

Efficacy of Implementing Acupressure Technique on Weight Reduction among Obese Adolescent

Nahed Khamies Mohamed¹, Nora Abd -Elhamed Zaki² & Maha Hosny Elshater³

¹Lecturer of Pediatric Nursing, Faculty of Nursing, Assuit University, Egypt.

²Assistant Professor of Pediatric Nursing, Faculty of Nursing, Assuit University, Egypt.

³Lecturer of Pediatric Nursing, Faculty of Nursing, Alexandria University, Egypt

Abstract

Background: - Obesity is a serious, refractory, and prevalent health problem attributable to sedentary lifestyles and consumption of high-fat foods, and associated with a substantial amount of morbidity and mortality. Acupressure can control appetite, improve digestion and increase metabolism by applying pressure to specific points on the body. **The present study was aimed** to determine the efficacy of implementing acupressure technique on weight reduction among obese adolescent. **Subjects and Method: Design:** A quasi-experimental research design was utilized in **the present study. Setting:** the study was conducted at obesity unit at Assiut University Hospital. **Study sample:** A convenience sampling of 60 children with obesity aging $12 \leq 18$ years were divided into two groups study and control group (30 children for each group). The current study started from the beginning of August 2021 till the end of November 2021. Two tools were utilized; Tool I, A structured questionnaire sheet. Tool II: Anthropometric measurement: weight and height measurement and estimated Body mass index (BMI) of studied children. **Results:** Highly statistically significant difference in BMI of studied' children were found after implementation of acupressure with P. Value <0.001 when compared to children in the control group **Conclusion:** Implementation of acupressure technique in children with obesity who were receiving routine hospital care led to highly significant reduction in the mean scores of body mass index in comparison to adolescent who received routine hospital care only **Recommendations:** Encourage health care professionals to implementing acupressure technique to reduce weight among obese adolescent children.

Keywords: *Acupressure, Weight reduction, Obesity, Adolescent & Children*

Introduction

Obesity is a condition in which excess body fat has accumulated to such an extent that it may have a negative effect on health. Adolescent obesity has become a major global epidemic that imposes a substantial social and health burden worldwide. Over 340 million children and adolescent aged 5-19 years were obese in 2016. The most common cause of obesity throughout childhood and adolescence is an inequity in energy balance that is excess caloric intake without appropriate caloric expenditure. Adiposity rebound (AR) in early childhood is a risk factor for obesity in adolescence and adulthood (National Center for Health Statistics, 2016).

Obesity can affect all aspects of children and adolescents not limited to their psychological and cardiovascular health and also their overall physical health. The association between obesity and morbid outcomes makes it a public health concern for adolescents. Consequently, it is associated with several comorbidity conditions such as hypertension, hyperlipidemia, diabetes, sleep apnea, poor self-esteem, and even serious forms of depression. In addition, children with obesity who were followed-up

to adulthood were much more likely to suffer from cardiovascular and digestive diseases. The increase in body fat also exposes the children to increase in the risk of numerous forms of cancers, such as breast, colon, esophageal, kidney, and pancreatic cancers (Ginsberg, et al., 2016)

Pathophysiology of obesity is complex that results from a combination of individual and societal factors. At the individual level, biological, and physiological factors in the presence of ones' own genetic risk influence eating behaviors and tendency to gain weight. Societal factors include influence of the family, community and socio-economic resources that further shape these behaviors. Body mass index (BMI) is an inexpensive method to assess body fat (Frank & Soliman, (2017).

Acupressure is a non-invasive technique that uses fingers to rub, squeeze, pinch and press on different acupressure points on the body and also it's done by stimulating these points through massage therapy. (Chuang, 2013) . Acupressure is part of the ancient practice of traditional Chinese medicine and has been practiced in China for more than 2000 years, but is only recently beginning to gain acceptance by

Western Medical Practitioners (WMP) as a legitimate means of treating symptoms of illness. It is a very popular complementary therapy at present and plays an important role in multidisciplinary approach to the treatment and management of various symptoms ([Vickers & Linde, 2014](#)).

The art of acupressure technique that there exist special acupoints or acupressure points, which lie along meridians or channels in children body. It is believed that through these invisible channels flows vital energy or a life force called qi (ch'i). It is also believed that these meridians connect specific organs or networks of organs, organizing a system of communication throughout the body. The meridians begin at the fingertips, connect to the brain and then connect to an organ associated with a certain meridian. By applying acupressure to certain points, it is thought to improve the flow of qi and therefore health ([Janseen et al., 2014](#)).

Traditional Chinese medicine practitioners believe that gaining weight is caused by an energy imbalance within the body. Acupressure stimulates the acupoints of the body surface to boost energy or Qi. Hence, it can create comfort and positive benefits for health. Since acupressure is designed to restore this balance, it is thought that it can help reduce overall weight in people who are overweight or [obese](#) and using other ways to lose weight ([Soong, 2017](#)).

Many people are not aware of the reason why some child gain weight easily while others manages to stay slim. The body type of a person is determined by their metabolic rate. A child with a high metabolic rate is capable of burning fat and calories faster, even when the body is in rest. On the other hand, a low metabolic rate does not utilize the calories for energy and it is stored away and deposited as excess fat in the body. Acupressure is known to stimulate the energy flow in the body to improve metabolism, and thereby aid in weight loss ([Shafshak, \(2015\)](#)).

Educating nurses about this technique is important. Nurses can use acupressure as noninvasive, safe, well-studied, and effective treatment modalities in their practice. Acupressure can incorporate as an advanced clinical preparation for nurses and a program for continuing education. Nursing managers should establish the policies or protocols that involve acupressure therapy as a standard of care for children in wards. Consequently, it is thought that acupressure intervention will decrease such symptoms experienced by children and increase the quality of life ([Lin, 2016](#)).

Learning acupressure techniques for self-care allows the practitioner nurse to gain confidence and experience that can be brought to the clinical setting. While she takes some advanced training to reap all the benefits of acupressure ([Oleson, 2015](#)).

Integrative nursing practice uses evidence-based practice to promote child ability to heal, emphasizing the use of the least invasive interventions. Integrative practice allows nurses to use acupressure alone or in conjunction with other approaches to treat moderate to severe symptoms. Nurses are encouraged to check with their state boards of nursing regarding the use of integrative therapies. In many states, integrative therapies are within a nurse's scope of practice; some state boards clarify this on their web sites ([National Health and Nutrition Examination Survey \(NHANES\), 2017](#)).

Significance of study

Obesity is becoming more prevalent globally. It remains a major critical public health problem in industrialized countries because of its association with multiple chronic disorders. Over 340 million children and adolescent aged 5-19 years were obese in 2016 ([National Center for Health Statistics , 2016](#)). To prevent obesity, strategies should target obese children, Acupressure is one of such non pharmacological methods for weight reduction and also acupressure techniques are easy to teach to healthcare providers, children and their family members. It can be applied at home as it is a simple, cost-effective and safe technique and can be used for weight reduction and to improve quality of their lives.

Aim of study

The present study was aimed to determine the efficacy of implementing acupressure technique on weight reduction among obese adolescent

Research hypothesis

Implementation of acupressure technique at specific point in adolescent body with obesity will be expected to experience weight reduction than those who are receiving only routine hospital care.

Operational definition

Acupressure: It is a traditional Chinese medicine bodywork technique that involve application of pressure (as with the thumbs or fingertips) to the same discrete points on the body stimulated in [acupuncture](#) that is used for its therapeutic effects (such as weight reduction).

Subjects and Method

Research design

A quasi-experimental research design was used to conduct this study.

Setting

This study was conducted at obesity unit in Assiut University Hospital.

Subjects

Convenience sampling of 60 adolescent with obesity who were selected from the previous settings. They

were divided into two group study and control group (30 children for each group).

Inclusion criteria included:-

Adolescent children ($12 \leq 18$ y) who voluntarily agree to participate in the study.

The exclusion criteria

- Children diagnosed with acute or chronic illness, cognitive disorder.
- Children who have taken a prescription drug for weight reduction within the last three months
- Children who have received other alternative therapies within the last month prior to the experiment.
- Children with skin lesions at the intervention site.

Children were divided into two groups:

Study group: Involved adolescent with obesity who received routine hospital care in addition to application of acupressure technique at specific point of children's body (30 children).

Control group: involved children with obesity who were receiving only routine hospital care (30 children).

Power analysis

A power calculation estimated that in order to detect an effect size of 3.27 difference of acupressure technique between means of two independent groups, with a p-value < 0.05 and 80% power, confidence level 0.95, a sample size of 26 children for each group was needed. However, 30 children in each group were attempted in this research work to avoid non-response rate. This calculated using G Power 3.1 (Hsieh et al., 1998).

Tools of data collection

Two tools were used for data collection, structured questionnaire sheet, body mass index scale

Tool (1): A structured questionnaire sheet

It was developed by the researchers in simple Arabic language based on the review of relevant and recent literature and included the personal characteristics of the studied children as age, gender, marital status, level of education.

Tool (2): Anthropometric measurement: weight and height measurement and estimated Body mass index (BMI): weight in kilograms divided by height in meters squared) It was adopted from (WHO, 2016), it's widely used among adolescent.

Scoring System

Below 18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Pre-obesity
30.0–34.9	Obesity class

Method of data collection

1. An official permission was obtained from the director of obesity unit, and also obtained from the director of Assiut University Hospital.

2. Informed consent from parents of participating children was obtained after explaining the nature and purpose of the study.
3. **Validity:** Tool I was tested for content validity by 5 experts; three in the field of pediatric nursing and two in pediatrics and the needed modifications were done accordingly. Their content validity index result was 97%.
4. **Reliability:** Reliability of tools I was done using the alpha Crombach's test to examine the internal consistency and found to be $R=0.731$.
5. Tool II valid and reliable by (WHO), it was ($r=0/7$, $p<0/001$).
6. **A pilot study:-** A pilot study was conducted to assess the applicability of the tools, the feasibility of the study and to estimate the time needed for data collection. It was conducted on 10 % (6) of the total participants according to the selection criteria. No changes were done in the assessment sheet, so the 6 children selected for the pilot study were included in the main study.
7. The researchers were trained by physical therapist at Assiut University Hospital for 7 days to do the acupressure technique successfully through practice and watching video and photo. The current study started from the beginning of August 2021 till the end of November 2021

Field of the work

This study was carried out through three consecutive phases: interviewing & assessment phase, implementation phase and evaluation phase. The data collection period was done for four months from the beginning of August (2021) to the end of November (2021).The researcher went to hospital two days per week from 8 am to 12 am to meet the children at obesity unit in the hospital after explaining the aim and nature of the study to adolescent children and also obtain written consent for participation in the study. The weight-reduction program extended over 8 weeks. All participants met once weekly for 20 minutes. (10 minutes for applying intervention and 10 minutes for filling questionnaire sheet). Body mass index (BMI) was measured each week.

Interviewing and Assessment Phase

During this phase, the researchers explained the aim of the study, tools components, and steps of acupressure technique.

Implementation Phase

In traditional Chinese medicine, each acupressure point on the body exists on an energy pathway called a "meridian." These meridians are named according to the various organs in the body. Each acupressure point along a meridian is named using the letters corresponding to that meridian, followed by the location of the point on the pathway. These acupressure points also have corresponding

traditional names. Below, the researcher found some of the acupressure points that are believed to influence digestion, metabolism, and other factors related to weight loss. **Acupressure technique on these points were done using the following steps:**

Zusanli (ST36)

Located along the stomach meridian, zusanli is believed to influence the organs of the upper abdomen, the parasympathetic nervous system (which controls digestion), and the overall energy of the body. This point is located below the kneecap, roughly 3 inches below and 1 inch away from the center of the body.

Figure (1) Zusanli acupoint

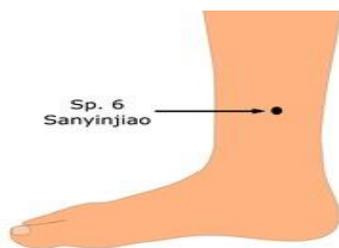


<https://www.researchgate.net/profile/Tao-Huang/location-of-the-Zusanli-acupoint-ST36.jpg>

Sanyinjiao (SP6)

Located along the spleen meridian, sanyinjiao is thought to influence the organs of the lower abdomen and the parasympathetic nervous system. This point is located roughly 3 inches above the inner ankle bone. To massage this point

Figure (2) Sanyinjiao acupoint

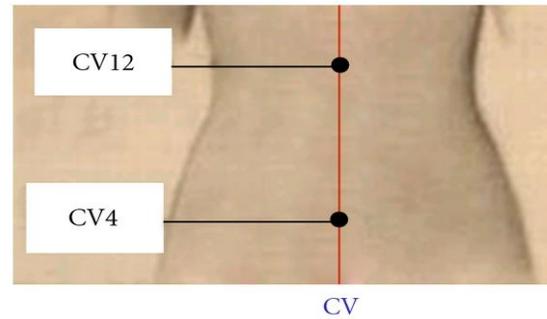


<https://image.shutterstock.com/image-vector/acupuncture-point-spleen-6-sp-260nw-1835047885.jpg>

Zhongwan (CV12)

This point is along the conception vessel meridian. Zhongwan is believed to influence the organs of the upper abdomen, as well as those related to digestion, such as the stomach and intestines. This point is located roughly four inches above the navel.

Figure (3) Zhongwan acupoint



Available at <http://www.acupressure.com/blog/wpcontent/uploads/2012/06/P1010548.jpg>

Renzhong (GV26)

Located along the governing meridian, renzhong is thought to have an influence on weight, especially obesity. This point is located on the philtrum, less than 1 inch below where the nostrils meet.

Figure (4) Renzhong acupoint



<https://www.herbalshop.com/wp-content/uploads/2015/02/gv26.png>

Xuehai (SP10)

Located along the spleen meridian, xuehai is believed to have an impact on blood sugar levels, particularly in the context of diabetes. This point is located above the kneecap, roughly two inches away from the center of the body at the bottom portion of the thigh muscle.

Figure (5) Xuehai acupoint



<http://www.tcmwindow.com/uploadFile/newsImg/2015/7/1/eb1937a4-af0d-48f6-8bb5-a23a3c13ccbb.jpg>

To massage these points

- Place two fingers on one of these points.
- Apply gentle but firm pressure to the point with both fingers.
- Use a circular motion to massage the point for 2 to 3 minutes.
- Repeat on the other side

Evaluation Phase

BMI were measured weekly until the end of intervention (8 weeks).

Ethical Considerations

Written informed consent was taken from parents of each child participating in the study and they are secured that data will be confidential and used only for the research purpose. The parents and their children had the right to withdraw their children from

the study at any time without any effect on the care provided for their children.

Statistical analysis:

The data were tested for normality using the Anderson-Darling test and for homogeneity variances prior to further statistical analysis. Categorical variables were described by **number and percent** (N, %), where continuous variables described by mean and standard deviation (**Mean, SD**). **Chi-square test** and fisher exact test used to compare between categorical variables where compare between continuous variables by **t-test** and **ANOVA TEST**. We are used person correlation to appear the association between BMI with personal data. A **two-tailed p< 0.05** was considered statistically significant all analyses were performed with the **BMI SPSS 20.0** software.

Results**Table (1): Percentage distribution of studied Adolescent regarding to their characteristic (n=60).**

Items	Study group(n=30)		Control group(n=30)	
	No	%	No	%
Age				
From 12-<14 year	9	30	10	33.3
From 14-<16 year	11	36.7	12	40.0
From 16-≤18 year	10	33.3	8	26.7
Mean±SD	15.80±1.32		15.77±1.28	
Gender				
Male	10	33.3	13	43.3
Female	20	66.7	17	56.7
Education				
Preparatory School	7	23.3	7	23.3
Secondary School	21	70.0	19	63.3
University	2	6.7	4	13.3
Birth Order				
First	14	46.7	6	20.0
Second	11	36.7	9	30.0
Third	5	16.7	15	50.0
Residence				
Rural	23	76.7	16	53.3
Urban	7	23.3	14	46.7

Chi square test for qualitative data between the two groups

Independent T-test for quantitative data between the two groups

**Significant level at P value < 0.05, **Significant level at P value < 0.01*

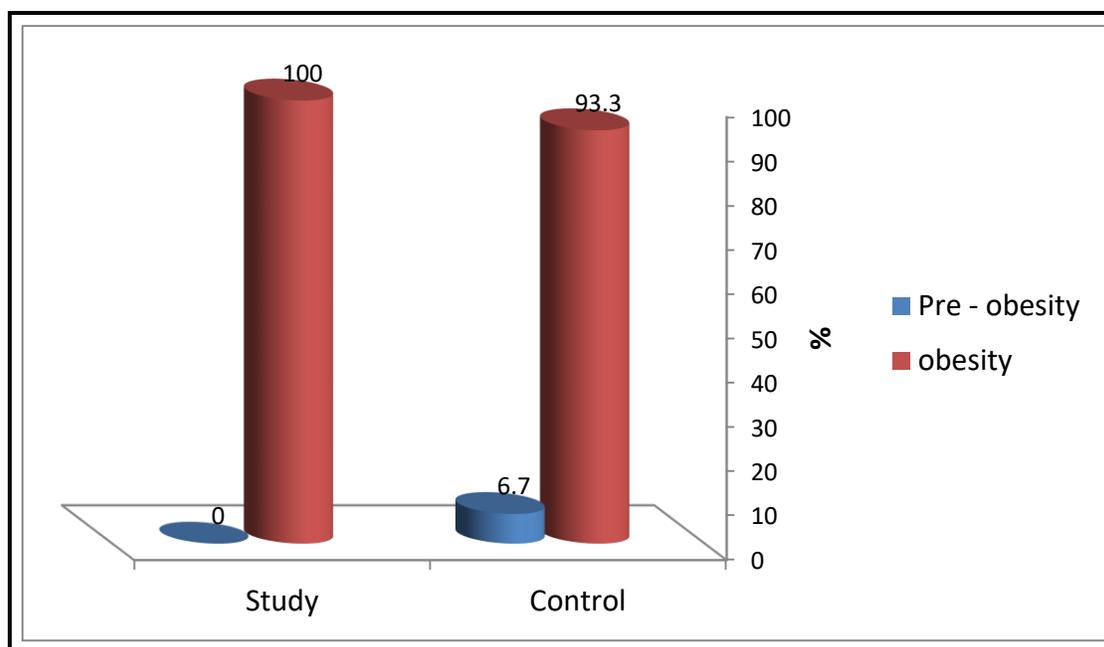


Figure (1): Percentage distribution of studied children according to body mass index before implementing acupressure technique (no=60)

Table (2): Comparison between study and control groups related to body mass index before and after implementing acupressure technique and different weeks (no=60)

	Study	Control	Mean difference	T	P. value
	Mean±SD	Mean±SD			
BMI Before	33.15±1.16	32.72±1.69	0.427	1.139	0.259
W1	32.61±1.68	32.68±1.68	0.123	0.337	0.737
W2	32.39±1	32.63±1.68	-0.247	-0.692	0.492
W3	31.25±0.9	32.54±1.74	-1.297	-3.625	<0.001**
W4	30.42±1.12	32.46±1.73	-2.040	-5.430	<0.001**
W5	29.87±1.15	32.19±1.97	-2.313	-5.566	<0.001**
W6	29.21±1.54	31.79±2.09	-2.587	-5.450	<0.001**
W7	27.41±2.28	30.77±2.23	-3.356	-5.768	<0.001**
W8	26.25±2.68	29.89±2.15	-3.647	-5.822	<0.001**

Table (3): Relation between body mass index among study adolescent and control group (no=60).

	Study		Control		P. value
	No	%	No	%	
Body mass index					
1st week					
Underweight	0	0.0	0	0.0	0.150
Normal wight	0	0.0	0	0.0	
Pre obesity	0	0.0	2	6.7	
Obesity	30	100.0	28	93.3	
2nd w eek					
Underweight	0	0.0	0	0.0	0.150
Normal wight	0	0.0	0	0.0	
Pre obesity	0	0.0	2	6.7	
Obesity	30	100.0	28	93.3	

	Study		Control		P. value
	No	%	No	%	
3rd week					
Underweight	0	0.0	0	0.0	0.640
Normal wight	0	0.0	0	0.0	
Pre obesity	3	10.0	2	6.7	
Obesity	27	90.0	28	93.3	
4th week					
Underweight	0	0.0	0	0.0	0.129
Normal wight	0	0.0	0	0.0	
Pre obesity	6	20.0	2	6.7	
Obesity	24	80.0	28	93.3	
5th week					
Underweight	0	0.0	0	0.0	0.028*
Normal wight	0	0.0	0	0.0	
Pre obesity	10	33.3	3	10.0	
Obesity	20	66.7	27	90.0	
6th week					
Underweight	0	0.0	0	0.0	0.002**
Normal wight	0	0.0	0	0.0	
Pre obesity	18	60.0	6	20.0	
Obesity	12	40.0	24	80.0	
7th week					
Underweight	0	0.0	0	0.0	0.001**
Normal wight	8	26.7	1	3.3	
Pre obesity	15	50.0	8	26.7	
Obesity	7	23.3	21	70.0	
8th week					
Underweight	0	0.0	0	0.0	<0.001**
Normal wight	12	40.0	2	6.7	
Pre obesity	15	50.0	13	43.3	
Obesity	3	10.0	15	50.0	

Table (4): Correlation Co-efficient between BMI during baseline and 8 weeks with personal data for study group (no=30)

Correlations		Study group			
		Age	Sex	Education	Residence
BMI Before	R	.628**	0.165	.719**	-.610-***
	P	0.000	0.385	0.000	0.000
W1	R	.593**	0.132	.721**	-.639-***
	P	0.001	0.487	0.000	0.000
W2	R	.548**	0.148	.719**	-.683-***
	P	0.002	0.435	0.000	0.000
W3	R	.534**	0.115	.719**	-.683-***
	P	0.002	0.545	0.000	0.000
W4	R	.460*	0.090	.699**	-.664-***
	P	0.011	0.635	0.000	0.000
W5	R	.533**	0.226	.740**	-.462-*
	P	0.002	0.230	0.000	0.010
W6	R	.550**	0.078	.736**	-.388-*
	P	0.002	0.683	0.000	0.034
W7	R	.442*	0.029	.713**	-.420-*
	P	0.014	0.881	0.000	0.021
W8	R	.422*	0.090	.713**	-.401-*
	P	0.020	0.637	0.000	0.028

* Statistically Significant correlation at P. value <0.05 ** Statistically Significant correlation at P. value <0.01

Table (5): Correlation Co-efficient between BMI During baseline and 8 weeks with personal data for control group (no=30)

Correlations		Control group			
		Age	Sex	Education	Residence
BMI Before	R	.523**	0.153	.725**	-.428*
	P	0.003	0.420	0.000	0.018
W1	R	.517**	0.156	.723**	-.422*
	P	0.003	0.411	0.000	0.020
W2	R	.524**	0.160	.724**	-.430*
	P	0.003	0.399	0.000	0.018
W3	R	.522**	0.156	.719**	-.427*
	P	0.003	0.410	0.000	0.019
W4	R	.509**	0.137	.697**	-.458*
	P	0.004	0.471	0.000	0.011
W5	R	.479**	0.187	.727**	-.453*
	P	0.007	0.323	0.000	0.012
W6	R	.428*	0.132	.685**	-.464**
	P	0.018	0.486	0.000	0.010
W7	R	.407*	0.101	.643**	-.406*
	P	0.026	0.595	0.000	0.026
W8	R	.437*	0.168	.683**	-.352
	P	0.016	0.376	0.000	0.056

* Statistically Significant correlation at P . value <0.05 ** Statistically Significant correlation at P . value <0.01

Table (1): Shows percentage distribution of studied Adolescent regarding to their characteristic. Finding revealed that more than one third (36.7% & 40%) were in the age group (14 - < 16 years) in study and control groups respectively, also more than half (66.7% & 56.7%) were female in study and control groups respectively. Regarding residence, the majority (76.7%) of study group were from rural area Finally more than half (53.3%) from rural in control group.

Figure (1): Illustrates percentage distribution of studied children according to body mass index before implementing acupressure technique. It was observed that (100% & 93.3%) of children were obese in study in control groups respectively.

Table (2): Demonstrates comparison between study and control groups related to body mass index before and after implementing acupressure technique and different weeks, BMI were measured weekly after 3 weeks from applying acupressure technique, BMI begin to decrease with mean difference (31.25±0.9) and highly statistically significant difference begin from 3 weeks to 8 weeks p -value <0.001 **.

Table (3): Presents relation between body mass index among study adolescent and control group. It was found that half of studied children(50%) were normal weight, (26.7%) were preobesity & (23.3%) were obese at 7 week in study group compared to (3.3%) were normal weight, (20%) were preobesity & (76.7%) were obese at 7 week in control group. At the end of the intervention (63.3%) were normal weight, (33.3%) were preobesity & (3.3%) were obesity in study group compared to (6.7%) were normal weight,

(30%) were preobesity & (63.3%) were obesity in control group.

Table (4): Represents correlation Co-efficient between BMI at baseline and 8 weeks with personal data for study group. It was found that, there were statistically significant positive correlation between BMI of studied children and age, education and residence. While, there were statistically significant negative correlation between BMI of studied children and sex.

Table (5): Represents correlation Co-efficient between BMI at baseline and 8 weeks with personal data for control group. It was found that, there were statistically significant positive correlation between BMI of studied children and age, education and residence. While, there were statistically significant negative correlation between BMI of studied children and sex.

Discussion

Childhood obesity is a condition where excess body fat negatively affects a child's health or well-being. Due to the rising prevalence of obesity in children and its many adverse health effects it is being recognized as a serious public health concern. acupoint stimulation has become a popular weight loss method. However, its efficacy for obesity treatment has not been fully studied. **Frank & Soliman 2017**). This study aimed to determine the efficacy of acupressure on weight reduction among obese adolescent children.

The present study results demonstrate that, after 3 weeks from applying acupressure technique, BMI begin to decrease ($P < 0.001$) compared to BMI remain high in control group. This result showed that continuous acupressure at specific point of body can decrease BMI, which has been supported by many research studies as, (Richards & Marley 2016) assessed the efficacy of ear acupressure treatment on weight loss in a 4-week study. Their results showed an average weight loss of 4.0 ± 1.4 kg ($P < 0.05$) in treatment group.

Also the findings of current study revealed that, highly statistically significant difference begin from 3 weeks to 8 weeks with p-value (0.001. This could be interpreted in the light of a cupressure stimulates the acupoints of the body surface to boost energy or Qi. Hence, it can create comfort and positive benefits for health. It is thought that it can help reduce overall weight in people who are overweight. By applying acupressure to certain points, it is thought to improve the flow of qi and therefore health. This study go on the line with the results of the study by (Ching et al., 2018) who conducted the study on short term acupressure therapy on weight-reduction in adolescence, and they reported that highly statistically significant difference found between acupressure and control groups as regard to weight reduction.

In addition, at the end of the intervention about two thirds of studied' children were normal weight compared to two thirds of studied' children were obese in control group. This may be due to the body type of a person is determined by their metabolic rate. A person with a high metabolic rate is capable of burning fat and calories faster, even when the body is in rest. On the other hand, a low metabolic rate does not utilize the calories for energy and it is stored away and deposited as excess fat in the body. Acupressure is known to stimulate the energy flow in the body to improve metabolism, and thereby aid in weight loss. Also agreement with (Mery et al., 2019) who found that the effect of acupressure point of LI4, PC6, ST25, and ST36 on Increasing the Immunoglobulin and weight loss among toddler and found by applying acupressure to certain points were reduce weight.

Regarding child personal data, finding revealed that more than one third were in the age group (14 - < 16 years) in study and control groups. Also more than half were female in study and control groups. Also, the majority of study groups were from rural area while more than half from rural in control group. This results were consistent with (Safari,etal., 2014), and found that more than two thirds of studied children were boys and more than one third were girls.

Finally, the current study indicated that, there were there were statistically significant positive correlation between BMI of studied children and age, education

and residence while there were statistically significant negative correlation between BMI of studied children and sex in study and control groups. These findings were in accordance with (Youngmi, et al., 2021) their results showed positive correlation between BMI of studied children and age. While in contrast with (Safari,etal., 2014) who stated that negative correlation between demographic characteristics of children and BMI.

Conclusion:

Based on the results of the current study, concluded that that implementation of acupressure technique in obese adolescent led to significant reduction in mean score of weight.

Recommendations:

Based on the results of the current study, the following recommendations are suggested:

1. Acupressure technique should be carried out as supportive nursing intervention to reduce weight in obese adolescent children.
2. Educational programs should be provided to improve knowledge and skills of health care professionals for implementing acupressure technique to manage obesity in adolescent
3. Acupressure should be included in the curriculum of nursing sciences

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