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**Faculty of Nursing & Health Sciences**

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# Diet is a cause of depression

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## Dedication:

We all suggested dedicating our work to the (faculty of Nursing and Health Sciences) in the Islamic University of Lebanon-khaldeh branch.

By names we have the honor to dedicate this research for:

Prof: Dr. Adnan Mourad

Vice dean: Dr. Taghrid Shaaban

Supervisor: Mrs. Rola Hallal

Students of IUL and all over readers…

## Acknowledgment

Before we make our last step in IUL life, progress deepest thanks and gratitude and respect to our doctors and instructors and everyone who have given us a lot of support and encouragement and made a big effort in building tomorrows generation to send a nation again.

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## Outline

**Abstract**

**Objective:** Diet has been evolved throughout the last decade. This study is aimed to determine the effect of diet on psychological behaviors especially on mood that may revealed by depression

**Methods:** This is a descriptive analysis study, carried out in 5 diet clinical centers in Beirut region and mountain of Lebanon on 50 adult women & men between 20 and 40 year old age were chosen randomly. The data were collected through a Socio-Demographic & Multidimensional questions by means of face-to-face interview. Closed-ended questionnaire used to collect the data.

**Results:** The main outcome variable for this study was identifying early signs and symptoms of depression among people undergoing diet. This was assessed in one way by interview and filling a questionnaire.

Results showed that 26% of target population were in secondary educational level. 56% the diet was the first experience of them. 48% the most cause of diet was overweight. 36% the diet affected their activity. 24% were feeling excited and satisfied after diet. 48% were showed aggressive behaviors during and after diet. 60% were had predictable loose of weight. 90% were feeling depression that who on unhealthy diet.

Conclusions: Diet itself has no direct effect on depression. However, unhealthy diet and lack of needed and essential nutritional composition of body may be the cause of psychological changes. Therefore, our next step should study on more scientific aspect. To analyze the effect of nutritional deficit during diet on mood and psychological changes.

## Introduction:

Depression is characterized by feelings of worthlessness or guilt, poor concentration, loss of energy, fatigue, thought of suicide or preoccupation with death, loss or increase of appetite and weight and a disturbed sleep pattern.

Depression is a mental illness that is characterized by negative thoughts and behaviors. Mental illness is a worldwide epidemic. Food is one essential way in which you can control your epigenetic profile. Because the most causes of depression are: Genes, diet, Life events, stress and trauma. https://nutritionstudies.org/diet-to-fight-depression/

A healthy diet may reduce the risk of severe depression, and it is associated with a lower prevalence of depressive symptoms during the follow-up period.

While Unhealthy diet can be associated with an increased prevalence of elevated depressive symptoms such as: Suicidal attempts, anorexia, social isolation, familiar isolation

**Research objective**: To assess the people under diet was complaining of depression symptoms or not.

**Hypothesis 1:** Unhealthy diet is a major cause of depression.

## Background

Few people are aware of the connection nutritional deficiencies and physical illness. Depression is more typically thought of as strictly biochemical-based or emotionally-based. On the opposite, nutritional deficiencies can play a role in the onset as well as severity and duration of depression. Many of the easily food patterns that come before depression are the same as those that occur during depression. These may include poor appetite, skipping meals, and a dominant desire for sweet foods etc.,

The most common nutritional deficiencies seen in patients undergoing diet are of omega–3 fatty acids, B vitamins, minerals, and amino acids that are precursors to neurotransmitters. Accumulating evidence from demographic studies indicates a link between high fish consumption and low incidence of psychological disorders including highest risk of having depression.

## CARBOHYDRATES

Carbohydrates are naturally occurring polysaccharides and play an important role in structure and function of an organism. In higher organisms (human), they have been found to affect mood and behavior. Eating a meal which is rich in carbohydrates triggers the release of insulin in the body. Insulin helps let blood sugar into cells where it can be used for energy and simultaneously it triggers the entry of tryptophan to brain. Tryptophan in the brain affects the neurotransmitters levels.

## PROTEINS

Proteins are made up of amino acids and are important building blocks of life. A high quality protein diet contains all essential amino acids. Foods rich in high quality protein include meats, milk and other dairy products, and eggs. Plant proteins such as beans, peas, and grains may be low in one or two essential amino acids. Protein intake and in turn the individual amino acids can affect the brain functioning and mental health. Many of the neurotransmitters in the brain are made from amino acids. The neurotransmitter dopamine is made from the amino acid tyrosine and the neurotransmitter serotonin is made from the tryptophan if there is a lack of any of these two amino acids, there will not be enough synthesis of the respective neurotransmitters, which is associated with low mood and aggression in the patients.

**ESSENTIAL FATTY ACIDS:** Omega-3 fatty acids. The brain is one of the organs with the highest level of lipids (fats). Brain lipids, composed of fatty acids, are structural constituents of membranes. Experimental studies have revealed that diets lacking omega-3 PUFA lead to considerable disturbance in neural function

### Folate

It has been observed that patients with depression have blood folate levels, which are, on an average, 25% lower than healthy controls. Low levels of folate have also been identified as a strong predisposing factor of poor outcome with antidepressant therapy

### Chromium

Many studies on the association of chromium in humans depression have been recorded which indicate the significance of this micronutrient in mental health.

### Iodine

Iodine plays an important role in mental health. The iodine provided by the thyroid hormone ensures the energy metabolism of the cerebral cells. During pregnancy, the dietary reduction of iodine induces severe cerebral dysfunction, eventually leading to cretinism.

### Iron

Iron is necessary for oxygenation and to produce energy in the cerebral parenchyma (through cytochrome oxidase), and for the synthesis of neurotransmitters and myelin

### Lithium

The role of lithium has been well known in psychiatry, its choice for bipolar disorder with animatic, antidepressant, and anti-suicidal property.

## Zinc

Zinc participates among others in the process of gustation (taste perception). At least five studies have shown that zinc levels are lower in those with clinical depression.

## OTHER PHYSIOLOGICAL AND PSYCHOSOCIAL FACTORS

Another point of view related to diet and depression involves old age, which is a time of vulnerability to unintentional weight loss, a factor that is often linked to increased morbidity and premature death. Anorexia of aging may play an important role in precipitating this, by either reducing food intake directly or reducing food intake in response to such adverse factors as age-associated reductions in sensory perception (taste and smell), poor dentition, use of multiple prescription drugs, and depression. Malnutrition in elderly, in both institutional and community settings, due to refusal to eat, They suggest physiologic changes associated with aging, mental disorders such as dementia and depression, and medical, social, and environmental as causative factors.

## Literature review

A recent study that was published in the University of Melbourne in Australia in 14/3/2014 compared those whose diet included mostly processed foods like fried food, sugary products, and refined grains with people who ate a more healthy diet. The study found that the group that ate mostly processed foods was approximately 50% more likely to have depression. **(http://www.apa.org/moniter/2017/09/food-mental.aspx)**

Other study done in Australia, Dakin University on January 30, 2017 was done by the journal BMC Medicine they call it **THE SMILES TRIAL.**It was recruited on 67 men and women who are relatively eating unhealthy diet. The study showed that 50% of people was complaining with moderate to severe depression symptoms can improve and correct their mood by eating healthier diet. **(http://www.sciencedaily.com/releases/2013/09/130916103530.htm)**

And a new study was done by the university of Barcelona's department of nutrition in (November, 2, 2017) included 60 children who are on diet consuming fast food, sugar and soft drinks. This study found that children who ate fewer vegetables, fruits, fatty fish and other foods associated with the Mediterranean diet were more likely to have (ADHD) Attention – deficit/hyperactivity disorder. **(http://www.apa.org/moniter/2017/09/food-mental.aspx)**

## Methodology

1. Design: we are using descriptive analysis study design in our proposal to know and get back to event that already happened with target population on diet related to depression symptoms.

   Dependent Variables: People on Diet

   Independent variables: Depression symptoms

   Included criteria: Adult people on diet

   Excluded criteria: Any person with any chronic illness or on medication therapy

2. Sample and setting: questionnaire and a consent form were used to meet the requirement of this study by getting registered accurate information in a short duration of time, and privacy to be well maintained by mentioning no names and permission from the management by a consent form 50 males and females were interviewed.

3. Data analysis: an excel program was used for data analysis.

4. Ethical consideration: our main purpose was the privacy of our patients to make sure information are accurate and heart sourced in addition to gain patients trust by touching only medical not personal information.

5. Procedure: Data will be collected by interviewing people and filling the questionnaire over 5 clinics (3in Beirut and 2in mountain of Lebanon).

## Results

Demographic Data

| | Sex | | Age | | |
|---|---|---|---|---|---|
| | Female<br>Male | | 18 years | between 20-30 | between 30-40 |
| Total | 26 | 24 | 15 | 25 | 10 |
| Average | 52% | 48% | 30% | 50% | 20% |
| Count | 50 | 50 | 50 | 50 | 50 |
| Mean | 38 | 37 | 33 | 37 | 30 |
| SD | 12 | 13 | 17 | 13 | 20 |

Table1: Socio-Demographic Data of target population

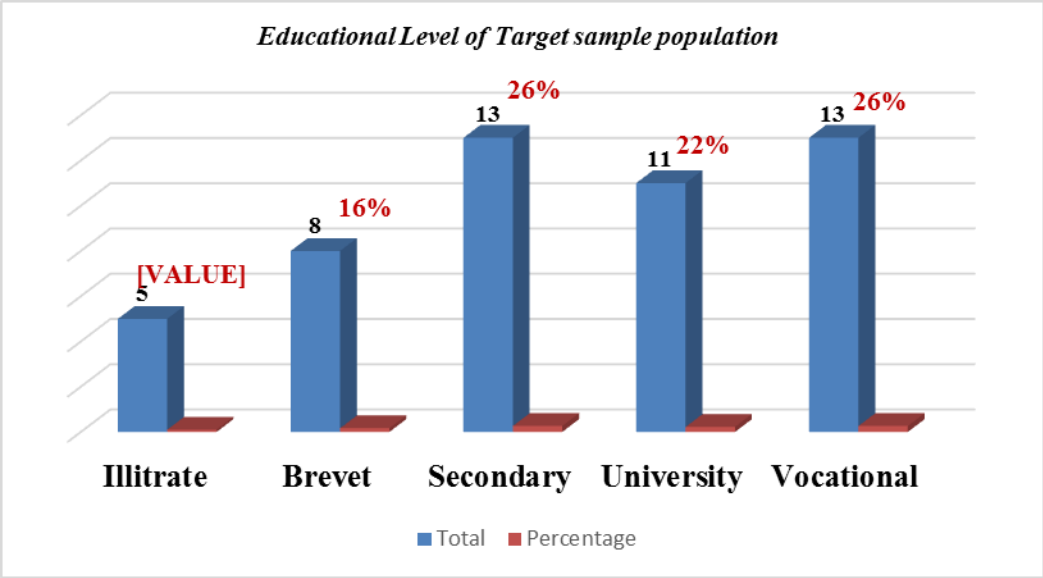


**Figure 1**: This figure showed that 26% of target population were on secondary & vocational educational level

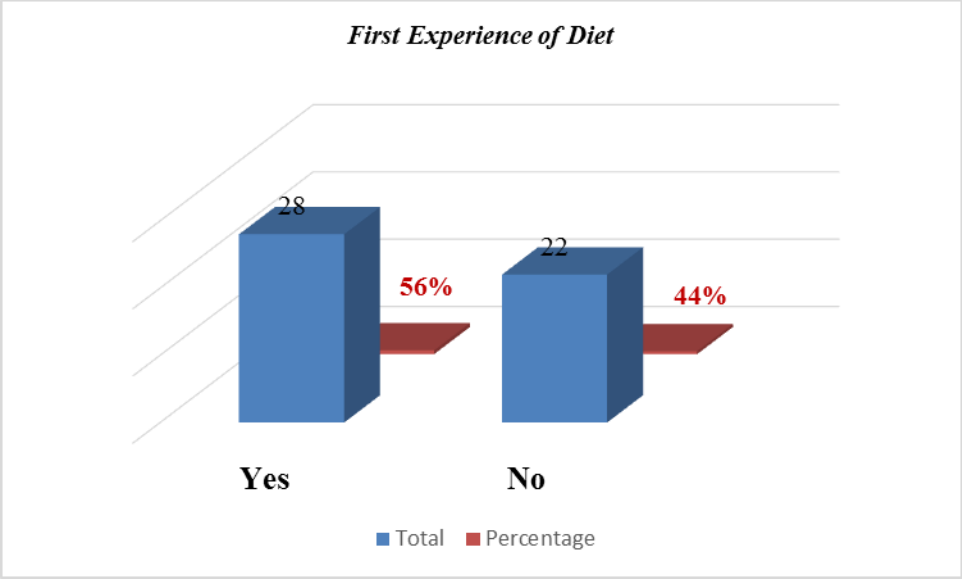


**Figure 2:** This figure showed that 56% of target population were on the first experience of diet

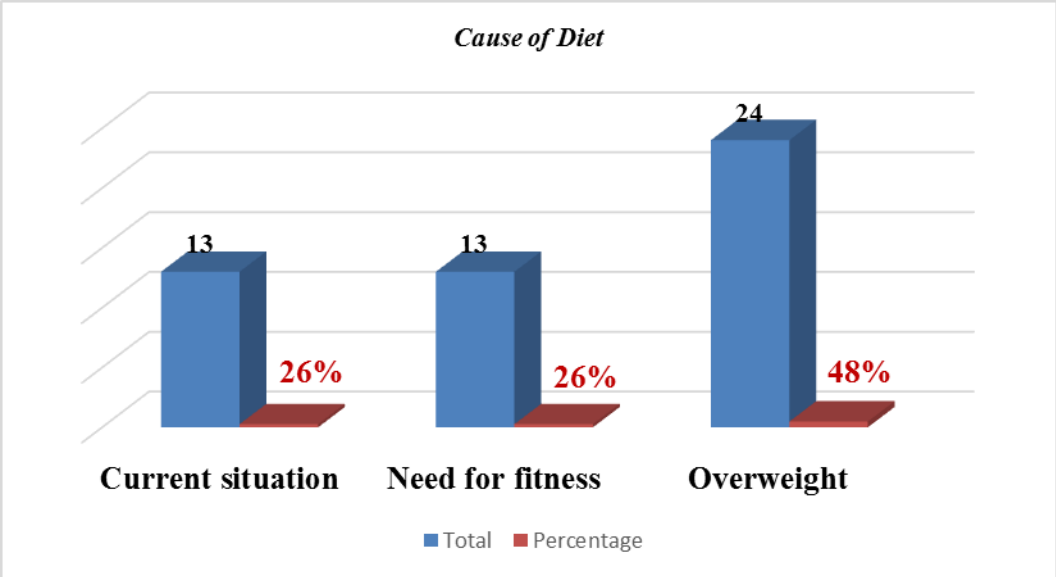


**Figure 3:** This figure showed that 48 % of target population were had overweight as a cause of diet

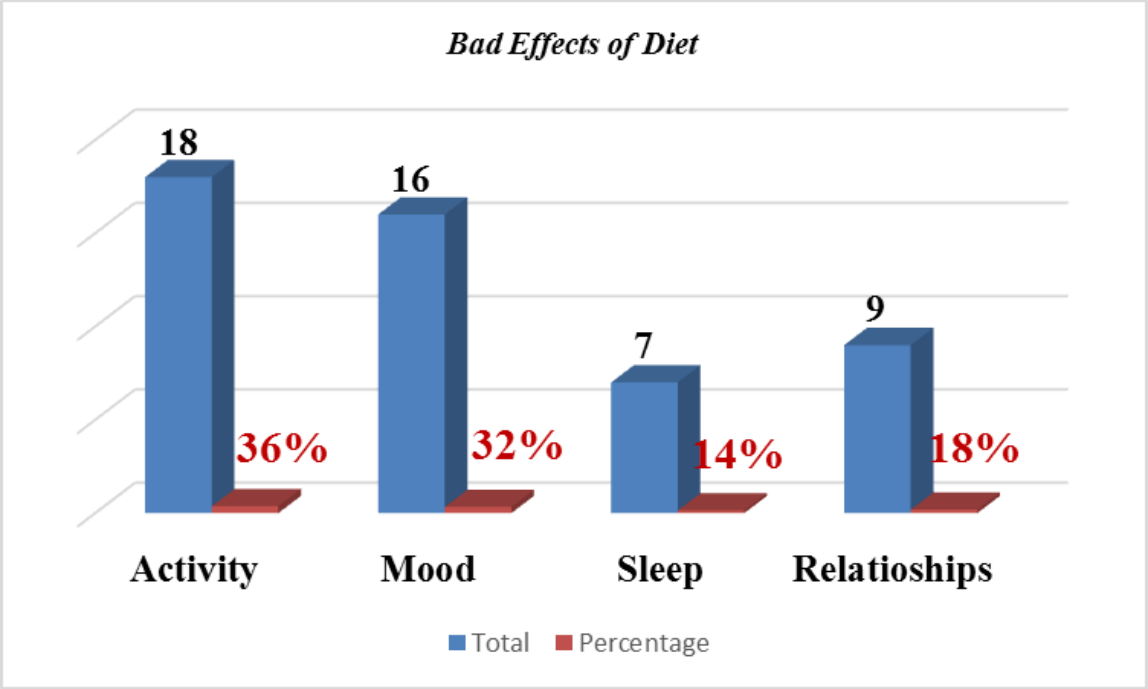


**Figure 4:** This figure showed that 36 % of target population were had activity changes as a bad effect of diet

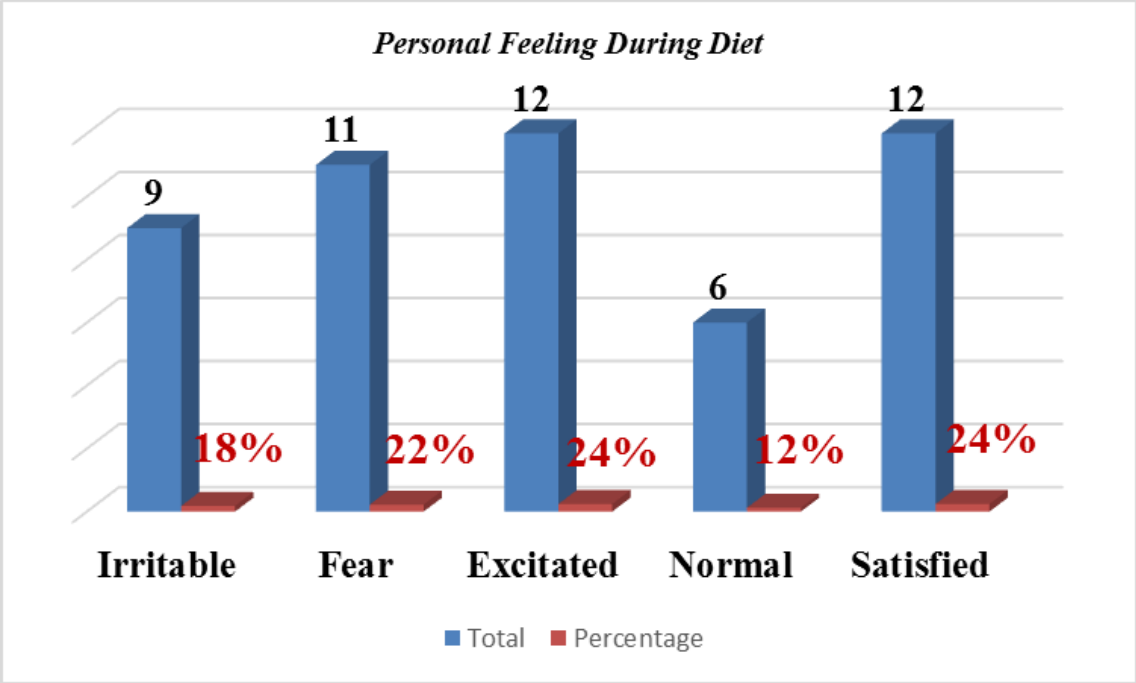


**Figure 5:** This figure showed that 24 % of target population were excited and satisfied during diet.

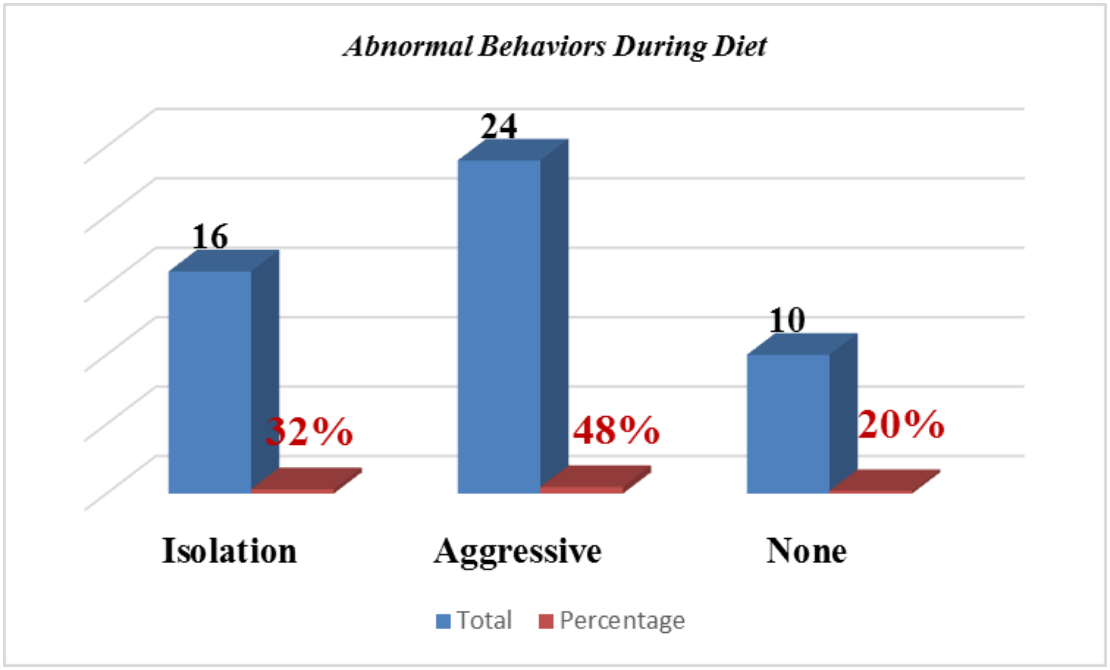


**Figure 6:** This figure showed that 48 % of target population had feeling of aggressive during diet.

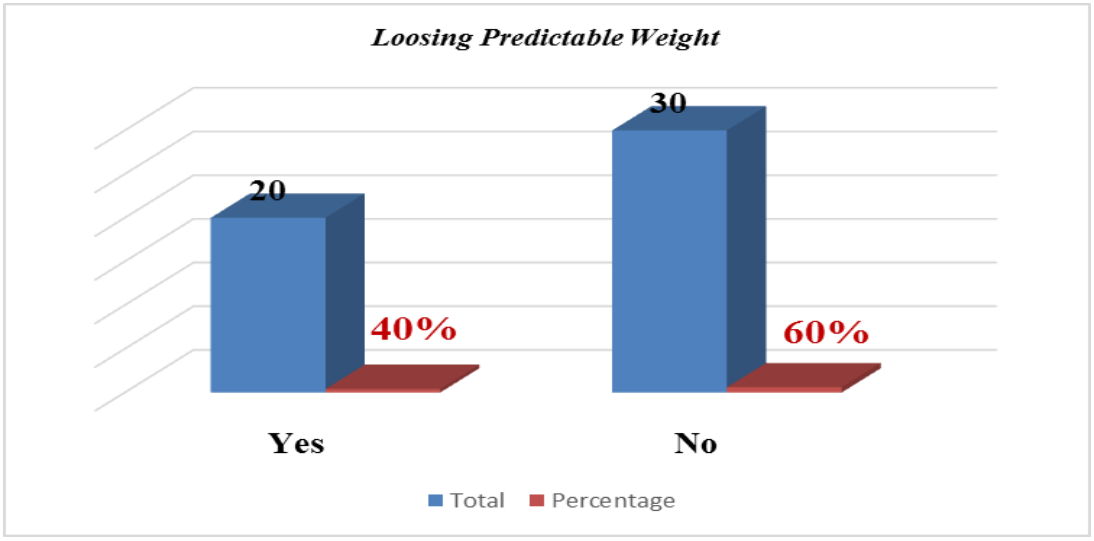


**Figure 7: This figure showed that 60 % of target population were predictable weight loss after diet**

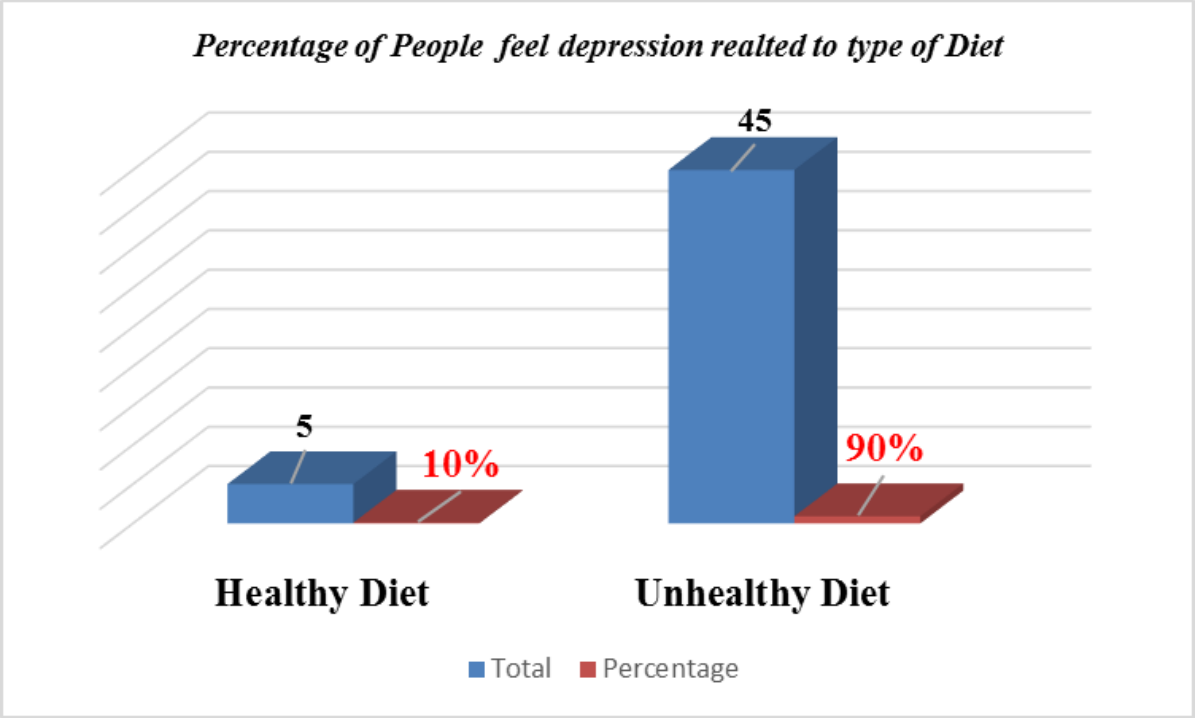


**Figure 8:** This figure showed that 90 % of target population who have unhealthy diet were had feeling of depression

## Discussion

Based on prevalence of diet behavior in the Lebanese population, it is important to understand and discuss all results in our study.

Results were obtained concerning both demographic and correlation data, and despite the significantly small sample number of 50 respondents we were able to analyze, and correlate data to reach a convincing inquiry about why adult people on diet are experiencing feeling of depression.

1) According to 1st study in the literature that was published in the University of Melbourne in Australia in 14/3/2014 compared those whose diet included mostly processed foods like fried food, sugary products, and refined grains with people who ate a more healthy diet. The study found that the group that ate mostly processed foods was approximately 50% more likely to have depression. Comparing to our study 90% of target population had a feeling of depression where they on unhealthy diet. This approve that lack of healthy food may affect psychological status and this needs more scientific researches.

2) Based on the other study done in Australia, Dakin University on January 30, 2017. It was recruited on 67 men and women who are relatively eating unhealthy diet. The study showed that 50% of people was complaining with moderate to severe depression symptoms can improve and correct their mood by eating healthier diet. In our study diet 36% of people was effected by diet on activity more and showed clearly that mood were effected and corrected by healthy food. This need more detectable information in other studies.

3) Comparing to the study that was done by the university of Barcelona's department of nutrition in (November, 2, 2017.) It included 60 children who are on diet consuming fast food, sugar and soft drinks. This study found that children who ate fewer vegetables, fruits, fatty fish and other foods associated with the Mediterranean diet were more likely to have (ADHD) Attention –deficit/hyperactivity disorder. Our study showed 48% were aggressive during diet without knowing the cause. This may reflect the scientific rationale of vegetable deficiency that may has a direct effect of hyperactivity disorder.

## Conclusion

Diet may not be the legal cause of depression. More statically analysis are needed to investigate people on diet closely. Medical record should be reviewed well to approve that unhealthy diet and lack of essential nutritional materials can effect psychological status. We recommended that education for people about diet and their side effects and follow up is so important to be safe and away from any undesired problem.

# Appendix

# References


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