



UNIVERSITI PUTRA MALAYSIA

***EFFECTIVENESS OF HEALTH EDUCATION INTERVENTION BASED ON
HEALTH BELIEF MODEL AMONG ELDERLY WOMEN
IN URMIA, IRAN***

JAMILEH AMIRZADEH IRANAGH

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**Thesis Submitted to the School of Graduates Studies, Universiti Putra Malaysia, in
Fulfillment of the Requirements for the Degree of Doctor of Philosophy**

July 2015

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DEDICATION

This thesis is dedicated to:

My parents, whom I owe everything I having my life

My husband, Mohammad Reza, for his remarkable patience, unwavering love, and endless support

My lovely daughter, Yeganeh for her understanding

My sisters and brothers for their support and encouragement



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Doctor of Philosophy

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July 2015

**Chairman : Hejar Binti Abdul Rahman, M.Com Hlth
Faculty : Institute and Gerontology**

Elderly population is now a challenge that affects developed and developing countries throughout the world. There is symmetry between age increase and the rise in chronic diseases. Non-communicable diseases (NCD's) are strongly influenced by behavioural risk factors including insufficient physical activity, and unhealthy diet, which lead to elevated blood pressure, blood glucose, cholesterol levels, and body weight. So, it is essential to use physical activity and nutrition intervention program to help prevention of NCD's. This study was aimed to evaluate the effectiveness of health education intervention based on the health belief model among elderly women in Urmia, Iran

This randomized control trial was carried out in Urmia city, which was divided to four zones and then randomly assigned to one of four groups. Then from each respective zone one primary health care centre was selected. The population sampled using a stratified, multistage probability cluster sampling design. Two hundred subjects were qualified to participate in this randomized controlled trial designed study. Subjects were randomized into four groups: (1) nutrition intervention, (2) physical activity (3) both nutrition intervention and physical activity (compound) (4) control, to either a three month education program.

First outcome variables were knowledge, performance, and perception of nutrition and physical activity in the elderly women. Second outcome was determination level of fasting blood glucose, lipid profiles and anthropometric parameters before and during intervention program period.

One hundred seventy two subjects with mean age 69.32 (SD=5.345), successfully completed the program duration. Among the 172 elderly women, the adherence rate to the program 82% for the nutrition group, 86% for the compound group, 86% for the physical activity group, and 90% for the control group, totalling 86% of general adherence. Generally, compared to similar intervention programs, the present study,

had an acceptable level of subjects' adherence to the program. Hence, an overall of 14% drop rate in this study showed a lower number than that in other studies.

There were no significant differences in the distributions of all tests scores for the variables between the intervention and control groups prior to the intervention. At the end of the intervention, results of mixed repeated measures analysis of variance revealed a statistical significant difference in knowledge, belief, and performance of nutrition and physical activity, anthropometric parameters, lipid, and glucose between intervention groups and control group across three different measurements, after six months ($p < 0.001$). Although, there was found significant interaction of time by group for all variable scores ($p < 0.001$).

The present study indicated that by the end of the six months intervention, the participants experienced some significant anthropometric changes. It seemed that each of the physical activity or nutrition or compound group led to improvement in the subjects' body mass index, waist circumference, mid-upper arm circumference, and hip circumference. Without any exercise and nutrition in the control group, the participants experienced a slight increase in their anthropometric parameters.

The post-intervention measurements showed significant reduction ($p < 0.001$) in FBS, systolic blood pressure, diastolic blood pressure in physical activity group as compared to other groups. However, comparison of result indicated that improvement in cholesterol, triglyceride, LDL, and increase in HDL in compound group were higher than nutrition alone and physical activity alone ($p < 0.001$).

This study suggests the physical activity and nutrition intervention is effective among the elderly women. Therefore, group-based nutrition and physical activity education could be an alternative solution, as it promotes favourable improvement on the conditions of the elderly with sedentary life style.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KEBERKESANAN INTERVENSI PENDIDIKAN KESIHATAN
BERDASARKAN MODEL KEPERCAYAAN KESIHATAN DALAM
KALANGAN WANITA BERUMUR DI URMIA, IRAN**

Oleh

JAMILEH AMIRZADEH IRANAGH

Julai 2015

Pengerusi: Hejar Binti Abdul Rahman, M. Com. Hlth
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Populasi warga tua kini merupakan cabaran yang memberi kesan kepada negara-negara maju dan membangun di seluruh dunia. Terdapat simetri antara peningkatan umur dan peningkatan penyakit-penyakit kronik. Penyakit tidak berjangkit (NCD) adalah dipengaruhi oleh faktor-faktor risiko tingkah laku termasuk aktiviti fizikal yang tidak mencukupi, dan pemakanan yang tidak sihat, yang membawa kepada peningkatan tekanan darah, glukosa darah, tahap kolesterol dan berat badan. Justeru, adalah penting untuk menggunakan program intervensi aktiviti fizikal dan pemakanan untuk membantu pencegahan NCD ini. Kajian ini bertujuan untuk menilai keberkesanan intervensi pendidikan kesihatan berdasarkan model kepercayaan kesihatan dalam kalangan wanita berumur di Urmia, Iran.

Percubaan kawalan rawak ini telah dijalankan di bandar Urmia, yang mana dibahagikan kepada empat zon dan kemudian dibahagikan secara rawak kepada satu daripada empat kumpulan. Kemudian dari setiap zon satu pusat penjagaan kesihatan utama telah dipilih. Populasi sampel adalah menggunakan reka bentuk persampelan kelompok kebarangkalian berstrata, pelbagai peringkat (*stratified, multistage probability cluster sampling design*). Dua ratus subjek layak untuk mengambil bahagian dalam kajian percubaan kawalan rawak ini. Subjek dipecahkan secara rawak kepada empat kumpulan: (1) intervensi pemakanan, (2) aktiviti fizikal (3) kedua-dua intervensi pemakanan dan aktiviti fizikal (kompaun) (4) kawalan, sama ada ke program pendidikan tiga bulan.

Hasil pembolehubah pertama adalah pengetahuan, prestasi, dan persepsi pemakanan dan aktiviti fizikal dalam kalangan wanita berumur. Hasil kedua adalah tahap penentuan glukosa darah, profil lipid dan parameter antropometri apabila berpuasa pada sebelum dan semasa tempoh program intervensi.

Satu ratus tujuh puluh dua subjek dengan min umur 69.32 (SD = 5.345), berjaya menamatkan tempoh program. Antara 172 wanita tua, kadar kepatuhan kepada program adalah 82% bagi kumpulan pemakanan, 86% bagi kumpulan kompaun, 86% bagi kumpulan aktiviti fizikal, dan 90% bagi kumpulan kawalan, bersamaan 86%

kepatuhan umum. Secara umumnya, berbanding program intervensi yang sama, kajian ini mempunyai tahap kepatuhan subjek yang boleh diterima untuk program ini. Oleh itu, kadar penurunan sebanyak 14% dalam kajian ini menunjukkan bilangan yang lebih rendah berbanding dalam kajian lain.

Tiada perbezaan signifikan dalam pengagihan semua markah ujian bagi pembolehubah antara intervensi dan kumpulan kawalan sebelum intervensi. Pada akhir intervensi, keputusan ukuran campuran berulang analisis varians membuktikan bahawa terdapat perbezaan statistik yang signifikan dalam pengetahuan, kepercayaan, dan prestasi pemakanan dan aktiviti fizikal, parameter antropometri, lipid, dan glukosa antara kumpulan intervensi dan kumpulan kawalan merentasi tiga ukuran yang berbeza, selepas enam bulan ($p < 0.001$). Walaupun, ada didapati kesan ketara yang signifikan pada masa oleh kumpulan bagi semua markah pembolehubah ($p < 0.001$).

Kajian ini menunjukkan bahawa pada enam bulan terakhir intervensi, peserta mengalami beberapa perubahan antropometri ketara. Ia kelihatan bahawa setiap aktiviti fizikal atau pemakanan atau kumpulan kompaun membawa kepada peningkatan dalam indeks jisim badan subjek, lilitan pinggang, lilitan pertengahan lengan atas, dan lilitan pinggul. Tanpa sebarang senaman dan pemakanan dalam kumpulan kawalan, peserta mengalami sedikit peningkatan dalam parameter antropometri mereka.

Pengukuran pasca intervensi menunjukkan penurunan yang signifikan ($p < 0.001$) dalam FBS, tekanan darah sistolik, tekanan darah diastolik dalam kumpulan aktiviti fizikal berbanding dengan kumpulan lain. Walau bagaimanapun, perbandingan keputusan menunjukkan bahawa peningkatan dalam kolesterol, trigliserida, LDL, dan peningkatan dalam HDL dalam kumpulan kompaun adalah lebih tinggi daripada pemakanan sahaja dan aktiviti fizikal sahaja ($p < 0.001$).

Kajian ini menunjukkan aktiviti fizikal dan pemakanan adalah intervensi yang berkesan dalam kalangan wanita berumur. Oleh itu, pendidikan pemakanan dan aktiviti fizikal berasaskan kumpulan boleh menjadi penyelesaian alternatif, kerana ia menggalakkan peningkatan yang menggalakkan terhadap keadaan orang tua dengan gaya hidup yang tidak aktif.

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Last but not least, my deepest gratitude goes to my beloved husband; Mohammad Reza Dadashzadeh, for his unceasing support and to my sweetheart, Yeganeh for her understanding.

I certify that a Thesis Examination Committee has met on 31 July 2015 to conduct the final examination of Jamileh Amirzadehiranagh on her thesis entitled "Effectiveness of Health Education Intervention Based on Health Belief Model among Elderly Women in Urmia, Iran" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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This thesis was submitted to Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctoral of Philosophy. The members of the Supervisory Committee were as follows:

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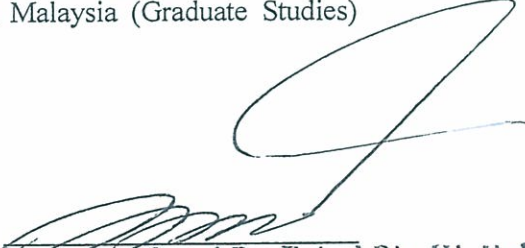
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CHAPTER 1

INTRODUCTION

1.1. Background

Elderly above 60 years old make nearly 600 million of the world population and by 2050 the figure will reach about two billion mainly living in developing countries (Shaghi, Babak, & Manzori, 2009). Globally the elderly population that has sharply grown in number due to decline in birth rate, a rise in life expectancy, development of urbanization, high income, higher education, and accessibility to health care (McCutcheon & Pruchno, 2011). In comparison to Western countries, Asia has been the world's fastest-growing region and this strong sustained performance has transformed the region from a group of typical developing countries into one of the three centers of gravity of the world economy, along with the US and EU (Lee, Mason, & Park, 2011). Iranian population like other countries in the world is undergoing aging. At present about eight percent of the population of Iran (about 5.5 million) are over 60 years of age, which will result in old age explosion in 20 years if the same condition persists. The consequence will be an increase by 25-30 percent to the population at the age of above 50 (Heidari & Shahbazi, 2012).

Likewise, there is an increase in the frequency of non-communicable diseases like coronary heart disease, cancer, cerebrovascular diseases, diabetes mellitus, osteoporosis and pulmonary diseases. Most of such chronic diseases are the risk factors as in high blood pressure, smoking, high cholesterol, obesity, physical inactivity and unhealthy diet, (Hosseini-Esfahani, Jessri, Mirmiran, Bastan, & Azizi, 2010). Now these non-communicable diseases are the main causes of death worldwide (Boutayeb, 2006; Lee, Shiroma, Lobelo, Puska, Blair et al., 2012).

Studies presented that chronic diseases highly prevail in old age. which is the main cause of heavy financial, health, and medical costs and disability in the elderly not to mention the fact that these diseases can largely lead to mortality in people over 65 (Salehi, Naajee, & Sargazi, 2012). In this regard, studies conducted in Iran indicate that there is a higher rate of visiting doctors, seeking for medication, and receiving hospitalization services for the elderly rather than for the non-elderly people. The ratio of hospitalization for an elderly person is reportedly 0.4 per year (Asefzadeh & Ghodoosian, 2010). Thus, prevention of and delay in the occurrence of chronic diseases in the elderly are a critical issues in public health (Goetzel, Shechter, Ozminkowski, Stapleton, Lapin et al., 2007) and physical activity and nutrition are determining factors of health of elderly (Oliveira, Fogaca, & Leandro-Merhi, 2009). The modification of nutritional and physical activity behaviours can, to a great extent, help enhance efficiency and independence in the elderly as well as assisting them in controlling the side effects of old age and different medical treatments (Knoops, Groot, Kromhout, Perrin, Moreiras-Varela et al., 2004).

With the help of effective health interventions and advanced treatment of diseases, most European countries have reduced the effect of non-communicable diseases specifically the heart diseases. Of the ten major causes of death in America, if six issues are properly addressed, casualties will be lowered to a great extent. These issues include behaviour, diet, exercise, smoking, use of antihypertensive medication and alcohol usages (Jemal, Siegel, Ward, Hao, Xu et al., 2008). As an effective factor in addressing behaviour, health education at primary health care (PHC) centres contribute significantly to changing behaviour and lowering the burden of non-communicable diseases behaviour (Midhet, Mohaimed, & Sharaf, 2010). Thus, the elderly are expected to be seriously in need of health care resources which will be accompanied by respective expenses being a critical issue, too (Shrivastava, Shrivastava, & Ramasamy, 2013). Therefore, health care providers should boost healthy behaviour for the old population (Barbara Cliff, 2012). It is documented that health-promoting behaviours regarding the condition of the elderly can basically enhance the condition of their health and quality of life (QoL) and hence decreasing the cost of health care (Tw, Is, & Kj, 2006; Dechamps, Diolez, Thiaudière, & et al., 2010). It is possible to improve healthy behaviour through health intervention, and education can give information accordingly. Therefore, education can pave the way for addressing health status in a proper way and help the elderly benefit intervention programs (Grossman, 2004).

With the use of health behaviour theories it will be possible to run health interventions. Among the current theories, one useful one is the Health Belief Model (HBM)(Hanson & Benedict, 2002; Champion & Skinner, 2008), stating that health behaviours are associated with certain beliefs. It says that when people tend to get sick, they try to make certain behavioural changes to stay healthy. That is to say, they begin to believe that the recommended preventive behaviour will be effective, the disease will be severe and the benefits have an advantage over the costs (Hurst & Wham, 2007).

1.2 Problem Statement

There is a close association between aging and chronic diseases. Globally, nearly 45% of women aged above 60 years died as a result of chronic conditions, especially cardiovascular diseases (WHO, 2009)and in Iran, 33% of elderly women died from chronic diseases (Asgari, Aghajani, Haghazali, & Heidarian, 2009).

The epidemic of the chronic diseases related to lifestyle, the intake of high calorie food with sedentary lifestyle can lead to the prevalence of obesity. Iranians use carbonated beverages about 42 liters per person a year. About 40% of Iranians' daily food consumption is more than their requirement. For example, their average use of fat and carbohydrate is 30% and 40% higher than they need (Malekzadeh, Mohamadnejad, Merat, Pourshams, & Etemadi, 2005) that lead to obesity or weight gain. Excess body weight and chronic health problems are closely related to each other. Hence, one study in Iran showed prevalence of overweight/obesity in elderly women in the urban and rural areas was 82.1% and 66.1%, respectively (Maddah & Sharami, 2010). Besides, most Iranian with diabetes mellitus are elderly, one-third of

the older population have diabetes and three-quarter have pre-diabetes (Haghdoost, Rezazadeh-Kermani, Sadghirad, & Baradaran, 2009), as well as,. diabetes and hypertension affected 23.5% and 52% of Iranian elderly women, respectively (Tanjani, Motlagh, Nazar, & Najafi, 2015). So it is important to run a nutrition intervention for behaviour change among elderly people (Eakin, Lawler, Vandelanotte, & Owen, 2007).

Furthermore, WHO has recently announced that the fourth main risk factor worldwide is physical inactivity (Young & Dinan, 2005), which is the most critical risk factors for non-communicable diseases (NCDs). Regular physical activity offers many benefits (Shabani, Nazem, & Puraqayy, 2009; Lee, Jancey, Howat, Burke, Kerr et al., 2011; Giuli, Papa, Mocchegiani, & Marcellini, 2012). Physical activity can prevent NCDs and help to eliminate the risk of the chronic diseases (Chodzko-Zajko, Schwingel, & Chae Hee Park, 2009). In addition, it is documented that as the level of activity decreases, the cost of health care rises (Martinson, Crain, Pronk, O'Connor, & Maciosek, 2003). Unfortunately more than 80% of Iranians are physically inactive (Sheikholeslam, Mohamad, Mohammad, & Vaseghi, 2004) and 38.8% of the elderly spent their leisure time at home alone and 22.5% of the elderly did not participate in any kind of physical activities (Tanjani et al., 2015). People cannot change their detrimental behaviours unless they are instructed about the effect of their lifestyle on their health (Bandura, 2007; Resnick, Orwig, D'Adamo, Yu-Yahiro, Hawkes et al., 2007). Therefore, it is important to explain the ways of improving the quality of life through health, nutrition and physical activity education (Malekafzali, Baradaran-Eftekhari, Hejazi, & Khojasteh, 2010). Education is important because of its behavioural impact and for nutrition and physical activity education, HBM can enhance the impact of educational programs (Lynch & Happell, 2008). As a result, it is of high value to offer the elderly a nutrition and physical activity intervention.

1.3 Significance of the Study

This research attempts to make an investigation into the impact of health education on elderly women's behaviour. Health education interventions aims to give people the information and/or skills needed for understanding the nature of diseases, results of illness, its mechanism, symptoms, prevention and diagnosis techniques or self-monitoring practices, appropriate methods for self-care, management and treatment. When knowledge about possible hazards are learned, change can take place much more easily. As a result, the clarification of precise effects of health education on behaviour of the elderly can help prevent the occurrence of chronic diseases. Furthermore, this study attempts to add to the current literature the idea that a health education intervention is able to stop deaths due to chronic diseases in the elderly and finally produce a better life quality and higher life expectancy in elderly women. To achieve this goal, health knowledge, attitudes and practices should be improved through an intervention for elderly women. One theory that focus on individual's health behaviour is HBM. This model considers individual's perceptions (susceptibility, severity, barrier, self-efficacy, and benefit) about a health condition. Therefore, the HBM as a theoretical basis might identify elderly perception and influence belief and effect health behaviour. As a result, this study will employ HBM

to make an investigation into the impact of the health education intervention on changing the elderly health behaviour in Iran. As the number of old people increases in Iran, the need for a health education intervention becomes more serious. It is hoped that this research project can greatly contribute to the understanding of aging and especially the status of elderly women in Iran. When there is a lack of health behavior, the result will be dependency and so a high rate of hospitalization; therefore, a successful diagnosis of diseases associated with unhealthy behavior can be well accompanied by an appropriate intervention.

The findings of this research can assist health program developers in preparing appropriate programs for improving the status of health behavior in elderly women. In addition, the result will help policy makers and health care providers decide what health factors can be emphasized in maintaining the health and life quality of elderly women in Iran. Finally, this research can help to prevent chronic diseases and ultimately allow the elderly to lead a more independent and pleasant life.

1.4 Objectives of Study

1.4.1 General Objectives

This study aims to determine the effect of health education intervention based on HBM on the health behaviour change in the elderly women in Urmia, Iran.

1.4.2 Specific Objectives

1. To determine the socio-demographic characteristics of elderly women.
2. To investigate the impact of a three-month health education intervention on the physical activity and nutrition knowledge in elderly women at baseline, after a three-month intervention and at the end of the follow up in elderly women.
3. To determine the impact of the health education intervention on the physical activity and nutrition beliefs (perceived benefit, perceived barriers, perceived severity, perceived susceptibility, and self- efficacy) in elderly women at baseline, after a three-month intervention and at the end of the follow up in elderly women.
3. To compare the impact of a three-month health education intervention on the nutrition and physical activity performance in elderly women at baseline, after a three-month intervention and at the end of the follow up in elderly women.
5. To examine the impact of a three-month health education intervention on the anthropometric parameters in elderly women at baseline, after a three-month intervention and at the end of the follow up in elderly women.
6. To evaluate the impact of the health education intervention on the biomedical parameters in elderly women at baseline, after a three-month intervention and at the end of the follow up in elderly women.

1.5 Hypotheses of the Study

1. There is a significant difference between the intervention and control groups on knowledge of nutrition at baseline, after three months and at the six months.
2. There is a significant difference between the intervention and control groups on nutrition beliefs at baseline, after three months and at six months.
3. There is a significant difference between the intervention and control groups on nutrition performance at baseline, after three months and at the six months.
4. There is a significant difference between the intervention and control groups on knowledge of physical activity at baseline, after three months and at the six months.
5. There is a significant difference between the intervention and control groups on physical activity beliefs at baseline, after three months and at six months.
6. There is a significant difference between the intervention and control groups on physical activity performance at baseline, after three months and at the six months.
7. There is a significant difference between the intervention and control groups for anthropometric parameters at baseline, after three months and at six months.
8. There is a significant difference between the intervention and control groups for biomedical parameters at baseline, after three months and at six months.

1.6 Definition of Terminology

In this study the following terms are widely used:

Health education: Health education refers to the information that is given to people about health. It deals with principles that people should follow to lead them to improvement, maintenance, or restoration of health. Health education consists of consciously constructed opportunities for learning some form of communication for the promotion of health literacy. It promotes knowledge and life skills required for individual and collective health.

Intervention: The literal definition of intervention is to enter into or mediate between two parties. In health science, intervention deals with the measures taken either for promotion or modification of a person mentally, emotionally, or physically or for the prevention of damage and problems. These actions may involve teaching to follow a proper diet, or take recommended actions seriously. In this study, intervention is examined according to the pattern of health beliefs.

Educational Intervention: The educational intervention deals with the administration of educational programs following the pattern of health beliefs for the promotion of knowledge and behaviour levels, and for the improvement effectiveness of the nutrition behaviour and physical activities in elderly women.

Nutrition: Nutrition, nourishment, or aliment refers to the provision of food needed by organisms and cells to stay alive. In medicine, nutrition is the science or practice of using food. This study measures operational nutrition through certain questionnaires.

Physical activity: Physical activity is defined as body movements which result in the use of energy. It may include a pre-programmed activity such as walking, running, or any daily activity. In this study, physical activity consists of cardiorespiratory endurance.

Health behaviour: Health behaviour refers to any activity performed by a person to improve, protect or maintain health whether or not this behaviour can achieve the goal.

Body mass index: Based on measurement of height and weight at baseline recommended by WHO; body mass index is calculated through $[\text{weight (kg)}/\text{height (m)}^2]$.

Perceived susceptibility: The concept of perceived susceptibility involves an individual's opinion about the chance of developing a condition.

Perceived severity: Perceived severity includes opinions about the importance of developing a disease or condition and its medical consequences (such as pain, disability and death) and the social costs (like the impact on a person's work, family and social relationships).

Perceived benefits: Perceived benefits refer to the belief about the positive results of a certain behaviour when a real threat comes up. In other words, the concept suggests that taking a recommended action can reduce the risk or severity of a potential disease.

Perceived Barriers: As the strongest predictor to changes in health behaviour, perceived barriers are concerned with tangible and psychological costs of the recommended action. This concept also addresses an individual's estimation of the degree of social, personal, environmental, and economic obstacles to a specific behaviour or their desirable goal status on that behaviour.

Self-Efficacy: Self-efficacy refers to a feeling that makes one start an activity that will affect one's efforts over time.

1.7 Conceptual Framework

Figure 1.1 indicates the theoretical framework of the study. The framework for this study was built on the basis of the HBM. The constructs of HBM are based on the domains of perceived susceptibility, perceived severity, perceived threat, perceived barriers, perceived benefits, and cues to action.

Before any changes can be made, it is important to understand people's health beliefs and attitudes toward specific health issues. Reviews on health-related behaviour indicate that unless people have no minimal levels of related health motivation and information (cues to action), they will not try to seek for diagnosis, prevention, or treatment for a condition so increasing women's knowledge about the outcome of physical inactivity and unhealthy diet can help produce successful educational interventions. Furthermore, these people must be made potentially vulnerable (perceived susceptibility), aware about the seriousness of their situation (perceived severity) and convinced of the efficacy (perceived benefits) of health intervention.

According to the Health Belief Model if they develop self-regulation abilities (self-efficacy) to change their health behaviours, they will be more likely to involve in the recommended health behaviours.

Based on the literature review and educational principles and by considering of Health Belief Model that aimed to change behaviour, a complementary nutritional and physical activity booklets adopted from ministry of health in Iran was used. The health educational program attempted to promote the nutritional and physical activity of the elderly women and make positive changes in their biomedical and anthropometric parameters level through changing their perception about the risk of nutrition habits and physical inactivity.



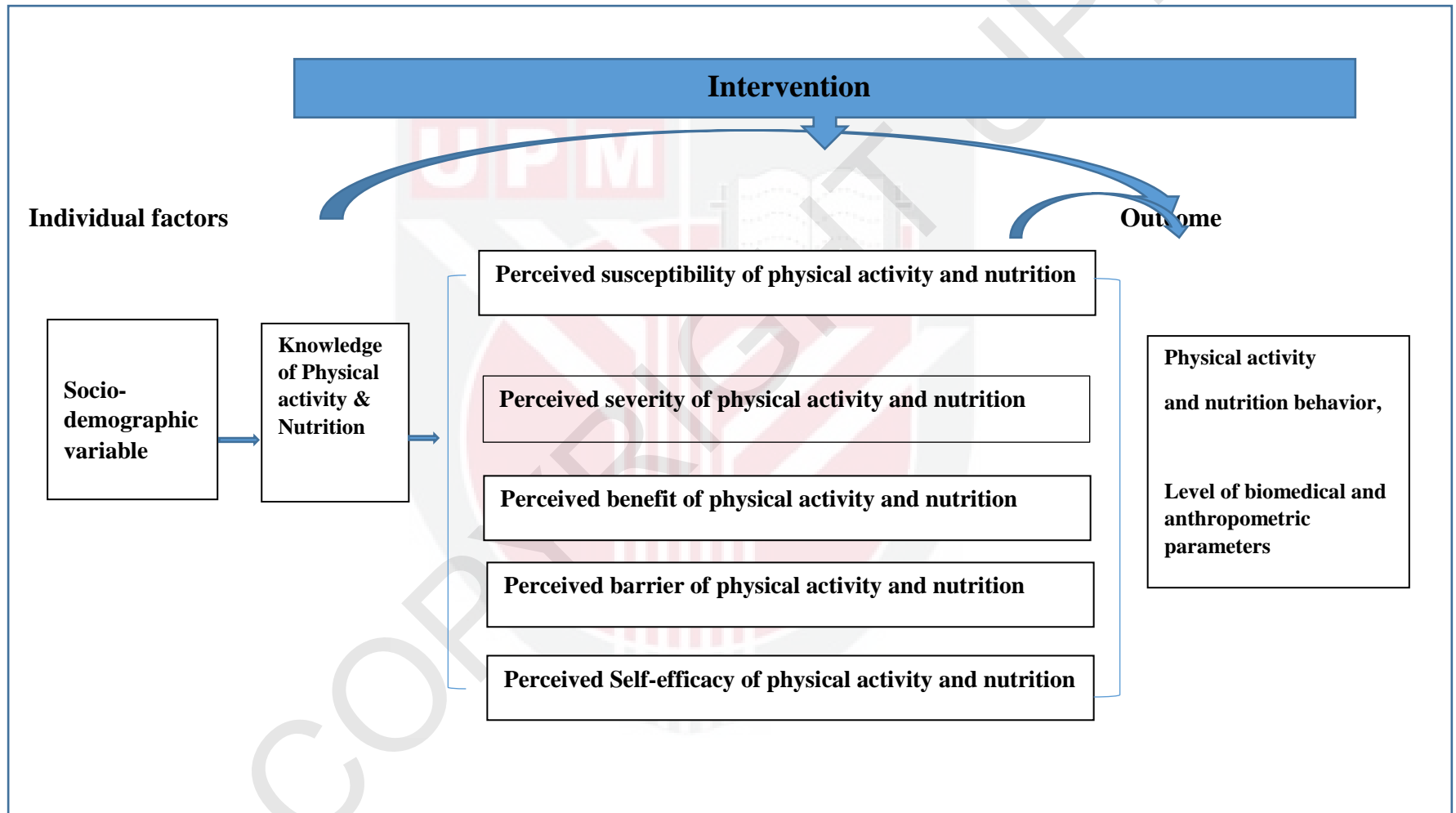


Figure1.1 Conceptual Framework of Health Education Intervention Based on Health Belief Model on the Health Behaviour, Anthropometric Parameters, and Biomedical Changes among Elderly Women in Urmia, Iran

REFERENCES

- Abegunde, D. O., Mathers C. D., Adam T., Ortegón M., & Strong K. (2007). The burden and costs of chronic diseases in low-income and middle-income countries. *The Lancet*, 370(9603), 1929-1938.
- Abolfazl, R., Monireh A., Fazlollah A., & Mahshid F. (2011). Exercise and physical activity among healthy elderly Iranian. *Southeast Asian J Trop Med public health*, 42 (2), 444-455.
- Aburto, N. J., Ziolkovska A., Hooper L., Elliott P., Cappuccio F. P., & Meerpohl J. J. (2013). Effect of lower sodium intake on health: Systematic review and meta-analyses. *BMJ: British Medical Journal*, 346(8), 1-20.
- ACSM. (2013). *Acsm's guidelines for exercise testing and prescription*. Baltimore Md : Sydney: Lippincott Williams & Wilkins.
- Agstromer, M., Oja P., & Sjostrom M. (2006). The international physical activity questionnaire (IPAQ): A study of concurrent and construct validity. *Public Health Nutr*, 9(3), 755-762.
- Ahmed, T., & Haboubi N. (2010). Assessment and management of nutrition in older people and its importance to health. *Clinical interventions in aging*, 5(3), 207-216.
- Al-Ali, N., & Haddad L. G. (2004). The effect of the health belief model in explaining exercise participation among Jordanian myocardial infarction patients. *Journal of Transcultural Nursing*, 15(2), 114-121.
- Al-Eisa, E. S., & Al-Sobayel H. I. (2012). Physical activity and health beliefs among Saudi women. *Journal of Nutrition and Metabolism*, 2012(12), 1-10.
- Al-Wehedy, A., Elhameed S. H. A., & El-Hameed D. A. (2014). Effect of lifestyle intervention program on controlling hypertension among older adults. *Journal of Education and Practice*, 5(5), 61-71.
- Albert, C., & Davia M. A. A. (2010). Education is a key determinant of health in Europe: A comparative analysis of 11 countries. *Health Promotion International*, 26(2), 163-170.
- Albinet, C. T., Boucard G., Bouquet C. A., & Audiffren M. (2010). Increased heart rate variability and executive performance after aerobic training in the elderly. *European Journal of Applied Physiology*, 109(4), 617-624.
- Alidosti, M., Sharifirad G. R., Golshiri P., Azadbakht L., Hasanzadeh A., & Hemati Z. (2012). An investigation on the effect of gastric cancer education based on health belief model on knowledge, attitude and nutritional practice of housewives. *Iranian journal of nursing and midwifery research*, 17(4), 256-262.

- Amarantos, E., Martinez A., & Dwyer J. (2001). Nutrition and quality of life in older adults. *Journals of Gerontology:Series A*, 56A (Special Issue II), 54–64.
- Anderson, E. S., Winett R. A., Wojcik J. R., & Williams D. M. (2010). Social cognitive mediators of change in a group randomized nutrition and physical activity intervention. *Journal of Health Psychology*, 15(1), 21–32.
- Anderson, J., Suchindran C., Kritchevsky S., & Barrett-Connor E. (2004). Macronutrient intakes of elderly in the lipid research clinics program prevalence study. *J Nutr Health Aging*, 8(5), 395-399.
- Anderson, N. B. (2004). *Encyclopedia of health and behavior*. Thousand Oaks: Sage Publications Inc.
- Anderson, R., & Burke E. (1985). *Stretching orthopaedic sports medicine:Principles and practice* (J. DeLee & D. Drez Eds. 2nd edition ed.). Philadelphia: WB Saunders.
- Appel, L. J., Brands M. W., Daniels S. R., Karanja N., Elmer P. J., & Sacks F. M. (2006). Dietary approaches to prevent and treat hypertension a scientific statement from the american heart association. *Hypertension*, 47(2), 296-308.
- Arena, R., Myers J., & Guazzi M. (2008). The clinical significance of aerobic exercise testing and prescription: From apparently healthy to confirmed cardiovascular disease. *Am J Lifestyle Med*, 2(6), 519-536.
- Arija, V., Martín N., Canela T., Anguera C., Castelao A. I., García-Barco M., García-Campo A., González-Bravo A. I., Lucena C., & Martínez T. (2012). Arija. *BMC public health*, 12(373), 2-7.
- Arnold, S. V., & Rich M. (2009). Hyperlipidemia in older adults. *Clinical Geriatrics*, 7(2), 2-8.
- Aronow, W. S. (2001). Treatment of older persons with hypercholesterolemia with and without cardiovascular disease. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 56(3), 138-145.
- Aronow, W. S., Fleg J. L., Pepine C. J., Artinian N. T., Bakris G., Brown A. S., Ferdinand K. C., Ann Forciea M., Frishman W. H., & Jaigobin C. (2011). Accf/aha 2011 expert consensus document on hypertension in the elderly: A report of the american college of cardiology foundation task force on clinical expert consensus documents developed in collaboration with the american academy of neurology, american geriatrics society, american society for preventive cardiology, american society of hypertension, american society of nephrology, association of black cardiologists, and european society of hypertension. *Journal of the American Society of Hypertension*, 5(4), 259-352.

- Asefzadeh, S., & Ghodoosian A. (2010). Recognition of the health related factors of aged population of minodar in order to design research interventions. *Salmand*, 5(15), 53-60.
- Asgari, F., Aghajani H., Haghazali M., & Heidarian H. (2009). Non-communicable diseases risk factors surveillance in iran. *Iranian Journal Public Health*, 38(1), 119-122.
- Aslam, F., Haque A., Lee L. V., & Foody J. (2009). Hyperlipidemia in older adults. *Clinics in geriatric medicine*, 25(4), 591-606.
- Atak, N., Gurkan T., & Kose K. (2008). The effect of education on knowledge, self management behaviours and self efficacy of patients with type 2 diabetes. *Australian Journal of Advanced Nursing*, 26(2), 66-74
- Atzmon, G., Rincon M., Rabizadeh P., & Barzilai N. (2005). Biological evidence for inheritance of exceptional longevity. *Mech Ageing Dev*, 126(2), 341-354.
- Azizan, A., Justine M., & Kuan C. S. (2013). Effects of a behavioral program on exercise adherence and exercise self-efficacy in community-dwelling older persons. *Current Gerontology and Geriatrics Research*, 2013, 9. doi: 10.1155/2013/282315
- Azizi, F., Rahmani M., Emami H., Mirmiran P., Hajipour R., Madjid M., Ghanbili J., Ghanbarian A., Mehrabi J., & Saadat N. (2002). Cardiovascular risk factors in an iranian urban population: Tehran lipid and glucose study (phase 1). *Sozial-und präventivmedizin*, 47(6), 408-426.
- Badimón, J. J., Santos-Gallego C. G., & Badimón L. (2010). Importance of hdl cholesterol in atherothrombosis: How did we get here? Where are we going? *Revista espanola de cardiologia*, 63(1), 20-35.
- Baghianimoghadam, M. H., Hadavandkhani M., Mohammadi M., Fallahzade H., & Baghianimoghadam B. (2012). Current education versus peer-education on walking in type 2 diabetic patients based on health belief model: A randomized control trial study. *Rom J Intern Med*, 50(2), 165-172.
- Bailey, A. J. (2001). Molecular mechanisms of ageing in connective tissues. *Mechanisms of Ageing and Development*, 122(7), 735-755.
- Bakhshi, E., Seifi B., Biglarian A., & Mohammad K. (2011). Factors associated with obesity in iranian elderly people: Results from the national health survey. *BMC research notes*, 4(1), 538-544.
- Balboa-Castillo, T., León-Muñoz L. M., & Guallar-Castillón P. (2011). Longitudinal association of physical activity and sedentary behavior during leisure time with health-related quality of life in community-dwelling older adults. *Health and Quality of Life Outcomes* 9(47), 1-10.

- Bandura, A. (2007). Health promotion by social cognitive means *Health education a behavior* 31(2), 143-164.
- Barbara Cliff, R. (2012). Patient-centered care: The role of healthcare leadership. *Journal of Healthcare Management*, 57(6), 381-383.
- Barnett, A., Smith B., Lord S. R., Williams M., & Baumand A. (2003). Community based group exercise improves balance and reduces falls in at risk older people: A randomised controlled trial. *Age and ageing*, 32(4), 407-414.
- Bartels, S. J., Dums A. R., Oxman T. E., Schneider L. S., Areán P. A., Alexopoulos G. S., & Jeste D. V. (2002). Evidence-based practices in geriatric mental health care. *Psychiatric services*, 53(11), 1419-1431.
- Bayat, F., Shojaezadeh D., Baikpour M., Heshmat R., Baikpour M., & Hosseini M. (2013). The effects of education based on extended health belief model in type 2 diabetic patients: A randomized controlled trial. *J Diabetes Metab Disord*, 12(1), 45.
- Bazzano, L., Serdula M., & Liu S. (2003). Dietary intake of fruits and vegetables and risk of cardiovascular disease. *Current Atherosclerosis Reports*, 5(6), 492-499.
- Becker, M., Maiman L., Kirscht J., Haefner D., & Drachman R. (1977). The health belief model and prediction of dietary compliance: A field experiment. *J Health Soc Behav*, 18(4), 348-366.
- Becker, M. H., Maiman L. A., & Kirscht J. P. (1977). The health belief model and prediction of dietary compliance :A field experment *Journal of Health and Social Behavior* 18, 348-366.
- Bedworth, A. E., & Bedworth D. A. (1992). *The profession and practice of health education*. Dubuque IA: Brown & Benchmark.
- Bello, A. I., Owusu-Boakye E., Adegoke B. O., & Adjei D. N. (2011). Effects of aerobic exercise on selected physiological parameters and quality of life in patients with type 2 diabetes mellitus. *International journal of general medicine*, 4, 723-727.
- Ben Ounis, O., Elloumi M., Ben Chiekh I., Zbidi A., Amri M., Lac G., & Tabka Z. (2008). Effects of two-month physical-endurance and diet-restriction programmes on lipid profiles and insulin resistance in obese adolescent boys. *Diabetes & metabolism*, 34(6), 595-600.
- Bendermacher, B., Willigendael E. M., Tejjink J., & Prins M. H. (2006). Supervised exercise therapy versus non-supervised exercise therapy for intermittent claudication. *Cochrane Database Syst Rev*, 2(2), 530-538.
- Bernstein, M. A., Nelson M. E., Tucker K. L., Layne J., Johnson E., Nuernberger A., Castaneda C., Judge J. O., Buchner D., & Singh M. F. (2002). A home-based

nutrition intervention to increase consumption of fruits, vegetables, and calcium-rich foods in community dwelling elders. *Journal of the American Dietetic Association*, 102(10), 1421-1427.

Bernstein, M. S., Costanza M. C., James R. W., Morris M. A., Cambien F., Raoux S., & Morabia A. (2002). Physical activity may modulate effects of apoe genotype on lipid profile. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 22(1), 133-140.

Bhurosy, T., & Jeewon R. (2013). Effectiveness of a theory-driven nutritional education program in improving calcium intake among older mauritian adults. *The Scientific World Journal*, 2013, 1-17.

Bittner, V. (2009). Menopause, age, and cardiovascular risk: A complex relationship. *J Am Coll Cardiol*, 54(25), 2374-2375.

Boshtam, M., Ramezani M. A., Naderi G., & Sarrafzadegan N. (2012). Is friedewald formula a good estimation for low density lipoprotein level in iranian population. *J Res Med Sci* 17(6), 519-522.

Boule, N. G., Haddad E., Kenny G. P., Wells G. A., & Sigal R. J. (2001). Effects of exercise on glycemic control and body mass in type 2 diabetes mellitus: A meta-analysis of controlled clinical trials. *JAMA*, 286(10), 1218-1227.

Boutayeb, A. (2006). The double burden of communicable and non-communicable diseases in developing countries. *Transactions of The Royal Society of Tropical Medicine and Hygiene*, 100(3), 191-199.

Braith, R. W., & Stewart K. J. (2006). Resistance exercise training: Its role in the prevention of cardiovascular disease. *Circulation*, 113(22), 2642-2650.

Brand-Miller, J. C., Holt S. H., Pawlak D. B., & McMillan J. (2002). Glycemic index and obesity. *The American journal of clinical nutrition*, 76(1), 281S-285S.

Brandão Rondon, M. U. P., Alves M. J. N. N., Braga A. M. F. W., Teixeira O. T. U. N., Barretto A. C. P., Krieger E. M., & Negrão C. E. (2002). Postexercise blood pressure reduction in elderly hypertensive patients. *Journal of the American College of Cardiology*, 39(4), 676-682.

Brandon, L., Boyette L., Lloyd A., & Gaasch D. (2004). Resistive training and long-term function in older adults. *J Aging Phys Act*, 12(1), 10-28.

Brandt, E. N., Baird M. A., Berkman L. F., Boyce W. T., Chesney M. A., Gostin L. O., Israel B. A., Johnson R. L., Kaplan R. M., McEwen B., & Sheridan J. F. (2001). *Health and behavior : The interplay of biological, behavioral, and societal influences*. Washington D C: National Academy Press.

Braz, N. F., Carneiro M. V., Oliveira-Ferreira F., Arrieiro A. N., Amorim F. T., Lima M. M., Avelar N. C., Lacerda A. C., & Peixoto M. F. (2012). Influence of aerobic training on cardiovascular and metabolic parameters in ederly

hypertensive women. *International journal of preventive medicine*, 3(9), 652-659.

- Buglar, M. E., White K. M., & Robinson N. G. (2010). The role of self-efficacy in dental patients' brushing and flossing: Testing an extended health belief model. *Patient Education and Counseling*, 78(2), 269-272.
- Bulckaen, M., Capitanini A., Lange S., Caciula A., Giuntoli F., & Cupisti A. (2011). Implementation of exercise training programs in a hemodialysis unit: Effects on physical performance. *J Nephrol*, 24(6), 790-797.
- Bunout, D., Barrera G., Leiva L., Gattas V., de la Maza M. P., Avenda a., & Hirsch S. (2006). Effects of vitamin d supplementation and exercise training on physical performance in chilean vitamin d deficient elderly subjects. *Experimental Gerontology*, 41(8), 746-752.
- Burke, L., Lee A. H., Pasalich M., Jancey J., Kerr D., & Howat P. (2012). Effects of a physical activity and nutrition program for seniors on body mass index and waist-to-hip ratio: A randomised controlled trial. *Preventive Medicine*, 54(6), 397-401.
- Burke, T. N., Franca F. J., Ferreira de Meneses S. R., Cardoso V. I., & Marques A. P. (2010). Postural control in elderly persons with osteoporosis: Efficacy of an intervention program to improve balance and muscle strength: A randomized controlled trial. *Am J Phys Med Rehabil*, 89(7), 549-556.
- Cadore, E. L., Pinto R. S., Bottaro M., & Izquierdo M. (2014). Strength and endurance training prescription in healthy and frail elderly. *Aging and Disease*, 5(3), 183-195.
- Cadore, E. L., Rodríguez-Man˜as L., Sinclair A., & Izquierdo M. (2013). Effects of different exercise interventions on risk of falls, gait ability, and balance in physically frail older adults: A systematic review. *Rejuvenation Research*, 16(2), 105-114.
- Caiaffa, W. T., Ferreira F. R., Ferreira A. D., Oliveira C. D., Camargos V. P., & Proietti F. A. (2008). [urban health: "The city is a strange lady, smiling today, devouring you tomorrow"]. *Cien Saude Colet*, 13(6), 1785-1796.
- Campbell, P. T., Campbell K. L., Wener M. H., Wood B., Potter J. D., Mctiernan A., & Ulrich C. M. (2009). A yearlong exercise intervention decreases crp among obese postmenopausal women. *Medicine and science in sports and exercise*, 41(8), 1533-1539.
- Canbaz, S., Sunter A. T., Dabak S., & Peksen Y. (2003). The prevalence of chronic diseases and quality of life in elderly people in samsun. *Turkish Journal of Medical Sciences*, 33(5), 335-340.

- Cao1, Z.-J., Chen Y., & Wang S.-M. (2014). Health belief model based evaluation of school health education programme for injury prevention among high school students in the community context. *BMC Public Health*, 14(26), 1-8.
- Carpenter, C. J. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior. *Health Communication*, 25(8), 661-669.
- Cetin, D. C., & Nasr G. (2014). Obesity in the elderly: More complicated than you think. *Cleveland Clinic Journal of Medicine*, 81(1), 51-61.
- Champion, V. L., & Skinner C. S. (2008). The health belief model. *Health behavior and health education: Theory, research, and practice*, 4(1), 45-65
- Chapman-Novakofski, K., & Karduck J. (2005). Improvement in knowledge, social cognitive theory variables, and movement through stages of change after a community-based diabetes education program. *Journal of the American Dietetic Association*, 105(10), 1613-1616.
- Chernoff, R. (2001). Nutrition and health promotion in older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 56(suppl 2), 47-53.
- Chesnay, M. d., & Anderson B. A. (2011). *Caring for the vulnerable: Perspectives in nursing theory, practice, and research* (3rd ed.). London: Jones & Bartlett Publishers.
- Chin, T. L., Sauaia A., Moore E. E., Chandler J. G., Harr J. N., Johnson J. L., & Banerjee A. (2012). Elderly patients may benefit from tight glucose control. *Surgery*, 152(3), 315-321.
- Chodzko-Zajko, W., & ACSM. (2013). *Acsm's exercise for older adults*: Lippincott Williams & Wilkins.
- Chodzko-Zajko, W., Proctor D., Singh M. F., Minson C., & Nigg C. (2009). Exercise and physical activity for older adults. *Med Sci Sports & Exerc* 41(7), 1510-1530.
- Chodzko-Zajko, W., Schwingel A., & Chae Hee Park. (2009). Successful aging: The role of physical activity. *American Journal of Lifestyle Medicine*, 3(1), 20-28.
- Choi, Y., Kim C., & Park Y. S. (2007). The effect of nutrition education program in physical health, nutritional status and health-related quality of life of the elderly in seoul. *Korean Journal of Nutrition*, 40(3), 270-280.
- Ciccolo, J., Carr L., Krupel K., & Longval J. (2010). The role of resistance training in the prevention and treatment of chronic disease. *Am J Lifestyle Med*, 4(4), 293-308.
- Ciolac, E. G., & Greve J. M. D. A. (2011). Muscle strength and exercise intensity adaptation to resistance training in older women with knee osteoarthritis and total knee arthroplasty. *Clinics(Sao Paulo)*, 66(12), 2079-2084.

- Clark, L., Thoreson S., Goss C. W., Zimmer L. M., Marosits M., & DiGuseppi C. (2013). Understanding fall meaning and context in marketing balance classes to older adults. *Journal of Applied Gerontology*, 32(1), 96 -119.
- Collier, S. R., Kanaley J. A., Carhart R., Jr., Frechette V., Tobin M. M., Hall A. K., Luckenbaugh A. N., & Fernhall B. (2008). Effect of 4 weeks of aerobic or resistance exercise training on arterial stiffness, blood flow and blood pressure in pre- and stage-1 hypertensives. *J Hum Hypertens*, 22(10), 678-686.
- Concannon, L. G., Grierson M. J., & Harrast M. A. (2012). Exercise in the older adult: From the sedentary elderly to the masters athlete. *PM&R* 4(11), 833-839.
- Conner, M., & Norman P. (2005). *Predicting health behavior: Research and practice with social cognition models* Berkshire: Open University Press.
- Coqueiro Rda, S., Barbosa A. R., & Borgatto A. F. (2009). Anthropometric measurements in the elderly of havana, cuba: Age and sex differences. *Nutrition*, 25(1), 33-39.
- Cornelissen, V. A., & Smart N. A. (2013). Exercise training for blood pressure: A systematic review and meta-analysis. *J Am Heart Assoc*, 2(1).
- Cornell, J. E., Young D. M., Seaman S. L., & Kirk R. E. (1992). Power comparisons of eight tests for sphericity in repeated measures designs. *Journal of Educational and Behavioral Statistics*, 17(3), 233-249.
- Craig, C., Marshall A., Sjostrom M., Bauman A., Booth M., & Ainsworth B. (2003). International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc*, 35(8), 1381-1395.
- Cramer, H., Salisbury C., Conrad J., Eldred J., & Araya R. (2011). Group cognitive behavioural therapy for women with depression: Pilot and feasibility study for a randomised controlled trial using mixed methods. *BMC Psychiatry*, 11(3), 82.
- Cyarto, E., Brown W., Marshall A., & Trost S. (2008). Comparative effects of home- and group-based exercise on balance confidence and balance ability in older adults: Cluster randomized trial. *Gerontology*, 54(5), 272-280.
- Darnton-Hill, I., Nishida C., & James W. (2004). A life course approach to diet, nutrition and the prevention of chronic diseases. *Public health nutrition*, 7(1a), 101-121.
- Davari, S., Dolatian M., Maracy M. R., Sharifirad G., & Safavi S. M. (2011). The effect of a health belief model (hbm)- based educational program on the nutritional behavior of menopausal women in isfahan. *Iranian Journal of Medical Education*, 10(5), 1263-1272.

- Davidson, M. H., Kurlandsky S. B., Kleinpell R. M., & Maki K. C. (2003). Lipid management and the elderly. *Preventive cardiology*, 6(3), 128-135.
- Daviglus, M. L., Liu K., Yan L. L., Pirzada A., Manheim L., Manning W., Garside D. B., Wang R., Dyer A. R., Greenland P., & Stamler J. (2004). Relation of body mass index in young adulthood and middle age to medicare expenditures in older age. *JAMA*, 292(22), 2743-2749.
- Davis, M. G., Fox K. R., Hillsdon M., Sharp D. J., Coulson J. C., & Thompson J. L. (2011). Objectively measured physical activity in a diverse sample of older urban uk adults. *Medicine and science in sports and exercise*, 43(4), 647-654.
- de Jong, N., Paw C. A., Marijke J., de Graaf C., & van Staveren W. A. (2000). Effect of dietary supplements and physical exercise on sensory perception, appetite, dietary intake and body weight in frail elderly subjects. *British journal of nutrition*, 83(06), 605-613.
- De Maeyer, C., Beckers P., Vrints C. J., & Conraads V. M. (2013). Exercise training in chronic heart failure. *Therapeutic Advances in Chronic Disease*, 4(3), 105-117.
- DeCaria, J. E., Sharp C., & Petrella R. J. (2012). Scoping review report: Obesity in older adults. *Int J Obes*, 36(9), 1141-1150.
- Dechamps, A., Diolez P., Thiaudière E., & et al. (2010). Effects of exercise programs to prevent decline in health-related quality of life in highly deconditioned institutionalized elderly persons: A randomized controlled trial. *Archives of Internal Medicine*, 170(2), 162-169.
- Deedwania, P. (2000). Hypercholesterolemia. Is lipid-lowering worthwhile for older patients? *Geriatrics*, 55(5), 22-28.
- Deibert, P., König D., Vitolins M. Z., Landmann U., Frey I., Zahradnik H.-P., & Berg A. (2007). Effect of a weight loss intervention on anthropometric measures and metabolic risk factors in pre-versus postmenopausal women. *Nutrition journal*, 6(1), 31-38.
- Delahanty, L. M., Sonnenberg L. M., Hayden D., & Nathan D. M. (2001). Clinical and cost outcomes of medical nutrition therapy for hypercholesterolemia: A controlled trial. *Journal of the American Dietetic Association*, 101(9), 1012-1023.
- Delmonico, M. J., & Lofgren I. E. (2010). Resistance training during weight loss in overweight and obese older adults: What are the benefits? *American Journal of Lifestyle Medicine*, 4(4), 309-313.
- DeNysschen, C. A., Brown J. K., Cho M. H., & Dodd M. J. (2011). Nutritional symptom and body composition outcomes of aerobic exercise in women with breast cancer. *Clinical Nursing Research*, 20(1), 29 -46.

- Derby, C., Crawford S., Pasternak R., Sowers M., Sternfeld B., & Matthews K. (2009). Lipid changes during the menopause transition in relation to age and weight: The study of women's health across the nation. *Am J Epidemiol*, 169(6), 1352-1361.
- Dickinson, H., Beyer F., Ford G., Nicolson D., Campbell F., Cook J., & Mason J. (2009). Relaxation for high blood pressure in adults which has no clearly identified cause. *Cochrane Database of Systematic Reviews 2008*, CD004935(1). doi: 10.1002/14651858.CD004935.pub2
- Didarloo, A., Shojaeizadeh D., Ardebili H. E., Niknami S., Hajizadeh E., & Alizadeh M. (2011). Factors influencing physical activity behavior among iranian women with type 2 diabetes using the extended theory of reasoned action. *Diabetes Metabolism Journal* 35(5), 1-10.
- Dimeo, F., Pagonas N., Seibert F., Arndt R., Zidek W., & Westhoff T. H. (2012). Aerobic exercise reduces blood pressure in resistant hypertension. *Hypertension*, 60(3), 653-658.
- Djuric, Z., Lababidi S., Heilbrun L. K., Depper J. B., Poore K. M., & Uhley V. E. (2002). Effect of low-fat and/or low-energy diets on anthropometric measures in participants of the women's diet study. *J Am Coll Nutr*, 21(1), 38-46.
- Doll, R., Peto R., Boreham J., & Sutherland I. (2004). Mortality in relation to smoking: 50 years' observations on male british doctors. *Bmj*, 328(7455), 1519-1525.
- Domino, G., & Domino M. L. (2006). *Psychological testing: An introduction*: Cambridge University Press New York.
- Donadikia, E. M., Jiménez-García R., Hernández-Barrera V., Sourtzia P., Carrasco-Garrido P., Andrés A. L. d., Jimenez-Trujillo I., & Velonakisa E. G. (2014). Health belief model applied to non-compliance with hpv vaccine among female university students. *Public Health*, 128(3), 268-273.
- Donini, L. M., Savina C., Gennaro E., De Felice M., Rosano A., Pandolfo M., Del Balzo V., Cannella C., Ritz P., & Chumlea W. C. (2012). A systematic review of the literature concerning the relationship between obesity and mortality in the elderly. *The journal of nutrition, health & aging*, 16(1), 89-98.
- Dorner, T. E., Lackinger C., Haider S., Luger E., Kapan A., Luger M., & Schindler K. E. (2013). Nutritional intervention and physical training in malnourished frail community-dwelling elderly persons carried out by trained lay "buddies": Study protocol of a randomized controlled trial. *BMC public health*, 13(1), 1232-1243.
- Dunn, A. L., Andersen R. E., & Jakicic J. M. (1998). Lifestyle physical activity interventions: History, short-and long-term effects, and recommendations. *American journal of preventive medicine*, 15(4), 398-412.

- Eakin, E. G., Lawler S. P., Vandelanotte C., & Owen N. (2007). Telephone interventions for physical activity and dietary behavior change :A systematic review. *American Journal of Preventive Medicine*, 32(5), 419 - 434.
- Ebrahimi, M., Kazemi-Bajestani S., Ghayour-Mobarhan M., & Ferns G. (2011). Coronary artery disease and its risk factors status in iran: A review. *Iran Red Crescent Med J*, 13(9), 610-623.
- Enoki, H., Kuzuya M., Masuda Y., Hirakawa Y., Iwata M., Hasegawa J., Izawa S., & Iguchi A. (2007). Anthropometric measurements of mid-upper arm as a mortality predictor for community-dwelling japanese elderly: The nagoya longitudinal study of frail elderly (nls-fe). *Clinical Nutrition*, 26(5), 597-604.
- Ersin, F., & Bahar Z. (2011). Effect of health belief model and health promotion model on breast cancer early diagnosis behavior: A systematic review. *Asian Pacific J Cancer Prev*, 12, 2555-2562
- Eves, N. D., & Plotnikoff R. C. (2006). Resistance training and type 2 diabetes: Considerations for implementation at the population level. *Diabetes Care*, 29(8), 1933- 1941.
- Ezema, C. I., Onwunali A. A., Lamina S., Ezugwu U. A., Amaeze A. A., Nwankwo M. J., & Amaeze F. N. (2013). Blood glucose response to aerobic exercise training programme among patients with type 2 diabetes mellitus at the university of nigeria teaching hospital, enugu south-east, nigeria. *Health*, 5(11), 1796-1802.
- Ezzati, M., Oza S., Danaei G., & Murray C. J. (2008). Trends and cardiovascular mortality effects of state-level blood pressure and uncontrolled hypertension in the united states. *Circulation*, 117(7), 905-914.
- Fallah, F., Pourabbas A., & Shadnoush M. (2013). Effects of nutrition education on levels of nutritional awareness of pregnant women in western iran. *Int J Endocrinol Metab*, 11(3), 175–178.
- Fang, J., Wylie-Rosett J., & Alderman M. H. (2005). Exercise and cardiovascular outcomes by hypertensive status: Nhanes i epidemiological follow-up study, 1971–1992. *American journal of hypertension*, 18(6), 751-758.
- Fatouros, I. G., Kambas A., Katrabasas I., Leontsini D., Chatzinikolaou A., Jamurtas A. Z., Douroudos I., Aggelousis N., & Taxildaris K. (2006). Resistance training and detraining effects on flexibility performance in the elderly are intensity-dependent *Journal of Strength and Conditioning Research*, 20(3), 634-642.
- Felix-Redondo, F. J., Grau M., & Fernandez-Berges D. (2013). Cholesterol and cardiovascular disease in the elderly. Facts and gaps. *Aging Dis*, 4(3), 154-169.

- Ferreira, M., Matsudo S., Matsudo V., & Braggion G. (2005). Effects of an intervention program of physical activity and nutrition orientation on the physical activity level of physically active women aged 50 to 72 years old. *Revista Brasileira de Medicina do Esporte*, 11(3), 172-176.
- Figueira, T. R., Ferreira E. F., Schall V. T., & Modena C. M. (2009). Women's perceptions and practices regarding prevention and health promotion in primary healthcare. *Revista de Saúde Pública*, 43(6), 937-943.
- Figuroa, A. (2014). Effects of resistance training on central blood pressure and wave reflection in obese adults with prehypertension. *Journal of Human Hypertension* 28(3), 143–144.
- Figuroa, A., Park S. Y., Seo D. Y., Sanchez-Gonzalez M. A., & Baek Y. H. (2011). Combined resistance and endurance exercise training improves arterial stiffness, blood pressure, and muscle strength in postmenopausal women. *Menopause*, 18(9), 980-984.
- Finger, J. D., Tylleska T., Lampert T., & Mensink G. B. M. (2013). Dietary behaviour and socioeconomic position: The role of physical activity patterns. *PLoS ONE*, 8(11), 783-390.
- Fitzpatrick, S. E., Reddy S., Lommel T. S., Fischer J. G., Speer E. M., Stephens H., Park S., & Johnson M. A. (2008). Physical activity and physical function improved following a community-based intervention in older adults in georgia senior centers. *Journal of Nutrition for the Elderly*, 27(1-2), 135-154.
- Flegal, K. M., Carroll M. D., Ogden C. L., & Johnson C. L. (2002). Prevalence and trends in obesity among us adults, 1999-2000. *JAMA*, 288(14), 1723-1727.
- Fogelholm, M., & Lahti-Koski M. (2002). Community health-promotion interventions with physical activity: Does this approach prevent obesity? *Scandinavian Journal of Nutrition*, 46(4), 173-177.
- Forsman, A. K., Nordmyr J., & Wahlbeck K. (2011). Psychosocial interventions for the promotion of mental health and the prevention of depression among older adults. *Health Promotion International*, 26(suppl 1), i85-i107. doi: 10.1093/heapro/dar074
- Fowler-Brown, A., Wee C. C., Marcantonio E., Ngo L., & Leveille S. (2013). The mediating effect of chronic pain on the relationship between obesity and physical function and disability in older adults. *J Am Geriatr Soc*, 61(12), 2079-2086.
- Frankel, J. E., Bean J. F., & Frontera W. R. (2006). Exercise in the elderly: Research and clinical practice. *Clinics in geriatric medicine*, 22(2), 239-256.
- Fried, L., Walston J., Hazzard W., Blass J., Ettinger W., Halperin J., & Ouslander J. (2003). Principles of geriatric medicine and gerontology. *Principles of geriatric medicine & gerontology*, 58(4), 46-52.

- Gaines, J. M., Narrett M., & Parrish J. M. (2010). The effect of the addition of osteoporosis education to a bone health screening program for older adults. *Geriatric Nursing, 31*(5), 348-360.
- Galvão, D. A., Taaffe D. R., Spry N., Joseph D., & Newton R. U. (2010). Combined resistance and aerobic exercise program reverses muscle loss in men undergoing androgen suppression therapy for prostate cancer without bone metastases: A randomized controlled trial. *Journal of clinical oncology, 28*(2), 340-347.
- Garber, C., Blissmer B., Deschenes M., Franklin B., Lamonte M., Lee I., Nieman D., & Swain D. (2011). Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: Guidance for prescribing exercise,". *Medicine and Science in Sports and Exercise, 43*(7), 1334-1359.
- Garza, K. B., Harris C. V., & Bolding M. S. (2013). Examination of value of the future and health beliefs to explain dietary and physical activity behaviors. *Research in Social and Administrative Pharmacy 9*(6), 851-862.
- Geirsdottir, O. G., Arnarson A., Briem K., Ramel A., Jonsson P. V., & Thorsdottir I. (2012). Effect of 12-week resistance exercise program on body composition, muscle strength, physical function, and glucose metabolism in healthy, insulin-resistant, and diabetic elderly icelanders. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences, 67*(11), 1259-1265.
- Ghanbarian, A., Hadaegh F., Harati H., & Zabetian A. (2005). Prevalence of coronary heart disease among tehranian adults: Tehran lipid and glucose study. *Iranian Journal of Endocrinology and Metabolism (IJEM), 7*(4), 441 – 448.
- Ghassemi, H., Harrison G., & Mohammad K. (2002). An accelerated nutrition transition in iran. *Public health nutrition, 5*(1a), 149-155.
- Gil-Extremera, B., & Cía-Gómez P. (2011). Hypertension in the elderly. *International journal of hypertension, 2012*(2012), 1-4.
- Giné-Garriga, M., Roqué-Fíguls M., Coll-Planas L., Sitjà-Rabert M., & Salvà A. (2014). Physical exercise interventions for improving performance-based measures of physical function in community-dwelling, frail older adults: A systematic review and meta-analysis. *Archives of Physical Medicine and Rehabilitation, 95*(4), 753-769.
- Giuli, C., Papa R., Mocchegiani E., & Marcellini F. (2012). Predictors of participation in physical activity for community-dwelling elderly italians. *Archives of gerontology and Geriatrics, 54*(1), 50-54.
- Glanz, K., Rimer B., & Viswanath K. (2008). *Health behavior and health education: Theory, research, and practice* (4th ed.). San Francisco: Jossey-Bass.

- Goetzl, R. Z., Shechter D., Ozminkowski R. J., Stapleton D. C., Lapin P. J., McGinnis J. M., Gordon C. R., & Breslow L. (2007). Can health promotion programs save medicare money? *Clinical interventions in aging*, 2(1), 117-122.
- Goldhaber-Fiebert, J. D., Goldhaber-Fiebert S. N., Tristán M. L., & Nathan D. M. (2003). Randomized controlled community-based nutrition and exercise intervention improves glycemia and cardiovascular risk factors in type 2 diabetic patients in rural costa rica. *Diabetes Care*, 26(1), 24-29.
- Graham, M. E. (2002). Health beliefs and self breast examination in black women. *Journal of Cultural Diversity*, 9(2), 49-54.
- Graudal, N. A., Hubeck-Graudal T., & Jurgens G. (2011). Effects of low sodium diet versus high sodium diet on blood pressure, renin, aldosterone, catecholamines, cholesterol, and triglyceride. *Cochrane Database Syst Rev*, 9(11), 211-220.
- Green, J., & Tones K. (1999). Towards a secure evidence base for health promotion. *J Public Health Med*, 21(2), 133-139.
- Green, L. W., Kreuter M. W., Deeds S., & Partridge K. (1980). *Health education planning: A diagnostic approach*. Palo Alto CA: Mayfield Publishing Co.
- Greene, K. (2003). Messages influencing college women's tanning bed use: Statistical versus narrative evidence format and a self-assessment to increase perceived susceptibility. *Journal of Health Communication*, 8(5), 443-461.
- Gremeaux, V., Duclay J., Deley G., Philipp J., Laroche D., Pousson M., & Casillas J. (2010). Does eccentric endurance training improve walking capacity in patients with coronary artery disease? A randomized controlled pilot study. *Clinical Rehabilitation*, 24(7), 590-599.
- Griffiths, W. (1972). Health education definitions, problems, and philosophies. *Health Education Monographs*, 1(31), 12-14.
- Gristwood, J. (2011). Applying the health belief model to physical activity engagement among older adults. *A Student Journal in Recreation, Parks, and Leisure Studies* 9(1), 59-71.
- Grodofsky, S., & Sinha A. (2014). The association of gender and body mass index with postoperative pain scores when undergoing ankle fracture surgery. *Journal of anaesthesiology, clinical pharmacology*, 30(2), 248-252.
- Grossman, M. (2004). The demand for health, 30 years later: A very personal retrospective and prospective reaction. *Journal of Health Economics*, 23(4), 629-636.
- Gutiérrez-Doña, B., Lippke S., Renner B., Kwon S., & Schwarzer R. (2009). Self-efficacy and planning predict dietary behaviors in costa rican and south

- korean women: Two moderated mediation analyses. *Applied Psychology: Health And Well-Being*, 1(1), 91-104.
- Hacker, E. (2008). Exercise and quality of life: Strengthening the connections. *Clinical Journal of Oncology Nursing* 13(1), 31-39.
- Hagberg, J. M., Park J.-J., & Brown M. D. (2000). The role of exercise training in the treatment of hypertension. *Sports Medicine*, 30(3), 193-206.
- Haghdoust, A. A., Rezazadeh-Kermani M., Sadghirad B., & Baradaran H. R. (2009). Prevalence of type 2 diabetes in the Islamic Republic of Iran: Systematic review and meta-analysis. *East Mediterr Health J*, 15(3), 591-599.
- Hale, L. A., Waters D., & Herbison P. (2012). A randomized controlled trial to investigate the effects of water-based exercise to improve falls risk and physical function in older adults with lower-extremity osteoarthritis. *Archives of Physical Medicine and Rehabilitation*, 93(1), 27-34.
- Hall, W. D., Feng Z., George V. A., Lewis C. E., Oberman A., Huber M., Fouad M., & Cutler J. A. (2003). Low-fat diet: Effect on anthropometrics, blood pressure, glucose, and insulin in older women. *Ethn Dis*, 13(3), 337-343.
- Halter, J. B. (2009). *Hazard's geriatric medicine and gerontology* (6th ed.). New York: McGraw-Hill Companies.
- Halverstadt, A., Phares D. A., Wilund K. R., Goldberg A. P., & Hagberg J. M. (2006). Endurance exercise training raises high-density lipoprotein cholesterol and lowers small low-density lipoprotein and very low-density lipoprotein independent of body fat phenotypes in older men and women. *Metabolism - Clinical and Experimental*, 56(4), 444-450.
- Hamuleh, M., Vahed S., & AR P. (2010). Effects of education based on health belief model on dietary adherence in diabetic patients. *Iranian Journal of Diabetes and Lipid Disorders*, 9(1), 1-6.
- Han, G. (2011). *Prevalence of chronic diseases and risk factors for death among elderly americans* (Thesis), Georgia State University, Georgia
- Hansen, R. E. (2000). The role of experience in learning: Giving meaning and authenticity to the learning process in schools. *Journal of Technology Education* 11(2), 23-32.
- Hanson, J. A., & Benedict J. A. (2002). Use of the health belief model to examine older adults' food-handling behaviors. *Journal of Nutrition Education and Behavior*, 34, S25-S30.
- Hardcastle, S. J., Taylor A. H., Bailey M. P., Harley R. A., & Hagger M. S. (2013). Effectiveness of a motivational interviewing intervention on weight loss, physical activity and cardiovascular disease risk factors: A randomised

controlled trial with a 12-month post-intervention follow-up. *Int J Behav Nutr Phys Act*, 10(40), 1-16.

Harooni, J., Hassanzadeh A., & Mostafavi F. (2014). Influencing factors on health promoting behavior among the elderly living in the community. *J Edu Health Promot*, 3(40), 20-28.

Hashemi, R., Heshmat R., Motlagh A. D., Payab M., Esmailzadeh A., Baigy F., Pasalar P., & Siassi F. (2012). Sarcopenia and its determinants among iranian elderly (sarir): Study protocol. *Journal of Diabetes & Metabolic* 11(23), 2-6.

Haskell, W., Lee I., Pate R., Powell K., Blair S., Franklin B., Macera C., Heath G., Thompson P., & Bauman A. (2007). Physical activity and public health: Updated recommendations from the american college of sports medicine and the american heart association. *M ed Sci Sports Exer*, 39(8), 1423-1434.

Hayden, J. A. (2009). *Introudction to health behavior theory*. New Jersey: Jones & Bartlett Learning.

Haykowsky, M. J., Brubaker P. H., Stewart K. P., Morgan T. M., Eggebeen J., & Kitzman D. W. (2012). Effect of endurance training on the determinants of peak exercise oxygen consumption in elderly patients with stable compensated heart failure and preserved ejection fraction. *J Am Coll Cardiol*, 60(2), 120-128.

Hazavehei, M., Khani Jyhouni A., Hasanzadeh A., & Rashidi M. (2008). The effect of educational program based on basnef model on diabetic (type ii) eyes care in kazemi's clinic,(shiraz). *Iranian Journal of Endocrinology and Metabolism*, 10(2), 145-154.

Hazavehei, S., Sharifirad G., & Kargar M. (2008). The comparison of educational intervention effect using basnef and classic models on improving assertion skill level. *J Res Health Sci*, 8(1), 1-11.

He, F., & MacGregor G. (2002). Effect of modest salt reduction on blood pressure: A meta-analysis of randomized trials. Implications for public health. *Journal of human hypertension*, 16(11), 761-770.

Heidari, M., & Shahbazi S. (2012). Effect of self-care training program on quality of life of elders. *Iran Journal of Nursing* 25(75), 1-8.

Henwood, T. R., Riek S., & Taaffe D. R. (2008). Strength versus muscle power-specific resistance training in community-dwelling older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 63(1), 83-91.

Heravi Karimooi, M., Anoosheh M., Foroughan M., Sheykhi M. T., & Hajizadeh E. (2010). Understanding loneliness in the lived experiences of iranian elders. *Scandinavian journal of caring sciences*, 24(2), 274-280.

- Hermansen, K. (2000). Diet, blood pressure and hypertension. *British Journal of Nutrition*, 83(S1), S113-S119.
- Hill, A.-M. (2010). *Falls prevention education for older people designed using the health belief model*. (PhD), The University of Queensland, Queensland.
- Hingle, M., Yoon D., Fowler J., Kobourov S., Schneider M. L., Falk D., & Burd R. (2013). Collection and visualization of dietary behavior and reasons for eating using twitter. *J Med Internet Res*, 15(6), 125-130.
- Hiyama, Y., Yamada M., Kitagawa A., Tei N., & Okada S. (2012). A four-week walking exercise programme in patients with knee osteoarthritis improves the ability of dual-task performance: A randomized controlled trial. *Clinical Rehabilitation*, 26(5), 403-412.
- Hodgson, J. M., Burke V., Beilin L. J., & Puddey I. B. (2006). Partial substitution of carbohydrate intake with protein intake from lean red meat lowers blood pressure in hypertensive persons. *The American journal of clinical nutrition*, 83(4), 780-787.
- Hosseini-Esfahani, F., Jessri M., Mirmiran P., Bastan S., & Azizi F. (2010). Adherence to dietary recommendations and risk of metabolic syndrome: Tehran lipid and glucose study. *Metabolism*, 59(12), 1833-1842.
- Hovanec, N., Sawant A., Overend T. J., Petrella R. J., & Vandervoort A. A. (2012). Resistance training and older adults with type 2 diabetes mellitus: Strength of the evidence. *Journal of Aging Research*, 2012(2012), 1-12.
- Howe, T. E., Rochester L., Neil F., Skelton D. A., & Ballinger C. (2011). Exercise for improving balance in older people. *Cochrane Database of Systematic Reviews*, 4(11), 24-30.
- Howlett, J., & Ashwell M. (2008). Glycemic response and health: Summary of a workshop. *The American journal of clinical nutrition*, 87(1), 212S-216S.
- Huang, G., Gibson C. A., Tran Z. V., & Osness W. H. (2005). Controlled endurance exercise training and vo2max changes in older adults: A meta-analysis. *Prev Cardiol*, 8(4), 217-225.
- Hurst, P. R. v., & Wham C. A. (2007). Attitudes and knowledge about osteoporosis risk prevention: A survey of new zealand women. *Public Health Nutrition*, 10(7), 747-753.
- Huynh, H., & Mandeville G. K. (1979). Validity conditions in repeated measures designs. *Psychological Bulletin*, 86(5), 964.
- Hwang, L.-C., Chen S.-C., Tjung J.-J., Chiou H.-Y., Chen C.-J., & Tsai C.-H. (2009). Body mass index as a predictor of mortality in older people in taiwan. *International Journal of Gerontology*, 3(1), 39-46.

- Ignarro, L. J., Balestrieri M. L., & Napoli C. (2007). Nutrition, physical activity, and cardiovascular disease: An update. *Cardiovascular research*, 73(2), 326-340.
- Imayama, I., Alfano C. M., Kong A., Foster-Schubert K. E., Bain C. E., Xiao L., Duggan C., Wang C.-Y., Campbell K. L., & Blackburn G. L. (2011). Dietary weight loss and exercise interventions effects on quality of life in overweight/obese postmenopausal women: A randomized controlled trial. *Int J Behav Nutr Phys Act*, 8(118), 1-12.
- Jackson, T. A., Naqvi S. H., & Sheehan B. (2013). Screening for dementia in general hospital inpatients: A systematic review and meta-analysis of available instruments. *Age Ageing* 42(4), 689 - 695.
- Jacobson, B. H., Thompson B., Wallace T., Brown L., & Rial C. (2011). Independent static balance training contributes to increased stability and functional capacity in community-dwelling elderly people: A randomized controlled trial. *Clinical Rehabilitation*, 25(6), 549-556.
- Jain, N., Guyver P., McCarthy P., Sarasin S., Rouholamin N., & McCarthy M. (2008). Use of the abbreviated mental test score by junior doctors on patients with fractured neck of femur. *Arch Orthop Trauma Surg*, 128(2), 235-238.
- James, D. C. S., Pobe J. W., Oxidine D. I., Brown L., & Joshi G. (2012). Using the health belief model to develop culturally appropriate weight-management materials for african-american women. *Journal of the Academy of Nutrition and Dietetics*, 112(5), 664-670.
- Janz, N. K., & Becker M. H. (1984). The health belief model: A decade later. *Health Education & Behavior*, 11(1), 1-47.
- Javadivala, Z., Kousha A., Allahverdipour H., Jafarabadi M. A., & Tallebian H. (2013). Modeling the relationship between physical activity and quality of life in menopausal-aged women: A cross-sectional study. *JRHS* 13(2), 168-175.
- Jeffery, R. W., Bjornson-Benson W. M., Rosenthal B. S., Lindquist R. A., Kurth C. L., & Johnson S. L. (1984). Correlates of weight loss and its maintenance over two years of follow-up among middle-aged men. *Preventive medicine*, 13(2), 155-168.
- Jemal, A., Siegel R., Ward E., Hao Y., Xu J., Murray T., & Thun M. J. (2008). Cancer statistics, 2008. *CA: a cancer journal for clinicians*, 58(2), 71-96.
- Jimmy, G., & Martin B. W. (2005). Implementation and effectiveness of a primary care based physical activity counselling scheme. *Patient Education and Counseling*, 56(3), 323-331.
- Johanson, G. A., & Brooks G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement*, 70(3), 394 -400.

- Johanson, G. A., & Brooks G. P. (2010). Initial scale development: Sample size for pilot studies. *Educational and Psychological Measurement*, 70(3), 394 –400.
- John, J. H., Ziebland S., Yudkin P., Roe L. S., & Neil H. A. W. (2002). Effects of fruit and vegetable consumption on plasma antioxidant concentrations and blood pressure: A randomised controlled trial. *The Lancet*, 359(9322), 1969-1974.
- Johnson, C. (2012). The effects of home based nutrition and exercise interventions in improving functional capacity and preventing falls among older adults. *Injury prevention*, 18(Suppl 1), A123-A123.
- Jorgić, B., Pantelić S., Milanović Z., & Kostić R. (2011). The effects of physical exercise on the body composition of the elderly: A systematic review. *Facta universitatis-series: Physical Education and Sport*, 9(4), 439-453.
- Joshi, K., Kumar R., & Avasthi A. (2003). Morbidity profile and its relationship with disability and psychological distress among elderly people in northern india. *International Journal of Epidemiology*, 32(6), 978-987.
- Julious, S. A. (2005). Sample size of 12 per group rule of thumb for a pilot study. *Pharmaceutical Statistics* 4(4), 287–291.
- Jun, K. R., Park H. I., Chun S., Park H., & Min W. K. (2008). Effects of total cholesterol and triglyceride on the percentage difference between the ldl-c concentration measured directly and calculated using the friedewald formula. *Clin Chem Lab Med*, 46(3), 371-375.
- Kadoglou, N. P., Iliadis F., Sailer N., Athanasiadou Z., Vitta I., Kapelouzou A., Karayannacos P. E., Liapis C. D., Alevizos M., & Angelopoulou N. (2010). Exercise training ameliorates the effects of rosiglitazone on traditional and novel cardiovascular risk factors in patients with type 2 diabetes mellitus. *Metabolism*, 59(4), 599-607.
- Kamada, M., Kitayuguchi J., Inoue S., Ishikawa Y., Nishiuchi H., Okada S., Harada K., Kamioka H., & Shiwaku K. (2013). A community-wide campaign to promote physical activity in middle-aged and elderly people: A cluster randomized controlled trial. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 44-60.
- Kamp, B. J., Wellman N. S., & Russel C. (2010). Position of the american dietetic association, american society for nutrition, and society for nutrition education: Food and nutrition programs for community-residing older adults. *Journal of Nutrition Education and Behavior* 42(2), 72-82.
- Karinkanta, S., Piirtola M., Sievanen H., Uusi-Rasi K., & Kannus P. (2010). Physical therapy approaches to reduce fall and fracture risk among older adults. *Nat Rev Endocrinol*, 6(7), 396-407.

- Kasser, S. L., & Kosma M. (2012). Health beliefs and physical activity behavior in adults with multiple sclerosis. *Disability and Health Journal*, 5(4), 261-268.
- Kathleen, Y., Wolin D. P., Askew H. S., Matthews C. E., & Gary G. B. (2008). Validation of the international physical activity questionnaire-short among blacks. *J Phys Act Health*, 5(5), 746-760.
- Kelley, G. A., & Kelley K. S. (2006). Aerobic exercise and lipids and lipoproteins in men: A meta-analysis of randomized controlled trials. *J Mens Health Gend*, 3(1), 61-70.
- Kelley, G. A., & Kelley K. S. (2013). Dropouts and compliance in exercise interventions targeting bone mineral density in adults: A meta-analysis of randomized controlled trials. *Journal of osteoporosis*, 2013(2013), 1-20.
- Kelley, K., & Abraham C. (2004). Rct of a theory-based intervention promoting healthy eating and physical activity amongst out-patients older than 65 years. *Social Science & Medicine*, 59(4), 787-797. doi: <http://dx.doi.org/10.1016/j.socscimed.2003.11.036>
- Kemm, J. (1991). Health education and the problem of knowledge. *Health Promot Int*, 6(4), 291-295.
- Kenny, R., Rubenstein L., Martin F., & Tinetti M. (2001). For the american geriatrics society, british geriatrics society, and american academy of orthopaedic surgeons panel on falls prevention. Guideline for the prevention of falls in older persons. *J Am Geriatr Soc*, 49(2001), 664-672.
- Kerse, N., Peri K., Robinson E., Wilkinson T., Randow M. v., Kiata L., Parsons J., Latham N., Parsons M., Willingale J., & Brown P. (2008). Does a functional activity programme improve function, quality of life, and falls for residents in long term care? Cluster randomised controlled trial. *BMJ*, 337(4), 1-7.
- Keselman, H., Rogan J. C., Mendoza J. L., & Breen L. J. (1980). Testing the validity conditions of repeated measures f tests. *Psychological Bulletin*, 87(3), 479-481.
- Khan, M. M. H., Goto R., Sonoda T., Sakauchi F., Washio M., Kobayashi K., & Mori M. (2004a). Impact of health education and screening over all-cause mortality in japan: Evidence from a cohort study during 1984-2002. *Preventive Medicine*, 38(6), 786-792.
- Kharrazi, H., Faiola A., & Defazio J. (2009). Healthcare game design: Behavioral modeling of serious gaming design for children with chronic diseases. In J. Jacko (Ed.), *Human-computer interaction. Interacting in various application domains* (Vol. 5613, pp. 335-344): Springer Berlin Heidelberg.
- Khosravi, A., Kelishadi R., Sarrafzadegan N., Boshtam M., Nouri F., Zarfeshani S., & Esmailzadeh A. (2012). Impact of a community-based lifestyle intervention program on blood pressure and salt intake of normotensive adult population in a developing country. *Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences*, 17(3), 235-241.

- Kim, H.-S., June K.-J., & Song R. (2007). Effects of nutrition education and exercise programs on perceived dietary behaviors, food intake and serum lipid profiles in elderly Korean women living in residential homes. *Asian Nursing Research* 1(1), 35-47.
- Kim, H. K., Suzuki T., Saito K., Yoshida H., Kobayashi H., Kato H., & Katayama M. (2012). Effects of exercise and amino acid supplementation on body composition and physical function in community dwelling elderly Japanese sarcopenic women: A randomized controlled trial. *Journal of the American Geriatrics Society*, 60(1), 16-23.
- Kimura, M., Moriyasu A., Kumagai S., Furuna T., Akita S., Kimura S., & Suzuki T. (2013). Community-based intervention to improve dietary habits and promote physical activity among older adults: A cluster randomized trial. *BMC Geriatr*, 13(8), 1-11.
- Kinchoku, H., Castanho V. S., Danelon M. R. G., & Faria E. C. d. (2013). Lipid and lipoprotein responses of dyslipidemic patients to exclusive nutritional counseling by gender and age. *Revista de Nutrição*, 26(2), 215-224.
- Kirkman, M. S., Briscoe V. J., Clark N., Florez H., Haas L. B., Halter J. B., Huang E. S., Korytkowski M. T., Munshi M. N., & Odegaard P. S. (2012). Diabetes in older adults. *Diabetes care*, 35(12), 2650-2664.
- Kisioglu, A. N., Aslan B., Ozturk M., Aykut M., & Ilhan I. (2004). Improving control of high blood pressure among middle-aged Turkish women of low socio-economic status through public health training. *Croat Med J*, 45(4), 477-482.
- Kjær, M., Krogsgaard M., Magnusson P., Engebretsen L., Roos H., Takala T., & Woo S. L.-Y. (2003). *Textbook of sports medicine basic science and clinical aspects of sports injury and physical activity*. Massachusetts: Blackwell Science Ltd.
- Knoops, K., Groot L. D., Kromhout D., Perrin A., Moreiras-Varela O., & Menotti A. (2004). Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women: The hale project. *The journal of the American Medical Association*, 292(12), 1433-1439.
- Koch, J. (2002). The role of exercise in the African American woman with type 2 diabetes mellitus: Application of the health belief model. *Journal of the American Academy of Nurse Practitioners*, 14(3), 126-130.
- Kokkinos, P. (2012). Physical activity, health benefits, and mortality risk. *ISRN Cardiology*, 2012(2012), 1-14.
- Koning, L. d., Merchant A. T., Pogue J., & Anand S. S. (2007). Waist circumference and waist-to-hip ratio as predictors of cardiovascular events: Meta-regression analysis of prospective studies. *Eur Heart J*, 28(7), 850-856.

- Konstantinidou, E., Koukouvou G., Kouidi E., Deligiannis A., & Tourkantonis A. (2002). Exercise training in patients with end-stage renal disease on hemodialysis: Comparison of three rehabilitation programs. *Journal of Rehabilitation Medicine*, 34(1), 40-45.
- Kopelman, P. G. (2000). Obesity as a medical problem. *Nature*, 404(6778), 635-643.
- Kravchenko, J. S. (2008). Nutrition and the elderly. In H. K. Heggenhougen (Ed.), *International encyclopedia of public health* (pp. 578-587). Oxford: Academic Press.
- Kuhle, C. L., Steffen M. W., Anderson P. J., & Murad M. H. (2014). Effect of exercise on anthropometric measures and serum lipids in older individuals: A systematic review and meta-analysis. *BMJ Open*, 4(6), 1-9.
- Kumar, A., Johnson S., & Kamalanabhan T. J. (2012). The future of health care: Students' perceptions, education, and training in aging and health in india. *Asia-Pacific Journal of Public Health*, 24(6), 923-931.
- Kupka-Schutt, L., & Mitchell M. E. (1992). Positive effect of a nutrition instruction model on the dietary behavior of a selected group of elderly. *Journal of Nutrition for the Elderly*, 12(2), 29-53.
- Kurukulasuriya, L. R., & Kurukulasuriya D. S. (2007). Obesity in the elderly. *Therapy*, 4(5), 597-607.
- Lambers, S., Van Laethem C., Van Acker K., & Calders P. (2008). Influence of combined exercise training on indices of obesity, diabetes and cardiovascular risk in type 2 diabetes patients. *Clinical Rehabilitation*, 22(6), 483-492.
- Lammes, E., Rydwick E., & Akner G. (2012). Effects of nutritional intervention and physical training on energy intake, resting metabolic rate and body composition in frail elderly. A randomised, controlled pilot study. *The journal of nutrition, health & aging*, 16(2), 162-167.
- Layne, J. E., Sampson S. E., Mallio C. J., Hibberd P. L., Griffith J. L., Das S. K., Flanagan W. J., & Castaneda-Sceppa C. (2008). Successful dissemination of a communitybased strength training program for older adults by peer and professional leaders: The people exercising program. *J Am Geriatr Soc*, 56(12), 2323-2329.
- Lee, A. H., Jancey J., Howat P., Burke L., Kerr D. A., & Shilton T. (2011). Effectiveness of a home-based postal and telephone physical activity and nutrition pilot program for seniors. *Journal of Obesity*, 2011(2), 1-8.
- Lee, I.-M., Shiroma E. J., Lobelo F., Puska P., Blair S. N., Katzmarzyk P. T., & Group L. P. A. S. W. (2012). Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. *The lancet*, 380(9838), 219-229.

- Lee, S.-H., Mason A., & Park D. (2011). Why does population aging matter so much for asia? Population aging, economic security and economic growth in asia. *ERIA* 4(1), 1-34.
- Lefebvre, R. (2000). Handbook of marketing and society. In P. Bloom & G. Gundlach (Eds.). Newbury Park CA: Sage Publications.
- Leon, A. S. (2012). Interaction of aging and exercise on the cardiovascular system of healthy adults. *American Journal of Lifestyle Medicine*, 6(5), 368-375.
- Leung, A., Chi I., & Lui Y. H. (2006). A cross-cultural study in older adults' learning experience. *Asian J Gerontol Geriatr*, 1(2), 78-83.
- Lez, M. n.-G., Lo'pez-Fontan C., Varo J. J., Sa'nchez-Villegas A., & Martinez J. A. (2005). Validation of the spanish version of the physical activity questionnaire used in the nurses' health study and the health professionals' follow up study. *Public Health Nutrition*, 8(7), 920-927.
- Lian, X.-Q., Zhao D., Zhu M., Wang Z.-M., Gao W., Zhao H., Zhang D.-G., Yang Z.-J., & Wang L.-S. (2014). The influence of regular walking at different times of day on blood lipids and inflammatory markers in sedentary patients with coronary artery disease. *Preventive Medicine*, 58(0), 64-69.
- Liebman, M., Pelican S., Moore S. A., Holmes B., Wardlaw M. K., Melcher L. M., Raidl M., Wheeler B., & Haynes G. W. (2006). Dietary intake-, eating behavior-, and physical activity-related determinants of high body mass index in the 2003 wellness in the rockies cross-sectional study. *Nutrition Research*, 26(3), 111-117.
- Lim, E., Hollingsworth K., & Aribisala B. (2011). Reversal of type 2 diabetes: Normalisation of beta cell function in association with decreased pancreas and liver triacylglycerol. *Diabetologia*, 54(10), 2506-2514.
- Lin, Y.-P., Huang Y.-H., Lu F.-H., Wu J.-S., Chang C.-J., & Yang Y.-C. (2011). Non-leisure time physical activity is an independent predictor of longevity for ataiwanese elderly population: An eight-year follow-up study. *BMC Public Health*, 11(1), 428-437.
- Liu, L., Bopp M. M., Roberson P. K., & Sullivan D. H. (2002). Undernutrition and risk of mortality in elderly patients within 1 year of hospital discharge. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 57(11), 741-746.
- Liu, L., Ikeda K., Sullivan D. H., Ling W., & Yamori Y. (2002). Epidemiological evidence of the association between dietary protein intake and blood pressure: A meta-analysis of published data. *Hypertension research: official journal of the Japanese Society of Hypertension*, 25(5), 689-695.
- Liu, X., Miller Y. D., Burton N. W., & Brown W. J. (2010). A preliminary study of the effects of tai chi and qigong medical exercise on indicators of metabolic

syndrome, glycaemic control, health-related quality of life, and psychological health in adults with elevated blood glucose. *British Journal of Sports Medicine*, 44(10), 704-709.

Livesey, G., Taylor R., Hulshof T., & Howlett J. (2008). Glycemic response and health—a systematic review and meta-analysis: Relations between dietary glycemic properties and health outcomes. *The American journal of clinical nutrition*, 87(1), 258S-268S.

Loprinzi, P. D., Smit E., & Mahoney S. (2014). Physical activity and dietary behavior in us adults and their combined influence on health. *Mayo Clinic Proceedings*, 89(2), 190-198.

Lorenzo, M. S. D., & Strasinger S. K. (2010). *Blood collection :A short course* (2nd ed.): F A Davis Company.

Lynch, L., & Happell B. (2008). Implementation of clinical supervision in action: Part 2: Implementation and beyond. *Int J Ment Health Nurs*, 17(1), 65-72.

MacKian, S. (2003). A review of health seeking behaviour:Problems and prospects: Health systems development programme. The UK.

Maddah, M., & Sharami S. H. (2010). Obesity among iranian old adult women in urban and rural areas in guilan. *International Journal of Cardiology*, 145(1), 44-45.

Madden, K. M., Lockhart C., Cuff D., Potter T. F., & Meneilly G. S. (2009). Short-term aerobic exercise reduces arterial stiffness in older adults with type 2 diabetes, hypertension, and hypercholesterolemia. *Diabetes Care*, 32(8), 1531-1535.

Madureira, M. M., Takayama L., Gallinaro A. L., Caparbo V. F., Costa R. A., & Pereira R. M. R. (2007). Balance training program is highly effective in improving functional status and reducing the risk of falls in elderly women with osteoporosis: A randomized controlled trial. *Osteoporos Int* 18(4), 419–425.

Maes, C., & Louis M. (2003). Knowledge of aids, perceived risk of aids, and at-risk sexual behaviors among older adults. *Journal of The American Academy of Nurse Practitioners*, 15(11), 509–516.

Malekafzali, H., Baradaran-Eftekhari M., Hejazi F., & Khojasteh T. (2010). The effectiveness of educational intervention in the health promotion in elderly people. *Iranian J Publ Health*, 39(2), 18-23.

Malekzadeh, F., & MohagheghiMD A. (2008). A new horizon in primary prevention of cardiovascular disease, can we prevent heart attack by" heart polypill"? *Archives of Iranian medicine*, 11(3), 306-313.

- Malekzadeh, R., Mohamadnejad M., Merat S., Pourshams A., & Etemadi A. (2005). Obesity pandemic: An Iranian perspective. *Arch Iran Med*, 8(1), 292-291.
- Mamaghani, M. E., Mahdavi R., & Vaziri Y. (2007). Dental health and its relation to macronutrient intake and anthropometric indices "khuban" private nursing home residents in Tabriz. *Medical Journal of Tabriz University of Medical Sciences* 29(3), 21-27.
- Mancia, G., De Backer G., Dominiczak A., Cifkova R., Fagard R., Germano G., Grassi G., Heagerty A., Kjeldsen S., & Laurent S. (2007). Guía de 2007 para el manejo de la hipertensión arterial. *J Hypertens*, 25(6), 1105-1187.
- Marlett, J. A., McBurney M. I., & Slavin J. L. (2002). Position of the American dietetic association: Health implications of dietary fiber. *Journal of the American Dietetic Association*, 102(7), 993-1000.
- Marques, E., Carvalho J., Soares J. M. C., Marques F., & Mota J. (2009). Effects of resistance and multicomponent exercise on lipid profiles of older women. *Maturitas*, 63(1), 84-88.
- Marques, E. A., Mota J., & Carvalho J. (2012). Exercise effects on bone mineral density in older adults: A meta-analysis of randomized controlled trials. *AGE* 34(6), 1493-1515.
- Martins, I. S., & Marinho S. P. (2003). The potential of central obesity anthropometric indicators as diagnostic tools. *Revista de Saúde Pública*, 37(6), 760-767.
- Martins, R. A., Veríssimo M. T., e Silva M. J. C., Cumming S. P., & Teixeira A. M. (2010). Research effects of aerobic and strength-based training on metabolic health indicators in older adults. *Lipids in Health and Disease*, 9(76), 1-6.
- Martinson, B., Crain L., Pronk N., O'Connor P., & Maciosek M. (2003). Changes in physical activity and short-term changes in health care charges: A prospective cohort study of older adults. *Prev Med*, 37(4), 319-326.
- Mathus-Vliegen, E. M. (2012). Obesity and the elderly. *Journal of Clinical Gastroenterology*, 46(7), 533-544
- Matthews, C. E., Chen K. Y., Freedson P. S., Buchowski M. S., Beech B. M., Pate R. R., & Troiano R. P. (2008). Amount of time spent in sedentary behaviors in the United States, 2003–2004. *American journal of epidemiology*, 167(7), 875-881.
- Matthews, K., Kuller L., & Sutton-Tyrrell K. (2000). *Changes in cardiovascular risk factors during the peri- and post-menopausal years* (F. Bellino Ed.). Norwell MA: Serono Symposia USA Inc.
- Matthews, K. A., Crawford S. L., Chae C. U., Everson-Rose S. A., Sowers M. F., Sternfeld B., & Sutton-Tyrrell K. (2009). Are changes in cardiovascular

disease risk factors in midlife women due to chronological aging or to the menopausal transition? *J Am Coll Cardiol*, 54(25), 2366-2373.

- Mauchly, J. W. (1940). Significance test for sphericity of a normal n-variate distribution. *The Annals of Mathematical Statistics*, 11(2), 204-209.
- Mazzeo, R., & Tanaka H. (2001). Exercise prescription for the elderly: Current recommendations. *Sports Med*, 31(11), 809-818.
- McCamey, M. A. (2002). *An educational intervention in georgia elderly nutrition programs improves knowledge and behaviors related to nutrition and physical activity*. (PhD), University of Georgia, Georgia.
- McClelland, J. W., Irving L. M., Mitchell R. E., Bearon L. B., & Webber K. H. (2002). Extending the reach of nutrition education for older adults: Feasibility of a train-the-trainer approach in congregate nutrition sites. *Journal of Nutrition Education and Behavior*, 34(1), 48-52.
- McCutcheon, M., & Pruchno R. (2011). Introducing the international spotlight. *The Gerontologist*, 51(4), 423-424.
- McDermott, A. Y., & Mernitz H. (2004). Exercise and the elderly: Guidelines and practical prescription applications for the clinician. *JCOM*, 11(2), 117-128.
- McDermott, A. Y., & Mernitz H. (2006). Exercise and older patients: Prescribing guidelines. *American Family Physician*, 74(3), 434-444.
- McKenzie, J. F., Neiger B. L., & Smeltzer J. L. (2005). *Planning, implementing, and evaluating health promotion programs : A primer* (4 ed.). San Francisco: Pearson/Benjamin Cummings.
- McKeon, P. O., & Hertel J. (2008). Systematic review of postural control and lateral ankle instability, part ii: Is balance training clinically effective. *Journal of athletic training*, 43(3), 305-315.
- Medina, C., Barquera S., & Janssen I. (2013). Validity and reliability of the international physical activity questionnaire among adults in mexico. *Rev Panam Salud Publica*, 34(1), 21-28.
- Mehryar, A. H., & Ahmad-Nia S. (2004). Age-structural transition in iran: Short and long-term consequences of drastic fertility swings during the final decades of twentieth century. *Age-Structural Transitions: Population Waves, Disordered Cohort Flows and the Demographic Bonus*, Paris, 23-26 February 2004.
- Midhet, F., Mohaimeed A. R. A., & Sharaf F. (2010). Dietary practices, physical activity and health education in qassim region of saudi arabia. *Int J Health Sci*, 4(1), 3-10.
- Miller, C. K., Edwards L., Kissling G., & Sanville L. (2002). Nutrition education improves metabolic outcomes among older adults with diabetes mellitus: Results from a randomized controlled trial. *Prev Med*, 34(2), 252-259.

- Mitchell, A. J., & Malladi S. (2010). Screening and case finding tools for the detection of dementia. Part i: Evidence-based meta-analysis of multidomain tests. *The American Journal of Geriatric Psychiatry*, 18(9), 759–782.
- Miura, S.-i., Yamaguchi Y., Urata H., Himeshima Y., Otsuka N., Tomita S., Yamatsu K., Nishida S., & Saku K. (2004). Efficacy of a multicomponent program (patient-centered assessment and counseling for exercise plus nutrition [pace+ japan]) for lifestyle modification in patients with essential hypertension. *Hypertension research: official journal of the Japanese Society of Hypertension*, 27(11), 859-864.
- Moghaddam, M. H. B., Aghdam F. B., Jafarabadi M. A., Allahverdipour H., Nikookheslat S. D., & Safarpour S. (2012). The iranian version of international physical activity questionnaire (ipaq) in iran: Content and construct validity, factor structure, internal consistency and stability. *World Applied Sciences Journal* 18(8), 1073-1080.
- Mogra, R., & Arora A. (2010). Impact of nutrition counseling on blood glucose level of patients suffering from non insulin dependent diabetes mellitus. *STUDIES ON ETHNO-MEDICINE*, 4(3), 203-205.
- Mohamed, R. A., Awad M. M., Shalaby S. I., & Abdelsatar H. N. (2013). Effect of nutritional health education program on elderly nutritional knowledge, attitude and practice in abu khalifa primary health care center, ismailia governorate. *The Medical Journal of Cairo University*, 81(2), 405-409.
- Mohammadi, S., Sulaiman S., Koon P. B., Amani R., & Hosseini S. M. (2013). Impact of healthy eating practices and physical activity on quality of life among breast cancer survivors. *Asian Pacific J Cancer Prev*, 14(1), 481-487.
- Moholdt, T., Aamot I. L., Granøien I., Gjerde L., Myklebust G., Walderhaug L., Brattbakk L., Hole T., Graven T., Stølen T. O., Amundsen B. H., Mølmen-Hansen H. E., Støylen A., Wisløff U., & Slørdahl S. A. (2011). Aerobic interval training increases peak oxygen uptake more than usual care exercise training in myocardial infarction patients: A randomized controlled study. *Clinical Rehabilitation*, 26(1), 33-44.
- Moreno, G., Mangione C. M., Wang P.-C., Trejo L., Butch A., Tseng C.-H., & Sarkisian C. A. (2014). Physical activity, physical performance, and biological markers of health among sedentary older latinos. *Current gerontology and geriatrics research*, 2014(3), 1-9.
- Morey, M. C., Snyder D. C., Sloane R., Cohen H. J., Peterson B., Hartman T. J., Miller P., Mitchell D. C., & Demark-Wahnefried W. (2009). Effects of home-based diet and exercise on functional outcomes among older, overweight long-term cancer survivors: Renew: A randomized controlled trial. *Jama*, 301(18), 1883-1891.
- Morio, B., Barra V., Ritz P., Fellmann N., Bonny J. M., & Beaufriere B. (2000). Benefit of endurance training in elderly over a short period is

reversible. *European Journal of Applied Physiology*, 81(4), 329-336.

Morris, M., & Schoo A. (2004). *Optimizing physical activity and exercise in older people*. China: Butterworth Heinemann.

Mosallanezhad, Z., Hörder H., Salavati M., Nilsson-Wikmar L., & Frändin K. (2012). Physical activity and physical functioning in swedish and iranian 75-year-olds—a comparison. *Archives of gerontology and geriatrics*, 55(2), 422-430.

Mostert, S., & Kesselring J. (2002). Effects of a short-term exercise training program on aerobic fitness, fatigue, health perception and activity level of subjects with multiple sclerosis. *Multiple Sclerosis* 8(2), 161 - 168.

Mota, M. R., Pardono E., Lima L. C. J., Arsa G., Bottaro M., Campbell C. S. G., & Simões H. G. (2009). Effects of treadmill running and resistance exercises on lowering blood pressure during the daily work of hypertensive subjects. *The Journal of Strength & Conditioning Research*, 23(8), 2331-2338.

Motahari-Tabari, N., Shirvani M. A., Shirzad-e-Ahoodashty M., Yousefi-Abdolmaleki E., & Teimourzadeh M. (2014). The effect of 8 weeks aerobic exercise on insulin resistance in type 2 diabetes: A randomized clinical trial. *Global Journal of Health Science*, 7(1), 115-121.

Mozaffarian, D., Rimm E. B., & Herrington D. M. (2004). Dietary fats, carbohydrate, and progression of coronary atherosclerosis in postmenopausal women. *The American journal of clinical nutrition*, 80(5), 1175-1184.

Muros Molina, J. J., Oliveras López M. J., Mayor Reyes M., Reyes Burgos T., & López García de la Serrana H. (2011). Influence of physical activity and dietary habits on lipid profile, blood pressure and bmi in subjects with metabolic syndrome. *Nutrición Hospitalaria*, 26(5), 1105-1109.

Muszalik, M., & Kędziora-Kornatowska K. (2007). The analysis healthy behavior among elderly people in juczyński's inventory of healthy behavior. *Advances in Medical The analysis* 52(2006), 105-107.

Myers, V. H., & Champagne C. M. (2007). Nutritional effects on blood pressure. *Current opinion in lipidology*, 18(1), 20-24.

Nadine, R. S. (2002). Nutrition education for the healthy elderly population: Isn't it time? *Journal of Nutrition Education and Behavior*, 34, Supplement 1, S42-S47.

Nagarsenker, B. N., & Pillai K. C. S. (1973). The distribution of the sphericity test criterion. *Journal of Multivariate Analysis*, 3(2), 226-235.

Naghashpour, M., Shakerinejad G., Lourizadeh M. R., Hajinajaf S., & Jarvandi F. (2014). Nutrition education based on health belief model improves dietary

calcium intake among female students of junior high schools. *J Health Popul Nutr*, 32(3), 420-429.

Najimi, A., Dolatabadi N. K., Esmaeili A. A., & Sharifirad G. R. (2013). The effect of educational program on knowledge, attitude and practice of mothers regarding prevention of febrile seizure in children. *Journal of education and health promotion*, 2(26), 1-13.

Naomi, N., & Modeste T. S. (2004). *Dictionary of public health promotion and education : Terms and concepts* (2nd ed.): Jossey-Bass.

Nejad, L. M., Wertheim E. H., & Greenwood K. M. (2005). Comparison of the health belief model and the theory of planned behaviour in the prediction of dieting and fasting behaviour. *E-Journal of Applied Psychology: Social section*, 1(1), 63-74.

Nelson, M. E., Rejeski W. J., Blair S. N., Duncan P. W., Judge J. O., King A. C., Macera C. A., & Castaneda-Sceppa C. (2007). Physical activity and public health in older adults: Recommendation from the american college of sports medicine and the american heart association. *Med Sci Sports Exerc*, 39(8), 1435-1445. doi: 10.1249/mss.0b013e3180616aa2

Ng, T. P., Feng L., Nyunt M. S. Z., Feng L., Niti M., Tan B. Y., Chan G., Khoo S. A., Chan S. M., & Yap P. (2015). Ng. *The American journal of medicine*, 4(2), 1-13.

Nicklas, B. J. (2010). Heterogeneity of physical function responses to exercise in older adults: Possible contribution of variation in the angiotensin-1 converting enzyme (ace) gene? *Perspectives on Psychological Science*, 5(5), 575-584.

Nied, R. J., & Franklin B. (2002). Promoting and prescribing exercise for the elderly. *American Family Physician* 65(3), 419-426.

Nigg, C., English C., Owens N., Burbank P., Connolly-Belanger A., Dufresne R., Fey-Yensan N., Garber C. E., Luisi A., & Padula C. (2002). Health correlates of exercise behavior and stage change in a community-based exercise intervention for the elderly: A pilot study. *Health Promotion Practice*, 3(3), 421-428.

Noroozi, E., Dolatabadi N. K., Eslami A. A., Hassanzadeh A., & Davari S. (2013). Knowledge and attitude toward menopause phenomenon among women aged 40–45 years. *Journal of Education and Health Promotion* 2(25), 1-5.

Noroozian, M. (2012). The elderly population in iran: An ever growing concern in the health system. *Iran J Psychiatry Behav Sci* 6(2), 1 – 6.

Nowson, C. A., Wattanapenpaiboon N., & Pachett A. (2009). Low-sodium dietary approaches to stop hypertension–type diet including lean red meat lowers blood pressure in postmenopausal women. *Nutrition Research*, 29(1), 8-18.

- Ogawa, K., Sanada K., Machida S., Okutsu M., & Suzuki K. (2010). Resistance exercise training-induced muscle hypertrophy was associated with reduction of inflammatory markers in elderly women. *Mediators of Inflammation*, 2010(1), 1-7.
- Oh, E.-G., Hyun S. S., Kim S. H., Bang S.-y., Chu S. H., Jeon J. Y., & Kang M. S. (2008). A randomized controlled trial of therapeutic lifestyle modification in rural women with metabolic syndrome: A pilot study. *Metabolism*, 57(2), 255-261.
- Oldewage-Theron, W. (2006). Impact of a nutrition education combined with a walking programme for the elderly. *Journal of Nutrition Education and Behavior*, 38(4), 42-43.
- Oliveira, M., Fogaca K., & Leandro-Merhi V. A. (2009). Nutritional status and functional capacity of hospitalized elderly. *Nutr J*, 8(54), 1-8.
- Omolafe, A., Mouttapa M., McMahan S., & Tanjasiri S. P. (2010). We are family: Family history of diabetes among african americans and its association to perceived severity, knowledge of risk factors, and physical activity levels. *Californian Journal of Health Promotion* 8(1), 88-97.
- Onwukwe, S. C., & Omole O. B. (2012). Drug therapy, lifestyle modification and blood pressure control in a primary care facility, south of johannesburg, south africa: An audit of hypertension management. *South African Family Practice*, 54(2), 156-161.
- Orimo, H., Ito H., Suzuki T., Araki A., Hosoi T., & Sawabe M. (2006). Reviewing the definition of "elderly". *Geriatrics & gerontology international*, 6(3), 149-158.
- Ory, M. G., Anderson L. A., Friedman D. B., Pulczinski J. C., Eugene N., & Satariano W. A. (2014). Cancer prevention among adults aged 45–64 years: Setting the stage. *American Journal of Preventive Medicine*, 46(3), 1-6.
- osteras, H., Hoff J., & Helgerud J. (2005). Effects of high-intensity endurance training on maximal oxygen consumption in healthy elderly people. *The Journal of Applied Gerontology*, 24(5), 377-387.
- Owen, A., Wiles J., & Swaine I. (2010). Effect of isometric exercise on resting blood pressure: A meta analysis. *J Hum Hypertens*, 24(12), 796-800.
- Pahor, M., Blair S. N., Espeland M., Fielding R., Gill T. M., Guralnik J. M., Hadley E. C., King A. C., Kritchevsky S. B., Maraldi C., Miller M. E., Newman A. B., Rejeski W. J., Romashkan S., & Studenski S. (2006). Effects of a physical activity intervention on measures of physical performance: Results of the lifestyle interventions and independence for elders pilot (life-p) study. *J Gerontol A Biol Sci Med Sci*, 61(11), 1157-1165.

- Pajecki, D., Santo M. A., Kanagi A. L., Riccioppo D., Cleva R. D., & Cecconello I. (2014). Functional assessment of older obese patients candidates for bariatric surgery. *Arquivos de Gastroenterologia*, 51(1), 25-28.
- Papathanasiou, G., Georgoudis G., Papandreou M., Spyropoulos P., Georgakopoulos D., Kalfakakou V., & Evangelou A. (2009). Reliability measures of the short international physical activity questionnaire (ipaq) in greek young adults. *Hellenic Journal of Cardiology*, 50(4), 283-294.
- Park, Y.-H., Song M., Cho B.-l., Lim J.-y., Song W., & Kim S.-h. (2011a). The effects of an integrated health education and exercise program in community-dwelling older adults with hypertension: A randomized controlled trial. *Patient Education and Counselling*, 82(1), 133-137.
- Park, Y.-H., Song M., Cho B.-l., Lim J.-y., Song W., & Kim S.-h. (2011b). The effects of an integrated health education and exercise program in community-dwelling older adults with hypertension: A randomized controlled trial. *Patient Education and Counseling*, 82(1), 133-137.
- Parmenter, B. J., Raymond J., Dinnen P., & Singh M. A. F. (2011). A systematic review of randomized controlled trials: Walking versus alternative exercise prescription as treatment for intermittent claudication. *Atherosclerosis*, 218(1), 1-12.
- Patel, H. M., Kathrotia R. G., Pathak N. R., & Thakkar H. A. (2012). Effect of relaxation technique on blood pressure in essential hypertension. *NJIRM*, 3(4), 10-14.
- Paterson, D. H., & Warburton D. E. (2010). Review physical activity and functional limitations in older adults: A systematic review related to canada's physical activity guidelines. *International Journal of Behavioral Nutrition and Physical Activity*, 7(38), 1-22.
- Pathumarak, N. (2005). *Factors predicting the exercise behavior of the elderly*. Case Western Reserve University.
- Paulik, E., Bóka F., Kertész A., Balogh S., & Nagymajtényi L. (2010). Determinants of health-promoting lifestyle behaviour in the rural areas of hungary. *Health Promotion International*, 25(3), 277 - 288.
- Paw, C. A., J M., J M., M M. J., Jong d., Schouten N., Hiddink E. G., Kok G. J., & J F. (2001). Physical exercise and/or enriched foods for functional improvement in frail, independently living elderly: A randomized controlled trial. *Archives of Physical Medicine and Rehabilitation*, 82(6), 811-817.
- Payahoo, L., Ostadrahimi A., Mobasseri M., Bishak Y. K., Farrin N., Mohammad, Jafarabadi A., & Mahluji S. (2013). Effects of zinc supplementation on the anthropometric measurements, lipid profiles and fasting blood glucose in the healthy obese adults. *Advanced Pharmaceutical Bulletin*, 3(1), 161-165.

- Payette, H., Boutier V., Coulombe C., & Gray-Donald K. (2002). Benefits of nutritional supplementation in free-living, frail, undernourished elderly people: A prospective randomized community trial. *Journal of the American Dietetic Association*, 102(8), 1088-1095.
- Peeters, A., Barendregt J. J., Willekens F., Mackenbach J. P., Al Mamun A., & Bonneux L. (2003). Obesity in adulthood and its consequences for life expectancy: A life-table analysis. *Ann Intern Med*, 138(1), 24-32
- Pescatello, L. S., Guidry M. A., Blanchard B. E., Kerr A., Taylor A. L., Johnson A. N., Maresh C. M., Rodriguez N., & Thompson P. D. (2004). Exercise intensity alters postexercise hypotension. *Journal of hypertension*, 22(10), 1881-1888
- Petosa, R. L., & Holtz B. (2013). Flow for exercise adherence: Testing an intrinsic model of health behavior. *American Journal of Health Education*, 44(5), 273-277.
- Picorelli, A. M. A., Pereira L. S. M., Pereira D. S., Felício D., & Sherrington C. (2014). Adherence to exercise programs for older people is influenced by program characteristics and personal factors: A systematic review. *Journal of physiotherapy*, 60(3), 151-156.
- Pimentel, G., Arimura S., de Moura B., Silva M., & de Sousa M. (2010). Short-term nutritional counseling reduces body mass index, waist circumference, triceps skinfold and triglycerides in women with metabolic syndrome. *Diabetology & Metabolic Syndrome*, 2(1), 1-7.
- Pinto, S. L., Lively B. T., Siganga W., Holiday-Goodman M., & Kamm G. (2006). Using the health belief model to test factors affecting patient retention in diabetes-related pharmaceutical care services. *Research in Social and Administrative Pharmacy*, 2(1), 38-58.
- Pitsavos, C., Panagiotakos D. B., Tambalis K. D., Chrysohoou C., Sidossis L. S., Skoumas J., & Stefanadis C. (2009). Resistance exercise plus to aerobic activities is associated with better lipids' profile among healthy individuals: The attica study. *QJM*, 102(9), 609-616.
- Polikandrioti, M. (2009). Exercise and diabetes mellitus. *Polikandrioti*, 3(1), 130-131.
- Pollock, M. L., Franklin B. A., Balady G. J., Bernard L Chaitman, Fleg J. L., Fletcher B., Limacher M., Piña I. L., Stein R. A., Williams M., & Bazzarre T. (2000). Resistance exercise in individuals with and without cardiovascular disease: Benefits, rationale, safety, and prescription: An advisory from the committee on exercise, rehabilitation, and prevention, council on clinical cardiology, american heart association; position paper endorsed by the american college of sports medicine. *Circulation*, 101(7), 828-833.

- Polonia, J., & Martins L. (2009). A comprehensive review on salt and health and current experience of worldwide salt reduction programmes. *Journal of human hypertension*, 23(11), 771-772.
- Post, R. E., Mainous A. G., King D. E., & Simpson K. N. (2012). Dietary fiber for the treatment of type 2 diabetes mellitus: A meta-analysis. *The Journal of the American Board of Family Medicine*, 25(1), 16-23.
- Pourian, L. E., Salehi S., Kalhori R. P., Abdyazdan G., & Sharifi A. (2013). Assessing the effect of healthy belief model application on behavior change of the patients with myocardial infarction. *Iran J Crit Care Nurs* 6(2), 101-108.
- Predovan, D., Fraser S. A., Renaud M., & Bherer L. (2012). The effect of three months of aerobic training on stroop performance in older adults. *Journal of aging research*, 2012(10), 1-7.
- Prochaska, J. O., & Diclemente C. C. (1997). *System of psychotherapy: A transtheoretical analysis*. IL Homewood Dorsey Press.
- Proctor, D. N., Singh M. A. F., Salem G. J., & Skinner J. S. (2009). Position stand. *Official Journal of the American College of Sports Medicine*, 10(15), 1510-1530.
- Purath, J., Keller C. S., McPherson S., & Ainsworth B. (2013). A randomized controlled trial of an office-based physical activity and physical fitness intervention for older adults. *Geriatric Nursing*, 34(3), 204-211.
- Purnell, J. Q., Kahn S. E., Albers J. J., Nevin D. N., Brunzell J. D., & Schwartz R. S. (2000). Effect of weight loss with reduction of intra-abdominal fat on lipid metabolism in older men. *J Clin Endocrinol Metab*, 85(3), 977-982.
- Quaney, B. M., Boyd L. A., McDowd J. M., Zahner L. H., He J., Mayo M. S., & Macko R. F. (2009). Aerobic exercise improves cognition and motor function poststroke. *Neurorehabilitation and Neural Repair*, 23(9), 879-885.
- Rakhshanderou, S., Gaffari M., Heydarnia A., & Rajab A. (2010). Effectiveness of educational interventions on metabolic control in diabetic patients referred to the diabetes center of iran. *Iranian J Diabetes Lipid*, 9(5), 57-64.
- Rana, A., Kabir Z., Lundborg C., & Wahlin Å. (2010). Health education improves both arthritis-related illness and self-rated health: An intervention study among older people in rural bangladesh. *Public health*, 124(12), 705-712.
- Ratamess, N. A. (2011). *Foundations of strength training and conditioning*. United States: Lippincott Williams & Wilkins.
- Ratanasuwan, T., Indharapakdi S., Promrerker R., Komolviphat T., & Thanamai Y. (2005). Health belief model about diabetes mellitus in thailand: The culture

consensus analysis. *Journal of the Medical Association of Thailand= Chotmaihet thangphaet*, 88(5), 623-631.

- Ray, K., Seshasai S., & Wijesuriya S. (2009). Effect of intensive control of glucose on cardiovascular outcomes and death in patients with diabetes mellitus: A meta-analysis of randomised controlled trials. *Lancet*, 373(9677), 1765–1177.
- Rebholz, C. M., Friedman E. E., Powers L. J., Arroyave W. D., He J., & Kelly T. N. (2012). Dietary protein intake and blood pressure: A meta-analysis of randomized controlled trials. *American journal of epidemiology*, 176(7), 27-43.
- Reddings, J. M. (2009). *Culturally designed intervention to decrease blood sugar in selected groups of hispanic diabetic patients*. (D.N.P), Fairleigh Dickinson University, Ann Arbor.
- Reijneveld, S. A., Westhoff M. H., & Hopman-Rock M. (2003). Promotion of health and physical activity improves the mental health of elderly immigrants: Results of a group randomised controlled trial among turkish immigrants in the netherlands aged 45 and over. *Journal of Epidemiology and Community Health*, 57(6), 405-411.
- Rejeski, W. J., Mihalko S. L., Ambrosius W. T., Bearon L. B., & McClelland J. W. (2011). Weight loss and self-regulatory eating efficacy in older adults: The cooperative lifestyle intervention program. *The Journals of Gerontology*, 66(3), 279–286.
- Resnick, B., & Louise J. (2000). Testing the reliability and validity of the self-efficacy for exercise scale. *Nursing Research* 49(3), 154-159.
- Resnick, B., Orwig D., D'Adamo C., Yu-Yahiro J., Hawkes W., Shardell M., Golden J., Zimmerman S., & Magaziner J. (2007). Factors that influence exercise activity among women post hip fracture participating in the exercise plus program. *Clinical Interventions in Aging* 3(2), 413-427.
- Reuter, I. (2012). Aging, physical activity, and disease prevention 2012. *Journal of Aging Research*, 2012(6), 1-4.
- Rezende, L. F., Rey-López J. P., Matsudo V. K., & do Luiz O. (2014). Sedentary behavior and health outcomes among older adults: A systematic review. *BMC public health*, 14(1), 333-340.
- Ribeiro, F., & Oliveira J. (2007). Aging effects on joint proprioception: The role of physical activity in proprioception preservation. *European Review of Aging and Physical Activity*, 4(2), 71-76.
- Rider, R., & Daly J. (1991). Effects of flexibility training on enhancing spinal mobility in older women. *The Journal of sports medicine and physical fitness*, 31(2), 213-217.

- Riebe, D., Blissmer B. J., Greaney M. L., Ewing Garber C., Lees F. D., & Clark P. G. (2009). The relationship between obesity, physical activity, and physical function in older adults. *Journal of Aging and Health, 21*(8), 1159-1178.
- Rizvi, A. A. (2009). Nutritional challenges in the elderly with diabetes. *International Journal of Diabetes Mellitus, 1*(1), 26-31.
- Robinson-Whelen, S., & Bodenheimer C. (2004). Health practices of veterans with unilateral lower limb-loss: Identifying correlates. *Journal of rehabilitation research and development, 41*(3), 453-460.
- Roh, H. L., & Heelee D. A. (2012). Effect of a home-based exercise program on elderly women's health. *Journal of Physical Therapy Science, 24*(5), 449-453.
- Romo-Perez, V., Schwingel A., & chodzko-zajko W. (2011). International resistance training recommendations for older adults: Implications for the promotion of healthy aging in Spain. *Journal of Human Sport & exercise, 6* (4), 639-640.
- Rosario, M.-S., & Ann K. J. (2010). Spanish translation and adaptation of victoria champion's health belief model scales for breast cancer screening-mammography. *Cancer Nursing, 33*(2), 93-101.
- Rosenstock, I. (1974). The health belief model and preventive health behavior. *Health Educ Monogr, 2*(4), 354-386.
- Ross, R., Dagnone D., Jones P. J., Smith H., Paddags A., Hudson R., & Janssen I. (2000). Reduction in obesity and related comorbid conditions after diet-induced weight loss or exercise-induced weight loss in men: randomized, controlled trial. *Annals of internal medicine, 133*(2), 92-103.
- Rossi, P. H., & Freeman H. E. (1993). *Evaluation: A systematic approach* (5 ed.). Newbury Park CA: Sage Publications.
- Roszkowski, W., & Chmara-Pawlińska R. (2002). [anthropometric measurements as indicators of nutritional status of the elderly]. *Roczniki Panstwowego Zakladu Higieny, 54*(4), 399-408.
- Rousset, S., Droit-Volet S., & Boirie Y. (2006). Change in protein intake in elderly French people living at home after a nutritional information program targeting protein consumption. *Journal of the American Dietetic Association, 106*(2), 253-261.
- Rustad, C., & Smith C. (2013). Nutrition knowledge and associated behavior changes in a holistic, short-term nutrition education intervention with low-income women. *Journal of Nutrition Education and Behavior, 45*(6), 490-498.

- Rutter, D., & Quine L. (2002). *Changing health behaviour: Intervention and research with social cognition models* (1st ed.). Buckingham: Open University Press.
- Rydwik, E., Frandin K., & Akner G. (2010a). Effects of a physical training and nutritional intervention program in frail elderly people regarding habitual physical activity level and activities of daily living--a randomized controlled pilot study. *Arch Gerontol Geriatr*, 51(3), 283-289. doi: 10.1016/j.archger.2009.12.001
- Sacco, R. L., Benson R. T., Kargman D. E., & et al. (2001). High-density lipoprotein cholesterol and ischemic stroke in the elderly: The northern manhattan stroke study. *JAMA*, 285(21), 2729-2735.
- Sacks, F. M., Bray G. A., Carey V. J., Smith S. R., Ryan D. H., Anton S. D., McManus K., Champagne C. M., Bishop L. M., Laranjo N., Leboff M. S., Rood J. C., de Jonge L., Greenway F. L., Loria C. M., Obarzanek E., & Williamson D. A. (2009). Comparison of weight-loss diets with different compositions of fat, protein, and carbohydrates. *New England Journal of Medicine*, 360(9), 859-873.
- Sacks, F. M., & Campos H. (2010). Dietary therapy in hypertension. *New England Journal of Medicine*, 362(22), 2102-2112.
- Sadat Madah, S., Emami A., Rahgozar M., Foroughan M., Norouzi K., Mohammadi F., & Mazaheri M. (2009). The status of social and leisure time activities in the elderly residing in iran and sweden. *Salmand*, 8(3), 597-606.
- Safdari, R., & Mohamadiazar M. (2013). Analytical performance of administrations in charge of ageing program in iran. *Social Sciences*, 1(3), 108-111.
- Sakellaris, N., & Baladima A. (2012). Hypertension in the elderly. *Rhythmos*, 7(1), 1-4.
- Salehi, L., Eftekhar H., Mohammad K., Taghdisi M. H., & Shojaeizadeh D. (2010). Physical activity among a sample of iranians aged over 60 years: An application of the transtheoretical model. *Archives of Iranian Medicine*, 13(6), 528-535.
- Salehi, L., Mohammad K., & Montazeri A. (2011). Fruit and vegetables intake among elderly iranians: A theory-based interventional study using the five-a-day program. *Nutrition Journal*, 10(123), 1-9.
- Salehi, S., Naajee A., & Sargazi M. (2012). The amount of consumption of fruits and vegetables and related factors in the hospitalized elderly in zahedan in 1389. *Iranian Journal of Ageing*, 6(22), 30-36.
- Samford, W., Allison G., George G., & Alastair F. (2011). Spinal clinic for obese out-patient project (scoop)—a 1 year report. *Food and Nutrition Sciences*, 2011.

- Santulli, G., Ciccarelli M., Trimarco B., & Iaccarino G. (2013). Physical activity ameliorates cardiovascular health in elderly subjects: The functional role of the beta adrenergic system. *Front Physiol*, 4(209), 1-27.
- Schaefer, E. J. (2002). Lipoproteins, nutrition, and heart disease. *Am J Clin Nutr*, 75(2), 191-212.
- Schmid, A. A., van Puymbroeck M., & Koceja D. M. (2010). Effect of a 12-week yoga intervention on fear of falling and balance in older adults: A pilot study. *Archives of Physical Medicine and Rehabilitation*, 91(4), 576-583.
- Schoenenberger, A., Erne P., & Stuck A. (2012). Hypertension in the elderly. *Therapeutische Umschau. Revue therapeutique*, 69(5), 299-304.
- Scholz, D. G., Kitzman D. W., Hagen P. T., Ilstrup D. M., & Edwards W. D. (1988). Age-related changes in normal human hearts during the first 10 decades of life. Part i (growth): A quantitative anatomic study of 200 specimens from subjects from birth to 19 years old. *Mayo Clin Proc*, 63(2), 126-136.
- Schwab, P., & Scalapino K. (2011). Exercise for bone health: Rationale and prescription. *Curr Opin Rheumatol* 23(2), 137-141.
- Seals, D. R., Silverman H. G., Reiling M. J., & Davy K. P. (1997). Effect of regular aerobic exercise on elevated blood pressure in postmenopausal women. *Am J Cardiol*, 80(1), 49-55.
- Sepanlou, S. G., Kamangar F., Poustchi H., & Malekzadeh R. (2010). Reducing the burden of chronic diseases: A neglected agenda in Iranian health care system, requiring a plan for action. *Archives of Iranian Medicine*, 13(4), 340-350.
- Shabani, G. R., Nazem F., & Puraqayy Z. (2009). The effect of an exercise program on quality of life in postmenopausal women. *Research in Sports Sciences*, 12, 123-133.
- Shaghi, S., Babak A., & Manzori I. (2009). Elderly nutrition situation in Isfahan. *Gerontology journal*, 2(5), 341-344.
- Shahar, S., Adznam S. N., Rahman S. A., Yusoff N. A., Yassin Z., Arshad F., Sakian N. I., Salleh M., & Samah A. A. (2012). Development and analysis of acceptance of a nutrition education package among a rural elderly population: An action research study. *BMC geriatrics*, 12(24), 1-9.
- Sharifirad, G., Entezari M. H., Kamran A., & Azadbakht L. (2009). The effectiveness of nutritional education on the knowledge of diabetic patients using the health belief model. *Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences*, 14(1), 1-6.
- Sharifirad, G., Najimi A., Hassanzadeh A., & Azadbakht L. (2011). Application of health belief educational model for nutritional education among elderly patients

with type 2 diabetes: Improving the glycemic control. *J Res Med Sci*, 16(9), 1149–1158.

- Sharifirad, G., Najimi A., Hassanzadeh A., & Azadbakht L. (2013). Does nutritional education improve the risk factors for cardiovascular diseases among elderly patients with type 2 diabetes? A randomized controlled trial based on an educational model. *J Diabetes*, 5(2), 157-162.
- Sharifirad, G. R., Tol A., Mohebi S., Matlabi M., Shahnazi H., & Shahsiah M. (2013). The effectiveness of nutrition education program based on health belief model compared with traditional training. *Journal of education and health promotion*, 2(15), 1-15.
- Sharma, S. V., Gernand A. D., & Day R. S. (2008). Nutrition knowledge predicts eating behavior of all food groupsexceptfruits and vegetables among adults in the paso del norte region: Qué sabrosa vida. *J Nutr Educ Behav*, 40(6), 361-368.
- Sheikholeslam, R., Mohamad A., Mohammad K., & Vaseghi S. (2004). Non communicable disease risk factors in iran. *Asia Pac J Clinical Nutrition*, 13(2), 100-105.
- Shenkin, S. D., Russ T. C., Ryan T. M., & Maclullich A. J. (2014). Screening for dementia and other causes of cognitive impairment in general hospital in-patients. *Age and Ageing*, 14(43), 166–168.
- Sherrington, C., Lord S., Vogler C., Close J., Howard K., Dean C., Clemson L., Barraclough E., Ramsay E., O'Rourke S., & Cumming R. (2009). Minimising disability and falls in older people through a post-hospital exercise program: A protocol for a randomised controlled trial and economic evaluation. *BMC Geriatrics*, 9(1), 1-8.
- Sheykhi, M. (2004). Elderly people living in nursing homes in iran. *African and Asian Studies*, 3, 103-118.
- Sheykhi, M. T. (2006). The elderly and family change in asia with a focus in iran: A sociological assessment. *Journal of Comparative Family Studies*, 37(4), 583-588.
- Shibata, Y., Hayasaka S., Yamada T., Goto Y., Ojima T., Ishikawa S., Kayaba K., Gotoh T., & Nakamura Y. (2010). Physical activity and cardiovascular disease in japan: The jichi medical school cohort study. *J Epidemiol*, 20(3), 225-230.
- Shirazi, K. K., Wallace L. M., Niknami S., Hidarnia A., Torkaman G., Gilchrist M., & Faghihzadeh S. (2007). A home-based, transtheoretical change model designed strength training intervention to increase exercise to prevent osteoporosis in iranian women aged 40–65 years: A randomized controlled trial. *Health education research*, 22(3), 305-317.

- Shirin Kiani, M., Mana Bayanzadeh M., Mahkam Tavallaee M., & Robert S. (2010). The Iranian population is graying: Are we ready? *Archives of Iranian medicine*, 13(4), 333-339.
- Shiroma, E. J., & Lee I.-M. (2012). Physical activity and cardiovascular health: Lessons learned from epidemiological studies across age, gender, and race/ethnicity. *Circulation*, 122(7), 743-752.
- Shojaeizadeh, D., Sadeghi R., Tarrahi M. J., Asadi M., Safari H., & Lashgarara B. (2012). The effect of educational intervention on prevention of osteoporosis through health belief model (hbm) in volunteers of Khorramabad city's health centers in 2010-2011. *Annals of Biological Research*, 3(1), 300-307.
- Shrivastava, S. R. B. L., Shrivastava P. S., & Ramasamy J. (2013). Health-care of elderly: Determinants, needs and services. *International journal of preventive medicine*, 1(1), 1224-1225.
- Shubert, T. E. (2011). Evidence-based exercise prescription for balance and falls prevention: A current review of the literature. *J Geriatr Phys Ther*, 34(3), 100-108.
- Sibal, L., Neely R. D., Jones A., & Home P. D. (2010). Friedewald equation underestimates LDL-C at low concentrations in young people with and without type 1 diabetes. *Diabet Med*, 27(1), 37-45.
- Siegel, K., Narayan K. V., & Kinra S. (2008). Finding a policy solution to India's diabetes epidemic. *Health Affairs*, 27(4), 1077-1090.
- Sigal, R., Kenny G., Wasserman D., & Castaneda-Sceppa C. (2004). Physical activity/exercise and type 2 diabetes. *Diabetes Care*, 27(10), 2518-2539.
- Sigal, R. J., Kenny G. P., Boule N. G., Wells G. A., Prud'homme D., Fortier M., Reid R. D., Tulloch H., Coyle D., Phillips P., Jennings A., & Jaffey J. (2007). Effects of aerobic training, resistance training, or both on glycemic control in type 2 diabetes: A randomized trial. *Ann Intern Med*, 147(6), 357-369.
- Silva-Smith, A. L., Fleury J., & Belyea M. (2013). Effects of a physical activity and healthy eating intervention to reduce stroke risk factors in older adults. *Preventive Medicine*, 57(5), 708-711.
- Simmons, R., Griffin S., Steele R., Wareham N., & Ekelund U. (2008). Increasing overall physical activity and aerobic fitness is associated with improvements in metabolic risk: Cohort analysis of the proactive trial. *Diabetologia*, 51(5), 787-794.
- Simonds, S. (1976). *Health education in the mid-1970s: State of the art*. New York: Prodist: In Preventive Medicine USA.
- Singh, M. A. F. (2000). *Exercise, nutrition, and the older woman: Wellness for women over fifty*. Florida: CRC Press LLC.

- Smith, P. J., Blumenthal J. A., Babyak M. A., Craighead L., Welsh-Bohmer K. A., Browndyke J. N., Strauman T. A., & Sherwood A. (2010). Effects of the dietary approaches to stop hypertension diet, exercise, and caloric restriction on neurocognition in overweight adults with high blood pressure. *Hypertension*, 55(6), 1331-1338.
- Southgate, K., Keller H., & Reimer H. (2010). Determining knowledge and behaviour change after nutrition screening among older adults. *Canadian Journal of Dietetic Practice & Research*, 71(3), 128-133.
- Spiriduso, W. W., Francis K., & MacRae P. (2005). *Physical development and decline in physical dimensions of aging* (2nd ed.). Champaign USA: Human Kinetics.
- Srikanthan, P., Seeman T. E., & Karlamangla A. S. (2009). Waist-hip-ratio as a predictor of all-cause mortality in high-functioning older adults. *Annals of epidemiology*. *Annals of epidemiology* 19(10), 724-731.
- Stathokostas, L., Little R. M. D., Vandervoort A. A., & Paterso D. H. (2012). Flexibility training and functional ability in older adults: A systematic review. *Journal of Aging Research*, 2012(7), 1-30.
- Stathokostas, L., McDonald M. W., Little R. M. D., & Paterson D. H. (2013). Flexibility of older adults aged 55–86 years and the influence of physical activity. *Journal of Aging Research*, 2013, 1-8.
- Stokes, G. S. (2009b). Management of hypertension in the elderly patient. *Clinical interventions in aging*, 4(3), 379-388.
- Strait, J. B., & Lakatta E. G. (2012). Aging-associated cardiovascular changes and their relationship to heart failure. *Heart Fail Clin*, 8(1), 143-164.
- Strasser, B., Keinrad M., Haber P., & Schobersberger W. (2009). Efficacy of systematic endurance and resistance training on muscle strength and endurance performance in elderly adults – a randomized controlled trial. *Wien Klin Wochenschr* 121(23), 757–764.
- Strasser, B., Siebert U., & Schobersberger W. (2010). Resistance training in the treatment of the metabolic syndrome. *Sports medicine*, 40(5), 397-415.
- Stratton, I. M., Adler A. I., Neil H. A. W., Matthews D. R., Manley S. E., Cull C. A., Hadden D., Turner R. C., & Holman R. R. (2000). Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (ukpds 35): Prospective observational study. *Bmj*, 321(7258), 405-412.
- Strihler, B. (2012). *Times, cells, and aging* (1st ed ed.). New York: Academic Press Inc.

- Sung, K., & Bae S. (2012). Effects of a regular walking exercise program on behavioral and biochemical aspects in elderly people with type II diabetes. *Nursing & Health Sciences*, 14(4), 438-445.
- Swaim, R. A., Barner J. C., & Brown C. M. (2008). The relationship of calcium intake and exercise to osteoporosis health beliefs in postmenopausal women. *Research in Social and Administrative Pharmacy*, 4(2), 153-163.
- Swain, D. P., & Franklin B. A. (2006). Comparison of cardioprotective benefits of vigorous versus moderate intensity aerobic exercise. *American Journal of Cardiology*, 97(1), 141-147.
- Sykes, K., Choo L. L., & Accum M. C. (2003). Accumulating aerobic exercise for effective weight control. *JRSH*, 124(1), 24-28.
- Tabet, J.-Y., Meurin P., Driss A. B., Weber H., Renaud N., Grosdemouge A., Beauvais F., & Cohen-Solal A. (2009). Benefits of exercise training in chronic heart failure. *Archives of Cardiovascular Disease* 102(10), 721-730.
- Tajvar, M., Arab M., & Montazeri A. (2008). Determinants of health-related quality of life in elderly in tehran, iran. *BMC public health*, 8(323), 1-8.
- Takeshima, N., Rogers N., Rogers M., Islam M., Koizumi D., & Lee S. (2007). Functional fitness gain varies in older adults depending on exercise mode. *Med Sci Sports Exerc*, 39(11), 2036-2043.
- Takeya, Y., & Rakugi H. (2011). [hypertension in the elderly]. *Nihon rinsho. Japanese journal of clinical medicine*, 69(11), 2037-2041.
- Tambalis, K., Panagiotakos D. B., Kavouras S. A., & Sidossis L. S. (2009). Responses of blood lipids to aerobic, resistance, and combined aerobic with resistance exercise training: A systematic review of current evidence. *Angiology*, 60(5), 614-632.
- Tanjani, P. T., Motlagh M. E., Nazar M. M., & Najafi F. (2015). The health status of the elderly population of iran in 2012. *Archives of gerontology and geriatrics*, 60(2), 281-287.
- Thomas, S., & Rich M. W. (2007). Epidemiology, pathophysiology, and prognosis of heart failure in the elderly. *Heart Fail Clin*, 3(4), 381-387.
- Thompson, P. D., Franklin B. A., Balady G. J., Blair S. N., Corrado D., Estes N. M., Fulton J. E., Gordon N. F., Haskell W. L., & Link M. S. (2007). Exercise and acute cardiovascular events placing the risks into perspective: A scientific statement from the american heart association council on nutrition, physical activity, and metabolism and the council on clinical cardiology. *Circulation*, 115(17), 2358-2368.

- Thompson, W. R., Gordon N. F., & Pescatello L. S. (2010). *Acsm's guidelines for exercise testing and prescription* (8th ed.): American college of sports medicine.
- Tiedemann, A., Sherrington C., Close J. C. T., & Lord S. R. (2011). Exercise and sports science australia position statement on exercise and falls prevention in older people. *Journal of Science and Medicine in Sport* 14(6), 489–495.
- Tilburg, J. H. O. V., Sandkuijl L. A., Strengman E., Someren H. V., Rigtters-Aris C. A. E., Pearson P. L., Haeften T. W. V., & Wijmenga C. (2003). A genome-wide scan in type 2 diabetes mellitus provides independent replication of a susceptibility locus on 18p11 and suggests the existence of novel loci on 2q12 and 19q13. *Journal of Clinical Endocrinology and Metabolism*, 88(5), 2223 - 2230.
- Triantafyllou, A., Douma S., Petidis K., Doumas M., Panagopoulou E., Pырpasopoulou A., Tsotoulidis S., & Zamboulis C. (2010). Prevalence, awareness, treatment and control of hypertension in an elderly population in greece. *Rural Remote Health*, 10(2), 1225-1230.
- Tsigos, C., Hainer V., Basdevant A., Finer N., Fried M., Mathus-Vliegen E., Micic D., Maislos M., Roman G., Schutz Y., Toplak H., & Zahorska-Markiewicz B. (2008). Management of obesity in adults: European clinical practice guidelines. *Obes Facts*, 1(2), 106-116.
- Turner, K. (2013). *The effect of the stoplight diet and mode of intervention on blood glucose and hemoglobin a1c levels in overweight and obese non-diabetic veterans participating in the aspire-va study*. (M.S M.S), California State University, Long Beach, Ann Arbor. ProQuest Dissertations & Theses Global database.
- Tw, L., Is K., & Kj L. (2006). Health promotion behaviors and quality of life among community dwelling elderly in korea *Journal stud* 43(3), 293-300
- van der Bij, A. K., Laurant M. G. H., & Wensing M. (2002). Effectiveness of physical activity interventions for older adults: A review. *American Journal of Preventive Medicine*, 22(2), 120-133.
- Varela, S., Aya'n C., Cancela J. M., & Marti'n V. (2011). Effects of two different intensities of aerobic exercise on elderly people with mild cognitive impairment: A randomized pilot study. *Clinical Rehabilitation*, 26(5), 442-450.
- Vásquez, E., Batsis J. A., Germain C. M., & Shaw B. A. (2014). Impact of obesity and physical activity on functional outcomes in the elderly: Data from nhanes 2005-2010. *Journal of Aging and Health*, 26(6), 1032-1046.
- Vigorito, C., & Giallauria F. (2014). Effects of exercise on cardiovascular performance in the elderly. *Frontiers in physiology*, 5(51), 1-8.

- Villareal, D. T., Apovian C. M., Kushner R. F., & Klein S. (2005). Obesity in older adults: Technical review and position statement of the american society for nutrition and naaso, the obesity society. *The American Journal of Clinical Nutrition*, 82(5), 923-934.
- Villareal, D. T., Chode S., Parimi N., Sinacore D. R., Hilton T., Armamento-Villareal R., Napoli N., Qualls C., & Shah K. (2011). Weight loss, exercise, or both and physical function in obese older adults. *New England Journal of Medicine*, 364(13), 1218-1229.
- Vivodtzev, I., Pison C., Guerrero K., Mezin P., Maclet E., Borel J.-C., Chaffanjon P., Hacini R., Chavanon O., Blin D., & Wuyam B. (2011). Benefits of home-based endurance training in lung transplant recipients. *Respiratory Physiology & Neurobiology*, 177(2), 189-198.
- Voukelatos, A., Merom D., Sherrington C., Rissel C., Cumming R. G., & Lord S. R. (2015). The impact of a home-based walking programme on falls in older people: The easy steps randomised controlled trial. *Age and Ageing*, 44(3), 377-383.
- Vries, N. M. d., Ravensberg C. D. v., Hobbelenb J. S. M., Rikkert M. G. M. O., Staala J. B., & Sanden M. W. G. N.-v. d. (2012). Effects of physical exercise therapy on mobility, physical functioning, physical activity and quality of life in community-dwelling older adults with impaired mobility, physical disability and/or multi-morbidity: A meta-analysis. *Ageing Research Reviews* 11(1), 136–149.
- Walker, M. H., Murimi M. W., Kim Y., Hunt A., Erickson D., & Strimbu B. (2012). Multiple point-of-testing nutrition counseling sessions reduce risk factors for chronic disease among older adults. *J Nutr Gerontol Geriatr*, 31(2), 146-157.
- Wallace, J. P. (2003). Exercise in hypertension. *Sports Medicine*, 33(8), 585-598.
- Wanderley, F. A. C., Oliveira N. L., Marques E., Moreira P., Oliveira J., & Carvalho J. (2013). Aerobic versus resistance training effects on health-related quality of life, body composition, and function of older adults. *Journal of Applied Gerontology*, 8(3), 1-8.
- Waryasz, G. R., & McDermott A. Y. (2010). Exercise prescription and the patient with type 2 diabetes: A clinical approach to optimizing patient outcomes. *Journal of the American Academy of Nurse Practitioners* 22(4), 217–227.
- Watson, R. R. (2009). *Hand book of nutrition in the aged* (4th ed ed.). New York USA: Taylor & Francis Group LLC.
- Watts, G. F., Gidding S., Wierzbicki A. S., Toth P. P., Alonso R., Brown W. V., Bruckert E., Defesche J., Lin K. K., Livingston M., Mata P., Parhofer K. G., Raal F. J., Santos R. D., Sijbrands E. J. G., Simpson W. G., Sullivan D. R., Susekov A. V., Tomlinson B., Wiegman A., Yamashita S., & Kastelein J. J. P. (2014). Integrated guidance on the care of familial hypercholesterolemia

from the international fh foundation. *Journal of Clinical Lipidology*, 8(2), 148-172.

Wells, J. L., & Dumbrell A. C. (2006). Nutrition and aging: Assessment and treatment of compromised nutritional status in frail elderly patients. *Clinical interventions in aging*, 1(1), 67-79.

Whelton, P. K., Appel L. J., Espeland M. A., Applegate W. B., Ettinger Jr W. H., Kostis J. B., Kumanyika S., Lacy C. R., Johnson K. C., & Folmar S. (1998). Sodium reduction and weight loss in the treatment of hypertension in older persons: A randomized controlled trial of nonpharmacologic interventions in the elderly (tone). *Jama*, 279(11), 839-846.

Whelton, S. P., Hyre A. D., Pedersen B., Yi Y., Whelton P. K., & He J. (2005). Effect of dietary fiber intake on blood pressure: A meta-analysis of randomized, controlled clinical trials. *Journal of hypertension*, 23(3), 475-481.

WHO. (2002). Diet, nutrition and the prevention of chronic diseases. 1, from <http://www.fao.org/DOCREP/005/AC911E/ac911e08.htm>

WHO. (2008). Waist circumference and waist-hip ratio : Report of a who expert consultation. Geneva

WHO. (2009). *Women and health: Today's evidence tomorrow's agenda*: World Health Organization.

WHO. (2010). Global recommendations on physical activity for health. from http://whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf

WHO. (2013). High blood pressure-country experiences and effective interventions utilized across the european region. from <http://apps.who.int/iris/bitstream/10665/108619/1/e96816.pdf>

Wijman, C. A., Westendorp R. G., Verhagen E. A., Catt M., Slagboom P. E., de Craen A. J., Broekhuizen K., van Mechelen W., van Heemst D., & van der Ouderaa F. (2013). Effects of a web-based intervention on physical activity and metabolism in older adults: Randomized controlled trial. *Journal of medical Internet research*, 15(11), 233-257.

Williams, C. A., Benden C., Stevens D., & Radtke T. (2010). Exercise training in children and adolescents with cystic fibrosis: Theory into practice. *International journal of pediatrics*, 2010(1), 1-7.

Wilund, K. R., Colvin P. L., Phares D., Goldberg A. P., & Hagberg J. M. (2002). The effect of endurance exercise training on plasma lipoprotein ai and lipoprotein ai:Aii concentrations in sedentary adults. *Metabolism*, 51(8), 1053-1060.

Wing, R. R., & Hill J. O. (2001). Successful weight loss maintenance. *Annual review of nutrition*, 21(1), 323-341.

- Witham, M. D., & Avenell A. (2010). Interventions to achieve long-term weight loss in obese older people: A systematic review and meta-analysis. *Age and Ageing*, 39(2), 176-184.
- Wojtowicz, A., & Ranson K. v. (2006). Psychometric evaluation of two scales examining muscularity concerns in men and women. *Psychology of Men & Masculinity*, 7(1), 56-66.
- Wolff, J. L., Starfield B., & Anderson G. (2002). Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. *Archives of internal medicine*, 162(20), 2269-2276.
- Woo, E.-k., Han C., Jo S. A., Park M. K., Kim S., Kim E., Park M. H., Lee J., & Jo I. (2007). Morbidity and related factors among elderly people in south korea: Results from the ansan geriatric (age) cohort study. *BMC Public Health*, 7(1), 1-9.
- Woodard, G. A., Brooks M. M., Barinas-Mitchell E., Mackey R. H., Matthews K. A., & Sutton-Tyrrell K. (2010). Lipids, menopause, and early atherosclerosis in study of women's health across the nation heart women. *Menopause*, 18(4), 376-384.
- Woods, J. A., Ceddia M. A., Wolters B. W., Evans J. K., Lu Q., & McAuley E. (1999). Effects of 6 months of moderate aerobic exercise training on immune function in the elderly. *Mechanisms of Ageing and Development*, 109(1), 1 - 19.
- Yates, T., Davies M., Gorely T., Bull F., & Khunti K. (2009). Effectiveness of a pragmatic education program designed to promote walking activity in individuals with impaired glucose tolerance a randomized controlled trial. *Diabetes Care*, 32(8), 1404-1410.
- Yazdanpanah, B., Safari M., Yazdanpanah S., Angha P., Karami M., Emadi M., Yazdanpanah S., & Poorbehesht A. (2012). The effect of participatory community-based diabetes cares on the control of diabetes and its risk factors in western suburb of yasouj, iran. *Health Education Research*, 27(5), 794-803.
- Yim, K. S. (2008). The effects of a nutrition education program for hypertensive female elderly at the public health center. *Korean Journal of Community Nutrition*, 13(5), 640-652.
- Yin, Z., Geng G., Lan X., Zhang L., Wang S., Zang Y., & Peng M. (2013). Status and determinants of health behavior knowledge among the elderly in china: A community-based cross-sectional study. *BMC Public Health*, 13(710), 1-10.
- Ylonen, K., Saloranta C., Kronberg-Kippila C., Groop L., & et al. (2003). Associations of dietary fiber with glucose metabolism in nondiabetic relatives of subjects with type 2 diabetes: The botnia dietary study. *Diabetes Care*, 26(7), 1979-1985.

- Yoon, H. J., & Lee S. K. (2006). Effect of home-visit nutrition education for the elderly with high fasting blood glucose levels. *Korean Journal of Community Nutrition, 11*(3), 346-360.
- Young, A., & Dinan S. (2005). Activity in later life. *BMJ 330*(7484), 189-191.
- Young, D. R., Haskell W. L., Taylor C. B., & Fortmann S. P. (1996). Effect of community health education on physical activity knowledge, attitudes, and behavior the stanford five-city project. *American journal of epidemiology, 144*(3), 264-274.
- Yu, F., Nelson N. W., Savik K., Wyman J. F., Dysken M., & Bronas U. G. (2013). Affecting cognition and quality of life via aerobic exercise in alzheimer's disease. *Western Journal of Nursing Research, 35*(1), 24-38.
- Zamboni, M., Mazzali G., Fantin F., Rossi A., & Di Francesco V. (2008). Sarcopenic obesity: A new category of obesity in the elderly. *Nutrition, Metabolism and Cardiovascular Diseases, 18*(5), 388-395.
- Zhang, B., Sakai T., Noda K., Kiyonaga A., Tanaka H., Shindo M., & Saku K. (2003). Multivariate analysis of the prognostic determinants of the depressor response to exercise therapy in patients with essential hypertension. *Circ J, 67*(7), 579-584.
- Zhang, L., Qin L.-Q., Liu A.-P., & Wang P.-Y. (2010). Prevalence of risk factors for cardiovascular disease and their associations with diet and physical activity in suburban beijing, china. *Journal of epidemiology, 20*(3), 237-243.
- Zhao, G., Ford E., Li C., & Balluz L. (2011). Physical activity in u.S. Older adults with diabetes mellitus: Prevalence and correlates of meeting physical activity recommendations. *J Am Geriatr Soc, 59*(1), 132-137.
- Zhao, S. (2011). *Community health education and health promotion*. Beijing: Peking University Medical Press.
- Zhao, W., Gong W., Wu N., Li Y., Ye K., Lu B., Zhang Z., Qu S., Li Y., & Yang Y. (2014). Association of lipid profiles and the ratios with arterial stiffness in middle-aged and elderly chinese. *Lipids Health Dis, 13*(37), 2-6.
- Ziaee, A., Afaghi A., & Sarreshtehdari M. (2011). Effect of low glycemic load diet on glycated hemoglobin (hba1c) in poorly-controlled diabetes patients. *Global journal of health science, 4*(1), 211-216.