

American University in Cairo

AUC Knowledge Fountain

Theses and Dissertations

2-1-2015

Obesity interventions in Egypt: identifying gaps and highlighting assets

Hana Shahin

Follow this and additional works at: <https://fount.aucegypt.edu/etds>

Recommended Citation

APA Citation

Shahin, H. (2015). *Obesity interventions in Egypt: identifying gaps and highlighting assets* [Master's thesis, the American University in Cairo]. AUC Knowledge Fountain.

<https://fount.aucegypt.edu/etds/117>

MLA Citation

Shahin, Hana. *Obesity interventions in Egypt: identifying gaps and highlighting assets*. 2015. American University in Cairo, Master's thesis. *AUC Knowledge Fountain*.

<https://fount.aucegypt.edu/etds/117>

This Thesis is brought to you for free and open access by AUC Knowledge Fountain. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of AUC Knowledge Fountain. For more information, please contact mark.muehlhaeusler@aucegypt.edu.

Running head: OBESITY INTERVENTIONS IN EGYPT

The American University in Cairo
The School of Humanities and Social Sciences

OBESITY INTERVENTIONS IN EGYPT:
IDENTIFYING GAPS AND HIGHLIGHTING ASSETS

A Thesis Submitted to
The Department of Sociology, Anthropology, Psychology and Egyptology

In partial fulfillment of the requirements for
The degree of Master of Arts

By Hana Sherif Shahin

Under the supervision of Dr. Carie Forden

August 2015

Table of Contents

ACKNOWLEDGMENT.....	3
ABSTRACT	5
OBESITY IN EGYPT	9
FACTORS CONTRIBUTING TO OBESITY	10
OBESITY IN AN ECOLOGICAL FRAMEWORK.....	12
OBESITY INTERVENTIONS AND RECOMMENDATIONS.....	20
AIMS OF THE PRESENT STUDY	23
METHODS	24
PARTICIPANTS.....	24
PROCEDURES.....	25
MEASURES.....	27
DATA ANALYSIS.....	29
RESULTS.....	30
DISCUSSION.....	62
LIMITATIONS.....	93
IMPLICATIONS.....	94
CONCLUSION.....	95
REFERENCES.....	97
APPENDIX A: TARGET PARTICIPANTS.....	113
APPENDIX B: PHONE AND INTERVIEW PROTOCOL.....	117
APPENDIX C: CONSENT FORM	118
APPENDIX D: SEMI-STRUCTURED INTERVIEW/ DATA COLLECTION SHEET	120
APPENDIX E: FINAL THEMES AND CODEBOOK	125
APPENDIX F: TABLES OF INTERVENTIONS.....	126
APPENDIX G: INTERVENTIONS AND PROGRAMS BY THE ORGANIZATIONS.....	158

Acknowledgment

Firstly, I would like to express my sincere gratitude to my advisor Dr. Carie Forden for the continuous support of my thesis and related research, for her patience, motivation, advice and immense knowledge. Her guidance helped me in all the research and writing of this thesis. I was also blessed with having Dr. Amy Carillo as an advisor. I would like to thank her for all her efforts, motivation, continuous support, guidance and patience. Without them I could not imagine going through this journey.

Besides my advisors, I would like to thank the rest of my thesis committee: Dr. Mona Amer and Dr. Suzette Fromm-Reed for their insightful comments and encouragement, but also for the hard question and constructive challenges, which incited me to develop my research from various perspectives. I am utmost grateful for such a powerful committee.

My sincere thanks goes to all the participants who have enriched this research with their information and gave me their time. Without their precious time and willingness to share information it would not be possible to conduct this research.

Lastly, I would like to thank my family and friends. My mother Ayat Abdelmooty, who has always believed in me and supported me throughout my life; my father, Sherif Shahin, who has supported and challenged me throughout the way; and my beloved sister, Allia Shahin, who is my constant rock and source of empowerment. I am grateful to my friends who sat through my ongoing talks about my thesis and obesity, who have been there for all the time it took, and for the never ending support. In particular, I am grateful to my friends and

colleagues Zeina Morad, Farida Makar, Farah Shash, Salma el Sayeh, and Farah Abdelgawad for reading and reviewing my thesis, enriching it with their comments and questions. Additioannly, Iman Kaiss, Adham Aboulenein, Ahmad Ghalwash, Basma Hosny, Laila Marei, and Sarah Meshreky for the consistent support and efforts. I would also like to mention my friends and colleagues at the Gerhart Center; Yasmin Rashed, Angie Galal, Mohamed Hesham, and especially Nelly Corbel, who have been there along the way. Having finished the thesis at the Daebak CISV Village in Korea, I am very grateful for this time in Korea and believe the sleepless nights were all worth it. Without my family and friends I would not be able to make it through.

Abstract

Worldwide, obesity is a growing epidemic and a leading non-communicative disease. Egypt has high levels of obesity, causing harm to both individuals and society at large. Data on obesity in Egypt includes measures of obesity rates, comorbidity, and consequences, but there is little documentation on obesity interventions. This is in large part due to the fact that obesity is overlooked by the Egyptian government and culture. This study aimed to collect data on available programs and interventions in Egypt, to explore assets and challenges to obesity programming, and to ask for recommendations for combatting obesity. Semi-structured interviews were conducted with 25 participants from 22 different organizations in Cairo, including ministries, governmental, non-governmental, international organizations, and for-profit organizations.

The results showed that there was a lack of nationwide programs and services that tackle obesity; however, there were some minor activities and services that tackled other health issues related to obesity. In terms of challenges, most participants mentioned negative cultural customs and practices or circumstances that affected and contributed to the increase in obesity, such as poverty, personal habits, and environmental and political influences. As for assets, participants mentioned tangible assets such as facilities, finances, and staff; yet, they focused on nontangible assets such as partners, networks, knowledge, expertise and experience, reputation, media, and support.

Participants recommended collaboration, partnerships and multi-sectorial programs on a mass scale including national campaigns to get obesity recognized and on the national agenda. These Recommendations can help develop prevention strategies that are tailored to the socio-cultural and economic context of Egypt.

Keywords: Obesity, ecological framework, obesity programing and interventions, recommendations for obesity programming, and Egypt.

Obesity Interventions in Egypt: Identifying Gaps and Highlighting Assets

Worldwide, obesity is a growing epidemic and a leading non-communicative disease (Alpert, 2009; International Association for the Study of Obesity [IASO], 2010; Kime, 2008; Owen, Martin, Whincup, Smith, & Cook, 2005; Summerbell et al., 2005; World Health Organization [WHO], 2000). Based on the World Health Organization's (WHO) 2012 World Health Statistics Report, the prevalence of obesity doubled worldwide from 1980 to 2008, and the percentages of obese men and women rose from 5% to 10% for men and from 8% to 14% for women. Thus, an estimated half a billion men and women over the age of 20 are obese worldwide, with women having higher percentages of obesity compared to men across all age groups (WHO, 2010). Worldwide, obesity affects approximately 20-50% of children and teenagers (Cosoveanu & Bulucea, 2011); moreover, being overweight and obesity are linked with more deaths worldwide than being underweight (WHO, 2009), and are rated as the fifth leading risk for global deaths (WHO, 2008).

By definition, obesity is a condition of excess body fat (Ravussin & Swinburn, 1992); specifically, an imbalance between calories consumed and calories burned (Zulet, Berkenpas & Martinez, 2005). Obesity and overweight are usually mentioned together, as obesity is an advanced stage of overweight, and is officially defined by the National Institute of Health (NIH) as a Body Mass Index (BMI) equal to or above 30. A person's BMI is calculated by dividing the person's weight in kilograms over their height in meters squared. If the score is 25–29.9, this indicates overweight, while 30 or greater indicates obesity.

Especially at early onset, obesity can lead to physical and psychological co-morbidities. For example, obesity may contribute to non-communicable diseases (NCDs) such as type-2 diabetes, cardiovascular diseases such as hypertension,

metabolic syndrome, depression, coronary heart disease, and some types of cancers (Summerbell et al., 2005; WHO, 1997). As for obese children and adolescents, they are prone to physical health problems such as insulin resistance, impaired glucose tolerance, and coronary heart disease in adulthood (Wang et al., 2013). Studies show that overweight and obese children and adolescents have a greater chance of becoming overweight or obese as adults (Georgetown University Center for Aging, 2002; Lawlor, Smith, & O'Callaghan, 2007; Singh, Mulder, Twisk, Van Mechelen, & Chinapaw, 2008). No matter the stage of development, obesity both affects the quality of people's lives and may also shorten their lives (Sturm, 2002).

Stress contributes to overweight and obesity, as well as being a consequence of obesity and overweight (Becton, Shatat, & Flynn, 2012; Pervanidou & Chrousos, 2011). For example, in their studies on rodents to test chronic social stress and vulnerability to obesity, Coccorello, D'Amato, and Moles (2009) and Tamashiro, Hegeman, and Sakai (2006) concluded that stress in rats leads to overeating and using food as a reward, resulting in overweight. This is the same for humans especially in a society that has moved to a high-fat and high-calorie food diet. Stress may lead to biological reactions in the body like cortisol release or lipid resistance that may lead to weight gain (Foss & Dyrstad, 2011).

Obesity is linked to some mental health problems, such as later development of eating disorders and low self-esteem (Seo & Sa, 2010). The stigma regarding weight is both societal and self-imposed; it hinders people's abilities and raises stress levels which in turn causes weight gain (Major, Eliezer & Rieck, 2012). Consequently, obesity and its stigma become a physical and psychological threat to a person's health.

Obesity burdens countries' health systems with the direct and indirect costs of

treating patients who suffer from its consequences, especially given that these consequences are chronic in nature (Colditz, 1992; Withrow & Alter 2010). This is particularly an issue for developing countries such as Egypt, where around 35 million children are overweight, compared to 8 million in developed countries (WHO, 2010). These economic costs are seen in the workplace through higher sick leave or disability use, and more workplace injuries among obese and overweight employees (Schmier, Jones, & Halpern, 2006; Finkelstein, DiBonaventura, Burgess, & Hale, 2010). It is important that countries expand their understanding and approach to obesity not only as a contributor to mortality but also as a financial burden on the health systems and the workplace.

In summary, obesity is growing worldwide and becoming an emotional, psychological and financial burden on individuals and communities by becoming a leading risk for global health problems. It has affected both developed and developing countries, and people of all socioeconomic levels.

Obesity in Egypt

Obesity is highly prevalent in Egypt (Asfaw, 2006; Atinmo, Mirmiran, Oyewole, Belahsen, & Serra-Majem, 2009; Ellabany & Abdel Nasser, 2006). The estimated prevalence of overweight and obesity ($BMI \geq 25 \text{ kg/m}^2$) is 61-70% of the whole population aged 20 and above. This translates to 65% for males and 76% for females aged 15 and above (see Figure 1: Obesity and overweight prevalence in Egypt, WHO, 2010). As for obesity alone, 18-22% of males are obese while 39-48% of females are obese (Ellabany, & Abdel Nasser, 2006; IASO, 2012; WHO, 2010).

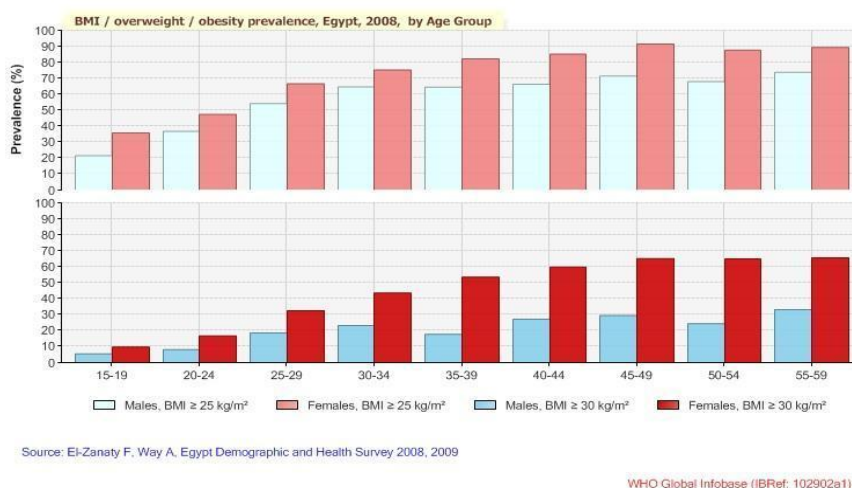


Figure 1. Obesity and overweight prevalence in Egypt. This figure demonstrates the rise of overweight and obesity by age. Reprinted from WHO Global Infobase, 2010. Retrieved from <https://apps.who.int/infobase/Indicators.aspx>

Ellabany and Abdel Nasser (2006), under the Egyptian Ministry of Health and Population's Preventive Sector, have named obesity as one of the top contributors to the national mortality and morbidity of Egyptians along with other NCDs such as hypertension and diabetes (both of which are connected to obesity). Chronic NCDs cause 41% of all mortality in Egypt (Food and Agriculture Organization of the United Nations [FAO], 2006). NCDs are reported to be the main cause of morbidity and mortality in Eastern Mediterranean Countries and are emerging as a major health problem in Egypt.

Factors Contributing to Obesity

To clearly understand the phenomenon of obesity in Egypt, how to tackle the problem, and how to develop prevention strategies, it is important to both recognize the high prevalence of overweight and obesity (Salazar-Martinez et al., 2005) and to understand the factors that contribute to them. Factors contributing to obesity fall under different categories; some, such as biological and personality factors, are

individual, and others, such as economic, educational, and cultural factors; are social. Both social and cultural factors may be related to each other; and an individual may be affected by multiple factors. Consequently, looking at obesity from the perspective of only one factor or as only a problem on an individual level would not provide an accurate picture. A holistic or ecological view would enable us to consider multiple factors occurring at multiple levels, allowing for a more complete understanding.

Supporting the ecological view, after a systematic review of obesity treatment and prevention initiatives, Jain (2005) concluded that despite the agreement of many experts that obesity is caused by environmental factors, research and prevention has ignored these factors. It is time to focus on public health interventions rather than individual efforts, so as to be able to make a real impact on this epidemic (Atinmo et al., 2009). As Bronfenbrenner (1977) and Prilleltensky, Nelson, and Peirson (2001) suggest, a person is a part of a community and society, so to understand or change the individual, one needs to look at all the ecological systems that surround the individual; namely, the micro-, meso-, exo-, and macrosystems. The microsystem is the immediate system around a person's life; it is a face to face setting such as family, neighborhood or school. For example, family eating habits or nutrition education at school would be aspects of the person's microsystem that relate to obesity. The macrosystem would include the culture, the media, and the policies of the country that may be distant from the person yet significantly affect their life and surround all other systems. In the case of obesity, creating a national policy in the school system to promote nutrition education, or cultural habits that promote healthy or unhealthy eating or exercise habits would be an example of tackling obesity at the macrosystem level. The systems between the micro- and macrosystem, the meso- and exosystems, represent the linkages between these systems. The exosystem is the linkages between

a person's microsystem and another setting, such as the links between local government and school lunch policies, or grocery store purchasing departments and family shopping habits. The mesosystem represents the relationship or connection between two microsystems, such as the linkages between a person's unhealthy or sedentary family upbringing and sedentary school system, or linkages between doctors and families.

Obesity in an Ecological Framework

In keeping with the ecological framework, this literature review of the factors contributing to obesity is broken down into the following sections: the individual, the microsystem (family and school), and the macrosystem (society and culture). Discussion of mesosystem and exosystem linkages are incorporated into the individual, microsystem and macrosystem sections when appropriate. It is important to note that although the discussion will focus on single factors; these factors are interrelated and affect the individual at multiple levels. Due to the limited research on obesity in Egypt, most of the studies referred to in this paper are from countries where literature on obesity research and interventions is available. However, examples from Egypt will be included wherever possible.

Individual. There are multiple factors at the individual level that affect the state of personal obesity; these are biological and physiological characteristics, nutrition intake and physical activity levels, education, and emotional factors.

Biological and physiological characteristics. Studies on the interplay between genetics and environmental factors have shown that genetic factors do in fact contribute to obesity (Farooqi, 2006; Hu, 2008). Notwithstanding, while genes may contribute to the tendency for an individual to become obese, genetic makeup cannot explain the rapid growth of obesity worldwide (Hu, 2008; Veerman, 2011). When it

comes to the proliferation of obesity, environmental factors are regarded as more critical for understanding and changing its spread (Qi & Cho, 2008).

Nutrition and physical activity. The rise in obesity is linked to changes in lifestyle; food intake, including foods and/or nutrients consumed, and activity level fall under this category. Food intake and activity level affect the person's body-fat storage and energy level, and the fundamental principle of the energy balance equation (WHO, 2000) explains the effects of nutrition and activity level on body weight. If the caloric intake is more than the caloric expenditure, weight gain occurs (FAO, 2006). Therefore the importance of a balance between caloric intake and caloric expenditure makes nutrition and physical activity a major contributor to a person's weight gain and loss.

Education. Lower education is also linked to overweight and obesity. Studies from Australia, Canada, England, and Korea have found a linear relation between obesity and education; the more educated the individual is the lower the probability of obesity (Devaux, Sassi, Church, Cecchini, & Borgonovi, 2011). Education provides the person with more knowledge regarding the risks, and provides greater access to health-related information and thus motivates improved self-control (Devaux et al., 2011). Aitsi-Selmi and co-authors (2012) studied the relationship between wealth, education, and obesity among 49,058 Egyptian women using the Demographic and Health Surveys' datasets. They found that obesity is mostly found amongst women with a primary education or less and who are poor or from rural groups; however, women who are wealthy but are of lower education levels, such as a primary education or less, were also at risk of obesity compared to others with higher education. Although educated women may be more protected against obesity, it is still prevalent among the educated and wealthy; in Egypt 40.9% of wealthy higher

educated women are obese compared to 53.9% of wealthy uneducated women, based on the 2005 data of 23,177 women (Aitsi-Selmi et al, 2012).

Low self-esteem. Low self-esteem has been considered a comorbid condition of childhood obesity, and it has been shown to be both a factor leading to obesity, as well as a consequence of obesity. A modest correlational relationship has been found between self-esteem and obesity, where obesity affects self-esteem due to parental criticism and weight-based teasing (El Baba, 2012). Moreover, obesity has been found to lead to an increase in the population prevalence of low self-esteem (Wang, Wild, Kipp, Kuhle, & Veugelers, 2009). Arizza (2005) discussed the Obesity-Low-Self-Esteem Cycle, a cycle that may start with low self-esteem and lead to obesity or vice versa. A longitudinal study of 7,588 individuals in the United Kingdom showed a relationship between obesity and low self-esteem: Children with low self-esteem at age 10 were more likely to report obesity at age 30 (Ternouth, Collier & Maughan, 2009). The researchers concluded that in children with low-self-esteem, emotional problems, and an external locus of control contribute to weight gain. In any case, this cycle can lead to negative consequences on the children's physical and psychological wellbeing.

Microsystem. The microsystem constitutes face to face settings affecting the individual. Two important microsystem settings for obesity are family and school.

Family. The family is a major contributor to most habits including those related to eating, such as the development of food preferences and the ability to regulate food intake, as well as physical activity (Epstein, 1996). A study in Gambia with 5,389 participants reported that those participants with a family history of obesity had significantly higher BMI means than the other participants who did not have obesity in their family history (Van der Sande et al., 2011). This may be because

obese parents tend to over nourish their children (Sobko et al., 2011). Data from the National Nutrition Institute (NNI) of Egypt showed that the number of Egyptian children receiving more than 100% of their Recommended Daily Allowance (RDA) of daily calories, to stay healthy and well nourished, has grown from around 14% in 1995 to around 47% in 2000 (FAO, 2005; Hassan, Moussa, & Ismail, 2005). This heightened risk of obesity in families is a mixture of genetic and environmental factors, and as the whole family shares both of these, it is difficult to untangle. Accordingly, the whole family should be addressed when tackling the problem of obesity.

Parenting styles and family stress also affect children's eating behaviors. Studies have shown that authoritative parenting styles may promote healthier lifestyles in youth, and an authoritative feeding style resulted in a positive consumption of fruits, vegetables, and dairy (Patrick, Nicklas, Hughes, & Morales, 2005). Family stressors too, can affect childhood obesity (Garasky, Stewart, Gundersen, Lohman, and Eisenmann, 2009). These stressors include low mental and physical stimulation as well as financial constraints; all of which can lead to biological effects or negative health habits like malnutrition or minimal of physical activity.

Research suggests that the family's inclusion in prevention programs to combat childhood obesity is crucial, and some researchers argue that interventions should be family-based (Ewald, Kirby, Rees, & Robertson, 2013). Positive effects have been apparent in studies of interventions that encourage family based interventions (Kitzman-Ulrich et al., 2010), where the family can adjust and alter the home environment and lifestyle to mitigate obesity. For example, parental participation and modeling has been found to be important when implementing interventions

encouraging exercise (Golan & Crow, 2004). Further, Kitzman-Ulrich, Wilson, St. George, Lawman, Segal, and Fairchild (2010) reviewed 21 weight loss interventions and 25 interventions related to physical activity and/or diet studies, and found that authoritative parenting styles, parenting skills or child management, and family functioning all had positive effects on youth weight loss. Similarly, Van Ryzin and Nowicka (2014) found in their study of 998 adolescent six graders and their families that improved family-youth relationships positively affected health habits of youth. Finally, the family-based program “Early STOPP” has been able to impact obesity through mentoring sessions along with a nutrition and activity program to deal with emotional stressors (Sobko et al., 2011).

School and University. Children, adolescents, and young adults spend a great part of their time at school or university. Children consume between 19 to 50 percent of their daily calories at school (Gleason & Sutor, 2001), which thus has a strong impact on their lifestyles and habits. School policies on health, nutrition and physical activity impact the school environment and its students and consequently affect the promotion or prevention of obesity. In a study assessing school environments it was found that schools are contributing to obesity through the availability of foods and beverages high in sugar adding to the high calorie consumption of the students (Frumkin, 2006). The amenities of universities, such as food outlets, sports facilities or nutrition education, may affect students’ lifestyles and many university students may experience some changes during their first year of college including weight gain, due to a change in eating and physical activity habits (Hudd et al., 2000; Hajhosseini et al., 2006; Racette, Deusinger, Strube, Highstein, & Deusinger, 2005). While studies in the Arab region highlighted the increasing prevalence of overweight and obesity

amongst university students of both genders (Al-Rethaiaa, Fahmy, & Al-Shwaiyat, 2010), no studies of interventions have targeted this group.

Macrosystem. The macrosystem includes socio-environmental factors, cultural contexts, media and policies. The cultural context and societal norms strongly affect people's behaviors and habits as well as eating patterns and body image, all of which affect obesity.

Socio-environmental factors. Socio-environmental factors, such as the subsidization of some commodities, and food availability play a very clear role in contributing to obesity, as they are a main contributor to lifestyle changes, including dietary changes and physical activity (FAO, 2006; Traill, 2006; Larson, Story, & Nelson, 2009). WHO (1997) reported that the Egyptian government's subsidies of energy dense food items aggravate the obesity problem. As the consumer is constrained by his income, s/he consumes more of the energy-dense foods than the nutrient-dense foods, leading to nutrient deficiency; therefore, economic changes and national food subsidies affect the individuals' food intake and choices. According to Asfaw (2007) there is an inverse and statistically significant relationship between the BMI of Egyptian women and the price of *balady* (pita) bread, thus an increase in the price of the subsidized *balady* bread should result in a decrease in the BMI of Egyptian women. Recently, modernization and globalization have also led to dietary changes as a result of the emergence of fast food and energy dense foods (FAO, 2006; Traill, 2006; Larson et al., 2009). For example, the Survey of Young People in Egypt (Population Council, 2011) found that the wealthier the young adults were, the more they consumed white bread and carbonated drinks.

Urbanization. People engage less in physical activity due to urbanization, the sedentary nature of jobs, the rise in "energy-saving" devices, as well as the speed and

convenience of driving rather than walking or biking (Traill, 2006; WHO, 2003); all these features promote an unhealthy lifestyle that may lead to obesity. Being physically active is not common in Egyptian culture, which also contributes to a sedentary lifestyle and consequently, to obesity. While the Survey of Young People in Egypt (Population Council, 2011) reported that only 19.4% of females and 6.2% of males do not bike or walk to work or school, this study does not provide data about the type, duration, or intensity of the activities the participants were engaged in; leaving room to question how these statistics fit with the obesity rates of Egyptians. The activity level described in the study may not be compensating for the food intake, and may not be enough for obesity prevention, given that the recommended activity level of adults (age 18-64) is at least 2 hours of moderate aerobic exercise and muscle strengthening activities one or two times a week (Centers for Disease Control and Prevention, 2011).

Cultural Context. Lastly, culture may affect obesity. In the past, obesity was not considered a disease but rather a sign of wealth, success, and an indicator for happiness in sub-Saharan Africa cultures. Before the Second World War, developing countries admired obesity as an indicator of wealth exhibited around the waist (Renzaho, 2004). In Egypt and in other Arab countries 'plumpness' was seen as a sign of beauty and larger sized women were generally accepted (Jackson, Rashed, & Saad-Eldin, 2003). Currently, studies about views and cultural perceptions on obesity in Egypt are not found, so it is unclear how obesity is seen today, but these attitudes may linger, especially among older Egyptians.

Media. Media has a role in feeding the misconceptions about thinness by portraying women with unattainable sizes for the normal population as the symbol for beauty and desirability (Cohen et al. 2005). It is also important to note that media

reinforce the stigma of obesity by their popular advertisements showing how weight is all about personal control (Geier, Schwartz, & Brownell, 2003). Excess consumption of food or discouraging physical activity is also incorporated in the media, which affects people's weight gain (Glanz et al., 2012; Grier and Kumanyika, 2008).

Meso and Exo systems. Both mesosystem and exosystem interventions focus on building linkages between systems. The mesosystem consists of the interrelations between two or more microsystems, such as the family and the school; for example, a school could provide nutrition education to students' families to combat obesity. The exosystem is the relationship between a microsystem and a setting outside of the microsystem such as the family and local government. For example, local government can impact the availability of sidewalks and this in turn can impact the health of people living in a neighborhood (Auchincloss et al., 2013). The Shape Up Somerville (SUS) intervention, implemented in the US, is a good example of a school program that builds linkages between systems in order to combat obesity. This campaign is based on an evidence-based approach, and takes place in different settings; before, during, and after-school, the home, and community. Additionally, the campaign is built on different initiatives, such as School Food Service and After School programs using a new curriculum, and includes Parents, City Employee, and Community Outreach amongst others (Segal, 2009). The integration of the program in the different ecosystems and linking some to each other like parents with neighborhoods and schools, makes use of the linkages in society and further bonds the program together. The comprehensive approach this program is taking ensures the ability to reach the children throughout the day and therefore, create sustainability of the teachings. Children get to experience a unified message from the different stakeholders in their lives, meaning their teachers, parents and community.

Although individual and societal factors contributing to obesity may seem fragmented on multiple ecological levels, it is important to note that there is a strong interrelation between these systems; accordingly, a change in one system is likely to affect change in another system (Prilleltensky et al., 2001). For example, economic status is likely to impact educational level, and educational level, in turn, affects obesity. Agricultural or food policies may impact people differently at different economic levels, and commercial zoning may impact families' abilities to buy nutritious food. Consequently, a wider and holistic view will enable us to better observe, understand, and fight obesity.

Obesity Interventions and Recommendations

While treatments and interventions for obesity have been spreading widely, unfortunately, the problem still remains and is growing (WHO, 2012). This is mainly due to the fact that research studies and interventions have largely been focusing on individual based treatments, like surgeries, drugs, and diets, which have not had a significant impact on the obesity epidemic at large (Jain, 2005). These trends suggest that interventions that target change within ecological systems, rather than targeting the individual, may be a more efficient way to deal with obesity. Furthermore, especially in Egypt, there is very little basic awareness of the problem of obesity, and so there are neither nationwide movements nor adequate documentation of initiatives dealing with obesity.

Australia, Europe, and the United States of America have tackled obesity in a variety of ways, addressing the issue at different ecological levels. Their interventions vary in type, audience, and impact, and are starting to become national movements. Examples are online campaigns, nutrition education programs, and policy change. One of these initiatives is the macrosystem level Campaign to End Obesity in the

United States (Campaign to End Obesity, 2014). This is a campaign to bring together leaders, advisors across industries, academia, and public health with policymakers and their advisors to provide information and guidance for decision-makers on policy changes that aim to reverse the effects of obesity. Choose My Plate by the U.S. department of Agriculture (ChooseMyPlate, 2011) is the “new” food pyramid that aims to advance and promote dietary guidance by using a plate to measure the proper intake of macronutrients. The guidance is as follows; fill half of the plate with fruits and vegetables, a quarter with proteins, and the remaining quarter with starch. It also aims to conduct applied research and analyses in nutrition and consumer economics. Not only does it work within the macrosystem level by impacting policy, Choose My Plate also works on the micro-, meso-, and exosystems by promoting healthy eating patterns in homes and schools, and examining how shopping patterns and food choices impact obesity. The program is a model for working on linkages within the community.

Although less is known about current obesity interventions in Egypt, research about malnutrition, anemia, and stunting is well established. These studies, reports, and analyses have highlighted malnutrition specifically, but also mention how the obesity epidemic is spreading (Ministry of Health and Population in Egypt, 2012). Researchers who have been studying the obesity epidemic in Egypt, including its rate of growth and contributing factors, have made recommendations regarding obesity prevention and interventions.

First, they have recommended that interventions and programs should be context sensitized and adapted to the Egyptian culture in order to ensure better and more sustainable nutrition. For example, Atinmo and co-authors (2009) suggest that change in this area may be achieved through a combination of agricultural and

educational actions, as well as nutritional actions in the form of supplement use, such as mineral and vitamin capsules, to help with micronutrient deficiencies. These recommendations can be seen as macrosystem level policy change, given that they tackle the agricultural and school education systems, and build connections between the education system and the agricultural efforts, which will in turn affect linkages in both the mesosystem and exosystem.

Second, researchers in the field recommend that programs should target adolescents and young adults, as a way to prevent the growth of obesity over their lifespan (WHO, 2009; FAO, 2006; Sobko et al., 2011). In addition, adolescents and young adults who are prone to obesity suffer physically and psychologically as a result (Ella, Shehab, & Ismail, 2011). Therefore, healthy eating and healthy lifestyles should be promoted in programs along with nutrition education targeting youth, especially females who are more susceptible to becoming overweight and obese (Hassan et al., 2005).

Third, researchers recommend nutrition education to elevate the awareness of Egyptians as a way to prevent diet-related diseases and their consequences (Hassan et al., 2005). Research has supported nutrition education as one of the strategies to change and control obesity, and promote sustainable healthy life changes (Asfaw, 2006; Atinmo et al., 2009; IASO, 2010; Traill, 2006). Nutrition education aims to change eating behaviors by promoting awareness of food choices and required caloric and nutrient intake (Thompson & Subar, 2008; Traill, 2006; Sobko et al., 2011).

Based on the above, researchers argue that nutrition education should be included in school curricula and should be made available to the public in the form of educational resources so they can teach themselves about nutrition and obesity (IASO, 2010; Traill, 2006). These initiatives are seen as an easy and inexpensive way to benefit

society (FAO, 1997; Traill, 2006). While there should be an overall change in the national nutrition policy in accordance with scientific knowledge, it should also be in accordance with food patterns and eating habits of the country, and implemented in all health facilities and school curricula (Hassan et al., 2005).

In addition to these recommendations, it is crucial to identify the factors contributing to obesity in order to develop adequate prevention strategies that are tailored to the socio-cultural and economic context (Salazar-Martinez et al., 2005). It is also important to keep records and have a database of interventions, programs, and resources dealing with obesity for replicability and scalability; documentation will help identify existing resources and how they are utilized to deal with the epidemic. In the case of Egypt, the most known forms of intervention are the “diet clinics” that target individuals; nevertheless, it is possible that other initiatives have been taking place, however there is currently not much data on them.

Aims of the Present Study

The data available on obesity in Egypt only includes measures of obesity rates, comorbidity, and how obesity threatens individuals in the society, and there is a shortage in the documentation of obesity interventions carried out in Egypt. The aim of this thesis therefore, is to document and map out existing interventions and initiatives in Egypt in order to form a preliminary database that will allow researchers, governmental ministries, and other relevant entities to identify the types of programs/interventions offered, the areas covered, the populations targeted, and existing gaps. This database will also provide information about current programs and interventions in Egypt including who is offering these programs, their duration, where they are located, and the factors that have contributed to their success as well as the challenges that were and are currently being faced by these programs. Such

information will be important to understand where Egypt stands in the fight against obesity.

Highlighting these factors, collecting information on previous interventions, and learning from their best practices and challenges should provide a benchmark to build on in the field. Most importantly, this study allows us to identify the gaps in the services and programs related to obesity in Egypt, thus providing us with recommendations and implications to help set strategies to deal with obesity. Furthermore, the recommendations from the study should encourage collaboration and partnerships in order to collectively work on obesity rather than deal with it in a fragmented manner.

Key sources of information for this study include people working in NGOs, government offices, and private enterprises potentially related to obesity. Based on the current literature, the main broad research questions were: (1) What obesity related programs, initiatives, and policies have been implemented in the last five years or are planned to be implemented in the next five years? (2) What factors, such as assets and resources, contribute to the availability of obesity programs, initiatives, and policies in Egypt? (3) What are the challenges faced when providing obesity related programs, initiatives, and policies?

Methods

Participants

The sample of the study consisted of 25 staff working in or who are members of 22 organizations from different sectors in Cairo. These included managers, directors, managing directors, managers and program coordinators, business owners, a manager of a food service, officers and coordinators of food production companies, and fitness experts. The intended sample was to be 15 officials from 15 organizations;

however, for the purpose of comprehensiveness and through snowball sampling, 22 organizations ended up being included and a total of 25 people were interviewed. In three of the organizations, interviews were conducted with more than one official, based on the request of the participants or for better coverage of the interventions. This happened in governmental ministries and one non-profit organization.

Organizations were chosen based on their potential relevance to obesity; whether their work was related to the factors contributing to obesity or dealt with consequences of obesity such as NCDs or through physical activity. Additionally, the participants were asked about their activities in all Egyptian governorates, as this study aimed to track nationwide interventions and not just those based in Cairo. The organizations interviewed were from the private/for-profit, public, and nonprofit sectors. The participants are from five national governmental organizations; including two ministries, a university, and two research institutes, As for the private sector, data were collected from a pharmaceutical company, a fast-food chain, a food production company, an individual initiative providing diet foods, a physical education private academy, a chain of gyms, private sports and fitness therapy centers, fitness program and physical activity initiatives, and a sport promotion services company. Regarding civil society organizations, three Egyptian organizations, two United Nations Agencies, and two international organizations were interviewed.

Procedures

Recruitment of participants. Potential participants were either contacted through a phone call or through an e-mail followed by a phone call (see Appendix B for the protocol). Participants from the initial list, which was put together before data collection, were contacted, and then later, other participants were contacted based on the snowball sampling approach. From organizations contacted and reached, two

people reported not working on obesity and therefore were not interviewed. From the snowballed list of potential participants, ten organizations/individuals were contacted, and three were unable to be interviewed. Four participants were contacted but not reached. If a participant was unreachable (i.e., after three phone calls and an e-mail), they were considered uninterested. Two participants were not interviewed due to busy or conflicting schedules.

In general, the request for an interview was viewed positively by potential participants because they saw the research as serving an educational purpose. Also, the American University in Cairo (AUC) is widely respected in Egypt, and perhaps most importantly, participants were approached through personal contacts.

Interview procedure. One pilot interview was conducted with a key informant who works at an international organization. This helped with refining the interview; data from this interview was not used. Twenty-two interviews took place at the participants' offices and three took place by phone. The interviews were conducted in English and/or Arabic, based on participants' preference, and lasted from 15 minutes to a little over an hour.

The purpose of the study was explained to the participants, then they were asked to complete the consent form (see Appendix C), which notified them that their names would be removed and their personal information would be kept confidential; however, the information about the interventions and services provided would be compiled and disseminated to add to the field of obesity interventions in Egypt. Participants who were interviewed over the phone were sent the consent form via email, signed and scanned it, and then sent it back via e-mail.

The semi-structured interview responses were audio-recorded with participant approval, to ensure accuracy, and a data collection sheet (see Appendix D) was used

to record the answers of the interview. Only two participants did not allow recording. The data collection sheet was organized with preset categories and domains, while including space for qualitative data through open-ended questions and room for further information.

A summary of the interview data was provided during the interview, and participants had the option to receive a copy of the transcribed data for their review. Only one participant asked to review the written up data of the interview, reviewed it, and sent it back. Participants were promised a copy of the findings and recommendations. Additionally, an e-mail or text message thanking them for their time was sent to them. Due to participants' busy schedules, participant review of the data was not obligatory, but they were asked about the possibility for future contact in case of further questions. In cases where the participant was referred to by another participant in the same organization, their contacts were not collected and accordingly were not sent an email afterwards or asked for their review. Hence, they were thanked for their time after the interview directly.

Measures

Semi-structured interviews were conducted to aid in rapport building and allow effective communication. Additionally, this measure was used to aid in obtaining a thorough description of the organizations' obesity programming in Egypt through follow-up questions, when needed. The questions were developed based on the literature review with the aim of collecting information about interventions and programs related to fighting obesity; the previous interventions in the last five years; and current and future interventions, programs, or activities that are carried out by the organization. Also examined were the barriers to such interventions, as well as resources that contribute to those programs and services. The questions were designed

to elicit a database of the prevention and intervention programs in Egypt relating to obesity at different ecological levels; this included interventions for all age groups, including their geographical placement, to be able to highlight the gaps in the services and programs.

The interviews were composed of eight main questions with follow up questions. Participants were asked the following questions regarding their organizations' efforts regarding obesity:

1. How has your organization addressed obesity, if at all?
2. Have there been any efforts regarding obesity interventions in the last five years by your organization?

- If the answer is yes:

- How was it designed?
- What were the objectives?
- How long have they been in existence?
- Who was the target audience? Type? Activities? Scope of the initiative?
- Where was it conducted?

- If the answer is no:

- What is hindering you from starting a program/ initiative?

Then participants were asked these next questions that focused on the challenges, and resources they had.

3. What issues have negatively affected your work in obesity? What challenges have you faced in your work on obesity?
4. What are the future plans to work on obesity?
5. What are the resources or assets (e.g. funding, policy change, facilities, etc.) that you think can benefit obesity interventions? How can they be obtained?

6. What has helped you in your work on obesity? What contributed to the success of your activity?

Lastly, for snowballing purposes, participants were asked if they knew of other organizations working on obesity in Egypt, how they knew about them, what are they working on; and who are the other people working in obesity that may be willing to be interviewed.

Data Analysis

The analysis process started with transcribing all interviews from recordings or notes. As the data was usually a mixture between Arabic and English translation was conducted during transcription. Usually, terminology was said in English and the Arabic used was colloquial, making it easy to translate to English. After transcription, categories were created for each question and a codebook was created. This was achieved by organizing the data under the questions and then dividing them by the categories; the data was then organized in sub categories per question, adding new category as they appeared in the interview content; this was carried out throughout the process. Each code/category was examined to determine consistency among the text within the code, and codes were adjusted when necessary (De Negri & Thomas, 2003). The initial codebook was composed of ‘middle-order’ categories (Dey, 1993), meaning that the codes were further developed to include more details as the process went on. These initial codes included the following: the type of interventions, their duration, their geographical location, the targeted audience, the implementing agency, their activities, the challenges, the assets, the recommendations, and future plans. The final codebook was developed through the alteration of the codes/categories or merging similar ones (see Appendix E for final codebook). New codes were created to merge several codes; for example, merging between the codes of infrastructures,

school canteens, etc. to fit under one of the bigger codes such as environmental factors. Each question in the transcribed interviews was then examined for the coded themes, and the number of participants who mentioned that theme were counted. Lastly, to test for inter-rater reliability, data from two questions and their codes were sent to a fellow researcher, and she was asked to sort the data from the questions according to the codes. There was agreement about the codes 90% of the time, which tested the codes to ensure consistency.

Results

The results of the study include information about the interventions and programs implemented by the different organizations and individuals that were interviewed. The data included obesity-specific interventions as well as related efforts such as nutrition education or wellness initiatives. After analysis, the data collected was organized by age of target audience, geographical location, and gender (see Appendix F) and into three groups according to their ecological levels in order to identify the gaps in service. Table 1 describes programs and services for different age groups, Table 2 includes the services and programs in geographical areas, and Table 3 lays out the services in accordance to the gender of the targeted audience. The interventions, services, and other activities related to obesity were added in a table (see Appendix G) that includes all the specific data collected about the interventions the participants described. The information was organized by intervention, scope, timing and duration, and target audience. Data presentation is organized by most commonly stated information; meaning that issues and topics most mentioned are presented first.

Question Themes

How has your organization addressed obesity, if at all? When asked this question, four participants provided information about set programs carried out internally for the staff, and two others reported conducting one-time events and activities for their employees. Furthermore, 20 organizations described external programs carried out for their clients or beneficiaries. These programs included nutrition awareness, physical activity programs amongst other activities.

Internal programs. Internally, three organizations reported programs and activities that they conducted for employees to improve their health and promote wellness. Another organization stated that they had tried but were unable to implement workplace activities, and another said that they have a gymnasium in the office building. The three organizations who reported conducting events and programs for the employees as a part of their internal efforts had a program for their housekeepers and staff, a fitness campaign, and Human Resources events. The housekeeper and staff program was composed of fitness classes twice a week within working hours. In the same organization there were fitness services and facilities to all their staff for free after working hours. Another organization started a fitness campaign for all employees in order to promote health and wellness which was organized by their nutrition department. The campaign was launched with an event where employees could get assessed by specialists and be given health and fitness advice if they wished. Furthermore, the campaign offered all employees health pamphlets containing tips and advice on their desks, in addition to a daily nutritious snack composed of a fruit, a vegetable, and yoghurt. Additionally, the employees had the opportunity to join the BeFit Transformation Challenge after working hours. The BeFit Transformation Challenge is a physical training program that helps people engage in healthier lifestyles and exercise to transform their bodies. The last

organization stated that they encourage sports and conduct annual events and outings, from brief group walks from the office to a nearby park to 2-3 day events in order for staff to engage in physical activities and sports competitions. All these initiatives were organized by a steering committee whose members served as representatives from all departments under the supervision of the Human Resources Department. A fourth organization reported that in 2008 they were planning to have a sports facility in the building in order to allow employees to engage in sports before or after their office hours; they were unable to implement the plan, but claimed that there was still a culture of exercise in the organization. Lastly, it was mentioned by one organization that they have a gymnasium in their office building.

External programs. As for external efforts, 20 organizations reported that they have future, current, or past activities conducted for the public. The remaining organizations stated that such activities are not part of their direct mandate and that they only have health related activities that indirectly target obesity. The indirect activities included tips on nutrition and health related issues through media channels, nutrition education programs and awareness sessions, professional fitness education, wellness and fitness programs, weight loss programs, research, monitoring and surveillance of children and mothers, and obesity management clinics (see Figure 2). Although these activities may be directly related to obesity, participants named them as indirect activities to their work. Most activities in the organization were targeting nutrition, with a primary focus on malnutrition and under-nutrition.

Organizations including five sports facilities, five research centers and medical organizations, two ministries, two food producing companies, and three civil society organizations, reported having programs or have had programs or campaigns that indirectly target obesity. Two organizations reported that they do not work on obesity

or related activities because it is not part of their mandate, yet they contribute to demographic research; including statistics about obesity and overweight, or nutrition awareness. Five organizations, mainly sports facilities, movements, initiatives, and companies, reported that they focus on general wellness, fitness, and health, to promote weight loss, combat obesity and unhealthy lifestyles. Five other organizations said they have worked on obesity only through research; two through medical or nationwide demographic studies, and three who had their own obesity clinics through applied research on clinic clients. One ministry has weight loss programs through sports and promotes physical activity through the national general sports program. Another ministry stated that they are working on conducting research on school canteens and physical activities in schools, monitoring mothers and children's eating patterns, and conducting a nutritional surveillance system in their facilities in order to eventually have protocols regarding obesity programs since there are none at the moment.

Regarding the food producing organizations, one organization was working on two programs in partnership with local organizations to promote healthy eating and physical activities as part of their corporate social responsibility, through nutrition education and awareness sessions. The other organization was providing healthy food options and had a campaign to prevent weight gain for its consumers. Another initiative reported providing individualized diet plans and meals specifically for weight loss. Concerning the civil society organizations, one did not directly focus on obesity but was concerned with malnutrition and incorporated physical activity across its programs, another had two nutrition education programs, and the third was focused on health education in general and was working on producing a coloring story book to educate children about obesity. Additionally, some initiatives were in the form of

pamphlets and flyers with information regarding healthy eating and living in order to reduce the consequences of NCDs were distributed in pharmacies and to physicians. Lastly, the fitness academy stated that they were targeting obesity by providing education to fitness professionals and others interested in the field through courses and yearly international conventions.

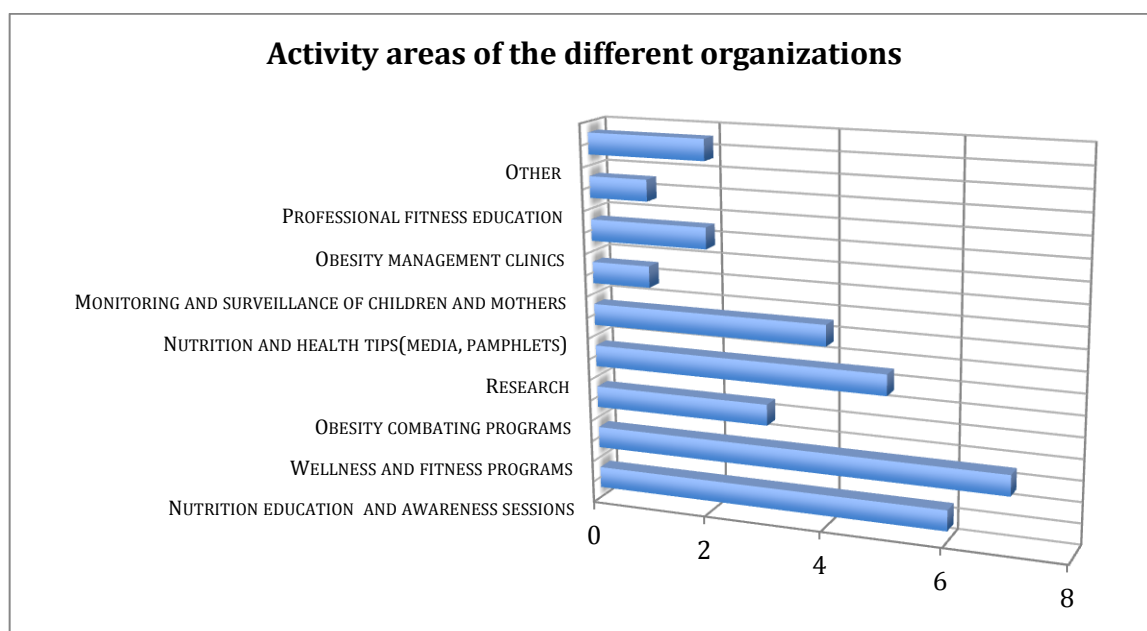


Figure 2: Activity areas of the different organization. This figure demonstrates the different activity types conducted by the organizations interviewed.

Has there been any efforts regarding obesity interventions in the last five years by your organization? This was a more detailed question for participants who answered the previous sentence with agreement. The purpose of this question was to get participants to talk specifically about initiatives implemented in the last five years, and to gather more detailed information about them. Accordingly, participants were asked about the design, specifically; objectives, duration, target audience, activities, location, and implementers of the intervention or program (see Appendix G). Also, if their answer was no they were asked about the reasons why they had not engaged in

such programs or activities and what was hindering the start of such a program/ intervention in their organization.

As was seen from answers to the first question, some organizations implement different types of activities, programs and interventions, which may or may not focus on obesity; the same results were found in the second question.

Obesity related activities. Interventions and programs mentioned to be directly and solely targeting obesity focused on promoting physical activity and obesity management. These were carried out in the form of physical activity programs by organizations under the Ministry of Youth and Sports, in addition to nationwide program that promoted sports under the slogan Alreyada lel Gami' (Sports for Everyone). Additionally, the Center of Excellence of the University of Physical Education engages in physical activity promotion and obesity management. Also, the National Nutrition Institute and the National Research Center are organizations that have clinics that target obesity management as well as malnutrition. These centers promote nutrition and health education as well.

The National Research Center and the University of Physical Education in Helwan conducted applied research on obesity that benefited a small number of people, as indicated by one of participants. On another note, the National Nutrition Institute (NNI) also conducts research and works on different aspects about nutrition such as food safety and food intake modulation; recommendations and best practices from the findings of research were implemented in their centers of excellence. Furthermore, the research centers promoted nutrition education through their website by providing nutrition and health related information and practices online in addition to their clinics where they practice. Additionally, the NNI has a training center to certify dieticians and clinical nutritionists in general nutrition or obesity management.

The Egyptian Medical Association for the Study of Obesity (EMASO) only conducts medical research and holds yearly conventions to discuss medical interventions related to obesity. Other conventions and further certifications are provided by the Strugo Academy for Fitness Education (SAFE) academy in order to educate fitness providers and others who are interested in the field. The academy has courses on group fitness, personal training and organizes international conventions that provide workshops and certification courses. Lastly, another organization, Antifat, a small healthy food service company that provides food based on a nutritional plan, stated that they mainly focus on obesity. The service they provide is daily meal deliveries that include nutritional low calorie foods, based on the clients' preference and needs.

General nutrition activities. Some interventions targeted nutrition generally. Nestle and Alashanek Ya Balady for Sustainable Development (AYB-SD) are currently implementing two nutrition education programs, one of which is a joint program called Nestle Healthy Kids. Save the Children and the World Food Program were mainly concerned with malnutrition, specifically stunting and anemia deficiency, and their programs reflected this focus. Nonetheless, they provided general nutrition awareness sessions which were geared towards preventing malnutrition. The Ministry of Health also focused on malnutrition, as well as antenatal and neonatal mortality; however, their services of monitoring pregnant women and children only covered over and under nutrition. The Ministry is also engaged in implementing a nutritional surveillance system which tracks and monitors the state of health of children and, based on the results, provides advice to mothers on how to best tackle nutrition related issues. Furthermore, the Ministry has different services like health awareness sessions that are provided to mothers during vaccination times. Additionally they also work in collaboration with the WHO and WFP on fortifying

certain foods to deal with malnutrition, such as adding vitamin A and B to subsidized oils, iodine in salt, and iron and folic acid in wheat for subsidized bread.

Pfizer, the pharmaceutical company, reported cooperating with different organizations such as the Egyptian Heart Association and producing materials about healthy eating habits, with the purpose of mitigating the consequences of NCDs. Similarly, McDonalds conducted a nationwide campaign that included health tips on the radio and introduced healthier/less fattening products like salads and reduced sizes. Meanwhile, Healthy Egyptians, a local NGO with pneumonia awareness as their main cause, was working on creating a full-fledged curriculum for children on different diseases and illnesses, including obesity.

General wellness programs. The most common type of initiative was wellness and fitness programs; the highest portion of the activities mentioned was geared towards general health, and promoting wellness. These were the programs and services provided by fitness providers such as the Samia Allouba gyms, QuickSlim, Fitness Republic, Befit, Zumba, and Igmadi. “Most gyms are geared toward wellness....our programs gear towards health and deals with obesity, namely getting rid of obesity” said by one of the fitness centers’ owners to reason how wellness is targeting obesity as well. These organizations provide their customers with programs such as fitness challenges and other services that are catered to the client with the overarching aim of improving their fitness, building muscles, and, consequently, causing weight loss.

No obesity related programs. Organizations that stated that they do not implement obesity related interventions claimed they were deterred by the mandate or practices of their work. The rationale was that either obesity or nutrition is not their direct mandate; their mandates are based either on the direction of their organizations

or on the country's need for maternal, neonatal and infant mortality, and stunting initiatives. Still, one of these organizations conducted and sponsored the demographic health survey (DHS), which includes a part on the prevalence and correlation of obesity. Lastly, even though UN Women do not work on obesity or on its related issues as it is not part of their mandate, one of their global programs, Safe Cities for Women and Girls Free from Violence Against Women, looks extensively at public spaces. One of the activities that were conducted was a cycling event, which was an event to encourage females to ride bicycles and break the stereotype of women not being able to practice such activities.

Geographical location of the interventions. More than half of the organizations implement their programs and initiatives in Cairo only ($n = 9$), Cairo and Alexandria ($n = 2$), in around six to ten governorates ($n = 5$), mainly Upper Egypt ($n = 2$), and only programs that are under the ministries and the promotional products of Pfizer reach all governorates. Reaching all of governorates is a major asset as obesity is a problem throughout Egypt. More so, including governorates also helps with the decentralization of services and programs, almost all of which are currently located in Cairo. This is a helpful finding because the outreach in the different areas in Egypt can spread the impact and services all over the country.

As this study aimed to map out obesity programming, the map below demonstrates the areas that the programs reach. The circles in the diagram depict the number of services and program in the area; the bigger the circle, the bigger the number of services and programs.



What issues have negatively affected your work in obesity? While answering this question participants stated general challenges and issues that have affected their work, in addition to challenges that are specific to the programs and activities mentioned above. Mostly participants listed challenges related to negative cultural practices or circumstances that affect and contribute to obesity, such as poverty, habits, and physical environmental and political influences. As one of the participants from a ministry said, “The NCDs are caused by different things like obesity, people not engaging in sports, the way we eat, people overeat in fats and fast food.”

The challenges mentioned included cultural habits and misconceptions, limited of awareness on education about nutrition and health, the country's political situation, environmental factors, low numbers of facilities and infrastructure, financial expenses and funding, media, poverty and food safety, the quality of the services and personnel, national agenda, interest and strategy, dieticians, the disregard of research outcomes and recommendations, and programs specific challenges.

Cultural habits and misconceptions. The culture and the habits of the Egyptian society and the misconceptions about nutrition and exercise were regarded as contributors to obesity and to the low number of activities and services provided to combat the epidemic. Participants mentioned the cultural components in mainly three categories: misconceptions ($n = 8$), unhealthy lifestyles and habits ($n = 13$), modernization and sedentary lifestyles ($n = 4$), and the lack of culture of sports ($n = 3$). The misconceptions included the appreciation of fatness and considering it as a sign of wealth, which participants said is still prevalent in Egyptian culture especially in poorer segments of the society, in addition to incorrect information about nutrition and health practices. Amongst the false information and unhealthy practices were misconceptions related to gender roles, as one participant said: “women thinking that they should not lift weights or they would look manly, [and] men who think aerobics is just for women;... cultural misconception of fitness in general.”

Another major misconception was unhealthy cooking techniques and considering them as healthy, for example, overcooking vegetables so that they lose their vitamins. Moreover, participants mentioned the misconception that being healthy and having a nutritious diet is either a luxury or is only for the purpose of weight loss and not general health. The minimal spread of the culture of sports was explained to be the reason why Egyptians do not practice enough sports. Consequently, the

shortage of practicing sports affects the usage of services and the engagement in sports programs. More so, the lack of physical literacy leads to a negative view of people who engage in work out such as jogging in the streets; they are either looked down on or seen with astonishment.

Regarding unhealthy lifestyles and habits, participants mentioned the sedentary lifestyle and the effects of modernization that contributes to people's laziness and absence of physical activities. Modernization included the use of energy saving devices, cars, and elevators; and the spread of working mothers who cannot breastfeed for the entire first six months because they must go back to work, which deprives infants from proper nutrition. Also, it was mentioned that the younger generation is more prone to engaging in unhealthy eating and activity habits, while also being neglectful of learning new skills to help the field of fitness or in breast feeding. Other habits like neglecting general health and not going for general health checkups, in addition to unhealthy eating habits, such as adding sugar to most drinks and eating heavy meals were also mentioned as contributing to obesity. Finally, participants pointed out that some of these factors contribute to low participation in their programs, and low compliance with instructions and activities, which impacted the overall success of their programs and of their beneficiaries.

Lack of awareness and education about nutrition and health. Participants mentioned lack of nutrition and health awareness and education ($n = 16$) as a major challenge. The main issues caused by the lack of awareness and education of nutrition and health were: the neglect of general health practices, minimal awareness of healthy choices and practices, the inability to read food labels, and the low demand for health education. Participants stated that limited of awareness was a cause of obesity and the reason why people did not join any initiatives or use their services. Moreover, it was

stated that the insufficient amount of nationwide programs, initiatives, and campaigns contributed to the shortage of awareness and education of nutrition and health.

Similarly, it was mentioned in two contexts that market forces, including a low demand for health education and fitness services was one of the reasons behind absence of obesity programs. Also, fitness services in the fitness education sector were seen as detrimental because they allow fitness providers to teach by only attending a 12 hour licensing workshop without an examination, instead of the more rigorous and reliable 90 hour certification course.

Egypt's political situation. The political unrest that Egypt has experienced in the last four years following the January 25, 2011 revolution, was seen as having caused a shift in the needs of the people that negatively affected both business and nonprofit and services ($n = 10$). A plan for multiple entity collaboration was negatively impacted, as one participant stated, "The plan was going to be multi sectorial but it has stopped with the political situation." After the revolution, people became skeptical about the work of non-governmental organizations - and the constant changes in the government made it difficult to cooperate with public entities. One of the participants pointed out that if a program is not adopted by a ministry it does not succeed in the short term and more importantly it is not sustainable. Safety concerns shifted people's priorities, as a participant in the food industry explained, "The last three years were very difficult and different from what we know and learned because people's needs were different, people were not into nutrition and so on, they just wanted to eat, and most importantly for the delivery man to deliver and come back safely, for the client to get his food and for our staff to be safe." Safety concerns also made experts in the field of obesity shy away from coming to Egypt. The

organizer of the fitness convention expressed this challenge by saying “Bringing those big names to Egypt, [is a challenge in itself] some were afraid to come.”

Environmental factors, facilities, and infrastructure. Environmental factors were seen as playing a major role in the results and impact of the interventions and activities ($n = 16$). One participant blamed the environment in Egypt generally while others mentioned that the prevalence of urbanization introduced gadgets, such as remote controls or inactive transportation, that contribute to obesity, or the scarcity of health promotion facilities. Participants mentioned the school canteens as an example of unhealthy facilities ($n = 2$) and believed that they were a hindrance to the progress of the participants in their adoption of the good nutrition habits taught in school prevention programs. Likewise, participants complained about the availability of unhealthy foods ($n = 3$), specifically fast food chains and junk food, due to their high-energy low-nutritional value which contributes to weight gain. Besides the availability of unhealthy foods, participants mentioned the deficient compliance with labeling policy by not including nutrition facts on food labels and unclear writing of nutrition labels so that people can't use them to make healthy choices ($n = 2$). It was also seen as a challenge to compliance to nutritional plans. Moreover, the lack of an existing entity that supervises quality assurance or monitors health related endeavors was mentioned ($n = 1$), as well as the subsidized commodities provided by the government that are energy dense ($n = 1$). The shortage of the availability or access to facilities such as sports facilities ($n = 2$) and school nutrition clinics ($n = 1$) was listed. Additionally, participants explained the scarcity of appropriate sidewalk space or infrastructure ($n = 2$), such as bicycle lanes, that promote overall physical activity.

Financial expenses and funding. Funding and financial expenses were seen as a great hindrance ($n = 18$). Funding was mentioned by 13 participants, two of

whom made the point that the funding agencies only work in special areas and require a direct interest or a certain gain in return for their assistance. Accordingly, as obesity is not a top priority, obesity programming is deprived of funding. Minimal funding has been hindering organizations from the creation, implementation, and expansion of programs, and from conducting research. Additional monetary issues include the high cost of healthy materials and services ($n = 5$), for example healthier food options are more expensive and difficult to prepare than junk foods. An example would be the higher cost of substituting french fries with an apple because the cost of equipment to package the apple is more expensive. One participant explained that the high cost of materials, such as modified milk formula for children with special nutritional needs hinders their service in malnutrition interventions because it is not financially feasible for everyone. Furthermore, one participant mentioned that clients do not want to pay extra money for the obesity reduction related services that their gym offers.

Media. Even though the main reason for the above questions was to explore challenges facing the organizations providing obesity programming, participants mentioned challenges and factors affecting obesity in general, such as the media. Media ($n = 7$) was mentioned as having a negative effect on the problem of obesity and the lack of awareness of health and nutrition and the promotion and advertisement of unhealthy products and habits ($n = 4$). Findings highlighted that the overall perception was that the media has failed to offer information about proper nutrition and healthy habits ($n = 2$). Participants blamed the media for the advertisements and messages they send to viewers, where they promote fast food and unhealthy meals by using athletes for example, and also for feeding the misconception of skinniness and fast weight loss rather than promoting health and healthy lifestyle changes and habits. Furthermore, it was mentioned that airtime to promote healthy messages was

expensive and the vast number of television channels made it difficult to target all Egyptians ($n = 1$) due to the fragmentation.

Poverty and food safety. Poverty ($n = 6$) was mentioned as the reason why obesity is spreading, mainly because people are unable to purchase foods high in nutrients and instead buy high energy and high-calorie foods that are quickly filling. Participants explained the spread of obesity by saying “The way mothers feed children high calorie foods with low nutritional values” and “Because the poor people eat bread to fill themselves up.” Additionally, unhealthy food choices and negative cooking techniques that promote energy dense rather than nutritious meals, lead to malnutrition and obesity. “In poor areas there is low protein intake that creates stunting and could also be obese stunting.” Furthermore, the financial state of the clients and the “increase of food prices [that] has affected food security” were seen as challenges that participants faced during the implementation of their programs. These challenges impeded the participants’ ability to abide by, attend, or follow the instructions of these programs by the different organizations. For example, a healthy food plan would include certain goods, which may be expensive for the participants to purchase, or would require a certain way of cooking that they would be unable to abide by due to their limited resources.

National agenda, interest and strategy. The challenges for obesity related programs lie mainly in the lack of interest by the government and high officials ($n = 4$) and accordingly there is an absence in obesity prevention on the national agenda. Participants mentioned that there was no general interest in or awareness of the issue, no straightforward agenda, and accordingly no public awareness. Furthermore, participants felt that the government was focused on other issues that they viewed as more important such as vaccines, safety and security, and economic development ($n =$

4). Yet, two participant pointed out that obesity, along with other consistently growing NCDs ($n = 2$), are a challenge in themselves because they are a financial burden on the country and its health system. As one participant explained:

We are not talking about people who die from traffic accidents, which is more preventable, or national disasters; we are talking about people dying of diabetes, hypertension, complications of anemia and pneumonia.

Participants saw obesity as an important national issue, as one said, “I believe that obesity is a national security problem, because it puts a burden on the Ministry of Health.”

Quality. Quality of existing projects or monitoring the quality worried participants ($n = 9$); they highlighted the low quality of services provided by the personnel in the field, such as untrained or insufficient numbers of nurses in health units ($n = 2$), or professionals in the field of sports who practice and use outdated information in their training programs ($n = 2$). The lack of an organization which supervises those implementers in the field of fitness was also mentioned as a cause for the low quality and using outdated information and practices ($n = 1$). Additionally, the shortage in personnel and human resources ($n = 2$), such as a team or physical education teachers in Egypt, was seen as a challenge for promoting physical activity. Moreover, maintaining the quality of the services provided especially when expanding the programs was a challenge for the participants ($n = 2$). As one participant pointed out, “With the growing community it is challenging to keep the quality that we are promising people and provide what we do at its best”.

Dieticians. In the Egyptian context, a dietician is someone, usually a medical doctor, to whom people go to lose weight; dieticians usually provide the patients with a diet plan to follow for weight loss. When participants mentioned dieticians ($n = 2$),

they were mentioned in two contexts; the first as a fad that only promotes weight loss and the second as a source of malpractice and profit making. Some complained about their lack of specialization due to the vagueness of the profession, their usage of one-plan-fits-all and preset diet plans for clients, and not spending adequate time with clients or providing them with tailored nutrition plans.

The disregarding of research outcomes and recommendations. Participants voiced complaints about how research results and recommendations get disregarded ($n = 2$). They felt that they conducted research that repeatedly recommended a certain direction yet was totally overlooked. National projects and programs are not based on recommendations from research, so as participants were publishing the results of their research, they felt frustrated that their findings were not put to use. However, one participant explained that this neglect may be the result of financial challenges and shortage of resources of the government and its need to prioritize its budget allocation.

Marketing and outreach. Additional challenges that contribute to the weak media coverage on obesity, mentioned by five participants, were marketing, the limited outreach of programs, word-of-mouth or social media as a source of information, as well as the reliance on haphazard methods of recruiting beneficiaries. Another concern was the inverse relationship between outreach and impact; participants believed that with a larger outreach the impact of the activities may be endangered. Participants believed that the more they reached out to people the more the message became diluted and its effect compromised ($n = 2$). For example: "...the outcome was not great, the further you go, the further the information gets diluted; so when you evaluate you feel that you need to start again."

Compliance and impact. In addition to the problem of beneficiary compliance, previously mentioned in the culture section, participants explained that some of the beneficiaries of their programs were unable to utilize the services with enough frequency, especially for weight-loss programs ($n = 3$). Therefore, the service providers try to incorporate as much information and services as possible into sessions ($n = 2$). The challenge of accommodating to the different interests and addressing boredom of participants was also seen as a challenge ($n = 2$), and that “people are resistant to change.” Lastly, participants pointed out that the effect of obesity programs takes a longer time to show and accordingly requires participants’ compliance, patience and commitment ($n = 6$).

Service & programs-specific challenges. Lastly, service and program challenges ($n = 3$) were mentioned. As one participant said, “...we just face the regular program implementation challenges.” Others mentioned specific challenges like coordinating with different partners, monitoring and evaluating programs and consumer-specific challenges associated with reaching some target groups such as street children or marginalized community members.

What has helped you in your work on obesity? What contributed to the success of your activity? The answers to these questions provided information about the assets that helped participants succeed in their activities. Assets were defined as a thing or person that is valuable or useful to the implementation of the program or service. The assets were divided into the following categories: partners and networks, human resources and manpower, knowledge and experience, emotional support and buy-in, research, referrals and reputation, programs and services, outcomes and effect of the programs, vision and mission of the organization, facilities and fixed assets, financial assets, media and social media, and natural assets.

Partners, networks and relations. Partners, networks and relations were mentioned as a treasured asset and a reason behind the success of many programs ($n = 22$), especially partnerships and relationships with the government ($n = 10$). Networks and partners were seen as especially beneficial ($n = 2$) by participants. Governmental partnerships took two forms. The first form was overlooking a subordinate organization ($n = 2$), like youth centers that follow the strategy of the Ministry of Sports and get funding out of the national budget. The second form is through cooperation with the government and different ministries ($n = 7$), or having a program be adopted by a ministry ($n = 1$). Other assets include partnerships with implementing organizations ($n = 4$), the media and media relations ($n = 2$), and strong relations with the private sector ($n = 4$). As for the networks, two participants mentioned their international network as an asset; local networks were also mentioned as an effective and powerful asset, primarily health facility networks and beneficiary databases.

Human resources and manpower. Human capital and manpower were mentioned as a dynamic and valued asset ($n = 16$). The staff of the organizations, such as physicians, trainers, dieticians, volunteers, and team members were mentioned as a clear asset ($n = 11$). Participants expressed their pride in their teams and staff; for example: “I think I have a team of amazing instructors they are one of the best in the country.” Furthermore, participants mentioned that students were great assets, serving as recipients of the programs and being easily available with predictable schedules since they are in school, thus helping the organization to grow and improve ($n = 2$). Youth in general were seen as a valuable asset, as volunteers ($n = 2$) and as the future assets of Egypt ($n = 1$). As one participant said, “Youth, they are not a burden but human resources. With the large number of youth we can easily enter the Olympics

and World Cup. But we do not have the system that selects the youth with the right potential... we do not give them the chance.”

Knowledge and experience. Participants regarded their own and their team’s knowledge and expertise ($n = 12$) as the core value of their organizations. The team’s personal experience and technical and operational expertise ($n = 4$), knowledge ($n = 2$), and educational background ($n = 3$) were mentioned by several organizations as strong assets. The participants stated that the knowledge they have access to from their international network ($n = 1$) and their educational backgrounds have helped them with the creation and implementation of the activities. Furthermore, they mentioned that the operational and technical experience they have as an organization or team ($n = 2$) are their most valuable assets because it makes their work easier and enhances their reputation. One participant proudly stated that they are “the pioneers in the field.”

Emotional support and buy-in. Different types of emotional support were mentioned ($n = 11$) as assets. Some participants mentioned that the community they work in is a great source of support ($n = 3$) as there is acceptance by the beneficiaries or general culture or to the efforts of the organization. Among the other factors are personal conviction ($n = 1$), the emotional support of family and friends around them, ($n = 2$) and beneficiaries’ momentum ($n = 3$). To maintain such momentum, a participant from a ministry said “some of the staff work pro-bono so that the people do not drop out and to keep their momentum [of the beneficiaries].” Lastly, a participant from a non-governmental organization mentioned momentum as an asset and added there is “acceptance by the children...Egyptian children and youth want to and are eager to know more; unlike what people criticize.” The support from different organizations through incentives and in-kind support was also mentioned ($n = 1$).

Lastly, the lack of competition ($n = 1$) and the existence of other health services ($n = 1$), mainly during vaccination times in health units, contribute as supporting factors to the activities. As one participant pointed out health units are a great asset because almost all children in Egypt are vaccinated and so when they visit the health unit for their vaccinations it is an opportunity to monitor growth and physical development.

Research. Although more than four organizations were engaged in research, only participants working on research mentioned that research and the ability to conduct research were a great asset that can contribute to the work in the field ($n = 2$). One participant stated: “We have the research and are the pioneers in the field.” Additionally, another participant who was not engaged in research emphasized the importance of research by saying:

The problem has to be put on the national agenda and then get all the concerned stakeholders to take part. And maybe you can also start with putting together the research that highlights the main key points, the populations that are affected, how it affects the children as well as grown-ups now and how this will affect the children and the future generation and the country.

Referrals and reputation. Some of the activities and services provided mainly relied on the reputation of the organization ($n = 4$) and referrals ($n = 3$). Two organizations stated that their beneficiaries know about their work through referrals, which is an indication of people’s satisfaction with their services and the quality of their outputs; reputation was seen as a major asset that should be invested in and cherished. One organization even stated that they had gained international recognition by conducting an event abroad.

Programs and services. The programs themselves were regarded as an asset ($n = 14$); more specifically, the actual activities that the organizations implemented as

part of their programs and services were seen as assets ($n = 4$), especially in terms of variety and adaptability to a variety of clients' needs ($n = 3$). Participants also felt that the longevity of their programs, whether being a service by the government or ongoing for several years and still continuing, was a major asset ($n = 2$). Services by the government were seen as an asset because they are consistent, have their own budget, and only need to be implemented by the organization; they would not need to fundraise for them or even promote them as they are already known to the public. Additionally, free services ($n = 2$) and incentives ($n = 3$), like gifts, for the winners of their programs and challenges, were seen as an added value to the programs and service.

Outcomes and effects of the programs. Though it may seem unusual to think of the outcomes as an asset, participants mentioned that the effect and outcomes of the initiatives and activities are an asset that the organizations can and should build on ($n = 5$). Outcomes can be viewed as either the success of the activity ($n = 2$), fundraising ($n = 1$), or a sense of community among participants ($n = 2$). A fitness provider who organizes large sports events mentioned that “there is also a sense of community [in these events], when people are sharing events and wanting new people to join. There is something especially in Egypt, when you have these ladies only events and again this community aspect, it is like a secret society – a sense of community.”

The vision and mission. The message, vision and mission ($n = 3$) and the way the organization operates ($n = 2$) were regarded as key to developing and implementing projects, including their creativity, autonomy, or flexibility, giving them room to be innovative and grow in the direction they see fit. As one participant stated,

The creative ideas that we come up with; which are part of the vision and mission; ensures that we are constantly reminded that innovation and creativity are the core of what they do. So we do not work on anything the same way as it has been done before.

Facilities and fixed assets. The facilities and fixed assets mentioned ($n = 13$) fell into two categories, one was organization owned ($n = 6$) and the other was government/nationally owned ($n = 5$). The organizations' properties that were mentioned specifically were the office building and venues, and medical facilities such as laboratories. The nationally owned organizations that were repeatedly mentioned by participants were schools, youth centers, and public spaces and the over 5000 health units.

Financial assets. Three organizations who are also funding agencies for smaller organizations mentioned that being funding agencies is an asset ($n = 3$). These organizations have the resources to fund the projects they cooperate on with other organizations. Also, ministries and subordinate organizations mentioned that the financial support received from the national budget was an asset ($n = 2$), and an organization that recently got accredited ($n = 1$) saw accreditation as an asset that was likely to increase their budget.

Media and social media. Participants saw media as an asset; one mentioned that, "We rely on conferences and lectures and media for people to know about us". Appearing on a television show contributed to the promotion for one organization's program. Additionally, other organizations mentioned that their Facebook pages were one of their assets ($n = 3$). One participant stated: "I advertise mainly on Facebook" and another explained their main source of publicizing externally is social media

saying that: “We publicize... internally in classes and by using posters and externally through Facebook.”

Natural assets. Lastly, the variety of geographical areas and weather conditions in Egypt was seen as one of the assets ($n = 1$). The different geographical areas provide opportunities for different types of sports like cycling, hiking, and water sports.

What are the future plans to work on obesity? Almost all participants were enthusiastic about sharing future plans or had the intention for future plans but two participants, from international organizations, expressed that obesity was not their priority. Participants provided information about future obesity related plans as well as their hopes for future plans, while others had either unclear or no plans.

Continuation of current plans. All organizations that reported activities related to obesity, nutrition, and/or fitness said that they planned to continue with their activities. Some expressed that they would work on keeping the quality of their existing projects ($n = 3$) because they fit their strategic plans, and because they are also based on the governmental services.

Potential plans. Organizations that did not have clear set plans shared that they saw some potential in expansions in the field ($n = 7$). Organizations shared their future hopes of expansion ($n = 4$), but had no clear plans, these included the hope of starting new programs ($n = 3$), for example, creating an education program for free that would be applied nationwide, as well as implementing weight loss camps all over Egypt. Another organization had the intention to create a nationwide campaign or a program based on the recommendations of their nutritionist.

Set plans. A number of organizations had specific or clear strategies and plans ($n=11$). Two governmental institutions stated that they were working on a national

multi-disciplinary nutritional strategy which will include input from all stakeholders. Additionally, they planned to work on a strategy for adolescents' nutrition and a national consumption survey. Furthermore, a ministry official mentioned that they are trying to get the results of research on physical activity and school canteen standards disseminated to organizations concerned with school aged children's health. The aim would be to implement recommendations based on research findings and promote cooperation between different stakeholders. Interestingly, a ministry shared a program that is about to launch in 12 centers in primary health units. The program will provide different kinds of counseling, including nutrition counseling, for youth aged 10-24, in Assiut, Sohag and Cairo.

Additional programs also include children-related programs ($n = 2$); such as programs to develop children's abilities, skills, and their health, including nutrition. As one participant pointed out, such programs were important "so that [children] are prepared as the future generation and also they are the age we can affect." The other project is a book series and cartoons on different diseases, with obesity being one of the issues tackled. Organizations with clear expansion plans also included the addition of nutrition or physical activity programs or some awareness sessions to their work ($n = 3$), or the introduction of new healthier food options ($n = 1$).

No plans. Organizations that are not providing obesity related interventions stated no future plans ($n = 2$), yet declared their openness to cooperation with other organizations ($n = 3$). Two organizations stated that they do not have any future plans and may only change depending on the interest of the government, as it is currently not a focus. Moreover, one organization mentioned that their projects are derived from personal interests and individual connections ($n = 1$), and so there are no clear plans or set intentions for any activities related to obesity.

What are the resources or assets that you think can benefit obesity interventions? How can they be obtained? Although this question is asking about further assets and resources, participants mainly answered by giving mainly recommendations for future initiatives, programs, and activities to aid with combating obesity, especially from participants who had mentioned general assets previously. Some recommendations were specific to certain target groups, cooperation between certain ministries, and specific assets that only related to their organization's work, while others were more general and recommended spreading awareness about health and nutrition or shedding light on obesity. The recommendations were mainly comprised of nutrition education, physical activities and sports practices, health and sports education, facilities and infrastructure, policy and governmental action, multi sectorial programs and partnerships, media as a channel of communication, funding and budget allocation, and issues to address or areas to focus on. One participant argued that,

We need to attract attention to the field of obesity but we need to be careful because this is a sensitive topic people may realize it wrongly, you need to not give the wrong messages like promoting dieting to lose weight but it is about how to have a healthy living and a healthy lifestyle and work on the prevention and not just tackling the problem as it is. So we need to alert the population about obesity hazard and how it leads to non-communicative diseases like hypertension and heart diseases and how that is becoming a problem in younger generation which makes it more concerning as they are the future asset of the country.

Nutrition education. The spread of nutrition education and awareness was mentioned by most participants ($n = 17$). Participants recommended nutrition education for children, youth, and mothers. Nutrition education was mentioned both

generally ($n = 5$), and specifically to target schools ($n = 5$), sporting clubs and youth centers ($n = 2$), and in the form of tips in school books. Moreover, participants felt that nutrition education should consist of positive habits and education about healthy eating in addition to the warning and health hazards of obesity.

Physical activities and sports practices. Participants who recommended the encouragement and reviving of physical education ($n = 10$), specified for it to be done through classes in school and in summer schools, through competitions between schools and between universities, and in youth centers, while developing the services of the youth centers. Moreover, they recommended encouraging and reviving the five percent sports excellence addition to students' grades, which are five extra percentage points granted to students for their engagement in sports and added to their final grade. They also recommended the development of a system that develops sport talents and provides better chances for the discovery of athletes.

Health and sports education. In addition to nutrition education and physical activity practices, participants expressed the need for general health education and physical education to promote general activity and a positive culture of sports ($n = 10$). They felt that general health education should be included in all educational curricula, and be a part of both formal and informal educational activities. It was also suggested that the information needed to be community specific and should include reference to religious teachings.

Facilities and infrastructure. Participants believed that education alone would not result in the practice of physical activity without the provision of sports facilities and public spaces ($n = 6$), especially gymnasiums. Participants mentioned the need for proper sidewalks, parks, and bicycle lanes, which needed to be planned for by the government. They argued that such infrastructure would encourage the general

practice of physical activity and reduce car usage, hence pollution and traffic, especially the bicycle lanes. Participants also called for the provision of health clinics in schools and a center or organization in neighborhoods that would spread nutrition and health awareness.

Policy and governmental action. Participants made numerous policy recommendations ($n = 16$) and believed that it was important for obesity to be recognized at a national level ($n = 6$). In the case of legislation, they recommended adding nutrition to the government's agenda, making nutrition and obesity a priority, and coming up with national plans, strategies and recommendations during ministries' assembly to tackle the issue. Recommendations also included policies related to the standardization of school canteens, the provision of healthy meals at school, having bicycle days, nutrition and health education in school and university curricula, compliance of products in food labels, and the creation of systems that encourage physical activity on all levels. Participants also believed that the neglect and minimal of awareness of nutrition issues, especially obesity, was hindering the progress in the field and accordingly high-level government, specifically the Ministry of Education and Higher Education, needs to be involved. Similarly, it was also recommended for civil society organizations to incorporate nutrition in their assessment of beneficiaries.

Multi-sectorial programs and partnerships. Participants recommended multi-sectorial programs on a mass scale including national campaigns. This recommendation would require the creation of partnerships between different organizations and the inclusion of multiple stakeholders to be able to target the issue from different angles ($n = 11$). The essential and specific partnerships mentioned were mainly those between the Ministry of Youth and Sports with the Ministry of Education, the Ministry of Youth and Sports with the Ministry of Planning, the

Ministry of Health with the Ministry of Education and the Ministry of Higher Education, and between the Ministry of Education and the media. All of these partnerships would help to promote nutrition and sports education and the provision of facilities to promote physical activities.

Media as a channel of communication. The media as a mass communication channel was recommended for communicating simple and clear messages and spreading nutrition and health education ($n = 11$). Furthermore, one of the participants believed that the media should contribute to such initiatives as part of their social responsibility and to give back to the community.

Funding and budget allocation. Although the recommendations generally require funding, recommendations regarding budget allocation and funding were only mentioned for research, children and adolescent related problems, materials such as milk formula to aid with malnutrition, and to educate fitness providers in the field. Nonetheless, the recommendation to allocate more funds to obesity combating activities is apparent from the budget deficiencies mentioned by participants when they were asked about challenges.

Issues to address or areas of focus. This category consisted of miscellaneous recommendations that were crosscutting for the above mentioned recommendations. These included a focus on socio-economic and cultural factors, addressing the sedentary lifestyle, correcting misconceptions, especially the false paradigms of beauty versus health and obesity as a sign of wealth, addressing the problem of obesity through prevention as well as tackling it directly, and enhancing the quality and standards of service providers. Lastly, participants mentioned the need for the provision of healthy food.

What are other organizations working on obesity in Egypt that you know of and what do they do? Although this question was only asked for snowballing purposes, surprisingly however, it served as an inventory of people's awareness of other efforts done regarding obesity in Egypt. When the question was posed to two of the prominent fitness providers in Egypt their answer were "I am sure all the gyms do...also surgeries; which one is most effective I won't know..." and "obesity specifically, I don't think you can find any but you would find in fitness." The organizations the participants were thinking of were mainly organizations that participants previously worked with or organizations that they thought might be working on obesity research.

Six participants answered that they are unaware of organizations working on obesity. For example:

Not really, not even the nutrition institute, maybe them but what I know [is that] there isn't much public awareness ... on obesity and its implications in general just like we have it abroad. And even when we discuss weight in public media it is all about how your shape would look like rather than the health implication, it is about the public image ... education about nutrition is something that we definitely lack and people don't know much about nutrition.

Based on participants' observations, physicians, especially dieticians and clinical nutritionists ($n = 4$), and operations and surgeries ($n = 2$) seemed to be the only other people working on obesity. The rest of the participants mentioned organizations that are working on related issues but not specific to obesity awareness or prevention.

These organizations included two NGOs, four fitness providers and gyms, one television program, three physical education colleges in national universities, and the School of Medicine and Public Health Department, in addition to the possibility of

having interested individuals in universities. Different United Nations agencies were also mentioned: the World Health Organization (WHO) ($n = 6$), UNICEF ($n = 2$), the World Food Program ($n = 1$) and United Nations Population Fund (UNFPA) ($n = 1$). As for governmental institutions, the National Nutrition Institute (NNI) ($n = 3$), the Non-Communicative Disease Unit of the Ministry of Health ($n = 2$), and the National Council for Childhood and Motherhood ($n = 1$) were suggested. Research producing organizations were also listed, including the Population Council, the National Research Center, the Academy of Science and Technology, and the High Commission of Health in Alexandria. Healthy food outlets were also mentioned ($n = 1$) with “diet menus like Diet House or like Saladero, who only do salads. They are not actually diet food suppliers but they provide lower calorie foods.”

Furthermore, some participants provided suggestions for stakeholders that they assume would be working on obesity issues. These are the media, physicians and especially pediatricians, university professors in other governorates, and the Ministry of Education. One of the participants recommended “go to the Ministry of Education in the unit of Physical Education and get to know from them if they have enough teachers and so on because physical activity is closely related to obesity”. Some mentioned the probability of organizations such as international and national civil society organizations, and pharmaceutical companies working on diet pills as likely to be working on obesity. Also participants named other organizations that they think should probably exist, like an anti-obesity organization, and entities in the army and police; explaining that “You would never see someone in the army or police that is obese.”

Who are the other people working in obesity that I can interview? Again, although the purpose of the question is to build on the previously asked question to

aid in snowballing, it is added to the results section as it demonstrated that participants had a certain degree of knowledge of others working on obesity. Some of the contacts provided were further contacted for interviews. Moreover, it was also noted that participants knew of activities related or around their fields only. Seven participants; who answered by saying that they knew of organizations who work on obesity related issues, did not know other people that could be interviewed or who were in the organizations they had referred to, and one participant mentioned that they could provide the contacts of the Heart Association but did not because they would only be working on heart related issues. The rest provided contact information of people they knew in the organizations they had mentioned; which were three contacts in the WHO, three contacts in NNI, one contact in the NCD unit of the MoH, one contact in another university of physical education, one contact in the WFP, one contact in a national NGO, one contact that owns an obesity center, and one contact of a health television show presenter. Moreover, three participants referred to other employees in the organizations that they work in.

Discussion

Prior to implementing this research, it was assumed that mapping out obesity interventions in Egypt would make it possible to easily identify gaps in programming. However, throughout the research it became clear that the gaps and missing interventions in particular areas is not the only concern. More specifically, obesity programming is missing throughout the map. Accordingly, mapping out gaps and assets alone may not even begin to address how the epidemic of obesity in Egypt can be tackled. The Egyptian government and the Egyptian culture have been overlooking obesity and the programs.

The Lack of Focus on Obesity in Egypt

The issue of obesity is not addressed in the national prevention strategy of Egypt or on governmental agendas. In the West, and especially in the United States, obesity has been targeted as a national epidemic and prevention and treatment strategies have been set in place to combat it (National Prevention, Health Promotion and Public Health Council, 2011). Ever since 1999 the U.S. Congress has funded the Center for Disease Control and Prevention (CDC) to set a national, state-based, nutrition and physical activity program (CDC, 2009) to prevent obesity and chronic diseases. In contrast, in Egypt, the focus is mostly on stunting and malnutrition, as can be observed in the agenda of the Ministry of Health, the World Food Program, UNAID and the other initiatives by the civil society organizations. Out of the 22 organizations interviewed, only three tackled some components of obesity, then the rest focused on malnutrition in general, and/or had efforts related to obesity. It is interesting to see how most programs and strategies are geared towards malnutrition rather than obesity; and it was remarkable to find a participant saying that obesity was not an issue and another participant encouraging the focus on stunting by adding "...stunting is a priority based on statistics, so unless there are statistics that indicate that obesity is a problem in children we would work on it, but there are no statistics that indicate that." Furthermore, a participant mentioned that "obesity is not as obvious in children like in adolescents. But these statistics got Egypt to focus on stunting." Such statements explain the focus on malnutrition and not obesity (FAO, 2006; Hassan et al., 2005); yet statistics show the double burden of malnutrition, which results in obesity as well. While the focus before was only on under-nutrition, it is changing now. Under-nutrition was previously seen as a common popular disease but after epidemiologic and demographic transition of the populations, overweight and obesity become more apparent. Accordingly, under-nutrition is no longer the

major concern (FAO, 2006). This is quite alarming because it is still the rationale for many organizations and results in a lack of obesity programming.

It is a source of concern then that in the 22 organizations and initiatives interviewed, most of the activities did not mainly target obesity. The general disregard of obesity is likely to endure the spread of the epidemic in Egypt. Even if all of the related programming is taken into account, current efforts are inadequate for addressing the problem because they are not planned to address it. There is a clear need for comprehensive programming that directly targets obesity. A contrast to the lack of clear focus on obesity found in Egypt is found in initiatives in the West that have a central focus on the issue, such as the Campaign to End Obesity (Campaign to End Obesity, 2014) found in the U.S. or efforts by the Public Health Department in the U.K. (gov.uk). There, obesity focal points are prioritized, direct interventions are implemented, work and research done on obesity is coordinated, and obesity is on the national agenda.

Programs and Services

Participants generally described activities that only targeted issues related to obesity, such as nutrition and fitness; the types of activities and services related to obesity were mainly around wellness. While there was a diversity of activities, they were generally not focused on obesity, and the ones focused on obesity, such as applied research or weight management clinics, targeted a very small number of beneficiaries. The essence of obesity prevention is surely nutrition and exercise, but changes in ecological systems are essential to enabling healthy practices and the availability of and accessibility to healthy foods and healthier lifestyles.

Although nutrition education may be a simple solution, it may not have an impact if not done properly. Based on the FAO recommendations on nutrition

education, adequate time needs to be allocated (1997) for such programs to have an impact. Nutrition programs often focus solely on knowledge, and this also lessens impact as they need to address attitudes and lifestyle changes as well. The three components are complementary to each other, having all three would result in changes in the behavior and the adoption of a healthy lifestyle. But with only one component, people may gain knowledge but due to their life circumstances, are unable to practice what they have learned. Participants in the present study reported that one of the challenges that they face in their programs is the lifestyles of the participants, providing support for the idea that a lifestyle changing component is important to program success. Moreover, social issues like poverty, physical infrastructure, different sub-cultures, and availability and access to foods, need to be considered in implementing nutrition programs (FAO, 1997). Nutrition education needs to be adapted to the Egyptian culture and promote products that are locally grown and found. Also cooking and meal plans that are more suitable to low income families should be provided to make it easy for people to adopt them in their daily life.

Wellness promotion seems to be spreading, based on the emergence of the new fitness companies and for-profit initiatives. However, this fad is mainly targeting the upper class. For some organizations in the present study, obesity was not the main mandate, while others whose mandate was wellness and weight loss, believed that they were partially focusing on obesity. However, an obesity program should have an ultimate outcome of reducing obesity, chronic diseases, and mortality rates (CDC, 2009), and not just work toward wellness and weight loss as an end goal. The lumping together of obesity with malnutrition and wellness may be contributing to the low number of programs and services that target obesity specifically.

Sports programs/physical activity programs might be preventing more obesity but it may also be intimidating for some people to join even though these programs are open for the fit and unfit, and people of all weights. Additionally, these programs are only targeting those who can afford them, and do not address the needs of the larger community. Finally, fitness programs designed to combat obesity need to be specifically geared to obesity, as research shows that programs that are designed for non-obese children had mixed success or were unsuccessful with obese children (Hadley, Hair & Dreisbach, 2010). Moreover, the evaluators of a children's obesity prevention program argued that the success of the I Am Moving, I Am Learning (IMIL) program was due to having obesity as its primary goal (Segal, 2009).

Based on the fundamental principle of the energy balance equation (WHO, 2000), efforts focusing on eating and exercise to combat obesity should be effective, but other variables such as the willingness to engage in these programs or the scope of these programs limit their impact on obesity. Besides, although the energy expenditure/ energy intake equation seems easy to follow and to base interventions on, research has shown that calculating the dynamics of energy imbalance to predict changes in body weight is not straightforward (American Academy of Family Physicians [AAFP], 2013). Accordingly, interventions cannot simply target altering one factor contributing to obesity; they need to be multi-faceted in order to succeed.

Based on the National Academy for Science's report, "Evaluating Obesity Prevention Efforts: A Plan for Measuring Progress" (2013), before implementing interventions and programs, there should be evidence of their generalizability and success. This evidence should include how the strategy will be combined with others, the targeted population, the channels used, the duration, and the amount or intensity. Yet, due to the fact that in Egypt there are no clear strategies for obesity prevention in

place, and the activities mentioned do not always directly relate to obesity, it is impossible to determine the success or generalizability of interventions. And even though some of the activities may be generalizable, participants reported that the minimal resources to expand pose a challenge, and so does programming quality and consistency.

Most of the organizations that mentioned interventions related to obesity described events that were either inconsistently implemented or had very little effect. It is worth noting that participants proposed activities that were ordinary, such as a walk to the park, as related to combating obesity. The fact that participants had to stretch to come up with obesity-related activities is an indication of the poor state of obesity interventions in Egypt. However, it is worth mentioning, that participants were trying to mention programs and services that are related to health and wellness to provide data for the research. Participants were aware and mentioned the limitations of their activities and programs; not claiming that they directly deal with obesity. A family day once or twice a year, organized by the human resources office, is not aimed at reducing obesity but in reality is simply a way to increase the employees' satisfaction at the workplace, build a sense of community, or provide a change in routine. In addition to the limitations expressed by the participants of their activities not dealing directly with obesity, they mentioned that some of these activities were short lived and have a minimal impact on obesity. Small scale programs such as these have not been found to be effective (Snyder and Hamilton, 2002), however, they should not go unnoticed and may be built on. We can not deny the effects of the projects and programs on the small scales, yet, to work on obesity as a nationwide epidemic, larger scale programs need to be implemented. Nonetheless,

adding a community activity component helps the effectiveness and reach of programs (Huhman and Patnode, 2013).

Experts evaluating obesity programs have documented key elements of success; which are also the characteristics to measure the scale, scope, involvement, levels of success, and financial stability of the model. These characteristics are collaborations and partnerships, funding sources and sustainability, successful methods and strategies, family involvement, program duration, technical assistance support, operating costs, staffing levels, organization structure, and measurable outcomes (HSC Foundation, 2009). Clearly, the programs identified in this study do not meet these standards and so are unlikely to combat or prevent obesity effectively.

The only focus on obesity was through applied research by some organizations that happened to work with a target group that was obese, and obesity was just one of the variables studied. However, these studies had a relatively small target group, and based on the participants' complaints, the findings were published but not used to combat obesity. As one participant pointed out, "The major challenges are that the recommendations and results from the research are not taken into consideration or worked with." By disregarding the research recommendations, the progress in the field and the benefit to the nation is jeopardized. Based on the data, in Egypt, there are two types of research regarding obesity; research targeted towards medical procedures for individual cure of obesity, and applied research with a small sample group to study the effects of some procedures and new techniques. The first type is usually taken up by physicians and accordingly may be used on an individual basis. Yet individual interventions have been shown to be unsuccessful in dealing with the epidemic. The latter type of research effectively impacts a small number. This sample group gets to benefit from the service, program, or new technique to combat obesity.

Unfortunately, the findings from this applied research does not yield benefit to a larger population because they are disregarded. The recommendations and reports from the findings are not taken over by other organizations that can benefit from them and benefit others as well. More importantly, none of the research programs are targeting the emotional problems that either lead to or are the result of obesity, which are shown to predict weight gain in adulthood (Ternouth, Collier, & Maughan, 2006).

With the rising rate of obesity, it might be expected that companies and corporations would provide health programs for their employees, including obesity prevention; mainly to benefit from cutting the cost of health insurance and have healthier, more productive employees as a result (Segal, 2009). From the answers of the participants, it is clear that organizations do not specifically target obesity among their employees. The programs or facilities offered were either a gymnasium in the building, or wellness programs. The gymnasium in the building did not seem like something that was used by employees, but the wellness program drew more engaged and enthusiastic employees. As for other activities, they appeared to be more geared towards team-building than health promotion or obesity prevention. As one participant explained,

Internally we are encouraging sports and conducting outings. We just had a brief walk, not a marathon but a walk from the office to the fish garden, it was to encourage the principle of moving don't sit for the whole eight hours, although we sit for more, and also team building it is a good chance to be walking and talking with your colleagues in the sports attires, it is definitely the mood is different and the talks are different. A series of outing take place throughout the annual calendar for the staff so that people go out of the office,

breathe some fresh air, do some sports- we had horseback riding, usually soccer, when there are boys it usually becomes competitions about soccer.

Only one organization was providing a program for its employees that offered healthy foods, physical assessment and a fitness program. These programs for employees may be more impactful if the approach included incentives to motivate participation, for example, tying participation to health insurance coverage. An example of a corporation that has programs for their employees is the General Motors Corporation in the US. They adopted a nutrition program created by the U.S. Department of Agriculture and Food and Drug Administration in the 1980's (<http://www.generalmotorsdiet.net/>). The program was followed by the employees to reduce obesity. The collaborative and collective effort of all employees to follow the program spread motivation. While offering wellness programs does not necessarily have an impact on obesity, it has been shown to reduce cost of health insurance, which is a benefit for employers. For example, the Johnson & Johnson Health & Wellness Program resulted in the reduction of medical care expenditure starting its third year (Ozminkowski, Ling, Goetzel, Bruno, Rutter, Isaac, Wang, 2002).

The Ecological Systems Targeted

It is important to address all ecological levels if we want to maximize the impact of obesity interventions (Gaglio & Glasgow, 2012; Green & Glasgow, 2006), and achieve a more holistic understanding of the problem (Prilleltensky et al., 2001). An example of an intervention that is working on multiple levels in the US is the Initiative for a Healthy Weight (IHW), as it works on identifying assets and barriers in the community, provides support and advocacy for policy and environmental changes, works on state-level school policy change initiatives, while also partnering with a

hospital's pediatrician to enhance appropriate referrals of patients who are obese and overweight (Segal, 2009).

None of the programs or initiatives in the present study worked on multiple ecological levels. The data in the current study shows that more than half of the programs and services targeting the individual, such as providing tips on nutrition or joining a fitness program, or work on the microsystem level. This is a concern because it shows that the efforts are still geared to individuals and not to the larger population; which should be the focus (Atinmo et al., 2009). More importantly, the community context, although complex, should be essential to obesity prevention since there are risk factors related to eating and activity levels which affect the larger population.

Individual interventions. As previously stated, the different factors at the individual level include biological and physiological composition, nutrition intake and physical activity levels, education, and emotional factors. In the present study, only some research has targeted the biological and physiological factors contributing to obesity. Based on the fact that biological and physiological factors do not entirely explain the growth of the epidemic (Hu, 2008; Veerman, 2011), it makes sense that the focus should not be geared towards it.

As for nutrition intake and physical activity levels factors, most of the programs in the present study worked on physical fitness and weight loss through diet programs, which directly target these factors. However, the outreach and scope of the programs is not large enough to produce a higher impact and they only target change at the individual or microsystem level. Furthermore, the focus on weight does not ensure more nutritious diets (Cohen, Perales, & Steadman, 2005), and the focus on weight alone also adds to mental health problems, raising anxiety and poorer

perception of physical health (Cohen et al. 2005), as well as increased likelihood of depression, and suicidal thoughts and attempts (Carpenter, Hasin, Allison & Faith, 2000). Traditional diet programs only produce short term weight loss for participants, with high likelihood of weight regain post treatment and abandonment of healthy habits if the weight loss is not sustained, all of which may be more harmful to participants than being overweight. Based on the fact that weight centered treatment does not work on the long-term, and the finding that non-diet centered interventions are effective in health improvement, interventions at the individual level need to be more health centered with the shift to focus on health behaviors to improve health and well-being (Bacon et al., 2002).

The focus on the individual may foster stigma and prejudice against obese and overweight people as having poor health and character (Cohen et al., 2005), associating obesity with characteristics such as laziness, lack of self-control, and low intelligence (Puhl & Brownell, 2004). Such prejudice can be dangerous as teasing about weight is associated with low self-esteem and suicidal thoughts and attempts (Eisenberg, Neumark-Sztainer & Story, 2003). The stigma of obesity may also lead obese people to avoid going to the gym or being weighed at the doctor's office (Cohen et al., 2005). Accordingly, the creation of safe environments in the microsystem is needed to relieve the pressure of stigma (Cohen et al., 2005).

Lastly, the emotional factors that come with obesity were not targeted in any of the programs and services mentioned by participants, yet research has shown that it is important to deal with these factors. The use of behavioral therapy in managing obesity has been shown to be the most successful approach, especially within interventions that incorporate changes to dietary and physical activity plans (Jacob, & Isaac, (2012). Including a behavioral therapy component help insure the long lasting

effects of a program on the participants; as we have seen however, such programs do not exist in Egypt.

Just focusing on obesity in individuals and implementing individual-based programs distracts from the larger picture, and some research states that it may not result in the improvement of the health of the individuals (Cohen et al., 2005). Moreover, moving focus away from the individual and the victim blaming that often results, can help us focus on the broader social and economic issues that cause obesity. Strategies need to be geared towards the family, the community and the government (Cohen et al., 2005). Stakeholders and targeted populations should be included in planning and creating healthy environments (Cohen et al., 2005).

Microsystem interventions. Programs and services for the family, in schools and in universities, have been found to be successful. In the current study there were only two projects introducing nutrition education in schools and a short lived program was implemented in three universities in collaboration with the Nutrition Institute. These initiatives are promising and important, yet they only targeted a small number of students or hindered sustainability. As physical activity programs have shown success primarily when long-term, the threatened sustainability of these projects is a problem as they would not be able to provide long-term participation (Hadley et al., 2010). Additionally, the short lived project in universities, implemented by the NNI, is not enough to deal with the consistent changes that first year university students face. Such project needs to be replicated and sustainable to benefit freshmen as they enter university. Although the school intervention involved dietary and physical interventions, based on the Childhood Obesity Prevention Programs: Comparative Effectiveness (Agency for Healthcare Research and Quality [AHRQ], 2013) the

activities provided are not enough to prevent obesity, as their effect is high only if they are combined with a home or community component.

In agreement with Larson and Story (2006), participants mentioned several times that the school canteens and snacks in the neighborhoods are adding to the children's malnutrition and can lead to obesity. Moreover, the school snack provided in governmental schools is not enough to deal with malnutrition as it only contains a box of milk twice a week and biscuits five times a week. Through evaluations of school lunch programs, Hadley, Hair and Dreisbach (2010) found that school lunch menu modifications strategies are associated with the success of obesity prevention and mitigation. Accordingly, policy changes that affect school canteens and school lunches are needed in Egypt.

Finally, only one family program was mentioned by participants, the family event by the Ministry of Youth and Sports, but its main aim was not to tackle obesity. Since research has shown that services being provided to the family are the most efficient (Campbell Sahin-Hodoglugil, & Potts, 2006), interventions and programs involving the family as a whole are needed, especially that Egypt is a collectivistic society and the family plays a significant role (What about Egypt?, n.d.).

Macrosystem interventions. Compared to programs and services related to obesity in Australia, Europe, and the U.S., the services and programs in Egypt are not at the macrosystem level and have not become national movements or achieved public consensus. Programs at macro levels such as the collaboration with the WHO and WFP on fortifying certain foods to deal with malnutrition benefit a certain segment of the population. These projects target malnutrition, which is linked to obesity. Unfortunately though, these fortified foods are likely to contribute to obesity as they are covering subsidized foods that are low in nutrition values and may be high in

calories (WHO, 1997). The newly introduced national surveillance system, another macrosystem initiative, will track and monitor the health state of the children, and it has the potential to be a great asset to monitor the state of children and deal with over- or under nutrition from early stages. However, research suggests that the benefit of surveillance is still debatable and its potential hazards have not yet been fully studied (Folta et al, 2006). Additionally, some children may not be comfortable with the concept screening as it may lead to bullying by other students. If a child is labeled as overweight, he or she might be discriminated against.

Exo and mesosystem intervention. Due to the lack of collaborative interventions the present research found no interventions that worked at the meso- or exosystem levels. This is unfortunate because through collaborations between and within the different systems, providing healthier nutritious diets are possible. The Food Trust's Food Marketing Task Force in Philadelphia, for example, works with the local community, civic and government leaders, and the supermarket industry to provide affordable nutritious foods to low income families (Cohen et al., 2005). Additionally, YMCA of the USA's Activate America is working internally by fostering and supporting relationships with individuals and families who want to experience better total health and well-being. On an external level, they are working on eliminating barriers to healthy living by trying to adapt to the changing needs of their members and communities by implementing changes in programming, staffing, and the physical environment. Such efforts have resulted in a higher level of engagement of the members and more success in reaching the goals (Segal, 2009).

Services and programs need to be both collaborative and target multiple ecological levels, like the Choose My Plate program in the United States, a country with similar overweight and obesity rates. In this program, the U.S. Department of

Agriculture collaborates with other organizations and work at the macrosystem level by impacting policy, and at the micro-, meso-, and exosystems by promoting healthy eating patterns in homes and schools, and by examining how shopping patterns and food choices may impact obesity. In Egypt however, there are few interventions that focus at multiple levels, there is missing attention to linkage and collaboration between levels, and only a limited approach is taken to creating macrosystem change.

Location of the Programs

The geographical scope of the programs is also affecting their impact; due to the fact that most programs are in Cairo and Giza, they are not meeting the greater need all over Egypt. All of the organizations interviewed that had programs and services, had their programs implemented firstly in Cairo, Giza, and Helwan, secondly Alexandria, and lastly the Red Sea, Asyut, Sohag, Dakahlia, Port Sid, Qualioubeya, Beheira, Fayoum, Gharbia, Minya, Monofia, New Valley, and Qena. The rest of the governorates are reached by ministerial programs, such as programs in youth centers, or other promotional products in pharmacies, clinics or on the media. And of course, as has been stated repeatedly throughout the analysis, these services are not targeting obesity directly.

The concentration of the interventions in the greater governorates; such as Cairo and Alexandria, explains minimal outreach of these programs. It is also worth noting that programs with larger outreach and presence in all governorates, such as ministerial programs, face more challenges, as previously mentioned by the participants, in rural governorates. Programs in bigger governorates are more established because the experts, physicians and nurses, want to stay close to their families and do not want to be reallocated to smaller towns in rural governorates. This translates to a shortage of resources in smaller health units outside metropolitan

governorates; which highlights the need to focus the interventions on all of the governorates in order to make sure that the needs of the entire Egyptian population are met. Also, the need to spread in urban governorates is related to the higher rates of poverty in urban governorates; and with the rise in poverty and low education there is also a rise in obesity. Negative factors of urbanization and globalization have also reached many of these governorates and, consequently, obesity has also increased; as a result of the emergence of fast food and energy dense foods (Traill, 2006). Definitely, the emphasis on Cairo and Alexandria disadvantages other places that are also in need of interventions.

As shown in the map although some programs and services can be found in all governorates, some of the ministries' programs target only 150 persons per governorate. Therefore, focus on outreach to the rest of Egypt needs to be reconsidered. The map can be used to further plan distribution and outreach strategies for new programs or activities. Moreover, the 5,000 health units, operated by the Ministry of Health, should be considered as a place to start to implement and strengthen programs and services around Egypt. These units are a great start to reaching more people and with higher efficiency they would definitely reach the desired impact.

Gender and Age Groups

Almost all programs and services are available to both men and women. Yet since many of the programs target toddlers and neonates, the target groups are mostly women, specifically mothers, rather than men. Although women may be receiving more interventions as at least as they fall under the category of motherhood and breastfeeding, this does not effectively tackle the higher rate of obesity among females compared to males. As for other programs that are offered to both females

and males, such as sports programs, their existence does not guarantee that females go to them, especially because of cultural barriers and norms. Cultural, social and religious norms and barriers prevent females and males from practicing sports in the same area and prevent females from dressing in certain sports attire which may be too tight or revealing which creates further obstacles when trying to promoting an active and healthy lifestyle.

While the emphasis generally is on childhood obesity, in Egypt there were only two programs that really worked on weight reduction through nutrition education for children; most programs and services were mainly provided for adolescents and adults. However, there are some pre-, neo- and postnatal programs in Egypt. Research suggests that greater impact can be achieved through multi-faceted neonatal and postnatal programs that target children below the age of five and that also start with pregnant women in order to reach younger ages (Segal, 2009). Accordingly, the services and programs in Egypt are aligned with research that suggests targeting these specific groups; a promising initial step towards sustainable solutions. Unfortunately, their current focus, quality, and impact may not be reaching the desired results. The pre and neonatal program by the Ministry of Health is the widest reaching program and with most potential because it is implemented in the health units all over Egypt, but the challenges it faces threatens its efficacy. Monitoring and surveillance of children and mothers, and related programs, whether by the Ministry of Health or by other organizations, are mainly geared towards under-nutrition, stunting and anemia, rather than obesity. However, if they are executed with general nutrition coverage they may help with reducing the prevalence of obesity. For example, and as pointed out by the participants in the present research, proper breastfeeding can aid in

lowering obesity occurrence, and monitoring and surveillance could also shed light on how to deal with obesity at an early age.

Challenges

The challenges described by participants were either based on implementation of their own programs and activities or challenges that hindered obesity programming in general. Participants mentioned that quality is a major challenge and keeping up with proper standards is one of their biggest struggles. Low quality of services, whether due to untrained implementers or missing follow-up and supervision, is alarming, common, and lowers program effectiveness. The issue of untrained personnel is not unique to Egypt however, as it has also been a major concern in obesity programming in the West as well (Block, DeSalvo & Fisher, 2003). An additional challenge is the balance between outreach and impact; keeping the quality standards while spreading the activities to reach more people is a challenge that has not been fully addressed in Egypt. In the present study, programs and services by the ministries had the largest outreach and were spread throughout the country, yet organizational issues and quality assurance issues were still of concern and impeded their overall impact. As one participant stated, "...expansion needs a lot of things; we still need to train people, [which] needs time and resources, funding...etc." If these issues are not dealt with these programs' impact will remain minimal. More so than that, these programs and services need to be reformed before asking the nurses and physicians in these units to include an obesity component, or focus on obesity because adding to a system that is not functional would just add another burden on the executors, especially since obesity is not regarded as a major concern. The consequence of such an endeavor would likely lower the quality of service and may prevent utilizing the resources at their best.

Many programs face a shortage in the resources necessary to combat obesity, and are therefore inadequate (Segal, 2009). Accordingly, funding is essential to move forward with obesity interventions. This minimal funding reflects Egypt's political situation and national agenda which does not place obesity as a priority. The challenges of poverty and food safety and needed facilities, such as safe sidewalks or exercise facilities, override the need to address nutrition and obesity nationwide. Thus, participants felt that the only way to really benefit the field of obesity research and prevention was to get obesity on the national agenda.

Participants expressed that challenges to obesity and obesity programming were largely related to Egyptian culture and its scarce nutrition and health awareness. They stated that the lack of awareness and people's reduced participation in prevention and treatment programs is causing obesity. This was supported by the fact that nutrition education and spread of obesity awareness was not the main mandate of the activities listed. Therefore, the spread of awareness is important to targeting obesity, but it is also necessary to have more people engage in the programs and services provided.

While it was thought that only in the past 'plumpness' was seen as a sign of beauty and larger sized women were generally accepted in Egypt and in other Arab countries (Jackson et al., 2003), participants mentioned that it may still be an issue that is causing a big challenge to combating weight gain and obesity. Although obesity may be shunned in some social classes in Egypt, leading to the increase in fad diets and weight loss efforts, it is still valued in lower classes as a sign of wealth. Furthermore, a lack of cultural acceptance of nutritious eating and physical activity was seen as a challenge. As one participant pointed out, "Yet again the culture of nutrition and sports does not exist in the Egyptian society. So even when these

services exist they are not used.” Likewise, having participants mention that healthy lifestyles are considered a luxury sheds light on the need to work on the cultural misconceptions as a starting point. Interestingly, although culture was mentioned as the major challenge; there are almost no programs that specifically target the aspects of culture that supports unhealthy lifestyles.

There is a general concern that obesity is seen as an aesthetic and not a health issue. In fact, participants perceived dieticians to be contributing to this problem. As one participant said:

The main problem in Egypt is that this specialty is vague, to be a dietician; they don't know the difference between a dietician and clinical nutritionist, [and what] different specialties work on it... The fad of dietician and their diet plans is mainly due to the time [constraints] and usually these physicians are not specialized in nutrition... A proper nutritionist should give you 20-40 minutes, the standard in Egypt is 10 minutes but this is not proper.

These dieting programs are a result of a billion-dollar weight-loss industry that promises people to look better, and this has resulted in people aiming for quicker weight loss rather than health improvement and nutritious eating (Cohen et al., 2005). The focus on weight loss not only draws attention away from creating healthy lifestyles, it also contributes to distorted views on weight loss, leading to eating disorders, and adding to the stigma of obesity (Cohen et al., 2005). Ironically, although the rate of dieters worldwide is increasing, obesity is still increasing as well.

As for media, it is regarded as a contributor to misconceptions about thinness (Cohen et al. 2005) and a reinforcer of the stigma of obesity (Geier, Schwartz, & Brownell, 2003). The media was also regarded by participants as a contributor to obesity by promoting unhealthy foods and eating habits. Again, despite the

recognition that media plays a role in promoting obesity and unhealthy diet, there was only one media related program mentioned that partially targeted obesity and health in general, and another campaign that was on the radio. Although media is not utilized as a channel to communicate healthy messages, and participants' had a concern with the high numbers of existing television channels with high advertising prices, it still has to be considered as a strong asset and utilized to reverse its negative effects on obesity. Ideally, combining community-level programs with the media is the most effective way to educate people (FAO, 1997).

Although there are policies controlling food products, some participants expressed their frustration towards the violation of these policies; specifically, the violation in food labels. This concern is important because having food labels is essential in helping people with diabetes and others to care of their nutrition intake. This invites us to further think about the compliance of the private entities and food industry with policy and guidelines that aim to target obesity. More importantly, it asks us to rethink the ways we target obesity and calls into question policy enforcement as the optimal solution to combat the issue. If a simple policy, such as including food labels, is disregarded and there are no consequences to not following them, how can policy really affect significant change? This concern needs to be further researched and investigated to come up with the proper means of action that can result in national change.

Program monitoring and evaluation is needed to ensure the quality and impact of future obesity programming and their effect on obesity and mortality rates reduction. Proper evaluation, based on the Centers for Disease Control and Prevention's Division of Nutrition, Physical Activity and Obesity state plan evaluation, involves seven sets of questions. These questions concern: the process

(how engaged were the stakeholders when developing the activities, if they received official endorsement and informal acceptance from implementers); the content (how much does the plan of the program include recommended elements); dissemination (how much the plan's distribution involves all relevant stakeholders); awareness (how much do these stakeholders understand the plan dissemination); initial outcomes (to what extent are the plan's specified approaches, policies, and initiatives being implemented); intermediate outcomes (to what degree are the trends in nutrition and physical activity changing after implementation of the plan); and lastly, long-term outcomes (how much is the reduction in obesity and related chronic diseases; CDC, 2009).

Assets

Despite the many challenges, participants also mentioned assets and resources. The assets varied from material assets such as the facilities, finances, and services, to intangible assets like partners and networks, knowledge and experience, and outcomes and effects of the programs.

It is interesting to note that human resources and manpower were mentioned in challenges as well as assets. What should be taken away from this is that manpower is a great asset but needs proper training and supervision. Media and social media were also mentioned as challenges but also as a major asset and channel of communication. Although the media contributes negatively to factors related to obesity such as people's perception of themselves, their food consumption, and cultural norms, it is a great way to reach out and spread information. Participants who use media, especially social media, felt that it was the best way to communicate to the public, particularly to spread positive information rather than negative and unhealthy messages. Likewise, research was mentioned as a great asset although the unused research outcomes were

listed as a challenge. Finding a way to incorporate research into policy and programming is vital.

Lastly, partners and networks were regarded as a major asset; especially with different organizations on multiple levels. Participants believed that their partnerships or linkages with a variety of organizations, especially governmental organization, to be of great worth. The fact that some believed that programs are only successful when adopted by the government or that the funders and partner organizations are the reason for the success of their program shows the perceived value of these collaborations. Although there are some existing linkages and partnerships, there are no clear collaborations or coalitions operating. While most participants cherished these partnerships and recommended having nationwide coalitions and collaboration as the adequate tool to obesity programming, this type of coalition still needs to be further developed and scaled up to larger programs in various geographical areas.

Recommendations

The epidemic of obesity is still growing in Egypt (WHO, 2012), in large part because of the focus on individual based treatments (Jain, 2005), in addition to the diluted effects of many of the activities regarding obesity. Moreover, from the participants' recommendations, one can see that obesity is primarily seen as a problem of general nutrition, obscuring the seriousness of obesity as an epidemic and leading to the small number of activities and services directed at it. The focus needs to be on obesity as a public health problem and not just a problem of individual health (Atinmo et al., 2009).

One major recommendation is to spread awareness of obesity, in order to develop a healthier culture. Research shows the association between social influences and obesity, through social networks, group beliefs and normative behaviors

(Hammond, 2010). Accordingly, participants felt the need to influence some changes in the culture and promote healthy living to be able to have their beneficiaries commit to and benefit from the services. Correspondingly, changes in social norms and other psychosocial factors are required as they have an influence on the population level (National Academy for Science, 2013). More so than that, the need to understand the different norms and perceptions of body weight is important to be able to design programs that emphasize the importance of nutrition education and physical activity rather than just on slenderness (Cohen et al., 2005). These programs need to be culturally sensitive to be able to adapt to the norms of the community and their view of a healthy body.

Cultural and normative views of healthy weight and thinness also need to be addressed, so as to protect people from eating disorders (Cohen et al., 2005). To be more specific, the culture's focus on weight loss can lead to the emergence of fad diets and unhealthy eating habits which can lead to eating disorders. To prevent people from using fashionable weight-loss diets, a social ecological approach needs to be adapted; this approach needs to be inclusive and refrain from marginalizing or discriminating obese and overweight individuals (Cohen et al., 2005). To counter the fad diets, nutritious diets that are rich in fruits, vegetables and whole grains, should be associated with lowering risks of high blood pressure, cardiovascular disease, diabetes and some types of cancer (Appel et al., 2003).

As previously mentioned, traditional diet programs only produce short term weight loss for adhering participants, with high rates of weight regain post treatment and the associated abandonment of healthy habits if the weight loss is not sustained. Generally speaking, successful dieting is followed by weight gain (Bacon et al., 2002). Given that non-diet centered interventions were found to be effective in health

improvement, interventions need to be more health centered and focus on shifting towards healthy behaviors in order to improve overall health and well-being (Bacon et al., 2002). Rather than focusing on weight loss, programs focusing on self-acceptance and a healthy lifestyle have proven to lead to better health conditions in women with chronic dieters, even though they did not lose weight (Bacon et al., 2002). In contrast, participants who followed a regulated diet programs for weight- loss regained most of the weight lost, did not improve health state, and reported having poor self-esteem (Cohen et al., 2005).

In addition to the recommendations to change the culture's perceptions of obesity, participants called for greater availability of healthy food options, using media to communicate simple and clear messages about good nutrition, and increased focus on health education. The availability and access of healthy foods is a crucial factor regarding obesity (Glanz, Sallis, Saelens, & Frank, 2005, 2007). These recommendations will counter the effect of the media's promotion of unhealthy dietary practices and unhealthy consumption of products lacking in nutrition. This does not mean that the access of healthy food alone would counteract the unhealthy messages from the media, but it would definitely help in the promotion of healthy eating. As for marketing, the media should encourage healthy food, active lifestyles and discourage sedentary lifestyles and unhealthy eating habits (The National Academy of Science, 2013).

Programs and services should be adapted to Egyptian circumstances to ensure better and more sustainable interventions (Salazar-Martinez et al., 2005). For example, positive deviance could be utilized to determine healthy Egyptians, given the enormous diversity in Egypt. The practices and lifestyles practiced by these healthy people, and so are already possible in Egypt, can be the foundation of the

program. If one of these persons walks to work daily, then the program should work on the walkability of the areas; if they cook at home, programs should promote home cooking, and so on.

A systems-level change approach, incorporating multiple stakeholders needs to be taken (National Academy for Science, 2013). Most participants reiterated that a collaborative effort from a variety of stakeholders is the optimal way to deal with obesity. Collaboration between entities on a variety of endeavors should be created to magnify the impact of the activities and add a more holistic and comprehensive solution. Multi-sector and multi-level partnerships help attain better outcomes regarding improvement in behaviors, physical and social environments, amongst other positive effects on the population (Collie-Akers and Fawcett, 2008). Participants recommended multi-sectorial programs on a mass scale including national campaigns, as the success of interventions depends on the collaboration with governmental, nonprofit and the private sectors (Segal, 2009).

The main aim of the creation of partnerships between different organizations and the inclusion of all concerned stakeholders is to target the issue from different angles. Partnerships and collaborations can help in analyzing information and offering various solution to the problem, developing strategies and action plans, providing technical support for implementing effective strategies, and documenting progress (Fawcett, Schultz, Watson-Thompson, Fox, & Bremby, 2010). With a comprehensive approach taken on by leaders across all levels of society, clear progress could be made. We could see a rise in habitual physical activity, visibility and availability of healthy food, media promoting healthy food and active lifestyles balance, and schools serving as nutrition and wellness centers (IOM, 2009). Such collaborations can be implemented if the 5,000 health units spread around Egypt were utilized effectively.

Research suggests a centralized leadership for coordinating the planning, implementation, and evaluation of obesity prevention efforts across the country (National Academy for Science, 2013). Additionally, research recommended that the government should take a centralized role in developing comprehensive childhood obesity prevention multi-departmental initiatives instead of multiple uncoordinated programs (Segal, 2009).

Additionally, based on research, communities need to be incorporated in health promotion and obesity prevention. Adequate guidance, capacity, data, and resources necessary for assessing the status and causes of obesity in the different communities is needed. Additionally, there is a lack in identifying prevention needs, monitoring, and evaluating program outcomes associated with obesity reduction (National Academy of Sciences, 2013). Including communities in health promotion can provide a view of what is needed, highlight best practices, and accordingly build community coalitions that deal with the issue. An example of what this could look like might be a neighborhood coalition that works on the walkability of the neighborhood and providing healthy fruits and vegetables in the area.

In order to achieve a holistic approach to ending obesity, relevant policies need to be incorporated at the national strategy level, and obesity needs to be on the government's agenda. Having the state recognize obesity as a public health problem can provide relief to medical health systems and hope for other NCDs; this will result in federal regulations creating obesity prevention goals, strategies and programs in social health care systems (Segal, 2009). Dealing with obesity can cut costs in the medical care systems; such as heart operations and NCD medications. A policy monitoring system is also needed in order to ensure policy making processes and

content and provide data to examine progress in obesity-related policy making (National Academy of Science, 2013).

There are five critical environments that can enable policies and interventions to be successful (IOM, 2009). These are the physical activity environment, the food and beverage environment, the media/message environment, the health care and work environment, and the school and early care environment (The National Academy of Science, 2013). As for program design related recommendations, the integration of dietary interventions with physical interventions work best in dealing with obesity (AHRQ, 2013), and this was also recommended by participants when asked how to best tackle the issue. Participants added the creation of sports facilities and infrastructure to promote physical activity, such as bicycle lanes. This could be a great solution to Egypt's traffic, by increasing walkability in addition to promoting healthy lifestyles. However, such programs may be difficult to implement in Cairo due to the existing infrastructure. The introduction of bicycle lanes and maybe proper sidewalks could be initiated in the outskirts of Cairo and hopefully, to be gradually introduced to the rest of the country.

Furthermore, the food and beverage environment can be tackled through the availability of healthy food, making them attractive and affordable, while making unhealthy foods less so (The National Academy of Science, 2013). Egyptian cuisine includes some healthy options that can be publicized far more, for example, the large number of juice bars in the Egyptian streets that provide nutritious beverages. Additionally, the health care and worksite environments should encourage the promotion of these healthy foods and physical activity, in addition to the referral of their employees to nutritional support and guidance (The National Academy of Science, 2013). Likewise, environmental surveillance needs to include national, state,

and community measures of the physical environment. Accordingly, these environmental changes would help influence individuals' and families' energy intake and energy expenditure decisions (The National Academy of Science, 2013). For example, they should promote fruit and vegetable stalls and carts in Egypt, rather than promote multinational grocery stores that have relatively less fresh produce, and focus the shopper's attention to processed products.

In addition to nutrition education, participants believed in the need for general health and physical education to promote general health practice and a positive culture of healthy living. Similar to Traill (2006) and others' recommendations regarding nutrition education, participants felt that the services need to start in the schools and with children and mothers. Schools are an important environment to consider, due to the amount of time children spend in them and also offer an opportunity for outreach to a large number of children. Accordingly, promoting healthy foods and encouraging physical activities should be incorporated in addition to health education (The National Academy of Science, 2013). School canteens and school lunches need to be modified (Hadley et al., 2010), and policy changes that affect school canteens and school lunches are needed. Nevertheless, research states that services being provided to the family are the most efficient (Campbell et al., 2006), so there is a need for family programs, especially those that target children when they are young and learning eating and physical activity patterns. An example of successful strategies and methods are adopted by the Consortium to Lower Obesity in Chicago Children (CLOCC) and the Nemours Child Care Collaborative, the Nemours Health and Prevention Services (NHPS). CLOCC is a program in the United States that works with children's caretakers and health care providers who work with caregivers (Segal, 2009). The NHPS takes it a step further with their broad-based approach that is

working on community entities such as schools, childcare, community/youth-serving organizations, and primary care in addition to the physical environment and access to healthy food (Segal, 2009). They also provide coalition building and collaborative learning opportunities, toolkits, curricula and policy updates. Such programs are seen as unique and should be replicated to reach children under the age of five to prevent obesity; this approach also works with multiple target groups.

University students aged 18-29 are also a crucial age group (CDC, 2009). Universities can be a potential venue for implementing health and wellness programs to encourage physical activity and healthy lifestyle, promoting obesity prevention (Ferrara, 2009). These programs have the potential to work in Egypt if they are implemented in a culturally adaptive way and adopted by the government in cooperation with some non-governmental organizations to provide a more comprehensive approach, benefit from different resources and assets, and reach out to multiple systems and levels. Of course, such programs would require resources but they should be further explored in Egypt, given its previous success stories

The optimal way to treat overweight and obese patients is through the combination of diet and exercise; yet these treatment plans require changes in behavior that can be achieved through Behavioral Therapy (BT), for example (Jacob & Isaac, 2012). The two main assumptions that underlie the use of BT for management of obesity are, obese individuals have maladapted eating and exercise patterns where these maladaptive behaviors can be modified with specific interventions leading to weight loss (AAFP, 2013). BT has shown to be effective in achieving the goal of weight management and reduction by monitoring and modifying food intake, the increase in physical activity level, in addition to having patients recognize and control cues that trigger overeating. Higher- intensity interventions, by

including self-monitoring, goal setting, and planning to address barriers to maintaining lifestyle changes over time have been associated with greater weight loss as well (AAFP, 2013). Programs that implement a therapy/counseling component can be successful at improving child and adolescent nutrition and physical activity (Hadley et al., 2010). Therapy that leads to changing the behavior needs to be added to the treatment plans of patients who intend to lose weight and also be continued for patients who want to maintain the weight they have lost (Jacob & Isaac, 2012). It can be administered in clinic settings, self-help groups, commercial weight loss programs and internet based weight loss programs. In addition, physical activity is shown to increase in programs focusing on building skills and teaching children and adolescents self-regulatory physical activity skills in order to help them incorporate exercise into their daily lives (Hadley et al., 2010). So BT and skills building should be incorporated in addition to nutrition education in comprehensive obesity programming, especially in Egypt to counteract the effect of fad diets and promote healthy lifestyles rather than weight loss simply for esthetic purposes.

Lastly, devotion to research and respect for research recommendations needs to be further developed in Egypt. In the present study, participants whose research was disregarded by the government recommended that obesity research needs to be taken seriously and that the findings should actually be used when developing programs to benefit the field. Further research is needed to identify the individual and environmental causes of weight gain and poor nutrition, with the use of longitudinal data analyses to aid in the development of comprehensive prevention programs (Hadley et al., 2010). More so, research on the interventions and combination of interventions that are successful needs to be inventoried.

To summarize, between policy violations, the impact of the culture on obesity, and the minimal focus on obesity, it is clear that awareness of obesity should be spread at all levels in Egypt. The programs should also have clear long-term goals of decreasing obesity and mortality rates and their focus needs to be specifically targeting the obese. It is recommended for programs to be multi sectorial and take a multiple approach, be comprehensive of all important components to tackle obesity. Importantly, both emotional and behavioral components must be tackled to ensure long lasting effects. Finally, obesity needs to be on the national agenda, and tackled by different stakeholders collectively, as well as addressed at all ecological levels.

Limitations

Possible limitations of this research include the small sample size, which may not cover all the organizations working on obesity or cover activities conducted all over Egypt. Furthermore, as all interviews were conducted in greater Cairo, some information of local interventions in other governorates may have been missing. Moreover, the time period in which the interviews were conducted limited data collection to programs and activities witnessed during this period. The time limitation prevented further data collection of activities and programs, such as Egypt's new nutrition strategies; which were developed after that period. Additionally, generalizability is in question as the research is qualitative (Gobo, 2004). Although targeting high officials of the different organizations was meant to provide a better overview, it may have also limited the understanding of interventions by not including by on the ground implementers of projects.

Since the questions were geared towards obesity intervention, when obesity was not part of the mandate, participants did not provide information on their activities or tried to relate any of their activities to obesity. Further research can be

geared towards all aspects that contribute to wellbeing and then extract obesity related programs to include more activities and be better able to categorize obesity focused work. However, this study is of great worth because it serves as a starting point that should help future work on obesity and calls attention to the need for more focus on causes and solutions to obesity in Egypt.

Implications

The data collected can be used to benefit the field of obesity, can be built on, and most importantly calls for more research and attention to the cause of obesity as a growing epidemic. The study aimed to highlight the interventions and resources of obesity in Egypt; to be useful to organizations such as non-profits, ministries, and other organizations for the purpose of developing obesity interventions and to identify resources contributing to obesity treatment. The recommendations of the study should be useful to the organizations interviewed and others dealing with obesity and overweight, especially, as they show agreement on the need for collaboration and multi-disciplinary efforts to deal with obesity.

This study opens up more room for questions and research in the field of obesity than it has answered. Obesity is a changing and growing field in the world and the techniques used in Egypt are not up to date with how the field is evolving globally. Accordingly, more research related to obesity and how to make these changes that incorporate new and up to date research in Egypt is very much needed.

This study is a first step towards future work in the field of obesity programming in Egypt and should encourage more work in the field. The assessment of program assets, challenges, and what they can offer is of value to new initiatives that aim at utilizing the different organizations in combating the obesity epidemic. The services and programs collected may not be directly targeting obesity; however,

they may be conducting small changes at the ecological levels around the issue that may positively affect it. Yet more research in this regard is needed.

The limited findings on obesity interventions call for further interventions and initiatives in the field in addition to further research. A major challenge throughout the study is the absence of evaluation of the already existing activities. Accordingly, this study calls for further research; especially impact analysis and evaluations of these programs, to fully understand the challenges and assets. Further research on the fad of wellness campaigns and fitness initiatives needs to be conducted to assess the efficiency and also the target audience they are catering to in order to assess their contribution to obesity.

Conclusion

Obesity has become an alarming epidemic in Egypt by causing harm to both individuals and society; therefore, there is a strong need for obesity prevention programs. Ecological and community-based solutions need to be implemented to combat obesity a growing epidemic; however, there is little documentation and existence of initiatives, program, and activities dealing with obesity. There is little focus on obesity in Egypt, which explains the small number of programs and initiatives that tackle obesity as an epidemic. Most initiatives are concerned with weight loss or general well-being; which does not tackle obesity as a life threatening disease.

In concordance with the literature and the opinions of experts, a combination of diet modification, increased physical activity and behavior therapy can be effective (National Institute of Health, 2000). Additionally, literature and experts have also identified five key elements for effective programs working on preventing obesity. These are nutrition, physical activity, public health prevention and health services,

built environment, and promoting human capital (Segal, 2009). These need to be targeted by providing social-emotional-cognitive skill development, especially for programs targeting young children (Segal, 2009). Accordingly, programs that target a small portion or just one aspect do not effectively combat obesity.

There is some hope regarding the new national strategy for nutrition; which is still in the making and awaiting approvals from the government. This strategy should focus on the teenagers' well-being as well and target obesity through an integration of nutrition education in school curricula. It remains to be seen if this will be implemented effectively.

Collaboration in obesity prevention programs, including nationwide campaign and having obesity on the government's agenda is of utmost priority.

Recommendations from research should be taken into consideration, as it is currently an untapped resource, but one that can have a profound impact on the prevention and mitigation of this growing epidemic. The creation and documentation of obesity programs and initiatives should help develop the field of obesity interventions, hopefully paving a way forward for further interventions to combat this epidemic.

References

- Agency for Healthcare Research and Quality (AHRQ). (2013). *Childhood Obesity Prevention Programs: Comparative Effectiveness Review and Meta-Analysis. Comparative Effectiveness*. Rockville, MD: Wang, Y., Wu, Y., Wilson, R. F., Bleich, S., Cheskin, L., Weston, C., Showell, N., Fawole, O., Lau, B., Segal, J.; June 2013. Retrieved from www.effectivehealthcare.ahrq.gov/reports/final.cfm.
- Aitsi-Selmi, A., Chandola, T., Friel, S., Nouraei, R., Shipley, M.J., & Marmot, M. G.. (2012). Interaction between education and household wealth on the risk of obesity in women in Egypt. *PloS One*, 7(6), Retrieved from: <http://www.plosone.org/article/fetchObject.action?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0039507&representation=PDF>.
- Alpert, P. T. (2009). Obesity: A worldwide epidemic. *Home Health Care Management Practice*, 21, 442-444.
- Al-Rethaiaa, A. S., Fahmy, A. E. & Al-Shwaiyat, N. M. (2010). Obesity and eating habits among college students in Saudi Arabia: a cross sectional study. *Nutrition Journal*, 9(39). Retrieved from: <http://www.biomedcentral.com/content/pdf/1475-2891-9-39.pdf>.
- American Academy of Family Physicians (AAFP). (2013). *Diagnosis and Management of Obesity*. Leawood, KS. Retrieved from: http://www.aafp.org/dam/AAFP/documents/patient_care/fitness/obesity-diagnosis-management.pdf.
- Appel, L. J., Champagne, C. M., Harsha, D. W., Cooper, L. S., Obarzanek, E., Elmer, P. J., Stevens, V. J., Vollmer, W. M., Lin, P. H., Svetkey, L. P., Stedman, S. W., & Young, D. R. (2003). Effects of comprehensive lifestyle

- modification on blood pressure control: main results of the premier clinical trial. *Journal of the American Medical Association*, 289, 2083-93.
- Arrizza, N. (2005). The obesity self-esteem cycle. *Ezine Articles*. Retrieved from <http://ezinearticles.com/?The-Obesity-Self-Esteem-Cycle&id=111333>.
- Asfaw, A. (2006). The effects of obesity on doctor-diagnosed chronic diseases in Africa: empirical results from Senegal and South Africa. *Journal of Public Health Policy*, 27(3), 250-264.
- Asfaw, A. (2007). Do government food price policies affect the prevalence of obesity? Empirical evidence from Egypt. *International Food Policy Research Institute (IFPRI)*, 35(4), 687-701.
- Atinmo, T., Mirmiran, P., Oyewole, O.E., Belahsen, R., & Serra-Majem, L. (2009). Breaking the poverty/malnutrition cycle in Africa and the Middle East. *Nutrition Reviews*. 67 Suppl 1:S40-6. doi: 10.1111/j.1753-4887.2009.00158.x
- Auchincloss, A., Mujahid, M, Shen, M., Michos, E., Whitt-Glover, M., & Roux, A. (2013). Neighborhood health-promoting resources and obesity risk (the multi-ethnic study of atherosclerosis). *Obesity Journal*, 321(3), 621-628.
- Bacon, L., Keim, N. L., Van Loan M. D., Derricote, M., Gale, D., Kazaks' A., & Stern, J. S. (2002). Evaluating a 'non-diet' wellness intervention for improvement of metabolic fitness, psychological well-being and eating and activity behaviors. *International Journal of Obesity*, 26(6), 854-865.
- Bacon, L., Stern, J. S., Van Loan, M. D., & Keim, N. L. (2005). Size acceptance and intuitive eating improve health for obese, female chronic dieters. *Journal of the American Diet Association*, 105(6):929-36.
- Becton, L., Shatat, I. & Flynn, J. (2012). Hypertension and obesity: epidemiology, mechanisms and clinical approach. *The Indian Journal of Pediatrics*, 79(8),

1056–1061.

Block, J. P., DeSalvo, K.B., Fisher, W. P.(2003). Are physicians equipped to address the obesity epidemic? Knowledge and attitudes of internal medicine residents.

Preventive Medicine.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32(7), 513-531.

Campaign to End Obesity. (2014). *Campaign to End Obesity*. Retrieved from <http://www.obesitycampaign.org>.

Campbell, M., Sahin-Hodoglugil, N. N., & Potts, M. (2006). Barriers to fertility regulation: a review of the literature. *Studies in Family*

Planning. Retrieved from:

<http://www.ncbi.nlm.nih.gov/pubmed/16832983>

Carpenter, K., Hasin, D., Allison, D., & Faith, M. (2000). Relationships between obesity and DSM-IV major depressive disorder, suicide ideation, and suicide attempts: Results from a general population study. *American Journal of Public Health*;90:251–7.

Centers for Disease Control and Prevention. (2011). How much physical activity do adults need, Retrieved from

<http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>

Coccorello, R., D'Amato, F. R. & Moles, A. (2009). Chronic social stress, hedonism and vulnerability to obesity: Lessons from rodents. *Neuroscience*

&Biobehavioral Reviews, 33(4), 537–550

Cohen, L., Perales, D. P., & Steadman, C. (2005). The O word: why the focus on obesity is harmful to community health. *Californian Journal of Health*

Promotion. 3(3) , 154-161

- Collie-Akers, V., & Fawcett, S. B. (2008). Preventing childhood obesity through collaborative public health action in communities. In: Jelalian E, Steele RR, editors. *In Handbook of child and adolescent obesity*. New York: Springer Science; pp. 351–368.
- Colditz, G. A. (1992). Economic costs of obesity. *The American Journal of Clinical Nutrition*.55(2), 503S–507S.
- Cosoveanu, S., & Bulucea, D. (2011). Obesity in children – an increasing pediatric issue. *Romanian Journal of Pediatrics*, 60(2).
- De Negri, B. & Thomas, E. (2003). Making sense of focus group findings: A systematic participatory analysis approach. Washington, DC: Academy for Educational Development.
- Devaux, M., Sassi, F., Church, J., Cecchini, M., & Borgonovi, F. (2011). Exploring the relationship between education and obesity. *OECD Journal: Economic Studies*, Vol.2011/1. Retrieved from http://dx.doi.org/10.1787/eeco_studies-2011-5kg5825v1k23.
- Dey, I. (1993). *Qualitative data analysis: A user-friendly guide for social scientists*. London and New York: Routledge.
- Eisenberg, M. E, Neumark-Sztainer, D., & Story, M. (2003). Associations of weight-based teasing and emotional well-being among adolescents. *Archives of Pediatric and Adolescent Medicine*.
- El Baba, M., (2012). 'Obesity'. In: Elzouki, A. Y., Harfi, H. A., Nazer, H. M., Stapleton, F. B., Oh, W., Whitley, R. J. (ed), *Textbook of Clinical Pediatrics*. 1st ed. USA: Springer Berlin Heidelberg. pp.(769-777).
- Ella, N., Shehab, D. & Ismail, M. (2011). Prevalence of overweight and obesity, and status of chronic non- communicable diseases and some related risk factors

among Egyptian adolescents. *Journal of Diabetes and Endocrinology*, 2(4), 41-52.

Ellabany, E. & Abdel Nasser, M.A. (2006). Non- Communicable Disease Surveillance System, Egypt 2006. Ministry of Health and Population. Preventive and Primary Health Care Sector Preventive Sector. Retrieved from <http://www.who.int/chp/steps/EgyptSTEPSPresentation.pdf>

Epstein, L. (1996) Family-based behavioural intervention for obese children. *International Journal of Obesity and Related Metabolic Disorders : Journal of the International Association for the Study of Obesity*, 20 (1).

Ewald, H., Kirby, J., Rees, K., & Robertson, W. (2013). Parent-only interventions in the treatment of childhood obesity: a systematic review of randomized controlled trials. *Journal of Public Health*. Retrieved from <http://jpubhealth.oxfordjournals.org/content/early/2013/11/21/pubmed.fdt108.abstract>

Farooqi, I. (2006). Genetic aspects of severe childhood obesity. *Pediatric Endocrinological Review*, 3, 528-536.

Fawcett, S. B., Schultz, J., Watson-Thompson, J. , Fox, M., & Bremby, R. (2010). Building multisectoral partnerships for population health and health equity. *Preventing Chronic Diseases*, 7(6):A118.

Ferrara, C. M. (2009). The college experience: Physical activity, nutrition, and implications for interventions and future research. *Journal of Exercise Physiologyonline*. Retrieved from: [https://www.asep.org/asep/asep/Ferrara%2012\(1\)23-35.doc](https://www.asep.org/asep/asep/Ferrara%2012(1)23-35.doc).

Figure 1. Obesity and overweight prevalence in Egypt. World Health Organization (WHO), 2010, Retrieved from

http://www.who.int/gho/ncd/risk_factors/overweight/en/.

Finkelstein, E., DiBonaventura, M., Burgess, S., & Hale, B. (2010). The costs of obesity in the workplace. *Journal Occupational Environment Med*,52(10).

Retrieved from

https://globalhub.org/topics/offc_8_sp12/wiki/MainPage/File:economic_cost_of_obesity_in_the_workplace.pdf.

Folta, S. C., Goldberg, J. P., Economos, C., Bell, R., & Meltzer, R. (2006). Food advertising targeted at school-age children: A content analysis. *Journal of Nutrition Education and Behavior*, 38, 244 –248.

Food and Agriculture Organization of the United Nations (FAO). (1997). *Nutrition education for the public*. Discussion papers of the FAO Expert Consultation, 62. Retrieved from <http://www.fao.org/docrep/w3733e/w3733e00.htm>

Food and Agriculture Organization of the United Nations (FAO). (2005). *The state of food and agriculture*. FAO Agriculture Series No. 36. Retrieved from ftp://ftp.fao.org/docrep/fao/008/a0050e/a0050e_full.pdf

Food and Agriculture Organization of the United Nations (FAO). (2006). *The double burden of malnutrition: Case studies from six developing countries*. Retrieved from <http://www.fao.org/docrep/009/a0442e/a0442e00.htm>.

Foss, B., Dyrstad, S. M. (2011) Stress in obesity: cause or consequence? *Med Hypotheses*, 77(1). Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/21444159>

Frumkin H. (2006) Introduction: Safe and Healthy School Environments. In: Frumkin H, Geller RJ, Rubin IL, Nodvin J, (Eds.), *Safe and Healthy School Environments* New York: Oxford University Press

Gabel, J.R., Whitmore, H., Pickreign, J., Ferguson, C.C., Jain, A., KC, S.,

- & Scherer, H.(2009). Obesity and the workplace: current programs and attitudes among employers and employees. *Health Affiliation (Millwood)*.28(1):46-56. doi: 10.1377/hlthaff.28.1.46
- Gaglio, B., & Glasgow, R. E. (2012). Evaluation approaches for dissemination and implementation research. In R. Brownson, G. Colditz, & E. Proctor (Eds.), *Dissemination and implementation research in health: Translating science to practice* (327-356). New York, NY: Oxford University Press.
- Garasky, S., Stewart, S., Gundersen, C., Lohman, B. & Eisenmann, J. (2009). Family stressors and child obesity. *Social Science Research*, 38(4), 755–766
- Geier, A. B., Schwartz, M. B., & Brownell, K. D.(2003). "Before and after" diet advertisements escalate weight stigma. *Eating and Weight Disorders*; 8(4): 282–288.
- General Motors Diet. (2015). Retrieved from <http://www.generalmotorsdiet.net/>.
- Georgetown University Center on an Aging Society. (2002). *Childhood obesity: A lifelong threat to health*. [Data Profile]. Retrieved from <http://hpi.georgetown.edu/agingsociety/pdfs/obesity.pdf>
- Glanz, K., Sallis, J. F., Saelens, B. E., & Frank, L. D. (2005). Healthy nutrition environments: Concepts and measures. *American Journal of Health Promotion*. 19(5): ii, 330-333.
- Glanz, K., Sallis, J. F., Saelens, B. E., & Frank, L. D. (2007). Nutrition environment measures survey in stores (NEMS-S): Development and evaluation. *American Journal of Preventive Medicine*. 32(4):282-289.
- Gleason P., Suitor C. (2001). *Food for thought: Children's diets in the 1990s*. Princeton, N.J.: Mathematica Policy Research, Incorporated.
- Gobo, G. (2004). Sampling, representativeness and generalizability. In C. Seale, G.

- Gobo, J., Gubrium, B. & Silverman D. (Eds.), *Qualitative research practice* (pp. 435-456). London: Sage.
- Golan, M., Crow, S. (2004). Targeting parents exclusively in the treatment of childhood obesity: long-term results. *Obesity Research, 12*(2). Retrieved from <http://onlinelibrary.wiley.com/doi/10.1038/oby.2004.45/full>.
- Green, L. W., Glasgow, R. E.(2006) Evaluating the relevance, generalization, and applicability of research: issues in external validation and translation methodology. *Evaluations and Health Professions*;29(1):126-53.
- Grier, S., & Kumanyika, S. K.(2008). The context for choice: health implications of targeted food and beverage marketing to African Americans. *American Journal of Public Health*; 98(9): 1616–1629.doi: 10.2105/AJPH.2007.115626. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2509618/>.
- Hadley, A. M., Hair, E. C. , & Dreisbach, N. Child Trends (2010) *What works for the prevention and treatment of obesity among children: Lessons from Experimental Evaluations of Programs and Interventions* (Publication No 2010-07 4301) Washington, DC. Retrieved from: www.childtrends.org.
- Hajhosseini, L., Holmes, T., Mohamadi, P., Goudarzi, V., McProud, L. & Hollenbeck, CB. (2006). Changes in body weight, body composition and resting metabolic rate (RMR) in first-year university freshman students. *Journal of American College of Nutrition, 25*(2), 123-137.
- Hammond, R. A.(2010). Social influence and obesity. *Current Opinion in Endocrinology, Diabetes, and Obesity*. Retrieved from: <http://www.ncbi.nlm.nih.gov/pubmed/20689421>.
- Hassan, H., Moussa, W. & Ismail, I. (2005) Assessment of dietary changes and their

health implications in countries facing the double burden of malnutrition:

Egypt, 1980 to 2005. *The double burden of malnutrition*, 43. Retrieved from <http://www.fao.org/docrep/009/a0442e/a0442e07.htm>.

HSC Foundation. (2009). *Fighting Obesity: What Works, What's Promising*.

Washington, DC: Elliot A. Segal. Retrieved

from: <http://www.hscfoundation.org/aboutus/publications/Fighting%20Obesity%20Report.pdf>.

Hu, F. (2008). Genetic predictors of obesity. In: Hu F, ed. *Obesity Epidemiology*.

New York City: Oxford University Press; 437–460.

Hudd, S., Dumiao, J., Erdmann-Sager, D., Murray, D., Phan, E., Nicholas, S.,

& Yokozuka, N. (2000). Stress at College: effect on health habits, health status and self-esteem. *College Student Journal*, 34(2), 217-227.

Huhman, M., & Patnode, C. D. (2013). Communities leveraging the assets of a

national social marketing campaign: Experiences with VERB™: Experiences with It's what you do! In J. D. Williams, K. E. Pasch, and C. A. Collins (Eds.), *Advances In Communication Research To Reduce Childhood Obesity*, (439).

New York: Springer Science+Business Media.

International Association for the Study of Obesity (IASO). (2010). *Obesity:*

Understanding and challenging the global epidemic: 2009-2010 Report.

Retrieved from

http://www.iaso.org/site_media/uploads/IASO_Summary_Report_2009.pdf.

International Association for the Study of Obesity (IASO). (2012). *[Graphic*

illustration using a world map] Global prevalence of obesity in adult females.

Retrieved from

http://www.iaso.org/site_media/library/resource_images/Global_Obesity_Top

_5_in_each_region.pdf.

- Institute Of Medicine (IOM). (2009). *Accelerating Progress in Obesity Prevention Solving the Weight of the Nation*. CDC National Center for Health Statistics Office of Communication. Retrieved from:
https://www.iom.edu/~media/Files/Report%20Files/2012/APOP/APOP_rb.pdf.
- Jackson, R. T., Rashed, M., & Saad-Eldin, R. (2003). Rural urban differences in weight, body image, and dieting behavior among adolescent Egyptian Schoolgirls. *International Journal Of Food Sciences & Nutrition*, 54(1), 1-11.
- Jacob, J. J., & Isaac, R. (2012). Behavioral therapy for management of obesity. *Indian Journal of Endocrinology and Metabolism*, 16(1), 28–32.
doi:10.4103/2230-8210.91180.
- Jain, A. (2005). Treating obesity in individuals and populations. *BMJ: British Medical Journal*, 331(7529), 1387–1390. Retrieved from
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1309653/>.
- Kime, N. (2008). Children's eating behaviours: the importance of the family setting. *Area*, 40(3), 315-322. Retrieved from
<http://onlinelibrary.wiley.com/doi/10.1111/j.1475-4762.2008.00834.x/full>.
- Kitzman-Ulrich, H., Wilson, D. K., St. George, S., Lawman, H., Segal, M., & Fairchild, A. (2010). The integration of a family systems approach for understanding youth obesity, physical activity, and dietary programs. *Clinical Child Family Psychology Review*, 13(2), 231-253.
- Larson, N., Story, M. (2006). Nutrition at School: Creating a Healthy Food Environment. In Frumkin, H., Geller, R., Rubin, L., Nodvin, J. (Ed.), *Safe and Healthy School Environments* New York: Oxford University Press.
-

- Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: disparities in access to healthy foods in the US. *American Journal of Preventive Medicine, 36*(1), 74-81.
- Lawlor, D., Smith, G., & O'Callaghan, M. (2007). Epidemiologic evidence for the fetal overnutrition hypothesis: findings from the mater-university study of pregnancy and its outcomes. *American Journal of Epidemiology, 165*(4), 418–24.
- Major, B., Eliezer, D., & Rieck, H. (2012). The psychological weight of weight stigma. *Social Psychological and Personality Science, 3*(6), 651-658.
- Maynard, M., Gunnell, D., Emmett, P., Frankel, S., & Davey, S. (2003). Fruit, vegetables, and antioxidants in childhood and risk of adult cancer: the Boyd Orr cohort. *Journal of Epidemiology and Community Health, 57*(3), 218–225. doi:10.1136/jech.57.3.218.
- Ministry of Health and Population in Egypt. (2012). *Egypt Nutrition Landscape Analysis Report*. Egypt. Retrieved from http://www.unicef.org/egypt/Landscape_Analysis_Report_January_2013.pdf.
- MyPlate. (2011). Choosemyplate.gov. Retrieved from <http://www.choosemyplate.gov>.
- National Center for Chronic Disease Prevention and Health Promotion. (2009). *The Power of Prevention Chronic disease . . . the public health challenge of the 21st century*. Retrieved from: <http://www.cdc.gov/chronicdisease/pdf/2009-Power-of-Prevention.pdf>.
- National Academy of Sciences. (2013). *Evaluating Obesity Prevention Efforts: A Plan for Measuring Progress Committee on Evaluating Progress of Obesity Prevention Efforts*. Washington, DC:Green, L. W., Sim, L., & Breiner, H.

Retrieved from: <http://www.acsh.org/wp-content/uploads/2013/08/18334.pdf>.

National Prevention Council. (2011). *National Prevention Strategy*. U.S.

Department of Health and Human Services, Office of the Surgeon General.

Washington, DC. Retrieved from: Rockville, MD. Retrieved from:

<http://www.surgeongeneral.gov/priorities/prevention/strategy/report.pdf>.

National Prevention, Health Promotion, and Public Health Council.(2013). *Annual*

Status Report. U.S. Department of Health and Human Services, Office of the

Surgeon General. Washington, DC. Retrieved from:

<http://www.surgeongeneral.gov/priorities/prevention/2013-npc-status-report.pdf>.

Owen, C., Martin, R., Whincup, P., Smith, D., & Cook, D. (2005). Effect of infant feeding on the risk of obesity across the life course: a quantitative review of published evidence. *Pediatrics*, 115(5), 1367–1377.

Ozminkowski, R.J, Ling, D., Goetzel, R. Z., Bruno, J.A., Rutter, K.R., Isaac, F., Wang, S.(2002). Long-term impact of Johnson & Johnson's Health & Wellness Program on health care utilization and expenditures. *Journal of Occupational and Environmental Medicine*, 44(1):21-9.

Patrick, H., Nicklas, T.A., Hughes, S.O., Morales, M.(2005). The benefits of authoritative feeding style: caregiver feeding styles and children's food consumption patterns. *Appetite*, 44(2):243-9. Pervanidou, P. & Chrousos, G. (2011). Stress and obesity/metabolic syndrome in childhood and adolescence.

International Journal of Pediatric Obesity, 6(S1),21–28Prilleltensky, I.,

Nelson, G., Peirson, L. (2001). *Promoting family wellness and preventing child maltreatment: Fundamentals for thinking and action*. Toronto:

University of Toronto Press.

- Population Council. (2011). *Survey of Young People in Egypt*. West Asia and North Africa Office. Retrieved from http://www.popcouncil.org/pdfs/2010PGY_SYPEFinalReport_FrontMatter.pdf.
- Puhl, R., Brownell, K. R. (2004). Bias, prejudice, discrimination, and obesity. *Handbook of obesity: Clinical applications*.
- Qi, L., & Cho, Y. A. (2008). Gene–environment interaction and obesity. *Nutritional Reviews*, 66(12), 684–94.
- Racette, S., Deusinger, S., Strube, M., Highstein, G. & Deusinger, R. (2005). Weight changes, exercise, and dietary patterns during freshman and sophomore years of college. *Journal of American Collage Health*, 53 (6), 245-251.
- Ravussin, E., & Swinburn, B. (1992). Pathophysiology of obesity. *The Lancet*, 340(8816), 404-408.
- Renzaho, A. M.N. (2004). Fat, rich and beautiful: changing socio-cultural paradigms associated with obesity Risk, nutritional status and refugee children from Sub-Saharan Africa. *Health & Place*, 10(1), 105-113.
- Salazar-Martinez, E., Lazcano-Ponce, E., Sanchez-Zamorano, L., Gonzalez-Lira, G., Escudero-De Los Rios, P. & Hernandez-Avila, M. (2005). Dietary factors and endometrial cancer risk. Results of a case–control study in Mexico. *International Journal of Gynecological Cancer*, 15: 938–945.
- Schmier, J., Jones, M., & Halpern, M. (2006). Cost of obesity in the workplace. *Scandinavian Journal Work Environment Health*, 32(1):5-11.
- Seo, D., & Sa, J. (2010). A meta-analysis of obesity interventions among U.S. minority children. *Journal of Adolescent Health*, 46(4), 309-323.
- Singh, A. S., Mulder, C., Twisk, J. W. R., Twisk, C., Van Mechelen, W.,

- &Chinapaw, M. J. M. (2008) Tracking of childhood overweight into adulthood: a systematic review of the literature. *International Association for the Study of Obesity*, 9(5), 474-488.
- Sobko, T., Svensson, V., Ek, A., Ekstedt, M., Karlsson, H., Johansson, E., Cao, Y., Hagströmer, M., & Marcus, C. (2011). A randomised controlled trial for overweight and obese parents to prevent childhood obesity - EarlySTOPP (Stockholm Obesity Prevention Program). *BMC Public Health*, 11(1), 336 doi: 10.1186/1471-2458-11-336. Retrieved from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3121630/>.
- Stevenson, N. (2010). Examination of Family Environmental Factors Associated with Obesity in African American Youth Resides in Baltimore City. Retrieved from <http://drum.lib.umd.edu/bitstream/1903/10727/1/Stevenson.pdf>
- Sturm, R. (2002). The effects of obesity, smoking, and drinking on medical problems and costs. *Health Affairs*, 21(1), 245-253.
- Summerbell, C. D., Waters, E., Edmunds, L., Kelly, S., Brown, T., & Campbell, KJ. (2005). Interventions for preventing obesity in children. *Cochrane Database System Reviews* 3. DOI: 10.1002/14651858.CD001871.pub2. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001871.pub2/epdf>.
- Tamashiro, K. L. K., Hegeman, M. A., & Sakai, R. R. (2006). Chronic social stress in a changing dietary environment. *Physiology & Behavior*, 89(4), 536-542. Retrieved from <http://dx.doi.org/10.1016/j.physbeh.2006.05.026>.
- Thompson, F., & Subar, A. (2008). Dietary Assessment Methodology. *Nutrition in the Prevention and Treatment of Disease*, 2, 3-39.
- Ternouth, A., Collie, D., Maughan, B. (2009). Childhood emotional problems and self-perceptions predict weight gain in a longitudinal regression model. *BMC*

Medicine, 7, 46.

Terry, P., Giovannucci, E., Michels, K. B., Bergkvist, L., Hansen, H., Holmberg, L., Wolk, A. (2001) Fruit, vegetables, dietary fiber, and risk of colorectal cancer. *Journal of the National Cancer Institute*. 93(7):525-33.

Traill, B. (2006). Trends towards overweight in lower- and middle-income countries: some causes and economic policy options. *FAO Food and Nutrition Papers*. Retrieved: <http://www.fao.org/docrep/009/a0442e/a0442e0x.htm>.

Van der Sande, M., Walraven, G., Milligan, P., Banya, W., Ceesay, S., Nyan, O., McAdam, K. (2001). Family history: an opportunity for early interventions and improved control of hypertension, obesity and diabetes. *Bulletin of the World Health Organization* 79(4). Retrieved from [http://www.who.int/bulletin/archives/79\(4\)321.pdf](http://www.who.int/bulletin/archives/79(4)321.pdf).

Van Ryzin, M., Nowicka, P. (2014). Direct and indirect effects of a family-based intervention in early adolescence on parent-youth relationship quality, late adolescent health, and early adult obesity. *Journal of Family Psychology*. 27(1): 106–116. doi: 10.1037/a0031428.

Veerman, J.L. (2011). On the futility of screening for genes that make you fat. *PLoS Medicine*, 8(11): e1001114. doi:10.1371/journal.pmed.1001114. Retrieved from <https://www.plos.org/media/press/2011/plme-08-11-veerman.pdf>.

Wang, F., Wild, T., Kipp, W., Kuhle, S., & Veugelers, P. (2009). The influence of childhood obesity on the development of self-esteem. *Health Reports*, 20(2), 21-28. Retrieved from <http://www.statcan.gc.ca/pub/82-003-x/2009002/article/10871-eng.htm>

What about Egypt?. (n.d.). *The Hofstede Centre*. Retrieved September 9, 2015, from <http://geert-hofstede.com/egypt.html>.

- Withrow, D., & Alter, D. A. (2010). The economic burden of obesity worldwide: a systematic review of the direct costs of obesity. *Obesity Reviews*, *12*(2), 131-141.
- Wolff, T. (2010). *The power of collaborative solutions*. San Francisco, CA: Jossey-Bass.
- World Health Organization (WHO). (1997). *Obesity: Preventing and managing the global epidemic*. Geneva: World Health Organization.
- World Health Organisation (WHO). (2000). *Obesity: Preventing and managing the global epidemic* (No. 894). Geneva, Switzerland: World Health Organisation.
- World Health Organisation (WHO). (2003). *Global strategy on diet, physical activity and health*. Retrieved from www.who.int/dietphysicalactivity/en/.
- World Health Organisation (WHO). (2008). *World Health Statistics 2008*. Geneva, Switzerland: World Health Organisation.
- World Health Organisation (WHO). (2009). *Global Health Risks Mortality and Burden of Disease Attributable to Selected Major Risks*. Geneva, Switzerland: World Health Organisation
- World Health Organisation (WHO). (2010). *World Health Statistics 2010*. Geneva, Switzerland: World Health Organisation.
- World Health Organisation (WHO). (2012). *World Health Statistics 2012*. Geneva, Switzerland: World Health Organisation.
- Zulet M. A., Berkenpas M. E., & Martinez, J. A. (2005). Comparison of dietary approaches to treat obesity based on the different carbohydrate/fat content: Impact on weight loss and lipid profile. *Current Nutrition & Food Science*, *1*(1), 13-21.

Appendix A: Target Participants

The initial List:**Government:**

1. Ministry of Health (Looking at obesity as an epidemic)
2. Ministry of Sports* (Physical activity affects the state of obesity)
3. Ministry of Youth* (It runs all youth centers, where there are cultural and physical activities)
4. Ministry of Education*
5. National Council for Women (Women's obesity rates are more than men and this council tries to work on all types of women issues, so it is interesting to see how they are targeting obesity)
6. National Nutrition Institute* (They do research about nutrition)
7. National Council of Population (They have produced the statistics of some obesity studies)
8. National Council on Motherhood and Childhood Council (Research has been done mainly on children's malnutrition so they may have further research and plans in regards to obesity)

Non-profits:

9. Universities*(wellness programs at universities and public health initiatives may be targeting obesity)

Egyptian Non-governmental organizations (the following NGOs are the leading NGOs in Egypt and/or have contributed to nutrition related activities):

10. Alashanek ya Balady*

11. Masr el Kheir*
12. Food Bank*
13. ElOrman

International organizations (prominent organizations in Egypt that work on children, women, health, or nutrition):

14. WHO
15. UNWOMEN
16. UNWFP*
17. Care
18. Save the Children

For Profit:

Food industry:

19. Temmy's*(it is an Egyptian cornflakes company, recently sponsoring some fitness events)
20. Nestle Egypt*(its CSR sector is big and it is a multi national)
21. Coca cola*(coca cola does many obesity work outside Egypt)

Sports industry:

22. Private Sports Clubs (these are the equivalents to youth centers)
23. Gyms*(to see how they tackle obesity or do they just focus on the business part alone)

* means that I have a personal contact in the organization.

Actual list interviewed:

Government:

1. Ministry of Health

2. Ministry of Youth and Sports and the national anti-doping organization
3. National Nutrition Institute
4. The National Research Center

Non-profits:

5. Physical Education University Helwan

Egyptian Non-governmental organizations:

6. AYB-SD- Alashanek ya Balady for Sustainable Development
7. Healthy Egyptians
8. EMASO- The Egyptian Medical Association for the Study of Obesity

International organizations and United Nations Agencies(prominent organizations in Egypt that work on children, women, health, or nutrition):

9. UNWOMEN
10. WFP
11. Save the children
12. USAID

For Profit:

Pharmaceutical company:

13. Pfizer

Food industry:

14. Nestle Egypt
15. McDonald's Egypt

Sports industry:

16. Private Sports Centers: QuickSlim and the fitness republic
17. Samia Allouba Gyms: Gyms chain

18. BeFit: A company providing sports services

19. SAFE Academy: Physical education private academy

Individual initiatives:

20. Zumba: A fitness movement and classes providers

21. Igmadi for women's empowerment: an initiative for women's health and self defense.

22. AntiFati: An individual initiative that sells diet meals according to a set plan to people to promote weight loss.

Organizations who reported that they do not work on obesity initiatives and accordingly not interviewed:

1. National Council of Population (They have produced the statistics of some obesity studies) :

2. Coca cola*(coca cola does many obesity work outside Egypt):

Appendix B: Phone and Interview Protocol

The phone protocol will follow the same format as the e-mail.

Dear [insert name],

I hope this e-mail finds you well.

My name is Hana Shahin; I am a community psychology master's candidate at AUC. I am currently working on my thesis study about obesity interventions. I would like to collect information about past, current, and future initiatives being implemented in Egypt by the public, private, and non-profit sectors regarding obesity in order to develop a map of these efforts. Additionally, I would like to assess contributing factors to the availability of obesity programming in Egypt, as well as the challenges to providing such interventions/programs. The study aims to serve as a baseline study of obesity programs, services, and assets by mapping such efforts. Additionally, it shall contribute to the field of obesity in Egypt by highlighting assets that may contribute to future contribution to obesity interventions and programs.

I am contacting you as the [insert title], through your position I would like you to share with me information you know related to current, past, or future obesity initiative, activities, and programs. I would like to meet you for a short interview that would take an hour to maximum an hour and a half.

Kindly advise suitable times to meet by e-mailing me back or calling me on 01111788555.

I am looking forward to hearing from and meeting you soon.

Best Regards,

Hana Shahin

Community Psychology Masters Student

Appendix C: Consent form



Documentation of Informed Consent for Participation in Research Study

Project Title: **Obesity Interventions in Egypt: Identifying Gaps and Highlighting Assets**

Principal Investigator: **Hana Shahin** hshahin@aucegypt.edu

You are being asked to participate in a research study. The purpose of the research is to collect information about and map past, current, and future initiatives being implemented by organizations in public, private and non-profit sectors regarding obesity. The study aims to map the efforts available in Egypt in regards to obesity, through an assessment of what sectors of society are contributing to the field with their programs, initiatives, and policies. The study will also highlight factors that contribute positively to obesity program as well as challenges to providing such programs. The findings may be published and presented to further contribute your efforts to the field of obesity in Egypt.

The procedures of the research will be as follows: You will be asked to answer some questions in the interview. You will be asked about past, current, and future initiatives being implemented by your organization; in addition to challenges you've faced, and resources that have facilitated your work. The expected duration of your participation is 1-1.5 hours for the interview.

There are no risks or discomforts associated with this research other than your time contribution. The recommendations from the study will be sent to you in the aim to benefit your work in the obesity field.

Data from this study will be reported in the aggregate, and you will not be identifiable; accordingly, your information will be kept confidential, only information regarding the obesity work done by your organization will be published.

Would you allow me to record the conversation? The recording will be saved just in case I was unable to write al the valuable information you share. Only my faculty advisors and I will have access to the recordings and they recordings will be saved in password secured location. Your name will not be recorded and all recordings will be destroyed after 5 years.

Questions about the research or your rights should be directed to Dr. Carie Forden, my thesis supervisor, at Cforden@aucegypt.edu.

Participation in this study is voluntary. You may discontinue participation at any time or skip questions.

- I allow tape recording of the interview
- I do not allow tape recording of the interview

Signature _____

Printed Name _____

Date _____

Appendix D: Semi-structured interview/ Data collection sheet

Introduction: As you know my name is Hana Shahin; I am a community psychology master's candidate at AUC. I am currently working on my thesis study. By signing the consent form, you consented to participate in the study; and allowed me to record the interview for further transcription. You may end our conversation anytime you like. As per our agreement at your request, your name will be removed and your information will be kept confidential. The information provided to me will be compiled into a map and a table that will be disseminated to add to the field of obesity in Egypt.

Explanation of the study: The purpose of the research is to collect information about and map past, current, and future initiatives being implemented by organizations in public, private and non-profit sectors regarding obesity. Additionally, I would like to explore the factors contributing to the availability of obesity programming in Egypt, as well as the challenges to providing such interventions/programs. The study aims to compile the information into a map of the resources, and interventions, in addition to providing recommendations to contribute to the field of obesity in Egypt.

Name of participant:

Organization/institution:

1. To start how has _____ addressed obesity if at all? What have been done regarding obesity in your organization, internally (for the employees) and externally (for other communities)?

Internally

Externally

Program

Policy

2. So have there been any efforts regarding obesity interventions in the last 5 years by your organization?

a) If yes: How was it designed? What were the objectives?

How long have they been going?

Who is the target audience? Type? Activities? Scope of the initiative?

Females

Ages 1-5

5-18

18- 25

Males

Ages 1-5

5-18

18- 25

Where was it conducted?

Governorate: _____

Facility: _____

Challenges and Assets?

Financial

Political

Were they evaluated?

What	Why	Where	Who		When	How			
Name of Interventions	Objectives of the program/ intervention (Obesity factors targeted)	Place	Sector/ organization executing the intervention/program	Target group/ scope (Ecological level)	Time and duration	Activities	Assets	Challenges	Notes

b) If not- what is hindering you from starting a program/ initiative?

3. What issues have negatively affected your work in obesity? What challenges have you faced in your work on obesity?

4. What are your future plans to work on obesity? If yes what are they?

5. What are the resources or assets (e.g. funding, policy change, facilities,... etc.) that you think can benefit obesity interventions? How can they be obtained?

6. What has helped you in your work on obesity? What contributed to the success of your activity?

7. Who are other organizations working on obesity in Egypt that you know of? How do you know about them? What are they working on?

8. Do you know of other people working in obesity that I can interview?

Appendix E: Final themes and codebook

The initial codes were: the type of interventions, their duration, their geographical location, the targeted audience, the implementing agency, their activities, challenges, and assets.

Appendix F: Tables of interventions

Table 1. Programs and services according to age groups

	Microsystem	Meso- and exosystems	Macrosystem
	Program/service	Program/service	Program/service
Infant (< 1 year)		<p>Antenatal Program (by the Ministry of Health (MoH) and implemented in the 5000 health units all around Egypt)</p> <p>- Save the Children's Early Childhood Development Program (in partnership with NGOs and Ministry of Social Solidarity (MoSS))</p> <p>- Breast Feeding Promotion National Program</p> <p>- The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi)</p> <p>- 1000 day of the child's life</p> <p>- Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt)</p>	<p>- Food Fortification Program (supported by the WFP, implemented by the ministry of health and other ministries)</p>
Toddler (between 1 to 2 years)		<p>- Save the Children's Early Childhood Development Program</p> <p>- Breast Feeding Promotion National Program</p>	<p>- Food Fortification Program</p>

		<ul style="list-style-type: none"> - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Preschoolers (3-5 years)	<ul style="list-style-type: none"> - McDonalds Drip Campaign - Zumba Fitness - "Montaser Yantaser" Montaser triumphs 	<ul style="list-style-type: none"> - Save the Children's Early Childhood Development Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - School feeding program(supported by the WFP, implemented by the ministry of health, education and other ministries)
Children (6-11 years)	<ul style="list-style-type: none"> - Education and awareness program - Samia Allouba Children's sports program - Street Children Programs - McDonalds Drip Campaign - McDonalds Menu el 5 - Zumba Fitness - PE university programs 	<ul style="list-style-type: none"> - One day events by MoYS - Sports program for the family - Nashe'ien - Little Giants - School Health and Nutrition (by Save the children, partner NGOs, MoSS, and implemented in schools) - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 	<ul style="list-style-type: none"> - Food Fortification Program - School feeding program

		5000 health units all around Egypt)	
Adolescents (12-18 years)	<ul style="list-style-type: none"> - Education and awareness program - Samia Allouba Children's sports program - Street Children Programs - Igmadi (15+) - McDonalds Menu el 5 - Zumba Fitness - PE university programs 	<ul style="list-style-type: none"> - One day events by MoYS - Sports program for the family - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - School Health and Nutrition - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - Safe City Model (worldwide integrated program to create safe cities for women) - School feeding program
Adults (18 years and above)	<ul style="list-style-type: none"> - Nestle Khamsa le Sehetek - BeFit Challenge - Maganini Program - Program for Gym Housekeepers - Sit and get fit program - Lose to Win competition -SAFE convention - Zen Conference - QuickSlim - SAFE Academy - Antifat nutrition service 	<ul style="list-style-type: none"> - Educational Kitchen -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness (in cooperation with medical clinics, pharmacies and partner civil society organizations (CSO)) - Everyone Campaign(in partnership with 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a (national strategy to involve all sectors of the society in sports) - Safe City Model - McDonald's Campaign " what I eat and what I do" (worldwide campaign about eating habits and physical activity)

	<ul style="list-style-type: none"> - Igmadi - McDonalds Menu el 5 - Zumba Fitness - PE university programs - Lafarge business model - University Nutrition Education Program - Tofah Akhdar 	<p>NGOs and Ministry of Social Solidarity (MoSS))</p> <ul style="list-style-type: none"> - School Health and Nutrition (mothers) - Breast Feeding Promotion National Program (by the Ministry of Health (MoH) and implemented in the 5000 health units all around Egypt) - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) (by the Ministry of Health (MoH) , Unicef, and Ministry of Education, and schools) - Premarital counseling - 1000 day of the child's life (by the Ministry of Health (MoH) and implemented in the 5000 health units all around Egypt) - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
--	--	--	--

Table 2. Programs and Services according to geographical area

Governorates	Microsystem	Meso- and exosystems	Macrosystem
	Program/service	Program/service	Program/service

Alexandria	<ul style="list-style-type: none"> - McDonalds Drip Campaign - McDonalds Menu el 5 - Igmadi - Zumba Fitness - Pink Party - Montaser Yantaser”Montaser triumphs” - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen (in health units by the ministry of health) - Antenatal Program (by the Ministry of Health (MoH) and implemented in the 5000 health units all around Egypt) - Almontada al Reyady (by the Ministry of Youth and Sports (MoYS) and implemented in all youth centers around Egypt) - Alrowad (by the Ministry of Youth and Sports (MoYS) and implemented in all youth centers around Egypt) - Sports program for the family (by the Ministry of Youth and Sports (MoYS) and implemented in all youth centers around Egypt) - One day events by MoYS (by the Ministry of Youth and Sports (MoYS) and implemented in all youth centers around Egypt) - Nashe’ien (by the Ministry of Youth and Sports (MoYS) and implemented in schools around Egypt) - Little Giants (by the Ministry of Youth and Sports (MoYS) and implemented in schools around Egypt) - The Egyptian Anti-doping Organizations 	<ul style="list-style-type: none"> - Food Fortification Program (supported by the WFP, implemented by the ministry of health and other ministries) - Alreyada lel gami’a (national strategy to involve all sectors of the society in sports) - Safe City Model (worldwide integrated program to create safe cities for women) - McDonald’s Campaign “ what I eat and what I do” (worldwide campaign about eating habits and physical activity) - School feeding program(supported by the WFP, implemented by the ministry of health, education and other ministries) <p>DHS data</p>
------------	---	---	---

		<p>awareness sessions (it is supported and operates under the sponsorship of the MoYS)</p> <ul style="list-style-type: none"> - Pfizer Medical Awareness (in cooperation with medical clinics, pharmacies and partner civil society organizations (CSO)) - Breast Feeding Promotion National Program (by the Ministry of Health (MoH) and implemented in the 5000 health units all around Egypt) - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) (by the Ministry of Health (MoH) , Unicef, and Ministry of Education, and schools) - Premarital counseling - 1000 day of the child's life (by the Ministry of Health (MoH) and implemented in the 5000 health units all around Egypt) - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Asyut	<ul style="list-style-type: none"> - Nestle Khamsa le Sehetek - Street Children Programs - Zumba Fitness 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding

	<ul style="list-style-type: none"> - Montaser Yantaser”Montaser triumphs” - Tofah Akhdar 	<ul style="list-style-type: none"> - Sports program for the family - One day events by MoYS - Nashe’ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Save the Children’s Early Childhood Development Program (in partnership with NGOs and Ministry of Social Solidarity (MoSS)) - Everyone Campaign(in partnership with NGOs and Ministry of Social Solidarity (MoSS)) - School Health and Nutrition (by Save the children, partner NGOs, MoSS, and implemented in schools) - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3’zawi) - Premarital counseling - 1000 day of the child’s life - Al Ra2edat(by the Ministry of Health 	<p>program</p>
--	--	--	----------------

		(MoH) and implemented around the 5000 health units all around Egypt)	
Beheira	<ul style="list-style-type: none"> - Montaser Yantaser”Montaser triumphs” - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe’ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3’zawi) - Premarital counseling - 1000 day of the child’s life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami’a - Safe City Model - School feeding program
Beni Suef	<ul style="list-style-type: none"> - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Nestle Healthy Kids 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami’a

		<p>(Nestle company, AYB-SD, and ministry of education- implemented in schools)</p> <ul style="list-style-type: none"> -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Everyone Campaign - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Safe City Model - School feeding program
Cairo	<ul style="list-style-type: none"> - Education and awareness program - BeFit Challenge 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Nestle Healthy Kids 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a

	<ul style="list-style-type: none"> - Maganini Program - Program for Gym Housekeepers - Samia Allouba Children's sports program - Sit and get fit program - Lose to Win competition -SAFE convention - Zen Conference - SAFE Academy - QuickSlim - Antifat nutrition service - McDonalds Drip Campaign - McDonalds Menue el 5 - Igmadi - Zumba Fitness - Pink Party - The weight loss program - Applied research - National Nutrition Institute Services - The obesity clinic - The training unit - Lafarge business model - University Nutrition 	<ul style="list-style-type: none"> -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Save the Children's Early Childhood Development Program - Everyone Campaign - School Health and Nutrition - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Safe City Model - McDonald's Campaign " what I eat and what I do" - School feeding program
--	--	--	--

	<p>Education Program</p> <ul style="list-style-type: none"> - Montaser Yantaser”Montaser triumphs” - Tofah Akhdar 		
Dakahlia	<ul style="list-style-type: none"> - McDonalds Drip Campaign - McDonalds Menue el 5 - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe’ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3’zawi) - Premarital counseling - 1000 day of the child’s life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami’a - Safe City Model - McDonald’s Campaign “ what I eat and what I do” - School feeding program

Damietta	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program
Faiyum	<ul style="list-style-type: none"> - Montaser Yantaser"Montaser triumphs" - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding

		<p>family</p> <ul style="list-style-type: none"> - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<p>program</p>
Gharbia	<ul style="list-style-type: none"> - Montaser Yantaser"Montaser triumphs" - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<ul style="list-style-type: none"> - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Giza	<ul style="list-style-type: none"> - Maganini Program - Program for Gym Housekeepers - Samia Allouba Children's sports program - Sit and get fit program - Lose to Win competition - Antifat nutrition service - Igmadi - McDonalds Drip Campaign - McDonalds Menue el 5 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Nestle Healthy Kids - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - McDonald's Campaign " what I eat and what I do" - School feeding program

	<ul style="list-style-type: none"> - Zumba Fitness - Pink Party - The weight loss program - Applied research - National Nutrition Institute Services - The obesity clinic - The training unit - University Nutrition Education Program - Montaser Yantaser"Montaser triumphs" - Tofah Akhdar 	<ul style="list-style-type: none"> - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Helwan	<ul style="list-style-type: none"> - McDonalds Drip Campaign - McDonalds Menue el 5 - Zumba Fitness - Pink Party - PE university programs - The weight loss program - Applied research - Lafarge business model - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition 	<ul style="list-style-type: none"> - Food Fortification Program -Alreyada lel gami'a - Safe City Model - McDonald's Campaign " what I eat and what I do" - School feeding program

		<p>surveillance system - nutritional monitoring (tarakob ta3'zawi)</p> <ul style="list-style-type: none"> - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Ismailia	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		- Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt)	
Kafr el-Sheikh	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program
Matruh	- Tofah Akhdar	- Educational Kitchen	- Food Fortification Program

		<ul style="list-style-type: none"> - Antenatal Program - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Alreyada lel gami'a - Safe City Model - School feeding program
Minya	<ul style="list-style-type: none"> - Nestle Khamsa le Sehetek - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Nestle Healthy Kids - Almontada al Reyady - Alrowad - Sports program for the 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<p>family</p> <ul style="list-style-type: none"> - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Monufia	<ul style="list-style-type: none"> - Montaser Yantaser"Montaser triumphs" - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Nestle Healthy Kids -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<ul style="list-style-type: none"> - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
New Valley	<ul style="list-style-type: none"> - Montaser Yantaser"Montaser triumphs" - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<ul style="list-style-type: none"> - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
North Sinai	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<ul style="list-style-type: none"> - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Port Said	<ul style="list-style-type: none"> - McDonalds Drip Campaign - McDonalds Menu el 5 - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - McDonald's Campaign " what I eat and what I do" - School feeding program

		units all around Egypt)	
Qalyubia	- Montaser Yantaser”Montaser triumphs” - Tofah Akhdar	- Educational Kitchen - Antenatal Program - Nestle Healthy Kids - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe’ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3’zawi) - Premarital counseling - 1000 day of the child’s life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt)	- Food Fortification Program - Alreyada lel gami’a - Safe City Model - School feeding program
Qena	- Montaser Yantaser”Montaser triumphs”	- Educational Kitchen - Antenatal Program	- Food Fortification Program - Alreyada lel gami’a

	<ul style="list-style-type: none"> - Tofah Akhdar 	<ul style="list-style-type: none"> - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Safe City Model - School feeding program
Red Sea	<ul style="list-style-type: none"> - BeFit Challenge (Gouna) - McDonalds Drip Campaign - McDonalds Menue el 5 - Montaser Yantaser"Montaser triumphs" 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Almontada al Reyady - Alrowad - Sports program for the family - One day events by 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - McDonald's Campaign " what I eat and what I do" - School feeding

	- Tofah Akhdar	<p>MoYS</p> <ul style="list-style-type: none"> - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	program
Al Sharqia	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<p>awareness sessions</p> <ul style="list-style-type: none"> - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Sohag	<ul style="list-style-type: none"> - Nestle Khamsa le Sehetek - Street Children Programs - Tofah Akhdar 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - School Health and Nutrition - Breast Feeding 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<p>Promotion National Program</p> <ul style="list-style-type: none"> - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
South Sinai	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		<p>(tarakob ta3'zawi)</p> <ul style="list-style-type: none"> - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Suez	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program -Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

		(MoH) and implemented around the 5000 health units all around Egypt)	
Luxor and Aswan	- Tofah Akhdar	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Almontada al Reyady - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Breast Feeding Promotion National Program - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat (by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - School feeding program

Table 3. Programs and Services according to gender

	Microsystem	Meso- and exosystems	Macrosystem
	Program/service	Program/service	Program/service
Females	<ul style="list-style-type: none"> - Education and awareness program - Nestle Khamsa le Sehetek - BeFit Challenge - Maganini Program - Program for Gym Housekeepers - Samia Allouba Children's sports program - Sit and get fit program - Lose to Win competition program -SAFE convention - Zen Conference - SAFE Academy - QuickSlim - Antifat nutrition service - Street Children Programs - McDonalds Drip Campaign - McDonalds Menu el 5 - Igmadi - PE university programs - The weight loss 	<ul style="list-style-type: none"> - Educational Kitchen - Antenatal Program - Nestle Healthy Kids -Almontada al Reyady - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Save the Children's Early Childhood Development Program (in partnership with NGOs and Ministry of Social Solidarity (MoSS)) - Everyone Campaign(in partnership with NGOs and Ministry of Social Solidarity (MoSS)) - School Health and Nutrition (by Save the children, partner NGOs, MoSS, and implemented in schools) - Breast Feeding Promotion National Program - The nutrition 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - Safe City Model - McDonald's Campaign " what I eat and what I do" - School feeding program

	<p>program</p> <ul style="list-style-type: none"> - Applied research - National Nutrition Institute Services - The obesity clinic - The training unit - Lafarge business model - “Montaser Yantaser”Montaser triumphs - University Nutrition Education Program - Tofah Akhdar 	<p>surveillance system - nutritional monitoring (tarakob ta3'zawi)</p> <ul style="list-style-type: none"> - Premarital counseling (implemented by the MoH units all over Egypt) - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
Males	<ul style="list-style-type: none"> - Education and awareness program - BeFit Challenge - Maganini Program - Samia Allouba Children's sports program - Sit and get fit program - Lose to Win competition -SAFE convention - Zen Conference - SAFE Academy - QuickSlim - Antifat nutrition service - Street Children Programs 	<ul style="list-style-type: none"> - Antenatal Program - Nestle Healthy Kids - Alrowad - Sports program for the family - One day events by MoYS - Nashe'ien - Little Giants - The Egyptian Anti-doping Organizations awareness sessions - Pfizer Medical Awareness - Save the Children's Early Childhood Development Program - School Health and Nutrition 	<ul style="list-style-type: none"> - Food Fortification Program - Alreyada lel gami'a - McDonald's Campaign “ what I eat and what I do” - School feeding program

	<ul style="list-style-type: none"> - McDonalds Drip Campaign - McDonalds Menue el 5 - PE university programs - PE university programs - The weight loss program - Applied research - National Nutrition Institute Services - The obesity clinic - The training unit - Lafarge business model - “Montaser Yantaser”Montaser triumphs - University Nutrition Education Program - Tofah Akhdar 	<ul style="list-style-type: none"> - The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi) - Premarital counseling - 1000 day of the child's life - Al Ra2edat(by the Ministry of Health (MoH) and implemented around the 5000 health units all around Egypt) 	
--	--	---	--

Appendix G: Interventions and programs by the organizations.

This table lays out the different programs, their objectives, activities, target group, duration and location.

Name	Objectives	Activities	Target group	Sector/ organization executing	Time and duration	Place
Education and awareness program	<p>about nutrition in poorer/marginalized communities</p> <p>to spread awareness on proper nutrition and what are the nutrients that the person should consume daily to benefit from.</p> <p>The main aim is proper nutrition to fight diseases like anemia and stunting.</p>	<p>how to wash the food properly and personal hygiene to enhance life style overall.</p> <p>It was mainly nutrition an intensive week per year for the children and their mother as they are the ones who cook.</p> <p>lectures to pass on the knowledge</p>	<p>primary and secondary school 6-18 year olds for both genders in</p> <p>The program targeted 150-200 family per year</p> <p>run by the volunteers and the AYB student activities</p>	Non Governmental Organization (NGO)	<p>One part on nutrition awareness</p> <p>2006 until 2008</p>	Old Cairo area, Cairo

<p>Nestle Healthy Kids</p>	<p>The objective is to raise nutrition awareness , induces better eating habits, and more active lifestyles</p>	<p>7 sessions a general session about all nutrients then each session target a specific nutritional group, fruits, vegetables, etc. Every age group has a different curriculum , grade 4, 5,6. There is also a physical activity aspect.</p> <p>informal activities. nutrition education through activities like games, discussions with the children about their likes and dislikes of food...etc.</p> <p>4-5 days intensive course of 45 minutes that is during the social education</p>	<p>grade 1st until 8th grade Each cohort on its own –</p> <p>Females and males in public schools.</p> <p>5-15 year/9-12 the age to hold most information and are most open to accept new idea. old students Overall we have reached 200,000 child due to the large number of students in the public schools.2000 schools, + 130-150+ 50-80 schools</p>	<p>Non Governmental organization AYB-SD: Volunteers run the activities and have 3 full timers working on it. Private sector: Nestle with the permission of MoE They have created the program while there is nutritionist in nestle that is overwievng the curriculum and the activities. Content Ainsams</p>	<p>3 years from 2011-2012 until now. ongoing for 4 years</p>	<p>go to public schools Cairo, Giza, Sharkeya, Benisuef, Menia, Monufeya, Qualioubeya- 2 or 3 in bahari and 2-3 in kebli plus cairo and giza.</p> <p>Reached 500 schools, 300,000 children across 10 governorates: Cairo, Giza, Alexamdria, Benisuief , Ismailia, Fayoum ...etc.</p>
----------------------------	---	--	--	--	--	--

		<p>class students to go to the yard and engage in the different activities and games</p> <p>mainly focused on nutrition and only gave tips on the importance of sports, 30 minutes to an hour per day for example. But it was mainly focused on nutrition.</p>		<p>universit y</p> <p>publishi ng a research in cooperat ion with a departm ent at the GUC on the long term effect of nestle healthy kids</p>		
<p>Neslte khamsa le se7etek (5 for your health)</p>	<p>for women, with 5 main messages Eat well, look good, feel well, perform well, and cook well.</p>	<p>one nutritional session for 3-4 hours plus a cooking workshop.</p>	<p>young mothers and young married women</p> <p>underdev eloped segment, 300 + 2537 women.</p>	<p>partners are NGOs, 1 is the internati onal populati on council and the 2nd is the associati on for upper Egypt educatio n and develop ment</p>	<p>Since 2013-ongoing</p>	<p>Menia, Assiut, and Sohag we reached 2800 women.</p> <p>different villages and centers in upper Egypt the areas are much pooper than Egypt.</p>

<p>BeFit Challenge</p>	<p>Objective is to complete transformation</p> <p>Weight loss, building muscles, both simultaneously or even to only improve the fitness level</p> <p>Transform the person to become fit whether to lose or gain weight improve fitness</p> <p>The main ideas is to have the service to the people while they are on vacation as well</p> <p>To keep stressing on the fact that this is your life you are not doing</p>	<p>6 weeks program</p> <p>Workout programs and nutrition plan</p> <p>In 6 weeks they reassess the body composition and fitness test</p>	<p>Females and males people who want to transform lose weight or build their bodies</p>	<p>Private company</p>	<p>In 6 weeks they reassess the body composition and fitness test</p> <p>Season 1 February to mid march</p> <p>Season 2 may to mid June</p> <p>This year they are going to have a whole month</p> <p>2-3 classes per day different types</p> <p>They have had 3 camps in Gouna one during the Birahm-eid el kebeeer, the</p>	<p>Katamey a heights-new cairo and el gouna, hurghada</p>
------------------------	---	---	---	------------------------	--	---

	it to lose weight or temporarily but this is your life				second during new years, and the third in March. They will do them again next year- 3 camps.	
Maganini program	this is done for people to get results quickly and get encourages and who gets the best results gets a price and their trainer	derived from insanity and is a series of workout sessions	for non members as well as members	Samia Allouba Gyms	5 days a week for 9-12 weeks	Samia Allouba gyms in Cairo
Program for Gym Housekeepers and gym staff	Provide staff and housekeepers the service towards wellness	we offer them twice a week classes they get it out of their time all staff are welcome	housekeepers and gym staff 140 people in all the staff getting the service	Samia Allouba Gyms and their instructors	On going	Samia Allouba Gyms in Cairo

		to attend - all other staff is welcome to attend gym or classes outside of the gyms	offered to			
- Samia Allouba Children's sports program	weights loss	Children's program Kids are put with dietician and put him in a program with other kids- 2. Programs for kids - Gym once a week and attend classes twice a week Fitness and nutrition - 13-15 year olds Twice gym and once classes or more they have a choice Advise them how to snack	younger than 13 8-12 year olds and 13-15 year	Samia Allouba Gyms and their instructors	On going	Samia Allouba Gyms in Cairo

		and how to eat- basic info on nutrition 16 and up they are free to choose				
Sit and get fit	Rehabilitation of injured and seniors We make sure to keep them fit tackle all aspects, strengths endurance flexibility and occupational	exercise on chairs open and start with someone who can't be standing for the whole hours- people who have injuries can join too They can get nutrition too	Program for seniors and injured	Samia Allouba Gyms and their instructors	On going	Samia Allouba Gyms in Cairo
Lose to win a competition	and the person with best results – lose fat or gain muscles- fat loss	8 weeks nutrition and workout plan The people who won got prizes	Members who sign up	Samia Allouba Gyms and their instructors	On going	Samia Allouba Gyms in Cairo
SAFE convention (safeconventi	bring the best education	9 days morning till night	graduates of PE and people	SAFE academy ,	2005, 2007, 2010,	Cairo

ons.net)	for people working in the field at affordable price, held	back to back activities, workshops and courses for aerobic, personal training, nutrition, nutrition counseling , special populations, exercise and pregnancy.	working in the field in general.	international experts, local sponsors	2013	
Zen Conference	A convention on yoga, Pilates, meditation, healing, Ayurveda.	workshops and certification courses, where people who complete them get certified to teach. master classes and lectures.	Graduates of fitness college and people in the field.	SAFE Academy, international experts, local sponsors	2012, 2013	Cairo.
SAFE Academy	An academy for continuing education in fitness; aiming to was it is not proper that the people you	Courses for professional group fitness instructors course, teaching classes, personal training a broader look at	Graduates of fitness college and people in the field. Courses are open to people who want to be certified	SAFE Academy- courses developed by the dean of the academy based on recent findings in the	Courses all year long	Cairo

	develop the knowledge of Egyptians in the field of fitness. Additionally, to put Egypt on the international map of fitness.	exercise, Fluid Yoga- a yoga instructors course, level two of it launching in October of 2014 and level 3 in April 3015.	to teach.	field.		
Tofah Akhdar(green apple)	Television show about health and fitness in general to spread awareness and encouraging people to do more towards health.	Television show that talked about fitness and health- the health segment was cut down to 4 min. The program also includes presenting healthy recipe and talks about fitness, injury prevention s, etc.	Television viewers	MBC Presented by Huwaid a Abouheif	started 5 years ago and is on going but the	Middle east broadcast
Quick slim	QuickSlim method,	Trainng program with a	Middle and upper class	Quick slim	2005	Quick slim and fitness

	scientifically, IBM integrated body mechanics that works on increasing the metabolism to become healthier and lose weight.	personal trainer; one on one session 3 times a week for 1 hour. The trainer would give out a healthy eating plan.	customers who can afford the program	studios		republic studios in Cairo
Alreyada lel gami'a service/program- (translated sports for all)	Sports program to include all segments of the society.	Youth centers in all governorates get direction of implementation of these programs from the ministry, with a certain focus each year; for example for this year the focus is on volleyball or add handball, but each governorate executes their own way.	Members and non members of youth centers (yearly membership 10 EGP) Females and young women ages 16 until we have females ages 65	Ministry of Youth and Sports and the youth centers	Started around 10 years ago and are on going as part of the sports development programs of the ministry	All the youth centers all over Egypt
Almontada al Reyady	To engage in general sports- The main aim of these activities is to enhance the health state of the females and males and of course by that you enhance their performance and they also	for this year the focus is on volleyball or add handball, but each governorate executes their own way. Soccer, or aerobics	2 centers 50 in each		in the 27 governorates. The programs are on going, the budget is from the ministry yearly. People	in 2 youth centers because the budget is assigned by the ministry.
Al rowad			Male- 60 people			

<p>One-day</p>	<p>lose weight because they exert effort.</p>	<p>for women, volley ball and Ping-Pong.</p> <p>at the end of each year there is an annual meeting between the centers in the governorates a festival for sports. It includes competition in the sports we mentions, Ping-Pong, volleyball, and soccer and this year there was handball, especially for women. In the closing there is a performance by each governorate.</p>	<p>in the Olympic club</p> <p>ages 35 and up</p>		<p>can stay in the program for years and new people register as well.</p> <p>The program starts the first of September until 30th of June. 10 months a year and 3 months off.</p> <p>do not stop the activities during these two months. Some of the staff work pro-bono so that the people do not drop out and to keep momentum.</p>	
----------------	---	---	--	--	--	--

<p>events</p>		<p>marathon for walking, running, and cycling, cycling</p>	<p>youth and the rest 25 and up.</p>		<p>There are also sports days in the youth centers like these that are done twice a year.</p>	
<p>Sports program for the family</p>	<p>The aim is to bring the family together and they go through the competitions, the winners get to travel to a retreat and also can compete as well with</p>	<p>The whole family takes part in this, the father and mother and 2 children take part in the event as a team and go through physical challenges. They don't train it just one time</p>	<p>This is for youth centers and public clubs members. 10 families.</p>	<p>MOS</p>	<p>For 2 years</p>	<p>Youth centers</p>

	others in other governorates.	thing.				
Children program for school children Nashe'ien	To assess children for potential skills in a specific sport assessed to check what they have potential in.	Budget is either allocated to the schools to practice some sports like volley ball for example or come to the centers. At the end of the year they have an end event at the youth center.	This program was done in 10 schools in Alexandria this year, 50 students per school. 11 year olds	MOS and schools		Youth centers
little giants program	For tall students to play sports that need tall players such as volley and basketball	Assess the students and get them to engage in the sports accordingly	secondary school age children who are taller than 165 cm			
The Egyptian Anti-doping organization	To promote healthy youth and spread	awareness campaigns against doping, it may	14-35 year olds.	The Egyptian Anti-doping Organiz	4 years	sessions in clubs and youth centers.

		<p>awareness about the usage of medical supplement.</p> <p>include some information about obesity medications and their side effects.</p> <p>lectures in all governorates, usually 1 days events but sometimes 2 days, or on TV.</p>		<p>ation, sponsored by the MoS.</p>		
Safe City Model	<p>Global program providing safe cities for women and girls free from violence against women. The whole essence of the program is to create a safe public space for women to exercise all their rights like public transportation, using public</p>	<p>Youth engaged in a couple of youth activities like cycling inside this programs to encourage girls especially in governorates to ride bikes and break the stereotype. It is not a campaign it is a comprehensive integrated program</p>		<p>Many partners government and non governmental entities</p> <p>UNwomen is the lead.</p>	5 years	

	space just like men, a safe work environment for example in a safe environment.					
Antifat nutrition service	Relying on enhancing the efficiency of metabolism to burn fat, working on portion and cravings control.	Meal service/program- 3 meals and 4 snacks. Participants get to check the food they would like from the menu. The meals are then catered 6 days a week and a day off. Additionally, clients are provided with contacts of a nutritionists for customers to take their measurements. Also get participants to	Paying customers Segment A and B+ 75 clients during high seasons, around 600 per year	Antifat company and outsources kitchens	Starting 1 day order until customers decides to stop. Started a couple of years ago	Greater Cairo

		download a fitness application to log their food and exercise.				
Pfeizer medical awareness	Educate and spread awareness of the patients who are taking medicine for the different non communicative diseases	All materials talk about the NCDs and how to prevent the complications of them.	The clients are the target group, these are either people who discover that they have a high level of cholesterol, so it becomes more protective , or they can be people who have witnesses complications already like hypertension etc. The age group is mainly over 40 for the majority although there are some younger. The	Pfeizer, clinics and pharmacies, partner NGOs	These materials have been there for a long time but are present in different forms and change regularly. The projects are mainly a year or less due to code of ethics and ministry rules	This information can be found at all doctors all over Egypt and mainly in big and chain pharmacies.

			<p>number of direct target group can be the number of printings but the indirect would be more</p> <p>250 million people</p> <p>200,00 - 300,000 printing per project</p>			
<p>Save the Children Early Childhood development Program</p> <p>Everyone Campaign</p>	<p>the objectives are pre-schooling and supporting in having daycare centers in slum areas.</p>	<p>to provide children with educational activities.</p> <p>teach people in the day care center on nutrition, physical activity, educational activities, everything related to the age group. what foods are provided in these centers,</p>	<p>0-5</p>	<p>Save the children, partner organizations and the ministry of social solidarity</p>	<p>On going</p>	<p>Cairo and Asyut, in slum areas or very poor areas where children are not provided with any support and families are not aware of children's needs in pre schooling</p>

<p>School health and nutrition</p>	<p>global campaign that works on the MDGs 4 and 5 maternal and child mortality; look at it from the health, nutrition, livelihood etc.</p> <p>The focus is mainly about malnutrition, the child may be well-fed but not healthy.</p> <p>Spread awareness about malnutrition</p>	<p>etc. The content and the tools, it is either by save the children international or developed according to the need.</p> <p>Focuses on the nutrition of the children and the mother, it encourages breast feeding.</p> <p>living university model, people get trained then select some people that train others. A new program based on positive deviance will start.</p>	<p>Mothers</p> <p>Mothers for school children age 6-18</p>		<p>5 years ago The program has stopped and another program will start.</p> <p>7-8 years</p>	<p>Asyut, Beni Suef, and Cairo</p> <p>The awareness sessions are in Cairo, Assiut and Sohag.</p> <p>upper Egypt, Assiut, Sohag and Menia.</p> <p>lately that we moved from rural to urban, underprivileged communities.</p> <p>Cairo, Assiut</p>
------------------------------------	---	---	--	--	---	--

<p>Street children</p>	<p>Channel the children's energy positively, the aim is also the rights for recreation and to get their energy out.</p>	<p>Provide awareness sessions for mothers of children Awareness sessions for the mothers the child gets measured(weight, height, etc.)during the first session track the % of stunting after the sessions we reassess to see if there is an improvement. last round that we did we included stool sample and hemoglobin anemia test but we used to rely mainly on the other tests.</p>			<p>The tournament with the world cup takes place every 4 years and happened in 2010</p>	<p>and Sohag.</p>
------------------------	---	---	--	--	---	-------------------

		<p>10 kids</p> <p>Street world cup competition which was an event in Rio. 11 children from Egypt went.</p> <p>Soccer activities within the partner organizations, and we also want to have females involved in playing soccer as well</p> <p>focus on sports and we also want to launch a campaign</p> <p>We do marathons, we care about sports in general, whether save the</p>				
--	--	--	--	--	--	--

		<p>children or the NGOs.</p> <p>Every street children's day we have the NGOs and international associations we do sports activities, like a marathon. April 12th.</p> <p>take the children on excursions and engage them in physical activity-</p>				
<p>Mcdonalds Campaign "it is what I eat and what I do"</p>	<p>The idea is to tell people that it is not because you are eating fast food you get to gain weight but it is about the lifestyle you are living, does it support you burning these</p>	<p>The introduction of the salad and the combo of taking a salad and a diet coke. Provide facts and nutrition values on all products and on the back of the tray mats. During the launch there were matching</p>	<p>the A B segment and 60% females.</p>		<p>5 years ago 2008 for 6 months</p>	<p>all over the world in McDonalds, all the branches all over Egypt. 80 official branches in Cairo, Giza, Alex, Hurghada, Luxor, Sharm el sheikh, Port saieed,</p>

<p>Menu el 5</p> <p>Drip Campaign for kids's meals</p>	<p>calories.</p> <p>The objective of the program is to tell people that obesity and weight gain happen as a result of you not moving and eating a lot.</p> <p>Introducing to the people that they can eat what they love but in a smaller portions</p> <p>More healthy choices for the kids' meals;</p>	<p>flyers and 5 minute health tips on the radio on how to enhance your metabolism and how to develop a healthy lifestyle and strengthen your focus.</p> <p>Introduced a reduced size of the classical sandwiches with the brand affordability program to introduce to the people that you can eat what you like but less.</p> <p>The drip campaign, every 3 months there would be a healthy</p>	<p>For kids, school age and under 10</p>	<p>For the past 2 years</p>	<p>Mansura and Helwan</p>
--	---	---	--	-----------------------------	---------------------------

	giving the mother and the family a healthier choice.	choice to replace the fries with apple bites (apple vacuumed) , corn and carrot sticks. It can be ordered as an extra or swap the fries for it. Soft drink could be swapped for milk or orange juice.				
Igmadi	To empower women and help them become more comfortable with their bodies and own it. To help get the community activism so that women can come and think about how they can be physically fit, and are	The events include Zumba Fitness, self-defense, Wendo, and some time for initiatives to present what they do and help get the community involved with them.	Events for females only 2,500 people. Per event average 300 . Ages 15 +. The Facebook group has 15,000 likes from men and women.	relies on them individual initiative .	Since March 2013	6 events- 4 in Cairo and 1 in Alex and in one school.

	building the confidence with the movements and with Wendo.					
Zumba Fitness and Pink Party	To spread well being and awareness about women's issues. Especially when cooperating with the cancer institute in the pink party.	Instructors teach classes or organize bigger events Zumba Classes-privately or gyms events mainly classes by instructors, master classes, Zumba marathons	females and males but 90% are women. upper middle class and up but it is starting to change.	Zumba instructors, gyms, dance studios, the cancer institute with the pink party.	5 years ago	All instructors are in Cairo and Alex, and there is an instructor from Assiut
PE university programs	It is mainly part of community service and to promote health. Some program are geared towards weight loss.	Programs are swimming, gymnastics , basketball, fitness, weight loss and teaching swimming to people who cannot swim.	some children and mostly older women come-around 400 people per year private classes for girls and boys	provost of the university for students and activities overviewing these activities choose people who are trusted from the staff -assistant		

<p>The weight loss program</p>		<p>Exercise through machines, inside the water training,</p> <p>depends on the state of the client</p> <p>check the body composition of the client to check the fat composition and the waist hip ration, etc. interview to check the old versus new fats, the history to see if it hereditary or not.etc. ask them to go their physicians to run some labs before they join the</p>	<p>ages 4-12.</p> <p>100 people</p>	<p>professors or professors</p>		
--------------------------------	--	--	-------------------------------------	---------------------------------	--	--

<p>Applied research</p>		<p>program make them sign a consent form. create the program of the workout plan Fitness and swimming for obesity program. Different research on how physical activity affects individuals .</p>	<p>10-20 participants per research</p>			
<p>National Nutrition Institute Services</p>		<p>They have 11 units and departments: 1. Demographic research medical and anthropometric work that develops the national conception survey, which is</p>	<p>More women come to these clinics while boys come to cure under nutrition</p>	<p>doctors, and dieticians</p>	<p>started in 1959</p>	<p>Cairo</p>

		<p>done every four years.</p> <p>2. Nutritional needs and development</p> <p>3. Clinical nutrition unit working on surveys, metabolic syndrome of children ages 10-18- 20% are pre-diabetic and have pre dyslipidemia</p> <p>4. Training and development unit-provides different courses on obesity management</p> <p>5. Nutrition education</p> <p>6. Media Unit</p> <p>7. Statistics Unit</p> <p>9. Special nutrition</p>				
--	--	---	--	--	--	--

<p>The obesity clinic</p>	<p>aim of the clinics is the management of obesity.</p>	<p>10. Laboratories</p> <p>11. A chemistry unit working on the health of the different foods</p> <p>breast-feeding clinic</p> <p>breast-feeding programs</p>				
<p>University Nutrition Education Program</p>		<p>national action plan on adolescents</p>				
<p>Lafarge business model</p>		<p>strategy on diet and physical activity strategy</p> <p>to prevent obesity in adolescents. The plan was going to be multi sectorial but it has stopped with the political situation.</p>				<p>2 public and 3 private universities; Cairo, Ain shams, and 6 of October City and was spreading to clubs</p>

<p>The training unit</p>	<p>Spread awareness about health and nutrition for the employees of the company</p> <p>To provides a full scope on nutrition, under and over nutrition. Trains clinical physicians and dieticians on obesity management; to open an obesity clinic</p>	<p>o clubs and on media in the television, work on policy and legislation as well.</p> <p>There are two types of clinics; one for 4 EGP and the other for 20 EGP</p> <p>Two lectures to increase awareness. Students weight and height were assessed; accordingly, students who were under or overweight were directed to nutrition counseling .</p> <p>18 awareness sessions, and assessment of the employees</p>	<p>Company employees and their families</p> <p>Specialist in nutrition and home economics and physicians</p>		<p>one whole year</p>	
--------------------------	--	--	--	--	-----------------------	--

		<p>weight and height.</p> <p>further assessment and follow up of the obese was done</p> <p>worked on meal alteration</p> <p>lecture on the company's family day event.</p> <p>Training program and diploma</p>				
Demographic Health Survey (DHS)		Research of DHS, which includes prevalence of obesity and the prevalence with education, wealth, urban vs. rural.		USAID, Unicef, MoH, El Zanaty and Associates		
Healthy Egyptians Montaser Yantaser Montaser	The main objectives of the efforts are to create demand	It is a coloring story book of an Arab boy, he or his friends	4-8 year olds of both genders The targeted	volunteers who do the campaign in 12 governorates	started in 2011	12 governorates, Cairo, Giza, Qalyoube

<p>triumphs” early 2013. 10.</p>	<p>of health education and awareness on pneumonia as the leading killer for children under 5.</p>	<p>get a disease that is from their community and from the story he gets to detect the symptoms when the disease occurred, how to treat and prevent it. There is also a high quality cartoon on social media and YouTube and was on television for 4 times early 2013 the portable child cinema (It is a small cinema with little chairs for the children and wide screen and sound system) and a portable booth that goes around the country.</p>	<p>areas are all segments of the society, urban, rural, insider and outside Cairo. Until now with direct educational campaigns they have reached 50,000 child and parents. With indirect education - on television and social media because it was aired during prime time on satellite television they have most probably targeted at least 500,000 child and</p>	<p>rates and the employees of healthy Egyptians are less than 10</p>	<p>2013</p>	<p>ya, Fayoum Assiut, Monofia, Qena, New Valley, Beheira, Alexandria, Red Sea, Gharbeya . In front of schools, malls, and in slum areas where children can go in and watch the cartoon going around in Cairo only for now.</p>
--	---	--	---	--	-------------	---

		<p>They create health educational campaign in diverse areas, in schools, nurseries, local slum areas, social clubs..</p> <p>The curriculum / series of books and cartoons accordingly is still in the production process,</p> <p>iron deficiency anemia and non communicative diseases; obesity, diabetes, and hypertension</p> <p>We will produce a book and cartoons for each disease. The book about obesity can come out by the end</p>	parents.			
--	--	---	----------	--	--	--

		of this year but the books still need some time as it needs funding.				
breast feeding promotion program national program	encourage natural breast feeding and prohibit the child from taking anything else with the mothers' milk- not even water Wellbeing and general health of children and mothers To monitor the children's well being based on this data we can start	We train the doctors and the nurses the benefit of breast feeding and how the mother should breast feed properly- to answer the questions and correct the misconceptions of the people. - train them to do counseling to encourage the women to breast feed. monitor the child and his growth- weight him and check his height and place these	females and males children and mothers	Ministry of health	from the start of the units since 1996	over 5000 health units that we have all over - the rural units, medical center..et c.
The nutrition surveillance system - nutritional monitoring (tarakob ta3'zawi)			Children and students	MoH, Unicef and Ministry of education	pilot started in 2010	Gharbeya and now all over Egypt 48,000 schools cover 20,000,000

<p>educational kitchen</p>	<p>nutrition education based on it we would tell the child his state to raise the children's awareness . get a good idea on the prevalence and this would also give the nurse the power to provide students with tips. track malnutrition- for overweight we give tips on weight loss and for underweight we give some nutrition education. This would result in recommendation for health education etc, based</p>	<p>numbers on the curve to check if he is over or under weight, or normal. During vaccination period we take these measurement 2nd, 4th and 6th month booklet for the child that has his/her information, has the curve and the number of the visits and information to be filled during the visits. Growth monitoring for each kid, a comprehensive examination of in grades 1, 4, 6, 9 secondary and 9 high school part of the measureme</p>				<p>students.</p>
----------------------------	---	---	--	--	--	------------------

Antenatal program	on it we can give tips to the students and encourage PE.	nts taken is height, weight and BMI. -some set backs. All the schools should get the services.	Mothers Pregnant women			
Food fortification program	To work on enhancing the nutritional values in home cooking.	The program teaches women how to cook something that is nutritious on a low budget.				
Premarital counseling	Caring for the health of pregnant women Substituti	Booklet for pregnant women- they get weighed every month- If she gains more than 2 kilos per month we think she is at risk so we tell her to lose weight and	All Egyptians	MoH and WHO		

<p>the Ra2edat</p> <p>1000 day of the child's life national awareness program</p>	<p>ng missing nutrition in subsidized products.</p> <p>A medical checkup for couples before they get married.</p>	<p>provide her with information/ eating plan.</p> <p>Iodized salt</p> <p>Iron and folic acid in wheat for bread</p> <p>Vitamin A and B in Oil</p> <p>The children during vaccine, when they reach 9 month and 18 months get vitamin A capsules to raise immunity and vision, to act as antioxidant , etc.</p> <p>The couple comes and checks for genetic problems/diseases tests and check the medical health</p>	<p>Egyptian couples</p> <p>Mothers and children</p> <p>1300 females who are in charge of 70-100 families</p>	<p>MoH and Unicef</p>	<p>2008</p> <p>should be taking place every week.</p> <p>Started 10 years ago with family planning initiatives</p>	<p>in 4 governorates in lower Egypt 2 governorate in northern Egypt and are spreading .</p>
---	---	---	--	-----------------------	--	---

	<p>An outreach program that was done with the birth control unit in the ministry.</p>	<p>background to get them help, we do not stop couples from getting married though. This program is still not very strong.</p> <p>9 months of pregnancy and 24 months, the first 2 years.</p> <p>mentoring of the pregnant woman, a healthy pregnancy, monitoring of the child. It is the whole package of all programs.</p> <p>group of women during vaccination times talk to the</p>				
--	---	---	--	--	--	--

		<p>mothers in a lecture form-about vaccines, nutrition of the pregnant woman, etc.</p> <p>These women are working on visiting the families regularly, each in charge of 70-100 families</p> <p>are 13000 females.</p>				
School feeding program	<p>Nutrition is mainly the technical part amongst the other programs and is cross cutting.</p> <p>The aim is for the facilitators to spread the awareness of the nutrition education to the children</p>	<p>nutrition awareness, train the school facilitators of</p> <p>There is another health and nutrition curriculum for facilitators of primary school of the girls' education initiative and community schools.</p>	<p>community schools and girls education initiative schools</p> <p>ages 9-12,</p>	World Food Program and NGOs, with the support of ministry of Education	More than 5 years	Governorates in Upper Egypt

		<p>They also also work with NGOs and have the NGOs conduct the training for them.</p> <p>-developed educational information material for the children in school for the children with interactive ways.</p> <p>focus on the basic health messages and health and sanitation.</p> <p>- curriculum for kinder garden in the school-feeding program that has been incorporated in the Ministry of Education's curriculum .</p>				
--	--	---	--	--	--	--

		- snack of fortified date bars for the children to improve their attention span and concentration within the school.				
--	--	--	--	--	--	--