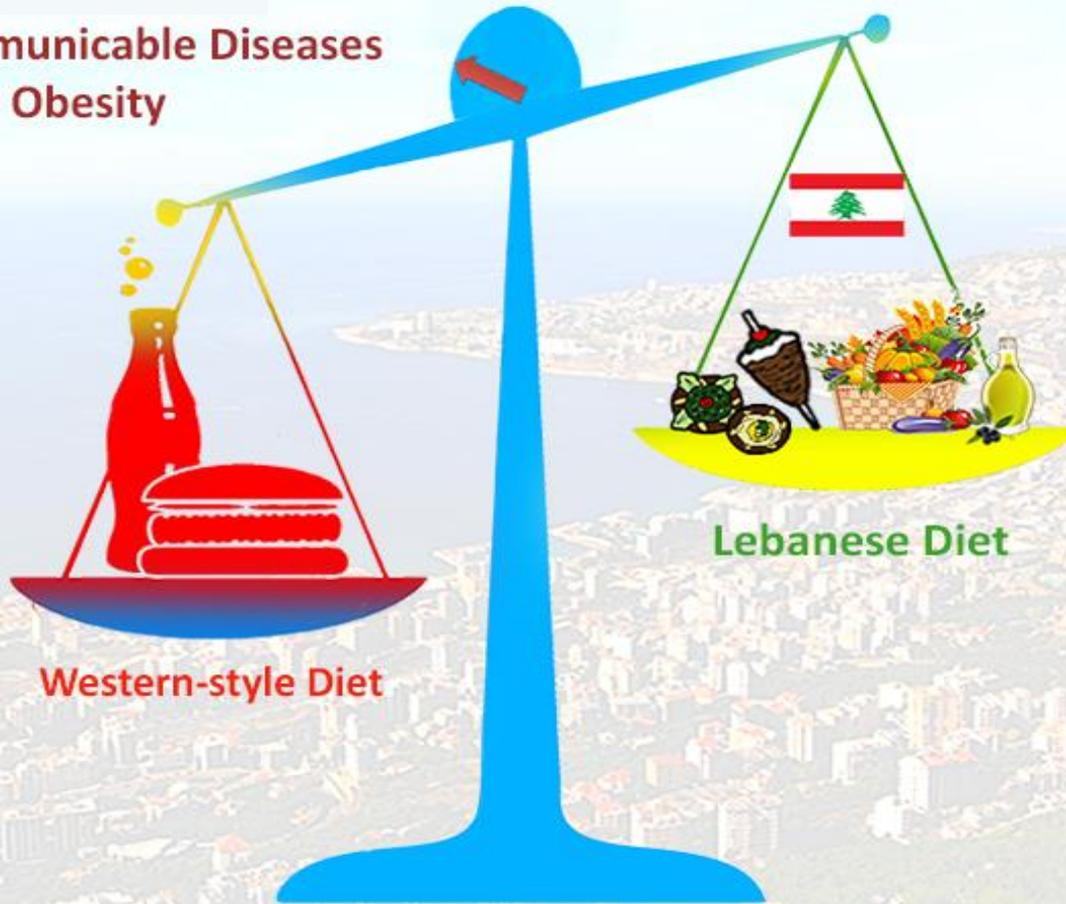
Western pattern Associated with High Odds of T2D in Lebanon

- **Refined Grains & Desserts (Western) pattern**
→  odds of T2D by more than 3 folds (*OR: 3.85*)
- **Fast Food pattern** →  odds of T2D by 2 folds (*OR: 2.80*)
- **Traditional Lebanese pattern** →  odds of T2D (*OR: 0.46*)



The Traditional Lebanese Diet seems to be protective against nutrition-related diseases

Non-Communicable Diseases
Obesity



Lebanese Diet

Western-style Diet



What is the effectiveness of nutrition intervention on children and adolescents in Lebanon?



More recently...Interventional Research

Habib-Mourad et al. *BMC Public Health* 2014, **14**:940
<http://www.biomedcentral.com/1471-2458/14/940>



RESEARCH ARTICLE

Open Access

Promoting healthy eating and physical activity among school children: findings from Health-E-PALS, the first pilot intervention from Lebanon

Carla Habib-Mourad^{1*}, Lilian A Ghandour³, Helen J Moore², Maya Nabhani-Zeidan¹, Kassim Adetayo², Nahla Hwalla¹ and Carolyn Summerbell²

Education and Health

Vol.32 No.1, 2014

Carla Habib-Mourad, Helen Moore, Maya Nabhani Zeidan, Nahla Hwalla and Carolyn Summerbell

Health-E-PALS: promoting Healthy Eating and Physical Activity in Lebanese school children - Intervention development



Major Findings: post-intervention

- **↑** in students' nutritional knowledge and self-efficacy
- **↓** in purchase and consumption of energy-dense snacks and beverages (potato chips & sweetened drinks)



From Research to Policy

The Ministry of Education & Higher Education- Lebanon has recently issued a **LAW restricting the sale of energy-dense foods in school shops**

✓ Transferability of intervention to UAE



How spread is malnutrition in the Middle East?



The Global Burden of Malnutrition

Traditional Diet



Nutrition Transition



Western Diet

Category A: Child stunting

Category B: Child micronutrient deficiencies

Africa: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Democratic Republic of the Congo, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger,

Africa: Algeria, Morocco

Asia: Brunei Darussalam, China, Kyrgyzstan, Malaysia, Sri Lanka, Thailand, Uzbekistan

Europe: Estonia, Romania

Malnutrition Category

MENA Countries

Child Stunting (A)

Yemen

Child Micronutrient Deficiencies (B)

Algeria, Morocco

Adult Obesity (C)

-

(BC) **double burden**
(most MENA countries)

Tunisia, Iran, Jordan, Kuwait, Lebanon, Oman, KSA, Turkey
UAE

(ABC) **triple burden**

Egypt, Libya, Iraq, Syria

Asia: Cyprus, Israel

Europe: Andorra, Czech Republic, Germany, Hungary, Iceland, Ireland, Portugal, Luxembourg, Malta, Slovenia, Spain, United Kingdom

Northern America: Canada, United States of America

Oceania: Australia, New Zealand

Category C: Adult obesity

Malnutrition category:

Stunting and micronutrient deficiencies (AB)

Stunting, micronutrient deficiencies and obesity (ABC)

Micronutrient deficiencies (B)

Obesity (C)

Micronutrient deficiencies and obesity (BC)



Is food insecurity high in the Middle East?

How is AUB tackling it?



AUB Tackling Food Security

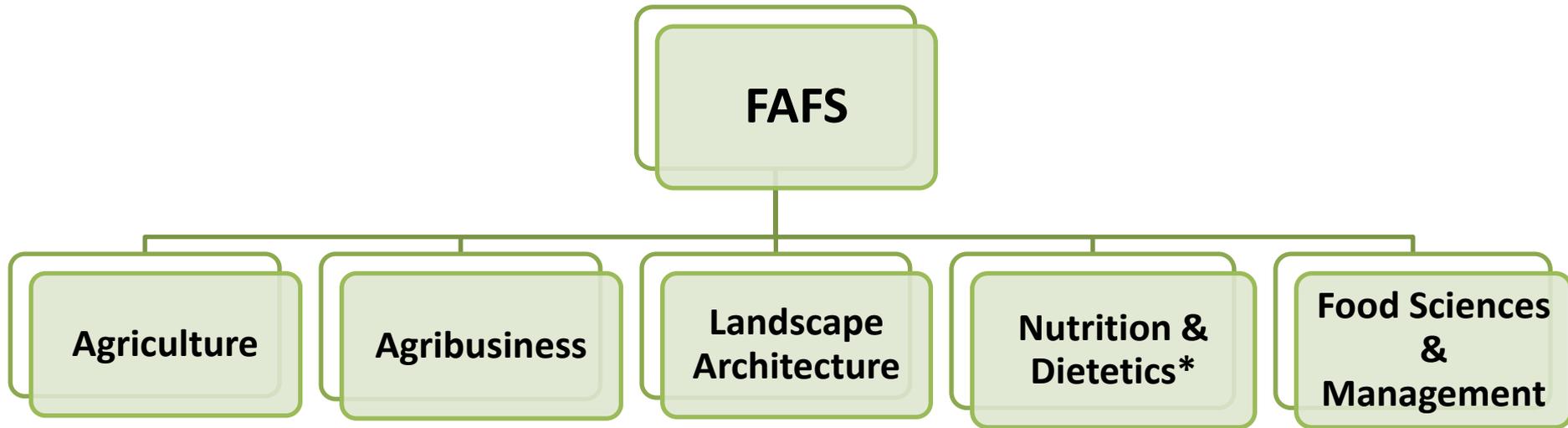
Research

Community

Academic Programs
Capacity Building



Faculty of Agricultural & Food Sciences Organizational Chart



*Nutrition and Dietetics; both Coordinated Program and Didactic program





GREENLINE



REGIONAL CONFERENCE ON FOOD SECURITY IN THE MIDDLE EAST AND NORTH AFRICA 2011

THE ROLE OF ACADEMIC
AND RESEARCH INSTITUTIONS

Recommended an interdisciplinary degree to build capacity and enhance knowledge in food security

The Food Security Program (FSP) is the first of its kind in MENA, focusing on capacity building to help promote food security in the region through education, research, dissemination, community-based action and professional practice.



GREENLINE

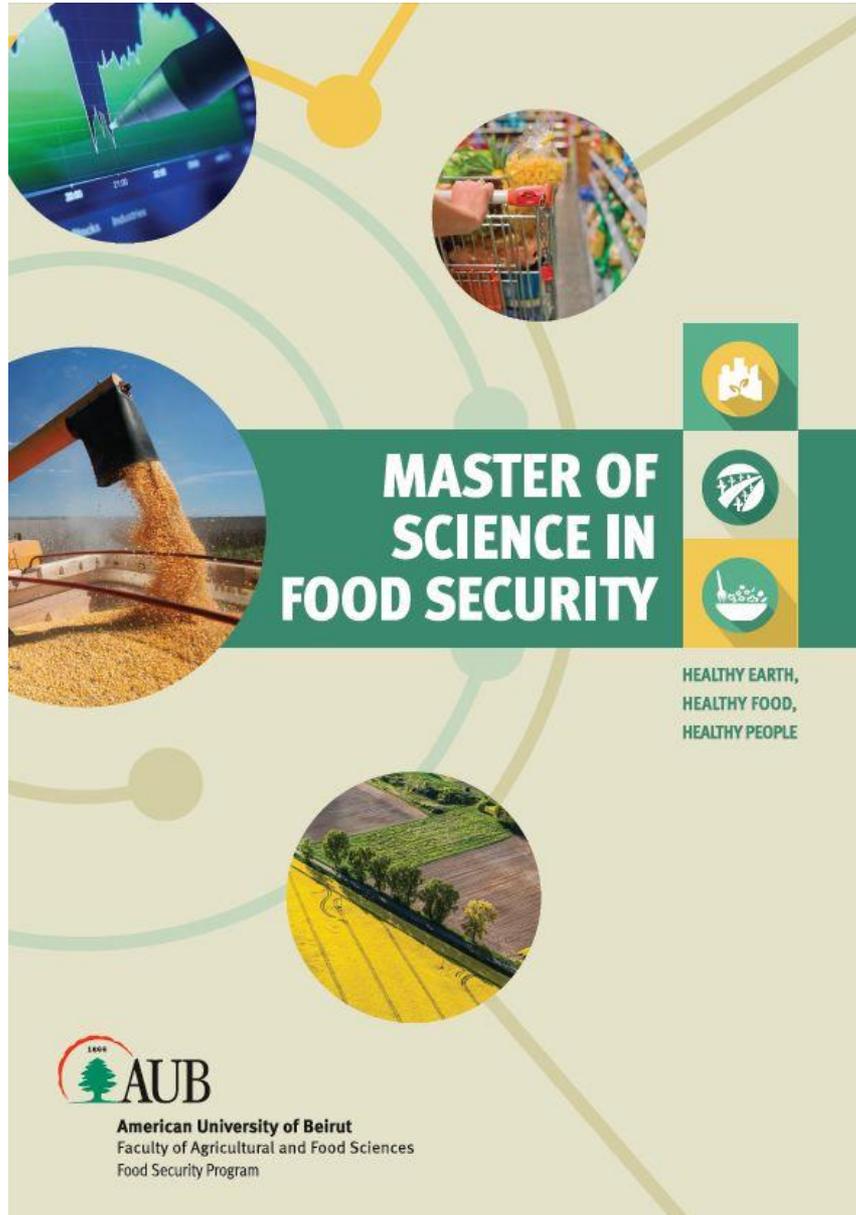


FSP at AUB

- New generation of researchers, scholars, and technocrats
- Graduate and post-graduate degrees in food security
- Topics: sustainable agriculture, food diplomacy, the “commodification” of food, food justice and poverty, indigenous food systems, action planning and policy design, health and socio-cultural aspects of food security



FSP will achieve a more inclusive regional strategy and aims to become a locally-led leading think-tank and an internationally recognized Center of Excellence on Food Security in the region.



MASTER OF SCIENCE IN FOOD SECURITY



HEALTHY EARTH,
HEALTHY FOOD,
HEALTHY PEOPLE



American University of Beirut
Faculty of Agricultural and Food Sciences
Food Security Program



Ongoing research projects target all dimensions of food security

Faculty Research Topics	Dimension of Food Security			
	Availability	Access	Utilization	Stability
Animal Adaptation to Water Stress	X			X
Community Vulnerability, Adaptation, Resilience to Climate Change		X		X
Conservation Agriculture / No-Till Strategies	X			
Control Measures to Limit Resistant Bacteria in Processed Foods			X	
Control of Plant Pathogen Outbreak Due to Climate Variability	X			X
Crop Varieties Resistant to Virus, Fungus, Nematodes, Heat, Drought	X			X
Effect of Food Prices on Household Food Security		X		
Factors Influencing Farmers' Decisions about Technology Adoption	X			
Fortification of Bread with Calcium and Iron			X	
Impact of Climate Variability on Agriculture Production in MENA	X			X
Intensive and Sustainable Livestock Systems	X			
Interaction of Micronutrients & Risk of Non-Communicable Disease			X	
Microalgae for Pest Management, Food, and Feed Systems	X			
Microbial Surveillance Systems of Slaughterhouses			X	
Anti-Microbial Elements in Food Packaging to Extend Shelf Life	X			
Political Economy as a Determinant of Access to Land		X		
Strategies for Environmentally Sound Integrated Pest Management	X			
Surface and Groundwater Availability and Crop-Water Demand under Current and Climate Variability Scenarios	X			X
	Agriculture	Agribusiness	Nutrition & Food Sciences	Agriculture



Short Communication

Validity and reliability of the Arabic version of the Household Food Insecurity Access Scale in rural Lebanon

Farah Naja, Nahla Hwalla, Talar Fossian, Dina Zebian and Lara Nasreddine*

Department of Nutrition and Food Sciences (WHO Collaborating Center for Research, Training and Outreach in Food and Nutrition), Faculty of Agricultural and Food Sciences, American University of Beirut, PO Box 11-0236, Riad El-Solh, Beirut 1107-2020, Lebanon

Submitted 4 June 2013: Final revision received 18 November 2013: Accepted 13 February 2014



The Journal of Nutrition. First published ahead of print March 5, 2014 as doi: 10.3945/jn.113.187112.

The Journal of Nutrition
Community and International Nutrition



Development and Validation of an Arab Family Food Security Scale¹⁻⁴

Nadine R. Sahyoun,^{5*} Mark Nord,⁶ Anniebelle J. Sassine,⁷ Karin Seyfert,⁸ Nahla Hwalla,⁶ and Hala Ghattas⁶

⁵Department of Nutrition and Food Science, University of Maryland, College Park, MD; ⁶Economic Research Service, USDA, Washington, DC; ⁷Department of Nutrition and Food Sciences, American University of Beirut, Beirut, Lebanon; and ⁸Department of Economics, School of Oriental and African Studies, University of London, London, UK



Food security prevalence in selected Lebanese and refugees populations

	AFFSS (South Lebanon)	AFFSS (Palestinian Refugees)	HFIAS (Beirut)	HFIAS (Bekaa Valley)
Food Secure	58%	38%	49.5%	48.3%
Mildly Food Insecure	-	-	8.5%	17.7%
Moderately Food Insecure	32%	42%	16.1%	12.9%
Severely Food Insecure	10%	20%	25.9%	21.1%
Total	100%	100%	100%	100.0%

AFFSS: 42% of Southern Lebanese citizens and 62% of Palestinian refugees living in Lebanon were food insecure

HFIAS: 50% of Lebanese households in Beirut & Bekaa Valley were food insecure



High level of food insecurity among Syrian refugees in Lebanon

>1.5 M = 34% of Lebanese pop. prior to crisis

70% below poverty line (3.84\$/day)

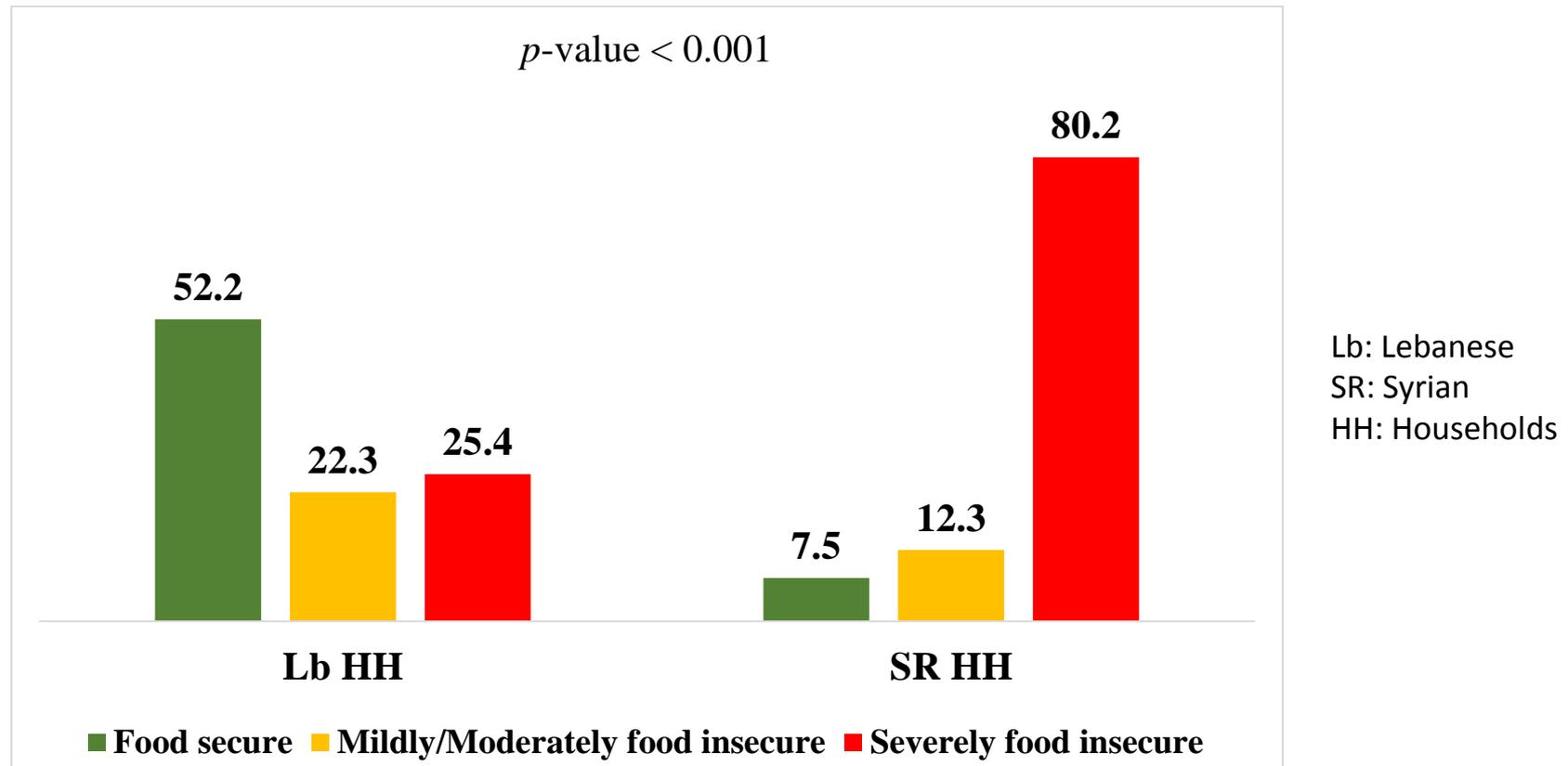
89% food insecure

Most common coping strategies: reliance on less preferred food, ↓ number & portion size of meals

Most severe coping strategies: spending savings, selling assets, marrying children <18 yrs, begging



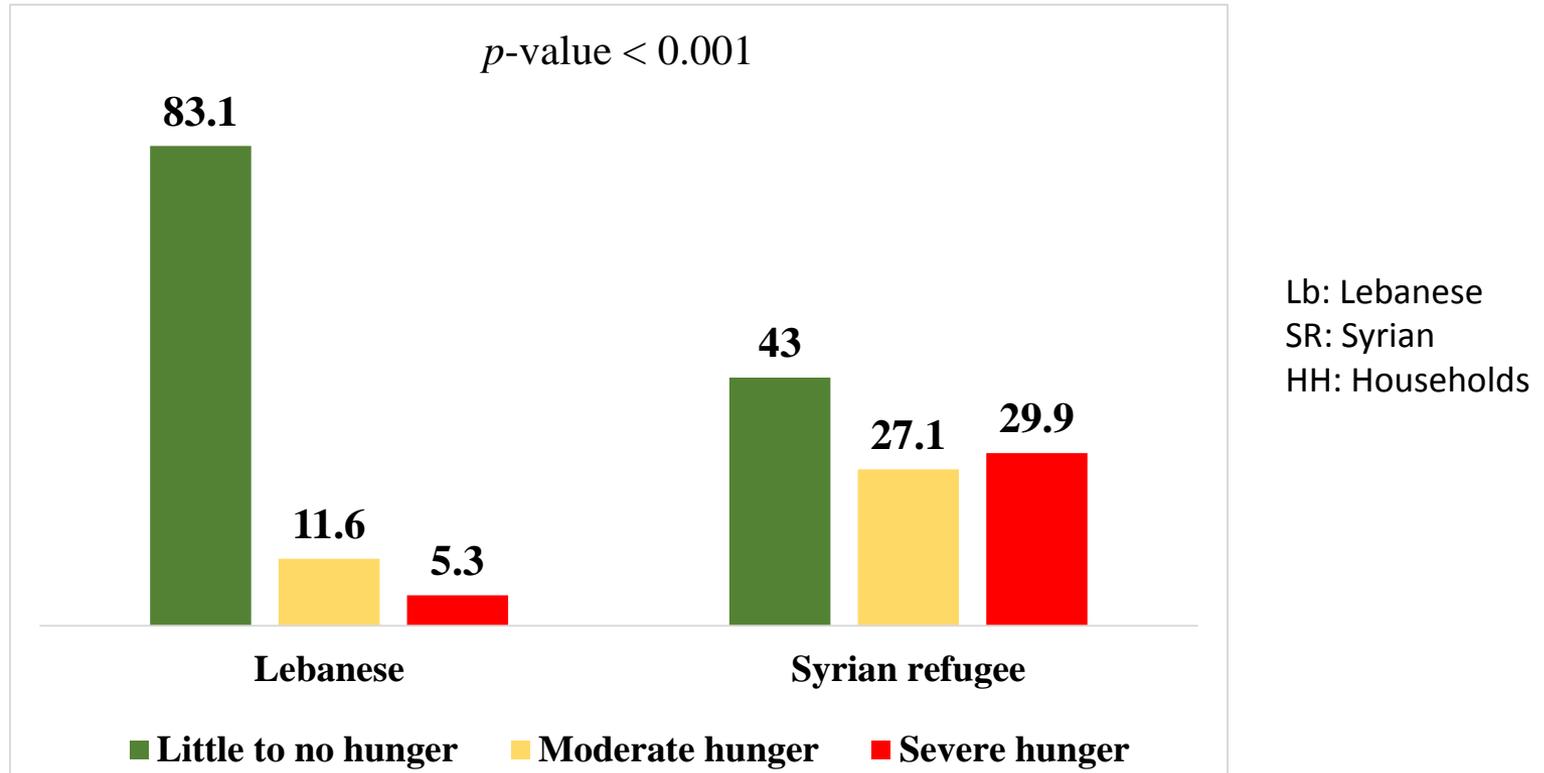
Food security status of Lebanese and Syrian refugee households in the Governorate of Akkar



- SR HH more severely food insecure
- Lb HH with higher level of mild to moderate food insecurity



Household hunger status* of Lebanese and Syrian refugee households in the Governorate of Akkar



- 57% among Syrian refugee households (with 30% of severe hunger)
- 17% among Lebanese households (lower yet still considerable)

* Defined using last 3 questions from the Household Food Insecurity Access Scale (HFIAS)



4 thematic working groups:

- Health/nutrition
- Education
- Shelter/ecosystem/WASH
- Social stability & cohesion

Objectives:

- Build synergy
- Communicate
- Foster partnership
- Facilitate operational aspects

AUB4Refugees Initiative

Framing:

Syrian
refugee crisis

Expected outcomes:

- AUB umbrella & brand
- Better use of resources
- Joint proposals
- Better recognition
- More partnerships
- Smoother administration
- Positive social & strategic impact
- Center of excellence on refugees



What is AUB's contribution to PHN research?



Publications

More than 70 articles

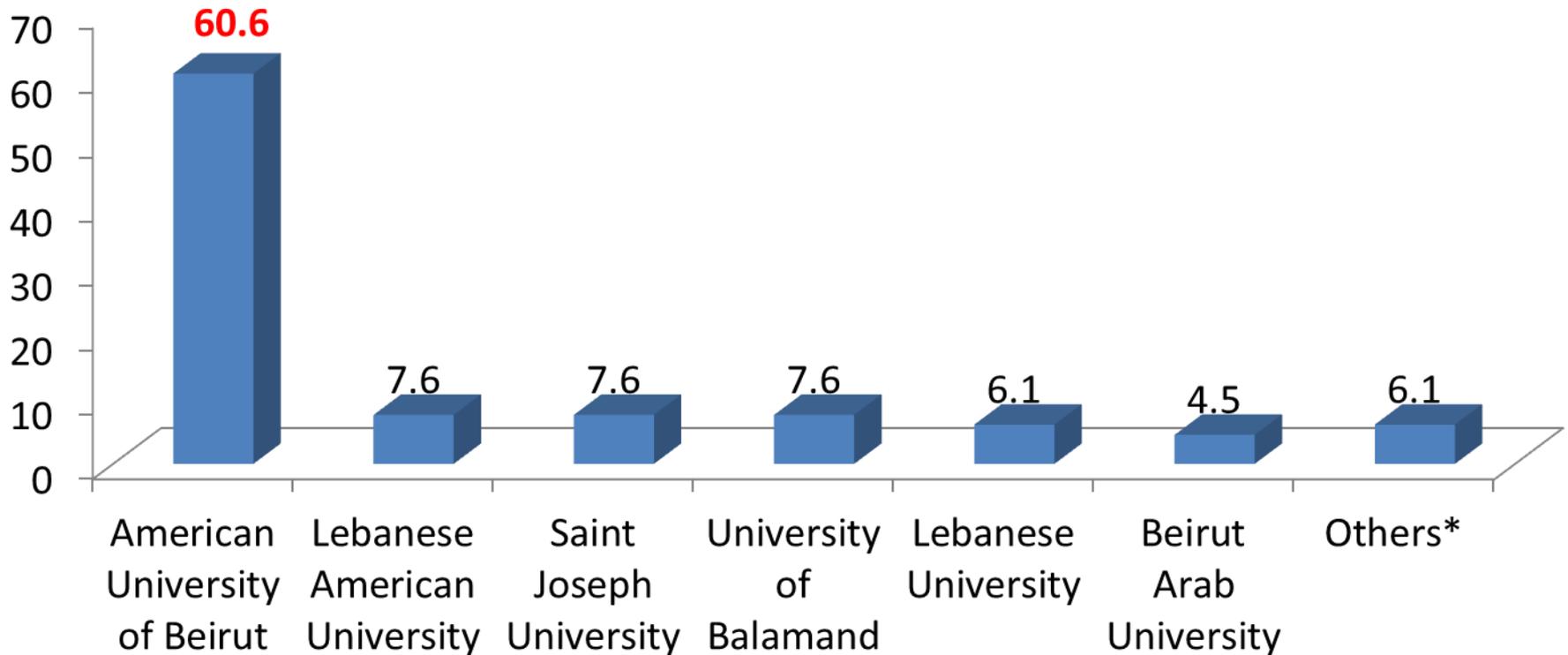
- On: nutritional assessment, body composition, dietary fats and plasma lipids, diet composition and insulin resistance, diabetes, obesity, NCDs, and dietary patterns
- Published in **international refereed high IF journals:**
 - American Journal of Clinical Nutrition,*
 - European Journal of Nutrition,*
 - Lipids,*
 - International Journal of Obesity,*
 - Public Health Nutrition,*
 - Journal of Nutrition and Health,*
 - International Journal of Food Science and Nutrition,*
 - Journal of Nutrition and Environmental Medicine,*
 - Nutrients,*
 - BMC Public Health*



AUB: highest percentage of research papers on Nutrition & NCDs in Lebanon

Lebanon: percentage of research papers addressing nutrition and NCDs *by institution* (2000-2014)

Research studies (%) conducted on nutrition



* Other institutions: National Heart Forum, Nutriments Lipidiques et Prevention des Maladies Metaboliques, University of Copenhagen, Psychiatric Hospital of the Cross, Jalledib

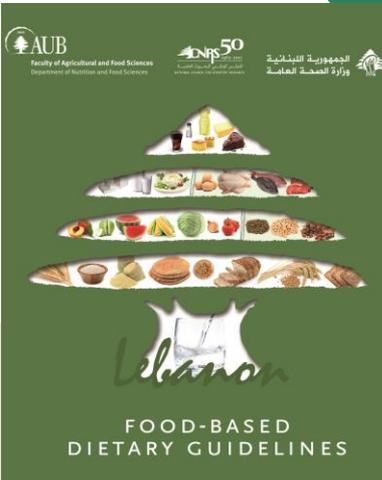
Services to the Country: National Nutrition Database

1992 1st FAO national country profile on Nutrition

2007 Prepared 2nd country profile for FAO

2010 National Nutrition Strategy

2011 National Food Based Dietary Guidelines



Services to Region

2003 Founding member of MENANA;
now adhering body of IUNS

2009 Regional Nutrition Strategy for
the Eastern Mediterranean Region

2011 Food Based Dietary Guidelines
for the Eastern Mediterranean Region



Excellence: Local & Regional Reference Center

2007 designation of the **Nutrition & Food Sciences Department at AUB** as a **WHO Collaborating Center for Research, Teaching and Outreach in Food and Nutrition**

→ **1st WHO CC in the country in any discipline**



2013 Accreditation of the Nutrition & Dietetics program at AUB

(Nutrition & Dietetics – Coordinated Program)
by the ACEND

1st in the Middle East
3rd Worldwide

Stamp of Excellence



congratulations
to the

first
Nutrition
AND
Dietetics
PROGRAM

IN THE REGION
to receive
US Accreditation

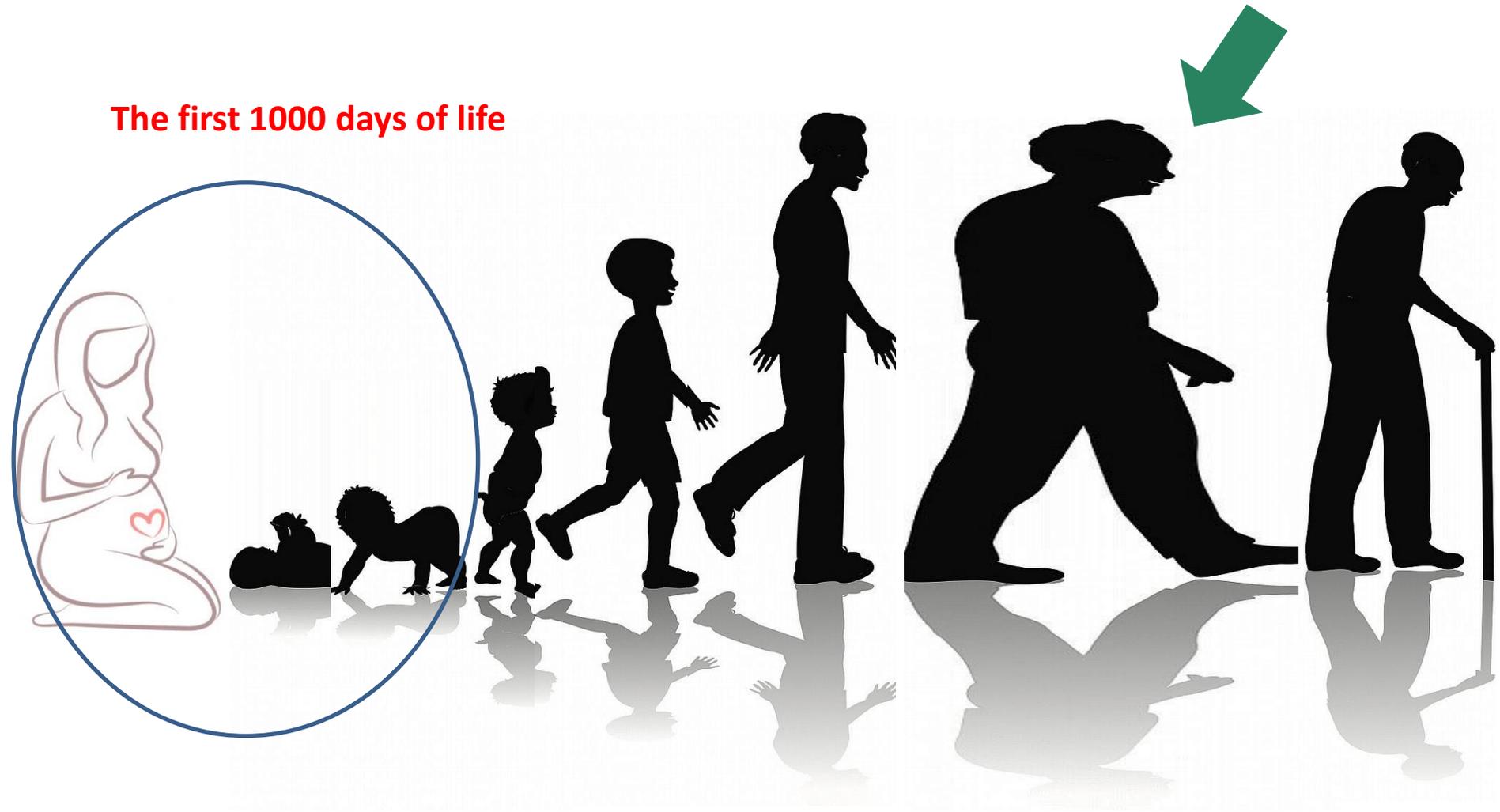
**Accreditation Council
for Education in
Nutrition and Dietetics**

The Way Forward



Obesity: when to intervene?

The first 1000 days of life





Greenland

Iceland

Norway

Sweden

Finland

Russia

Canada

United Kingdom

Ireland

Denmark

Poland

Germany

Netherlands

United States

Turkey

Mongolia

Lebanon

Iraq

Iran

Afghanistan

Japan

North Atlantic Ocean

North Pacific Ocean

Mexico

Cuba

Libya

Egypt

Saudi Arabia

Qatar

Pakistan

India

Venezuela

Colombia

Peru

Brazil

Chile

Argentina

Sudan

Ethiopia

Congo

Tanzania

Angola

Namibia

Botswana

South Africa

Madagascar

Indian Ocean

Indonesia

Papua New Guinea

Australia

New Zealand

South Pacific Ocean

South Atlantic Ocean

Mother and Infant Nutritional Assessment cohort studies in Qatar and Lebanon: MINA-Q and MINA-L



- Dr Farah Naja
- Dr Nahla Hwalla
- Dr Lara Nasreddine
- Dr Khaled Yunis



- Dr Al Anoud Al Thani (SCH)
- Dr Hiba Bawadi
- Dr Walaa EL Chitachi
- Dr Nibal Lubbad
- Dr Zuleikha Bashwar



STUDY PROTOCOL

Open Access



Study protocol: Mother and Infant Nutritional Assessment (MINA) cohort study in Qatar and Lebanon

Farah Naja^{1†}, Lara Nasreddine^{1†}, Al Anoud Al Thani², Khaled Yunis³, Michael Clinton⁴, Anwar Nassar⁵, Sara Farhat Jarrar¹, Patricia Moghames¹, Ghina Ghazeeri⁵, Sajjad Rahman⁶, Walaa Al-Chetachi², Eman Sadoun⁷, Nibal Lubbad⁸, Zelaikha Bashwar⁸, Hiba Bawadi⁹ and Nahla Hwalla^{10*}



What are the gaps, challenges and opportunities for PHN research in the Middle East?



Seizing Opportunities & Partnerships



This journey and what is ahead would not be possible without **research collaboration (north-south) and capacity building**



Common areas of research *aspirations for research collaboration*

NFSC (AUB)

-  **NCDs risk factors (diet, obesity, MetS)- risk, prevalence, determinants & associations**
-  **Micronutrients in health & diseases**
-  **Nutrition intervention**
-  **Early Life nutrition**
-  **Food & nutrition security**

Global health Research Institute (University of Southampton)

-  **Infectious Diseases**
-  **Sustainable development & health**
-  **Ageing & lifelong health**
-  **Lifecourse epidemiology**



How can we collaborate?

Common research areas

- **Lifecourse epidemiology** (NCDs risk factors: diet, PA, obesity, MetS)
- **Sustainable development & health** (food & nutrition security)

Gaps & challenges

- **Population-specific cut-off points** for many NCDs RFs (BMI, WC...)
- **Research instruments & methods** (validation of culture-specific tools)
- **Financial resources & chronic socio-political conflict** (no sustainability of research)
- **Specific nutrition expertise & limited national capacity** (nutrigenomics & nutrigenetics; handling large data sets)
- **Translational research**

Research collaboration

- **Joint resources for long-term research** (human, technical, & financial)
- **Joint data:** comparative studies & large-scale data analysis
- **Joint PhD programs** (PhD in: food security, PHN)
- **Exchange of faculty & students**
- **Joint events** (seminars, conferences, workshops)
- **Advocacy & policy**



The Quest For Excellence Continues



Local and Regional
Situational Analysis



Addressing global issues such as
NCDs, Diet & Epigenetics, Early
Nutrition and Food Security



Project Collaborators



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SUCCESS

THANK YOU

