

**WEIGHT EFFICACY LIFE STYLE AND WEIGHT LOCUS OF
CONTROL AS PREDICTORS OF PSYCHOLOGICAL WELL- BEING
AMONG OBESE ADULTS**

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Candidate's Declaration

I hereby certify that the work which is being presented in the thesis, entitled “Weight efficacy life style and weight locus of control as predictors of psychological well-being among obese adults” in fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Faculty and submitted in Galgotias University, Greater Noida is an authentic record of my own work carried out during a period from February, 2013 to March, 2018 under the supervision of Dr. Shikha Srivastava and Dr. Ranjana Tiwari.

The matter embodied in this thesis has not been submitted by me for the award of any other degree of this or any other University/ Institute.

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Introduction

Obesity is a growing phenomenon in which the psychological aspects of obesity affecting the psychological well being of obese people cannot be overlooked. WHO (2004) has defined obesity as an abnormal or excessive fat accumulation that may impair health with a body mass index greater than or equal to 30. In India there is a rapid rise in obesity among all sections of society (Khandelwal & Reddy, 2013). According to the fourth National Health and family survey 20.7 % women are obese and 18.6% of men are obese. A total of 39.3 % were obese in India in 2014- 2015. It is inevitable that both obesity and well being are interlinked as any physical condition is related to psychological wellbeing too. The feeling of being heavy and doing limited physical activities as compared to other people at their own age has an effect on their thoughts and self esteem, confidence and so on. Thus for our physical and mental health, together with effective living psychological well being is an important goal.

It is a matter of deep concern for all that in today's world negative emotions and a sense of despair are experiences which a majority of people are undergoing. The increasing number of suicides, crimes, brutality against innocent children, domestic violence are all indicators of a sense of dissatisfaction and hopelessness which is gradually becoming the hallmark of modern society. The senseless rat race in which we are almost becoming automatons pursuing goals of affluence at the cost of basic, deep rooted human needs which are related to a sense of mental and emotional liberation and achievement has made psychological well-being a more and more elusive goal. All efforts need to be made to identify factors and strategies related to enhancing psychological well-being. Broadly speaking, well-being refers to the positive evaluations individuals make of their lives and includes positive emotions, life satisfaction and meaning (Seligman, 2002). Sense of well being is a logical consequence of both good physical and mental health. It influences our perception of life by which we can take things in our stride and deal with day to day issues of living.

Well-being has many benefits and contributes to other important areas in life. Evidence shows that happy people are more healthy, creative, generous, tolerant,

active, altruistic, sociable, economically productive and long living (Lyubomirsky, King & Diener, 2005). All these qualities state what today's world really wants. Today, when individuals are generally stressed and busy, well-being has an even more important role to play in enhancing their quality of life. It is a challenge to maintain well-being in today's competitive world.

Psychological well-being means different things to different people. Pollard and Lee (2003) described well-being as a complex construct on which the researchers are still attempting to define and measure it. Psychological well-being has been defined as one's emotional and cognitive evaluations of one's own life (Diener, Oishi & Lucas, 2003). The evaluations can be regarding one's moods, emotional reactions to events and assessments about life satisfaction. Psychological well-being is the outcome of experiences and interactions relating to various aspects of our being. It is influenced by life events, personality characteristics (Diener, Oishi & Lucas, 2003), personal goals, perceived social support, the type of attributions one makes, etc.

Broadly well-being can be seen from two perspectives. The clinical perspective sees well-being as the absence of depression, distress or anxiety whereas the psychological perspective looks at well-being as the prevalence of positive self attributes (Keyes, 1998; Ryff & Singer, 1996).

Social psychologists have also studied extensively the concept of well-being. (Campbell, 1981; Ryan & Deci, 2003). While the specific dimensions of well-being have been argued upon, well-being has been referred to as the optimal psychological functioning and experience.

In academic literature one finds few explicit definitions of well-being like wellness is an integrated way of functioning or operating towards maximising the potential of an individual (Dunn, 1961).

Psychological well-being has also been defined as a person's evaluation of reactions about life – be it in terms of life satisfaction, cognitive evaluations or emotional reactions (Diener & Diener, 1995). Ryff (1995) defined psychological well-being as striving for perfection that includes the realisation of one's own true potential. Six dimensions of psychological well-being have been conceptualised by Ryff:

- Autonomy (An individual's self determination and his independence in making his own decisions. It also refers to self evaluation by personal standards and regulating behaviour from within).
- Environmental Mastery (creating a surrounding that fits one's personal needs and capacities). It also involves managing the environment by controlling complex situations and making effective use of opportunities).
- Personal growth (it is continued development of an individual's potential and growing and being open to new experiences. This mainly involves the self realization of an individual).
- Positive relations with others (having healthy, warm and trusting relationships with others with also feelings of empathy, affection and intimacy towards others).
- Purpose in life (Creating meaning and direction in life is central to this dimension. Having goals in one's life and a sense of directedness makes life more meaningful and gives it a purpose).
- Self - acceptance (This involves awareness and acceptance of both one's personal strengths as well as weaknesses).

Verma, Mahajan, and Verma (1989), defined well-being as subjective feelings of contentment, happiness, satisfaction with one's life experiences as well as an individuals role in the world or work, sense of achievement, utility, belongingness with no distress, dissatisfaction and worry.

Psychological well-being is a multi dimensional concept. Diener, Suh, Lucas and Smith (1999) described psychological and subjective well-being as a broad construct, involving four components including (a) pleasant or positive well-being (b) unpleasant affect or psychological distress (c) life satisfaction and (d) domain or situation satisfaction.

Well-being can be represented into two forms such as objective well-being and subjective well-being. Objective well-being deals with the feeling of the well off character that is, the satisfaction one attains after having comforts like good housing, stable financial status, employment etc. The subjective well-being on the other hand is the ability to maintain balance between one's needs and the environmental demands. It is the congruence between the individual and group expectations and the perceived

reality. Bradburn (1969), Campbell (1976), Warr (1978) and others have defined well-being as people's feelings about their life activities. Such feelings fall on the continuum of negative mental states with the second end indicating well-being. Most of the time it has been observed that an increase in the objective standards of living can enhance one's subjective well-being.

Bhogle and Prakash (1995) developed a measure of psychological well-being comprising of twelve factors (positive and negative) which are meaningless, self-esteem, positive affect, life satisfaction, suicidal ideas, personal control, tension etc. A person who has high psychological well-being not only has or experiences higher level of satisfaction, self esteem, positive feelings and attitudes but also manages tensions, negative thoughts, ideas and feelings much more efficiently.

In recent decades, research on positive functioning has flourished with two general perspectives – hedonic approach and eudaimonic approach. The hedonic approach defines well-being as subjective well-being such as happiness, pleasure attainment and life satisfaction (Ryan & Deci, 2001). The eudaimonic approach defines well-being as psychological well-being namely a person's full functioning focuses on self realization, personal expressiveness and the degree to which people are able to actualize their abilities (Waterman, 1993). Each construct involves different challenges that individuals face as they survive to function positively, and in combination these dimensions encompass a breadth of wellness. As per the hedonic view, well-being is equated with pleasure or happiness. The view among hedonic psychologists is that well-being involves subjective happiness and concerns the experience of pleasure versus displeasure broadly made to involve all judgements about good or bad elements of life (Ryan & Deci, 2001). Eudomonistic view on the other hand, maintains that well-being cannot be equated with hedonia. Instead, this second view considers well-being to consist more than just happiness, suggesting that peoples reports of being happy does not necessarily mean that they are functioning psychologically well. This view is referred to as eudaimonia and is concerned with living well or actualizing one's human potentials (Deci & Ryan, 2008). However empirical investigations suggest that there is substantial overlap between the experience of hedonia and eudaimonia. Hence psychological well-being is an important indicator of successful health promotion (Ingersoll-Dayton, Saengtienchai,

Kespichayawattana & Aunguroch, 2004). It makes life meaningful and purposeful.

After reviewing a variety of approaches to well-being the concept of well-being given by Ryff (1989) was felt to be the most comprehensive. Therefore the concept of well-being as studied by the researcher was in terms of Ryff's approach.

The lifestyle an individual adopts is also important in maintaining psychological well-being. Lifestyle includes dietary practices, physical-mental activities, cognitive exposure as well as cultural and environmental revelation (Tiwari & Pandey, 2013). Researchers have rightly emphasized that obesity is an undesirable outcome of changing of lifestyle and behaviours (Hajian & Heidari, 2007). The urban environment has a profound influence on how people live, work and play; conversely, that environment is continually being re-shaped by shifts in lifestyles and patterns of consumption (Lebel, Krittasudthacheewa, Salamanca & Sriyasak, 2012).

During the last few decades, Indian people particularly those living in urban and metro regions have become increasingly vulnerable to multiple issues related to life style and health. The nature of occupation and daily engagement has drastically changed. Although, we have availed higher standard comforts as a result of these changes but on the other hand we are facing constraints for healthy living also. There is hazardous reduction in physical activity and increase in sedentary engagements. Television viewing and use of information technology have risen up. Further, the consumption of alcohol, drugs and nicotine is aggravating health concerns. These changes increase the vulnerability of humans to a number of lifestyle diseases. Hill, Wyatt, Reed & Peters (2003) described how our current sedentary environment limits expenditure of energy and encourages consumption of energy with the core society's values of productivity, efficiency, and convenience encouraging fast food and readymade food which enable individuals to maximize productivity and convenience in their day at the expense of physical activity. Reece (2008) describes how mechanization in the modern world limits the amount of physical activity with people spending most of their time in the day sitting be it at work or in traffic and in front of a television or a computer monitor.

With these changes in lifestyle there is a new epidemic of lifestyle related diseases like cardiovascular diseases, hypertension, high cholesterol and increased risk for

diabetes and obesity. Obesity is an undesirable outcome of changing of lifestyle and behaviours (Hajian & Heidari, 2007). Research studies reveal that obesity and sedentary lifestyle are separately related to the chances of developing diabetes (Wing et al.,2001).Recently obesity has also shown to be a major risk factor for malign and non-malign diseases of the gastrointestinal tract (Karlas, Wieg & Berg,2013).There is a rise in the tide of obesity and it is one of the most difficult conditions to overcome (Lagerros & Rössner, 2013). Obesity apart from increasing health risks also affects mortality. One of the rapidly spreading although not considered as a disease in medical terms is obesity which has been noted to be linked to Cardiovascular and several other diseases (Lagerros & Rössner, 2013).Obesity is disastrous not only for the individual but also the national economy. So apart from medical problems that obese people face like Diabetes, Respiratory difficulties, cancer, Arthritis, premature death there are other consequences of unemployment increasing due to the increase in disability due to obesity. This indirectly affects the tax revenues and national output of the country.

Lifestyle theories of health and disease elaborate on the interrelationships between many variables in disease etiology (Cockerham, 2014). Lifestyle behaviours emphasize that diseases develop due to the result of unhealthy lifestyle. The lifestyle model emphasizes the role of individual choice in health related behaviours unlike the environmental model of disease (which considers individuals as victims of an unhealthy environment) or the germ theory (cause of a specific disease is a micro-organism be it viral, fungal etc). Hence the lifestyle perspective emphasizes personal responsibility on the health front. So according to this perspective the way people live is related to the illnesses they develop.

Dietary habits is a major part of lifestyle that can contribute to obesity. Unhealthy diets is a major risk for obesity as the intake consumption of energy is much more than the output of energy in the individual. As diet is a major part of lifestyle the researcher would mainly focus on this aspect in obese individuals.

Ames, Heckman, Grothe & Clark (2012) indicated that the Weight Efficacy Lifestyle Questionnaire (WEL) is used very often to determine the confidence with which people resist eating in tempting situations. In other words it assesses an individuals self efficacy in eating behavior. Self-efficacy is the individual's belief in their own

ability to perform the necessary behavior in order to achieve a desired outcome (Bandura, 1977). Eating Self-efficacy is theoretically defined as an individual's belief in his or her ability to engage in healthy eating behaviors that result in or maintain a healthy weight (Clark, Abrams, Niaura, Eaton & Rossi, 1991). Dimensions of eating self-efficacy include negative emotions, availability, social pressure, physical discomfort, and positive activities. Eating self-efficacy determines the success of adoption of weight management behaviors. WEL is a researched tool and found to be suitable and useful to be used in educational, clinical and research aspects for obese individuals. Therefore the concept of weight efficacy lifestyle as studied by the researcher was in terms of Clarks approach.

Causal attributions for obesity can also play a major role in obese individuals. According to Kelley (1972) attribution is a complex process in which we observe others behavior and then attempt to infer the cause behind it from various clues. It also refers to understand the causes behind our behavior too. Very often we want to know why people acted in a particular way or why events turned out in a specific manner. We think if the behavior originated from the individuals internal causes like one's own traits or if the behavior originated from external causes like the environment. Attribution theory is concerned with how people make causal attributions that is how they deal with questions beginning with 'why'. It is concerned with the way the individuals interpret events and how this is related to their thinking as well as behavior. People form explanations for human behavior and such explanations are called causal explanations in which specific conditions are attributed to a causal role.

The origin of Attribution theory can be traced to Heider's work (1944, 1958). He explained attribution in terms of two categories – personal and environmental causes. Individuals according to him attribute an action either to personal (internal factors like personality traits, moods, efforts) factors or environmental (external factors such as the action of other people) factors.

Weiner and his colleagues expanded Heider's primary distinction between the internal and external locus of causality to include questions about stability and controllability (Weiner, 1986; Weiner et al., 1972). Weiner was interested in the causes and consequences of the types of attribution made regarding a persons success or failure

on a task. He mentioned that three dimensions need to be considered in making an attribution.

1. Locus: Is the performance caused by the person (internal) or the situation (external)?
2. Stability: Is the internal or external cause a stable or unstable one?
3. Controllability: To what extent is future task performance under the person's control?

Stable causes are permanent and lasting whereas unstable causes are temporary and fluctuating. Some causes are called dispositional which are both internal as well as stable (like I never get good marks in Maths as I am poor in calculations). Other causes are internal but unstable (like one is sick and so couldn't perform well in the exams). Some causes can also be external and stable (teachers never give me credit for my work) and some external and unstable (like luck being bad). Weiner also mentioned the dimension of controllability where some causes are seen as being within the person's control and some causes as outside the individual's control. Weiner (1995) extended his model to place an emphasis on judgments of responsibility. On the basis of causal attributions, people make judgments of responsibility and it is these latter judgments, not the causal attributions themselves that influence affective experiences and behavioral reactions.

In various life situations we want to know why people acted in a particular way or why events have turned out in a particular way. This is important to know to understand the causes behind one's actions and adjust our own actions while making sense of the social world. It would be important to know if the behavior arose from internal causes or external causes or both? Kelly's co-variation model is the one theory that explains attributions from multiple observational points and details the processes for making external as well as internal attributions. According to Kelly, people try to find out what factors covary with the behavior and then assign that factor a causal role. According to him, people use the covariation principle. The principle states that for something to be the cause of a particular behavior, it must be present when the behavior occurs and absent when it does not occur – the presumed cause and observed effect must covary. In describing the locus of causality, Kelly elaborated on the internal-external dimension by further delineating external attributions in the

entity and circumstances. The entity is the object towards which the person's behavior is directed and can be another person or a thing. Circumstances are simply the conditions in which the actions or events occur. In an attempt to answer 'why' there are three dimensions that Kelly mentions.

1. Consensus: the extent to which others react to some stimulus or event in the same manner that we are considering. The higher the proportion of other people who react in the same way, the higher the consensus.
2. Consistency: the extent to which the person in whose behavior we are interested reacts to the stimulus or event in the same way on other occasions. In other words it is the extent to which the person's behavior is unvarying over time.
3. Distinctiveness: the extent to which the person reacts in the same manner to other different stimuli or events. It refers to similar reactions to different stimuli or events.

Kelly's theory suggests that we are most likely to attribute another's behavior to internal causes under conditions in which consensus and distinctiveness are low, but consistency is high. In contrast, we are most likely to attribute another's behavior to external causes under conditions in which consensus, consistency, distinctiveness are all high. Finally we usually attribute behavior to a combination of these factors under conditions in which consensus is low but consistency and distinctiveness is high.

There is significant evidence that emphasizes that the causal explanation which the individual considers as relevant to various events in his life has an effect on his actions and behavior. Attributing causes involves the personality dimension of internal or external locus of control. The concept of locus of control was developed by Julian Rotter (1954). A person's locus (Latin for place or location) is conceptualized as either internal (the person believes they can control their life) or external (meaning they believe that their decisions and life are controlled by environmental factors which they cannot influence, or by chance or fate). According to Rotter locus of control is the tendency of people to believe if the control lies internally with them or externally with others. Rotter (1990) described the internal locus of control as the degree to which individuals expect reinforcement or is an outcome of their behavior is dependent on their own behavior or personal characteristics. People with internal

locus of control rely on their own abilities to control themselves as well as the world. Whenever they face success they become more confident and when they experience failure they blame themselves for it. People with external locus of control believe that they have no control over events and have to just abide by it. Rotter (1990) described the external locus of control as the degree to which individuals expect reinforcement is a function of chance, luck, or fate, is under the control of powerful others, or is unpredictable. People with external locus of control are very passive and think that anything they do will not make any difference to the situation or the people. They blame the external circumstances for their failure and if they succeed they consider it to be due to luck factor.

Weight locus of control is another determinant of psychological well being in obese adults. The weight locus of control gives information about the degree to which obese adults attribute their obesity to internal or external factors. Weight locus of control is the belief that one can affect or control one's weight (Stotland & Zuroff, 1990). External weight locus of control is the belief that one's weight is due to factors outside of one's control, such as luck, genes, fate, or social support; whereas, internal weight locus of control is the belief Weight Locus of Control that one's own behavior determines one's weight (Stotland & Zuroff, 1990). Internal locus of control is a potential predictor of success in weight-loss programs (Stotland & Zuroff, 1990).

McGraw (2003) defined weight locus of control, as a particular mind-set that reveals what a person gives credit to or blames for the shape one is in. Some people would say their weight or obesity is due to their genes or relatives pressurizing them to eat . Others may admit that they are obese as they don't put in efforts to lose weight. The former is the external weight locus of control whereas the latter is the internal weight locus of control. If the individual mentions the weight is due to bad luck or fate then the person is attributing the weight to chance weight locus of control. The concept of weight locus of control as studied by the researcher was in terms of McGraw's approach.

Hence the present research would use the concepts of weight locus of control and weight efficacy lifestyle to understand the role they play in the psychological well-being of obese adults.

Review of Literature

The review of literature is essential before undertaking any research endeavor so that the researcher can become aware of the work already done in that area. The researcher can avoid pitfalls and help to bridge the gap that exists in that particular area of research. Relevant studies are highlighted in the area of weight efficacy lifestyle, weight locus of control and psychological well being in obese adults.

Demographic variables in Obesity

Kuntz and Lampert (2010) in their study examined income, education, and occupational position in 8318 people in Germany. Data was taken from the Telephone Health Survey in Germany. Details taken involved the household income, the highest education completed, and the autonomy of occupational activity was assessed on the Hoffmeyer-Zlotnik scale. Binary logistic regression was used for analysis. Findings revealed that 17% of men and 20% of women above 18 years of age were obese. In men, education and occupational position had a significant effect on the prevalence of obesity whereas for women, social gradient was found to be significant for all three status indicators. For example, the lower group women were three times more likely to be obese as compared to the women in the highest income group.

Rengma, Sen, and Mondal (2015) conducted a cross sectional study in the District of Assam among 422 males and 404 females of the age group 20 to 49 years. Analysis of the data was done using Anova, Chi square and Binary logistic regression. The findings of their study revealed that people of the age group 40 to 49 years, people with education lesser than or equal to 9th standard and having a monthly income of less than or equal to 10000 were significantly associated with overweight and obesity.

Biological Indexes

Aggarwal (2011) examined the effects of sedentary lifestyle and dietary factors on the change in Body Mass Index (BMI). The study was a follow up study of 325 women aged 15-49 years in Delhi, systematically selected from the 1998-99 NFHS-2 samples. Information was collected on height, weight, dietary habits and sedentary lifestyle through face to face interviews and the analysis involved multiple logistic

regression analysis to estimate the odds ratios for BMI change. Results indicated in the study that consuming a diet high in sugar and fat and living a sedentary lifestyle resulted in larger gains in BMI among Indian women.

Heinonen et al., (2013) conducted a cross sectional study on 1084 women and 909 men of the age group 30-45 years to examine different types of sedentary behaviour and obesity in adults. The findings of the study indicated that among the various sedentary behaviours like sleep duration, leisure time physical activity, occupational activity that may contribute to the development of obesity, TV viewing was most consistently related to higher Body Mass Index and waist circumference, both in men and women.

Matuska and Bass (2016) performed a cross-sectional research that examined differences in life balance and perceived stress by body mass index (BMI) levels and self-reported medical conditions that limited physical activity. The sample involved 2,338 participants of the ages 18 and 49 years who were assessed on the Life Balance Inventory and the Perceived Stress Scale. Demographic information along with height and weight was also recorded. Results revealed that obese individuals (BMI > 30.0) reported significantly lower life balance scores and higher stress scores than non obese individuals ($p < .001$). Apart from this individuals with medical conditions that had to restrict their activity levels reported significantly less life balance and more stress than individuals with no medical conditions that restricted their activity levels ($p < .001$). These findings emphasize the importance of activity participation to promote health and wellness.

Obesity and weight efficacy lifestyle

Edman, Yates, Aruguete & DeBord (2005) examined gender differences between negative emotions and disordered eating attitudes and behaviors among obese college students. For this purpose a total of 88 males and 102 females, with a BMI of 30 and above were included in the study .Results of the research revealed that females reported higher levels of disordered eating than males. So this study further confirmed that disordered eating behaviors function as maladaptive efforts to escape from negative emotional states.

Somers, Keefe, Carson, Pells & LaCaille (2008) conducted a study on borderline morbidly obese and morbidly obese adults with osteoarthritic knee pain to find out how they coped with the pain that they experienced. The study involved 43 participants who completed self-report measures of pain catastrophizing using the catastrophizing subscale of the Coping Strategies Questionnaire, pain using a 0 mm to 100 mm visual analogue scale, psychological distress using Symptom Checklist-90-R, quality of life using The Impact of Weight on Quality of Life, binge eating using the Binge Eating Scale (BES) and eating self-efficacy using the Weight Efficacy Life-Style Questionnaire. Anova and Regression analysis was performed for analyzing the data. Results suggested that participants with a high level of pain catastrophizing reported more intense and unpleasant pain, higher levels of binge eating, lower self-efficacy for controlling their eating and lower weight-related quality of life. Therefore this study does reveal that obese people use poor coping mechanisms to deal with their physical pain.

Lavender and Anderson (2010) conducted a study to investigate if emotional regulation difficulties contribute to disordered eating and body dissatisfaction in men as previous research studies found negative affect and emotion regulation factors to be significantly associated with disordered eating and body dissatisfaction in women only. 296 undergraduate men completed a series of questionnaires involving negative affect, difficulties in emotion regulation, disordered eating, and body dissatisfaction. Regression analysis was done for analyzing the data. Findings revealed that emotion regulation difficulties play a role in the etiology as well as maintenance of body dissatisfaction and disordered eating in men.

Wansink (2010) hypothesized that paying attention to tasks such as watching television may affect the ability of individuals to adequately respond to normal internal hunger and satiety cues, and can lead to dependence on external cues, like the end of a television show, to finish their meal. Hence associating eating with external cues rather than internal cues was mentioned by him.

Wingo et al., (2011) conducted a study to examine the role of weight with fear of pain. The study included three focus groups ($n=21$) to explore the role of fear-avoidance beliefs related to exercise among a group of overweight and obese adults. Focus group members discussed their beliefs that overweight and obese adults have

more exaggerated physical responses to exercises than normal weight adults. They also indicated that overweight and obese individuals interpret similar physical responses differently than normal weight individuals, and that these interpretations lead to fear that may result in exercise avoidance.

Mittal, Stevenson, Oaten & Miller (2011) in his study demonstrated how the effects of eating while watching television may impact not only concurrent eating, but also later food intake. Young women who ate snacks while watching television ate a greater amount of food during a television-free lunch (and had poor recall of their earlier food consumption) than young women who had consumed the same amount of snacks but not previously watched television. Hence eating while watching television in obese adults is a negative activity being followed.

Ding, Sugiyama & Owen (2012) examined how habitual active transport and TV viewing was related to weight gain. Data used was four-year longitudinal data on 969 adults from Australia where the mean age was 48 years and 61% were females predominantly. Weight change was the dependent variable and TV viewing time, habitual transport and past week physical activity were the independent variables. Results revealed that participants gained 1.6 kg over four years. So this research revealed how sedentary behaviour of long hours of TV viewing with no active everyday transport was related to gaining weight.

Seaman (2013) in his mini review study indicated that in the modern lifestyle the majority of the population lead a sedentary life and consume high calorie foods. This eventually negatively impacts the metabolism and stimulates the neural addiction mechanisms, which results in enhancing weight gain. Further Seaman has also emphasized that eating too quickly, lack of sleep and experiencing high stress levels increases weight further.

Spence et al., (2013) qualitatively explored the barriers on people's food portion size decisions. For this purpose ten focus groups with four to nine participants in each were formed. In this research a total of 66 persons of the age groups 19-64 years were selected. The discussions were recorded and then professionally transcribed verbatim. Analysis was done using inductive thematic analysis procedure. Findings revealed that eating unhealthy portion size behaviors occur due to seven significant barriers

like lack of clarity of portion size, guiltless eating, lack of control on food cues, distracted eating, childhood habits to eat more, social pressure and emotional eating. In this study also social pressure to eat emerged as a factor for inappropriate food portion size being consumed which leads to increase in weight.

Roer, Latzer and Geliebter (2014) in their study compared negative emotional eating among 76 obese individuals with and without Night Eating Syndrome (NES) and Binge Eating behavior (BE). The study included 15 males and 61 females of the ages 19 to 63 years. The participants were divided into four groups: the NES Only group; the BE Only group; the BE & NES group; and the overweight control group with neither BE or NES. The subjects were asked to complete the Emotional Appetite Questionnaire (EMAQ), the Questionnaire on Eating and Weight Patterns (QEWP-R) and the Night Eating Diagnostic Questionnaire (NEDQ) after physical examination. One-way ANOVA was used to compare the groups. Analysis revealed that higher negative emotional eating among the BE Only group. No other group reported eating in direct response to negative emotions and situations. Hence individuals with Binge Eating may be using food as a maladaptive coping mechanism to deal with their negative emotions that would further enhance or increase their obesity.

Hollands, Campbell, Gilliland & Sarma (2014) investigated in their cross sectional study whether the availability of fast-food restaurants has any effect on body mass index (BMI). Data for this study was taken from the 2007-08 Canadian Community Health Survey whereas the neighbourhood socio-demographic variables were acquired from the 2006 Canadian Census. Multivariable regression analyses was used to find out the association between restaurant density and BMI. Findings indicated that fast-food density had a positive association with BMI.

Baruth, Sharpe, Parra-Medina & Wilcox (2014) investigated the perceptions and barriers to exercise and healthy eating in disadvantaged neighborhoods among African American women. In this regard four focus groups (n = 28) were conducted with overweight or obese women. Qualitative Analysis revealed that among the various individual and environmental factors, social pressure was one of them. The women experienced lack of support from their family members. They also faced pressure from family and friends to eat more and were also told they did not need to lose weight.

Meleger, Froude and Walker (2014) assessed eating behavior among patients with chronic pain and receiving opioid analgesic therapy for their pain as part of their treatment. 50 participants were selected from an outpatient rehabilitation clinic for this purpose of which 44% were obese. The Body mass index was calculated initially following which the Food Frequency Questionnaire and the Eating Behavior Inventory were administered. Descriptive analysis found that obesity, deficient nutrient intake, and poor eating behavior was highly prevalent in patients with chronic pain who had undergone long-term opioid therapy. Hence poor eating patterns in obese people with chronic pain was revealed in this research.

Obesity and weight locus of control

Mills and Cullen (1994) investigated the locus of control (LOC) in samples of obese and non obese participants. Rotter's I-E scale was administered to 106 obese adults in outpatient treatment for obesity and to 99 non obese controls. Data analysis revealed that the obese subjects were significantly more internally oriented than the control group. Previous research studies however have revealed that obese individuals have an external locus of control orientation.

Nir and Neuman (1991) found no significant difference between the internals and the externals as for weight loss. women participated in a 10 week weight loss program where self – esteem and internal - external locus of control was assessed. Findings revealed that people with lower self –esteem lost lesser weight and those with high self esteem lost more weight. However no significant difference was there for internal and external locus of control.

Tiggemann and Rothblum (1997) compared undergraduate students from 2 different universities. 193 students with mean age of 24.99 years was taken from one university and 220 students with mean age of 18.93 was taken from another university. The tools used in the study were the Body Mass Index, Saltzer's Weight Locus of Control Scale, Dieting Belief's Scale, Tiggemann and Rothblum's Stereotypes about the Obese Scale and Rosenberg's Self Esteem Scale. Correlations and Multiple regression was used for analysis. Findings of their research revealed that internal locus of control had negative social consequences in terms of greater negative stereotyping for obese women and not for men and women with internal locus of

control had low self esteem.

Sonntag et al., (2010) examined health- related locus of control in 123 patients. They compared overweight and obese individuals and found that overweight individuals attributed their weight to mainly behavioral causes whereas obese individuals tended to attribute their weight to genetic origins which is an external locus of control.

Clark , Kassenboehmer and Schurer (2014) analyzed the relationship between individuals' locus of control and their decisions to exercise regularly, eat well, drink moderately, and avoid tobacco. The findings revealed that individuals with an internal locus of control are more likely to eat well and exercise regularly. This was true as long as individuals future orientation and the value they place on their health remained. Men who had an internal locus of control expect higher health returns to diet and exercise whereas women with internal locus of control achieve greater satisfaction due to healthy habits.

Donovan and Penny (2014) conducted a research where participants were 167 female undergraduates who completed self-report measures of control, body dissatisfaction and weight restricting and control behaviours. Analysis was done using means, standard deviations, cronbach alpha, hierarchical multiple regression and bivariate correlations for each of the measures used in the study. Findings indicated that higher external locus of control was related to less dieting and exercise and that locus of control was not related to purging.

Pearl and Lebowitz (2014) compared the causal attributions for overweight and obesity, among individuals with overweight and obesity, on weight-related beliefs, stigmatising attitudes and policy support. In Study 1, an online sample of 95 US adults rated the extent to which they believed various factors caused their own weight status. In Study 2, 125 US adults read one of three randomly assigned online passages attributing obesity to personal responsibility, biology, or the 'food environment.' All participants in both studies were overweight or obese. In Study 1, biological attributions were associated with low weight-malleability beliefs and blame, high policy support, but high internalised weight bias. 'Food environment' attributions were not associated with any outcomes, while 'personal responsibility' attributions were associated with high prejudice and blame. In Study 2, participants who received

information about the food environment reported greater support for food-related policies and greater self-efficacy to lose weight. The authors concluded that emphasizing the role of the food environment in causing obesity can promote good food policy support and healthy eating behaviours.

Obesity and psychological well - being

Berger (2004) investigated the role of obesity and exercise and found that many overweight individuals have low levels of subjective well-being as a reflection of *anti-fat* biases and sociocultural considerations. The author also suggested that as exercise helps balance the energy intake and output and is associated with mood benefits, improved self-concept and self-esteem, and decreased stress levels, is the best approach for breaking the inactivity obesity cycle.

Carr and Friedman (2005) conducted a research to know the frequency and psychological correlates of institutional and interpersonal discrimination. Participants were underweight, normal weight, overweight and obese Americans. This was done on more than 3,000 adults of the ages 25 to 74. The findings in their study revealed that compared to normal weight persons, obese persons are more likely to report institutional and day-to-day interpersonal discrimination as well as lower levels of self-acceptance than normal weight persons.

Carr and Friedman (2006) investigated whether underweight, normal-weight, overweight, and obese Americans differ in their evaluations of positive and negative aspects of their interpersonal relationships. Analyses are based on data from the Midlife Development in the United States (MIDUS) study, a survey of more than 3,000 adults ages 25 to 74 in 1995. They found no significant differences across the body mass index (BMI) categories with respect to the quality of relationships with friends, coworkers, and spouses. Severely obese persons reported significantly higher levels of strain and lower levels of support in their family relationships. This pattern, however, was dependent upon one's adolescent body weight. Among persons who were of "normal" weight at age 21, current BMI was not associated with relationship quality. For persons who were overweight at age 21, the level of social support received from family during adulthood declined as the adults BMI increases.

Bookwala and Boyar (2008) examined gender differences in the association between body mass index (BMI) and psychological well-being. 3251 adults was the study sample for this study. Ryff's psychological well-being and perceived weight (participants were asked to describe themselves on a 5 point rating scale ranging from underweight (5) to overweight(1) was administered to the participants and their height and weight were recorded. Regression analysis was done and findings revealed that higher BMI predicted lower psychological well-being for women only and not for men.

Brown, Schiraldi and Wroblewski (2009) investigated the effect of emotional and external cue eating on obesity and the correlation of emotional and external cue eating with positive and negative psychological factors, as well as early familial eating context. 483 young adults attending two universities completed instruments measuring obesity, emotional and external cue eating, familial eating patterns, depression, anxiety, stress behaviors and somaticism, optimism, self-esteem, resilience, gratitude, humility, happiness, religiosity, and disordered eating. Individuals with eating disorders like anorexia, bulimia and purging signs reported poor mental health and more emotional eating. Gender was the only consistent predictor of obesity and external cue eating. In addition to gender, being offered food for comfort as a child was an important predictor of emotional cue eating.

Ogbeide, Sandoval, Neumann & Rudebeck (2010) investigated gender, body weight and psychological well – being among 157 college students out of which 121 were females and 36 were males. Satisfaction with life scale and psychological general well-being index was administered to the participants. The analysis revealed that overweight and obese reported lower levels of life satisfaction than the normal weight range participants. They also found that for males and not females, increases in body mass index resulted in lower levels of life satisfaction and psychological well-being.

Cosci, Bernini and Berrocal (2011) explored the level of Psychological Well - Being (PWB) and Quality of Life (QOL) among subjects with obesity. 28 obese individuals were compared with 28 normal weight controls. PWB was assessed by the PWB questionnaire according to the Ryff's construct, the health-related quality of life was assessed via the World Health Organization Quality of Life Assessment. Statistical analyses were done with focus on between-groups differences. Both the groups were

matched for age and gender. Results revealed that positive relationship with others, self-acceptance, purposes in life, and personal growth were the psychological well – being constructs significantly more impaired in obese individuals. They also had a poor perception of their general quality of life, their physical and psychological health, their quality of social relationships and of environment. The authors concluded that individuals with obesity have a lower level of psychological well – being quality of life than the normal weight controls.

Pollak et al., (2011) investigated in their research if motivational interviewing techniques used by physicians increases patient satisfaction and perceived autonomy in 320 overweight or obese patients. The method used by them involved audio recording of encounters between 40 physicians and 320 overweight or obese patients. Various Motivational Interviewing (MI) techniques like empathy, reflective listening were coded and then equation models with Logit links were used to examine the relationships between MI and patient perceived autonomy and satisfaction. Findings revealed that when physicians used empathy techniques the patients reported high satisfaction whereas when reflective listening techniques were used by physicians they were perceived by the patients as receiving high autonomous support. Hence patient perceptions and outcomes can be improved when physicians use these techniques.

Keightley, Hansen, Princi & Witttert (2011) explored the effects of social conditioning in an obese population on self-perception and beliefs about the causes of obesity for self and others. Eighty-seven obese adults (29 males and 58 females) aged between 18 and 66 years from an Australian metropolitan hospital's obesity clinic and 50 healthy weight adults (15 males and 35 females) aged between 17 and 45 years from two undergraduate university courses participated in this cross-sectional study. Results revealed that obese participants were more likely to attribute internal factors as the cause of obesity in others ($X^2(1, n = 77) = 24.6, p \leq 0.001$) but considered internal and external factors equally as causing their own obesity ($X^2(1, n = 80) = .02, p \geq 0.05$). Weight locus of control was not related to body size in obese participants however, it was related to psychological well-being ($r = -0.38, n = 68, p \leq 0.005$). Obese participants were unable to accurately identify their own current ($t(83) = 84.54, p \leq 0.01$) and desired body shape

($t(85) = 50.16, p \leq 0.01$). Significant differences were present when rating female body shapes, with female obese participants unable to accurately identify body shapes compared to the healthy weight controls. Additionally, female perceptions of overweight appear to be normalising and they were unable to correctly differentiate between differing body shapes. This was found in healthy weight males also.

Vieira et al., (2012) examined BMI and risk for poor health-related quality of life (HRQOL) and psychological well-being (PWB) in women. Participants were 1,795 women aged 35.3 ± 10.2 years. Assessments included general Health Related Quality of Life, weight-related Health Related Quality Of Life, self-esteem, and body image. Results revealed that women with a BMI under 25 kg/m² reported improved psychological well-being and Health Related Quality Of Life in comparison to overweight or obese women.

Ishida (2012) proposed a way to improve obesity using purpose in life in view of the chemical traits of neurotransmitters such as serotonin, dopamine, noradrenalin and endorphin β related to emotions. Any stress, such as troubles in human relationships, causes anxiety that may relate to an imbalanced secretion of neurotransmitters. Every person has a need to establish meaning in his/her life intrinsically. Purpose in life is a prefrontal lobe function developed through evolutionary processes. Therefore, this is a natural and mentally healthy way to cope with stress and causes well-balanced secretion of neurotransmitters.

Leong, Madden, Gray & Horwath (2012) investigated the associations among people's level of autonomy in regulating their eating behaviors and their BMI in adult New Zealand women of the age group 40 to 50 years. 1601 women participants taken from electoral poll were mailed The Regulation of Eating Behavior scale and also asked details of their height and weight. Analysis was done using Univariate linear regression to find out the associations between demographic, health and behavioral variables, and BMI. Multivariate linear regression models was also used to examine the relationships between autonomous and controlled forms of eating behavior regulation and BMI in the adult women of New Zealand. Analysis revealed that BMI was significantly lower by 2% for every 10 unit increase in autonomous regulation as well as significantly higher by 1.4% for every 10 unit increase in

controlled regulation. The authors concluded that autonomous motivation for eating behavior will facilitate or enhance healthier food habits with a lower BMI.

Carr and Jaffe (2012) investigated the psychological impact of weight change among American adults. The data taken included from a survey which involved more than 3000 adults between the age groups of 25 to 74. The data was of the Midlife Development in the United States study.

Duchesne et al., (2012) examined empathy and other social skills of obese women with binge eating disorder (BED). The findings showed that five social skills were statistically associated with BED. Obese women with less assertiveness, lower ability to express feelings, lower capacity to deal with strangers, lower ability to understand the perspective of others, and with higher levels of distress in interpersonal situations had a higher probability of presenting the diagnosis of BED. These results emphasized an association between social skills deficits and BED.

Smith and Farrants (2013) explored in eight previous plastic surgery women patients the experience of body change. In-depth, semi-structured interviews was conducted 1 year after the plastic surgery was done to remove excess skin around their abdomen, that had occurred due to weight loss. Participant interviews were analysed using Interpretative Phenomenological Analysis. Most participants even after the surgery continued to be ashamed of their bodies. Shame and lack of acceptance influence each other such that shame doesn't allow the body to be accepted as it is. The lack of acceptance of the body by other people in the society which could be imagined or real, also contributes to the lack of acceptance of the body by the individual too.

Brandheim, Rantakeisu and Starrin (2013) examined the associations between body mass index (BMI) and psychological distress in Swedish adults. Data was measured with the General Health Questionnaire-12 (GHQ-12), in 68,311 adults of the ages 18–74. Logistic regression analysis was used to describe the association between BMI and psychological distress when controlled for age and gender in combination. Findings revealed that women reported an overall higher psychological distress than men. Findings also indicated that as age increased the psychological distress decreased among women and men in all BMI categories.

Magallares, Valle, Irlles, Ríosand and Lobera (2014) analyzed a total of 221 participants (111 obese individuals and 110 controls) for psychological well being using the Spanish version of Ryffs scale on Psychological Well Being and Short Form 36 Health Survey (SF-36) for mental health. Anova and t test was used for analysis. Results revealed obese people reported less psychological well being than controls and there was no significant statistical difference in the two groups for mental health.

Skär, Juuso and Söderberg (2014) conducted a study to know whether health-related quality of life and levels of sense of coherence among people with obesity have any correlation with body mass index, age, and gender. A cross-sectional, descriptive research design was used. Subjects (n=157) were selected from a sample of participants in an ongoing survey and had a body mass index >30 kg/m². Data were collected using the Short Form-36 Health Survey and the Sense of Coherence Scale. The mean body mass index of women was higher than that of men. Compared to men, a greater proportion of women had a low sense of coherence. There was a significant relationship between low physical health and high body mass index. Female gender and older age correlated with a low sense of coherence and showed a significant association with high body mass index.

As seen from the review above there is extensive research on obesity and treatments to reduce obesity. The review reveals that there is research done on obesity more on the physical aspects of health and a few psychological aspects like quality of life has been emphasized more. There is a dearth of studies from the perspective of positive psychology. In the research studies mentioned above also it is evident that obesity specific measures like weight efficacy lifestyle or weight locus of control haven't been used much at all with studies related to obesity.

Rationale for the present study

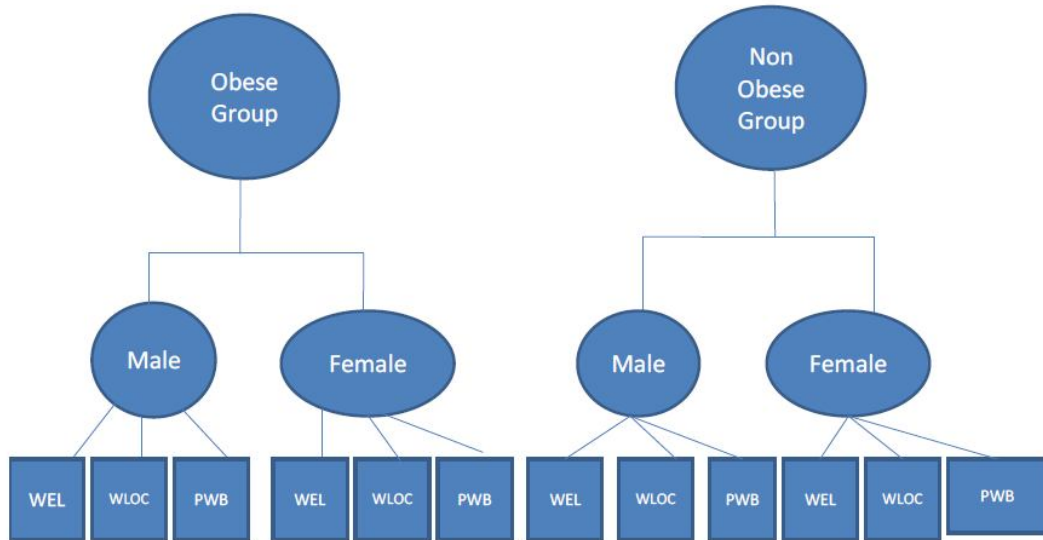
There is extensive research on obesity and treatments to reduce obesity. However still weight rebound has been an issue that is not resolved. This indicates that it is important to look into various psychological constructs that are related to obesity and how they are connected with each other. There are studies assessing psychological well-being and quality of life or the stress and psychological well-being in obese adults in the western literature only. There is a paucity of studies looking at obesity

from a positive psychology approach also. This may be essential as it can give us good insight for the treatment of obesity as well. It is also evident that obesity specific measures like weight efficacy lifestyle or weight locus of control haven't been used much at all with studies related to obesity. Therefore is also a lack of obesity specific measures being used in research for obesity (Lazzeretti et.al, 2015, Magallarres et;al, 2014). Both weight locus of control and weight efficacy lifestyle needs to be investigated to understand the role they play in the psychological well-being of obese adults. Hence the present study was designed to use obesity specific measures of weight locus of control and weight efficacy lifestyle along with psychological well – being to understand obesity from the approach of Positive Psychology.

Method

Research Design

This research is a comparative and correlational design.



Objectives

- 1) To find out role of weight efficacy lifestyle and weight locus of control as a predictor of psychological well-being among obese and non obese groups.
- 2) To find out the correlation for age, BMI and waist size for psychological well-being, weight efficacy lifestyle and weight locus of control among obese and non obese groups.
- 3) To find out group difference across factors (psychological well-being, weight efficacy lifestyle and weight locus of control).
- 4) To find out gender difference across factors (psychological well-being, weight efficacy lifestyle and weight locus of control) among obese and non obese groups.

Hypotheses

- 1) There will be significant role of weight efficacy lifestyle and weight locus of control in prediction of psychological well- being among obese and non obese groups.
- 2) There will be significant correlation for age, BMI and waist size for psychological well- being, weight efficacy lifestyle and weight locus of control among obese and non obese groups.
- 3) There will be significant group difference across psychological well- being, weight efficacy lifestyle and weight locus of control.
- 4) There will be significant gender difference across psychological well- being, weight efficacy lifestyle and weight locus of control between the obese and non obese adults.

Sample size

A sample of 200 obese adults of the age range of more than 18 years and less than 42 years were randomly selected from different clinics/hospitals and other areas of Delhi and NCR for the obese group. A sample of 100 non obese adults of the age range of more than 18 years and less than 42 years were also randomly selected from Delhi and NCR for the non obese group. As per gender the male (50%) and female (50%) participants are equal in proportion for the obese and the non obese group. As per age the young (18 -30 years) participants were 38.5% and the middle aged (31 to 42 years) participants were 61.5% indicating that there are more middle aged participants in the obese group. In the non obese group the young (18 -30 years) participants were 67.7% and the middle aged (31 to 42 years) participants were 32.3% indicating that there are more young aged participants in the non obese group as for age. As per education in the obese group 17% participants had completed 12th standard, 35.5% had completed graduation, 30.5% had completed post graduation and 17 % had completed above post graduation indicating that maximum participants had completed graduation in the obese group. In the non obese group 2.02% had completed 12th std, 55.5 % had completed graduation, 41.41% had completed post

graduation and 1.01 % had completed above post graduation indicating that maximum participants had completed graduation in the non obese group also. As per marital status 75% were married and 25% unmarried in the obese group indicating that there are more married in the obese group. In the non obese group for marital status 43.4% were married and 56.6% were unmarried indicating that unmarried participants were more in the non obese group. As per type of family, nuclear families were 64% and joint families were 36% in the obese group indicating that the nuclear families were more in the obese group. In the non obese group 68.8% families were nuclear and 31.31% were from joint families indicating that the nuclear families were more in the non obese group also.

Inclusion Criteria for the Obese Group

- 1) Participants who had BMI score of 30 and above.
- 2) Participants who had waist circumference of greater than 102 cm for males and 88 cm for females.
- 3) Participants who had age range of 18 to 42 years.

Exclusion Criteria for the Obese Group

- 1) Participants who underwent major surgery like heart, liver, kidney etc for last 3 months.
- 2) Participants with sub average intelligence as per the clinical interview.
- 3) Pregnant women or women who had given childbirth for last 6 months.
- 4) Participants with any history of physical, psychiatric, neurological and substance related disorders.

Inclusion Criteria for the Non Obese Group

- 1) Participants who had BMI score of 19 to 24.9.
- 2) Participants who had waist circumference of less than 102 cm for males and 88 cm for females.
- 3) Participants who had age range of 18 to 42 years.

Exclusion Criteria for the Non Obese Group

- 1) Participants who had BMI score of 30 or more than 30.
- 2) Participants who had waist circumference of more than 102 cm for males and 88 cm for females.
- 3) Participants who underwent major surgery like heart, liver, kidney etc for last 3 months.
- 4) Participants who had sub average intelligence as per the clinical interview.
- 5) Pregnant women or women who had given childbirth for last 6 months.
- 6) Participants with any history of physical, psychiatric, neurological and substance related disorders.

Tools used for Assessment

Socio-Demographic Data Format: Information data format was prepared to collect details about the participant's gender, age, education, marital status, number of family members, family history, occupation, residence etc.

Body mass index (BMI): BMI was calculated by dividing the weight by the height. [weight (kg) / height(cm)].

Waist circumference: The waist circumference of the participants was measured using the measuring tape in centimeter.

Weight Efficacy Lifestyle Questionnaire (WEL): The weight efficacy lifestyle questionnaire by Clark et al., (1991) is a 20-item self-report measure that assesses an individual's confidence to abstain from eating in a variety of different situations. It is possible to obtain both an overall measure as well as situational self-efficacy based on subscale scores. The Subscales are negative emotions, availability, social pressure, physical discomfort and positive activities. The reliability of WEL on cronbach alpha coefficients for internal consistency ranged from .70 to .90. The measure also indicates an independent cross-validation and convergent validity with the eating self-efficacy scale. The cronbach alpha was .86 on the Indian sample indicating that the reliability is quiet adequate for further application.

Ryff's Psychological Well-Being Scale (PWB): This scale was developed by Ryff (1989). The scale is a 54 item scale version that was used. The scale involves items of the 6 constructs of Psychological well being given by Ryff of autonomy, self acceptance, environmental mastery, personal growth, purpose in life and positive relations with others. The Inter-factor correlations of the psychological well-being constructs were sufficiently high (> 0.80). Internal consistency varied from .86 to .93 for the various dimensions. The cronbach alpha was .82 on the Indian sample indicating that the reliability is quiet adequate for further application.

Weight Locus of Control Scale (WLCS): This is a total 15 item scale by Phillip McGraw (2003). The scale has three subparts that involve internal locus of control, external locus of control and chance locus of control. The scoring of the three parts are done separately and interpretation is also separately given for the subparts. The participants have to select each item among the four choices of agree, agree slightly, disagree slightly and disagree. Cronbach alpha of .71 on the Indian participants indicates adequate reliability. Convergent and discriminate validity was present for the scale.

Procedure for the Obese Group

The participants who met above mentioned inclusion and exclusion criteria were explained about purpose of the study. Participants who gave their written consent were selected for the study. BMI and waist circumference were recorded. Weight efficacy lifestyle questionnaire, psychological well-being scale and weight locus of control scale were administered on 200 obese adults.

Procedure for the Non Obese Group

The participants who met above mentioned inclusion and exclusion criteria were explained about purpose of the study. Participants who gave their written consent were selected for the study. BMI and waist circumference were recorded. Weight efficacy lifestyle questionnaire, psychological well-being scale and weight locus of control scale were administered on 100 non obese adults.

Statistical Analysis

Statistical analysis was performed with SPSS version 20.0. Descriptive statistics was done to know the mean and SD of the data. t-test was applied to compare the obese and non obese groups. Pearson product momentum correlation was done to know the correlation between obese and non obese groups. Step wise regression was done to know the factors that predict psychological well being in obese and non obese groups. ANOVA was employed to know the differences in gender for the obese and the non obese group.

Results

Table 1: Clinical Picture for the Obese and the Non obese Group

Clinical Data Variables		Obese Group	Non Obese Group
Family History of Obesity	Present	87 (43.5%)	18 (18.2%)
	Absent	113 (56.5%)	81 (81.8%)
Body Mass Index (BMI)	Normal Weight	00	99 (100%)
	Obesity Grade 1	134 (67%)	00
	Obesity Grade 2	51 (25.5%)	00
	Obesity Grade 3	14 (7%)	00
	Obesity Grade 4	1 (0.5%)	00

Table 1 reflects the clinical picture which is family history of obesity and body mass index for the obese and the non obese group. 43.5% participants had a family history of obesity and 56.5% participants did not have a family history of obesity in the obese group indicating that maximum participants did not have a family history of obesity for the Obese Group. In the non obese group 18.2% had a family history of obesity and 81.8% did not have a family history of obesity indicating that maximum participants did not have a family history of obesity for the Non obese Group also . As for BMI no normal weight participants were in the obese group, 67 % of the participants were in the obese Grade 1, 25.5% were of obesity Grade 2, 7% were obesity grade 3 and 0.5% was obesity grade 4 indicating that obesity grade 1 was the maximum for the Obese Group. In the non obese group there were 100% normal participants only and no obese participants.

Table 2A : Comparison between the mean scores of obese and non obese groups on Weight Efficacy Lifestyle (WEL)

Sub domains and Total of the WEL Scores	Obese Group Mean(SD) N = 200	Non Obese group Mean(SD) N= 100	t	p
WEL-Negative Emotions	23.405 (8.763)	26.283 (6.744)	3.133	.002**
WEL-Availability	17.650 (8.216)	19.121 (6.885)	1.534	.126
WEL- Social Pressure	21.155 (7.053)	23.707 (7.090)	2.934	.004**
WEL-Physical Discomfort	23.925 (7.859)	25.434 (6.099)	1.824	.069
WEL- Positive Activities	20.995 (7.821)	22.040 (6.217)	1.253	.212
WEL – Total	107.130 (28.432)	116.585(26.738)	2.759	.006**

** Significant at 0.01, * Significant at 0.05

Table 2A reflects the comparison between the mean scores for the obese and the non obese group among the various sub domains of the Weight Efficacy Lifestyle. Significant differences on two sub domains - negative emotions ($t=3.133$, $p .002$) and social pressure ($t = 2.934$, $p .004$) was found between the two groups. The mean was lesser for the obese group (23.405 ± 8.763) than the non obese group (26.283 ± 6.744) for negative emotions sub domain as well as the mean was lower for the obese group (21.155 ± 7.053) than the non obese group (23.707 ± 7.090) for the social pressure sub domain also. The mean score of Weight Efficacy Lifestyle – Total in the obese group is $107.130 (28.432)$ and in the non obese group is $116.585 (26.738)$ which suggests that the mean score of the non obese group was found to be high in comparison to the obese group.

Table 2B : Comparison between the mean scores of obese and non obese groups on Psychological Well-Being (PWB)

Sub domains and Total of the PWB Scores	Obese Group	Non Obese group	t	p
	Mean(SD)	Mean(SD)		
	N = 200	N= 100		
PWB-Positive Relations	37.945 (7.691)	38.657 (6.460)	.792	.429
PWB-Autonomy	35.210 (6.133)	37.293 (6.325)	2.735	.007**
PWB-Environmental Mastery	36.470 (6.527)	38.450 (6.405)	2.496	.013*
PWB-Personal Growth	37.050 (6.911)	37.830 (6.449)	.937	.350
PWB-Purpose in Life	38.015 (6.855)	37.172 (6.227)	1.031	.303
PWB-Self Acceptance	36.390 (6.467)	38.050 (5.583)	2.190	.029*
PWB Total	221.070(30.986)	227.454(27.995)	1.730	.085

** Significant at 0.01, * Significant at 0.05

Table 2B reflects the comparison between the mean scores of obese and non obese groups on Psychological Well-Being (PWB). Significant differences in three sub domains of the PWB was found which was autonomy ($t=2.735$, $p .007$) environmental mastery ($t=2.496$, $p.013$) and self acceptance ($t=2.190$, $p.029$) between the obese and the non obese group. The mean was lower for the obese group (35.210 ± 6.133) than the non obese group (37.293 ± 6.325) on the autonomy sub domain as well as on the environmental mastery sub domain also the mean was lower for the obese group (36.470 ± 6.527) than the non obese group (38.450 ± 6.405) as well as the mean was lower for the obese group (36.390 ± 6.467) than the non obese group (38.050 ± 5.583) on the self acceptance sub domain too.

Table 2C: Comparison between the mean scores of obese and non obese groups on Weight Locus of Control (WLOC)

Sub domains and Total of the WLOC Scores	Obese Group Mean(SD) N = 200	Non Obese group Mean(SD) N= 100	t	p
WLOC -Internal	16.115 (3.103)	14.364 (3.255)	4.445	.000**
WLOC-External	12.305 (3.620)	11.354 (3.497)	2.163	.031*
WLOC-Chance	12.575 (3.900)	12.343 (3.201)	.546	.585
WLOC-Total	40.995(6.989)	38.060(6.874)	3.435	.001**

** Significant at 0.01, * Significant at 0.05

Table 2C reflects the comparison between the mean scores of obese and non obese groups on Weight Locus of Control (WLOC). On the weight locus of control scale there were significant differences on the Internal ($t=4.445$, $p .000$) and External ($t=2.163$, $p .031$) sub domains of the scale. The mean was higher in the obese group (16.115 ± 3.103) than the non obese group (14.364 ± 3.255) on the internal sub domain of the weight locus of control scale as well as the mean was higher in the obese group (12.305 ± 3.620) than the non obese group (11.354 ± 3.497) on the external sub domain of the weight locus of control scale. There was significant difference on the total of WLOC ($t = 3.435$, $p = .001$), with the mean of the obese group (40.995 ± 6.989) being higher than the non obese group (38.060 ± 6.874).

Figure 1 : Graph depicting the mean of obese and non obese groups on Psychological Well Being (PWB), Weight Efficacy Lifestyle (WEL) and Weight Locus of Control (WLOC).

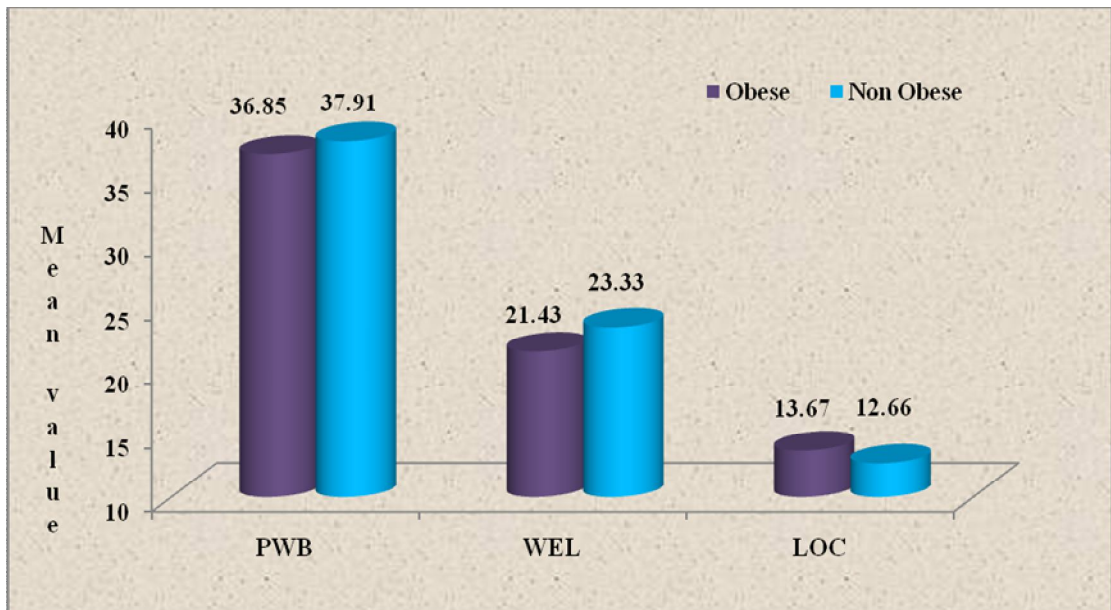


Figure 1 depicts the mean of obese and non obese groups on Psychological Well Being (PWB), Weight Efficacy Lifestyle (WEL) and Weight Locus of Control (WLOC). Non obese group means are higher for PWB and WEL as compared to the obese group means. The mean for WLOC was higher for obese group as compared to non obese group.

Table 3A1: Comparison between the mean scores of obese and non obese groups for gender (Males) on Weight Efficacy Lifestyle (WEL)

Sub Domains and Total of the WEL Scores	Males			
	Obese Mean(SD) N= 100	Non Obese Mean(SD) N=50	t	p
WEL-Negative Emotions	23.320(8.611)	26.820 (6.086)	2.570	0.011*
WEL- Availability	17.830(8.225)	19.700(6.519)	1.400	0.103
WEL-Social Pressure	21.070(6.730)	24.400(7.687)	2.720	0.007**
WEL-Physical Discomfort	24.240(7.699)	25.600(6.697)	1.060	0.289
WEL-Positive Activities	21.190(7.970)	22.620(5.735)	1.130	0.263
WEL Total	107.650(27.171)	119.140(27.561)	2.430	0.016*

** Significant at 0.01, * Significant at 0.05

Table 3A1 reflects the comparison between the mean scores for the obese and the non obese group for males among the various sub domains of the Weight Efficacy Lifestyle. Significant differences on two sub domains - negative emotions ($t=2.570$, $p .011$) and social pressure ($t = 2.720$, $p .007$) was found between the two groups for males. The mean was lesser for the obese males (23.320 ± 8.611) than the non obese males (26.820 ± 6.086) for negative emotions sub domain as well as the mean was lower for the obese males (21.070 ± 6.730) than the non obese males (24.400 ± 7.687) for the social pressure sub domain also. There was significant difference ($t=2.430$, $p.016$) in the total of WEL too where the mean score of WEL – Total in the obese group of males was (107.650 ± 27.171) and in the non obese group of males was (119.140 ± 27.561) which suggests that the mean score of the non obese males was found to be higher in comparison to the obese males.

Table 3A2: Comparison between the mean scores of obese and non obese groups for gender (Females) on Weight Efficacy Lifestyle (WEL)

Sub Domains and Total of the WEL Scores	Females		t	p
	Obese Mean(SD) N= 100	Non Obese Mean(SD) N=50		
WEL-Negative Emotions	23.490(8.956)	25.735(7.379)	1.640	0.013*
WEL- Availability	17.470(8.244)	18.531(7.260)	.680	0.499
WEL-Social Pressure	21.240(7.395)	23.000(6.425)	1.530	0.128
WEL-Physical Discomfort	23.610(8.043)	25.265(5.487)	1.360	0.178
WEL-Positive Activities	20.800(7.705)	21.449(6.680)	.470	0.639
WEL Total	106.610(29.768)	113.979(25.893)	1.530	0.129

** Significant at 0.01, * Significant at 0.05

Table 3A2 reflects the comparison between the mean scores for the obese and the non obese group for females among the various sub domains of the Weight Efficacy Lifestyle. Significant difference on one sub domain - negative emotions (t=1.640, p .013) was found between the two groups for females. The mean was lesser for the obese females (23.490 ±8.956) than the non obese females (25.735 ±7.397) for the negative emotions sub domain.

Figure 2 : Graph depicting the mean of obese and non obese groups for gender on Weight Efficacy Lifestyle

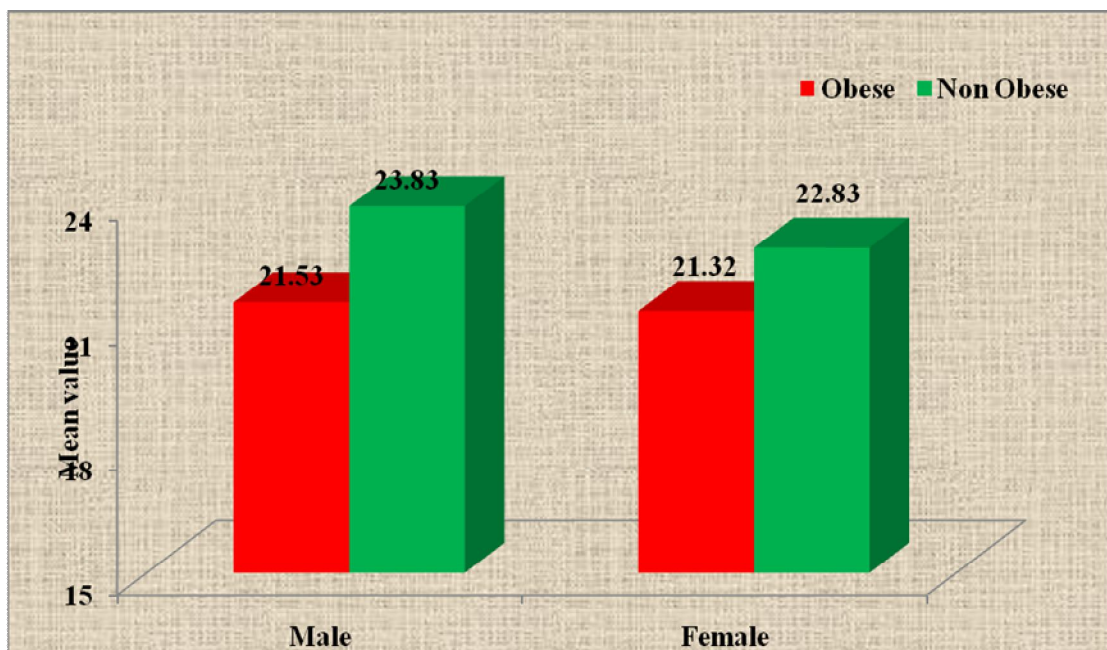


Figure 2 reveals that mean of the non obese group for both males and females was higher than the obese group for both males and females on weight efficacy lifestyle.

Table 3B1: Comparison between the mean scores of obese and non obese groups for gender (Males) on Psychological Well Being (PWB)

Sub Domains and Total of the PWB Scores	Males		t	p
	Obese Mean(SD) N= 100	Non Obese Mean (SD) N=50		
PWB-Positive Relations	37.770(7.887)	38.520(6.872)	0.570	0.568
PWB-Autonomy	35.800(5.916)	36.820(6.368)	0.970	0.334
PWB-Environmental Mastery	37.250(6.640)	38.660(7.133)	1.200	0.234
PWB-Personal Growth	36.920(6.862)	37.520(6.409)	0.520	0.607
PWB-Purpose in Life	37.710(6.518)	36.020(5.274)	1.590	0.114
PWB-Self Acceptance	36.190(6.476)	38.060(5.133)	1.780	0.077
PWB Total	221.640(30.157)	225.600(28.532)	0.770	0.442

** Significant at 0.01, * Significant at 0.05

Table 3B1 reflects the comparison between the mean scores of obese and non obese groups for males on Psychological Well-Being (PWB). No significant difference was there for any sub domain or total of the PWB.

Table 3B2: Comparison between the mean scores of obese and non obese groups for gender (Females) on Psychological Well Being (PWB)

Sub Domains and Total of the PWB Scores	Females		t	p
	Obese	Non Obese		
	Mean(SD) N= 100	Mean (SD) N=50		
PWB-Positive Relations	38.120 (7.525)	38.796(6.079)	0.590	0.557
PWB-Autonomy	34.620(6.317)	37.776(6.308)	2.930	0.004**
PWB-Environmental Mastery	35.680(6.348)	38.240(5.633)	2.420	0.017*
PWB-Personal Growth	37.180(6.993)	38.140(6.542)	0.730	0.469
PWB-Purpose in Life	38.320(7.196)	38.347(6.926)	0.030	0.974
PWB-Self Acceptance	36.580(6.486)	38.040(6.062)	1.350	0.177
PWB Total	220.500(31.936)	229.346(27.601)	1.660	0.098

** Significant at 0.01, * Significant at 0.05

Table 3B1 reflects the comparison between the mean scores of obese and non obese groups for females on Psychological Well-Being (PWB). Significant difference was found for the sub domains autonomy ($t= 2.930$, $p= .004$) and environmental mastery ($t=2.420$, $p= .017$). The mean of the non obese group was higher (37.776 ± 6.308) as compared to the obese group (34.620 ± 6.317) for the autonomy sub domain. On the environmental mastery sub domain too the mean of the non obese group was higher (38.240 ± 5.633) as compared to the obese group (35.680 ± 6.348).

Figure 3: Graph depicting the mean of obese and non obese groups for gender on Psychological Well Being

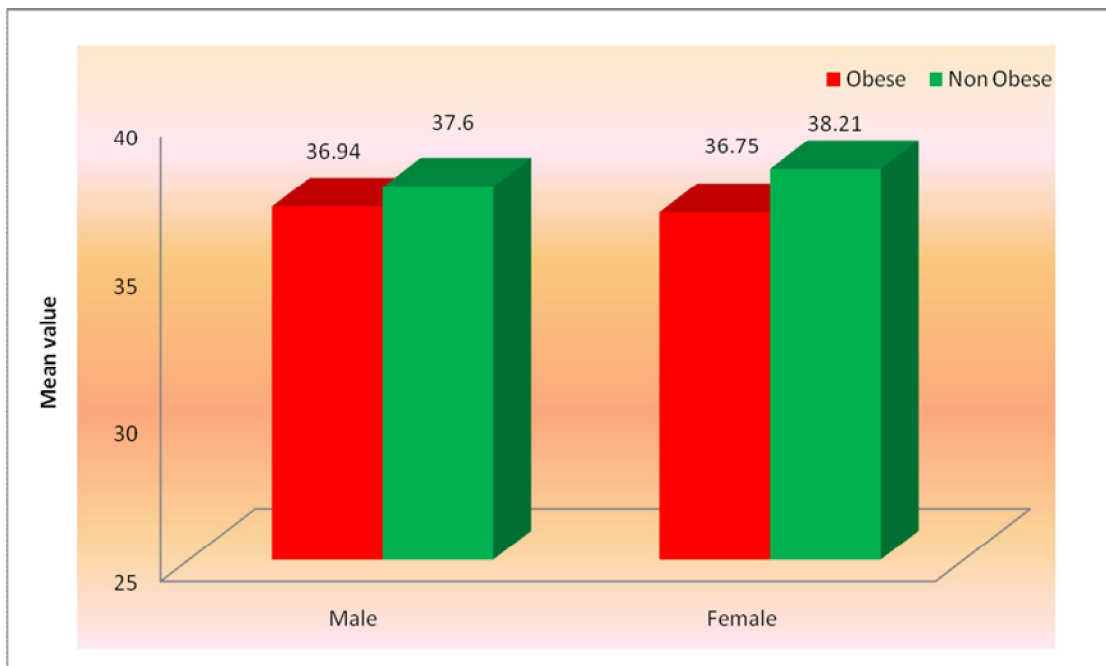


Figure 3 depicts the mean of the obese and non obese groups for gender on Psychological Well Being. The graph shows the mean of non obese males and females being higher than obese males and females.

Table 3C1: Comparison between the mean scores of obese and non obese groups for gender (Males) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Males		t	p
	Obese Mean(SD) N= 100	Non Obese Mean (SD) N=50		
WLOC –Internal	16.350(3.131)	14.260(3.231)	3.810	0.001**
WLOC-External	12.150(3.666)	11.220(3.501)	1.490	0.139
WLOC-Chance	12.450(3.677)	13.260(3.015)	1.350	0.180
WLOC-Total	40.950(6.836)	38.740(6.700)	1.880	0.062

** Significant at 0.01, * Significant at 0.05

Table 3C1 reflects the comparison between the mean scores of the obese and non obese males on Weight Locus of Control (WLOC). On the weight locus of control there was significant difference on the Internal ($t=3.810$, $p .001$) sub domain. The mean was higher in the obese males (16.350 ± 3.131) than the non obese males (14.260 ± 3.231) on the internal sub domain of the weight locus of control.

Table 3C2: Comparison between the mean scores of obese and non obese groups for gender (Females) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Females		t	p
	Obese	Non Obese		
	Mean(SD) N= 100	Mean (SD) N=50		
WLOC –Internal	15.880(3.072)	14.469(3.311)	2.680	0.008**
WLOC-External	12.460(3.585)	11.490(3.524)	1.740	0.084
WLOC-Chance	12.700(4.125)	11.408(3.141)	1.940	0.055
WLOC-Total	41.040(7.174)	37.367(7.174)	3.090	0.002**

** Significant at 0.01, * Significant at 0.05

Table 3C2 reflects the comparison between the mean scores of obese and non obese females on Weight Locus of Control (WLOC). On the weight locus of control there was significant difference on the Internal ($t=2.680$, $p .008$) sub domain. The mean was higher of the obese females (15.880 ± 3.072) than the non obese females (14.469 ± 3.311) on the internal sub domain of the weight locus of control. There was also significant difference on the total of WLOC ($t= 3.090$, $p = .002$) where the mean of obese females was higher (41.040 ± 7.174) than the non obese females (37.367 ± 7.174).

Figure 4: Graph depicting the mean of obese and non obese groups for gender on Weight Locus of Control

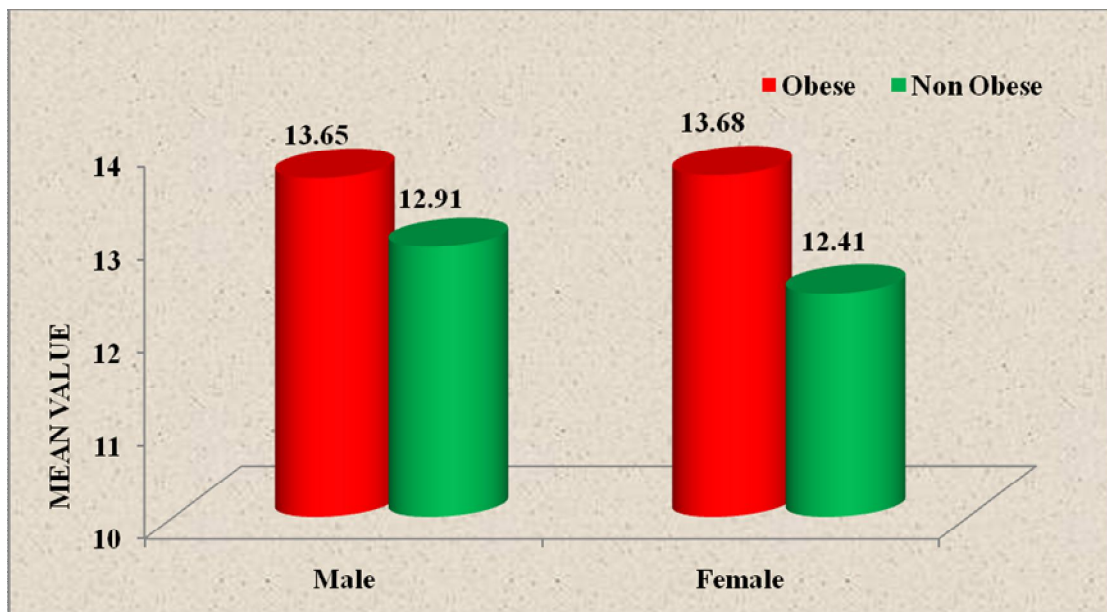


Figure 4 shows the mean of obese and non obese groups for gender on Weight Locus of Control. The mean of the obese males and females is higher than the non obese males and females.

Table 4A1: Comparison between the mean scores of obese and non obese groups for age (younger age) on Weight Efficacy Lifestyle (WEL)

Sub Domains and Total of the WEL Scores	Younger Age		t	p
	Obese	Non Obese		
	Mean(SD)	Mean(SD)		
	N = 77	N = 67		
WEL-Negative Emotions	23.026(8.401)	25.776 (6.986)	1.380	0.169
WEL- Availability	15.727(7.811)	18.000(7.181)	0.560	0.573
WEL-Social Pressure	19.987(7.057)	22.910(7.434)	1.110	0.269
WEL-Physical Discomfort	23.883(7.701)	25.358(6.333)	0.470	0.641
WEL-Positive Activities	18.961(8.092)	21.358(6.781)	0.080	0.940
WEL Total	101.584(25.573)	113.403(27.976)	1.000	0.321

** Significant at 0.01, * Significant at 0.05

Table 4A1 reflects the comparison between the mean scores of obese and non obese groups for age (younger age) on Weight Efficacy Lifestyle (WEL). No significant difference was found on any sub domain or total of the WEL for the younger age obese and non obese groups.

Table 4A2: Comparison between the mean scores of obese and non obese groups for age (older age) on Weight Efficacy Lifestyle (WEL)

Sub Domains and Total of the WEL Scores	Older Age		t	p
	Obese	Non Obese		
	Mean(SD)	Mean(SD)		
	N = 123	N = 33		
WEL-Negative Emotions	23.642 (9.009)	27.344 (6.178)	2.630	0.009**
WEL- Availability	18.854 (8.264)	21.469 (5.628)	1.230	0.221
WEL-Social Pressure	21.886 (6.980)	25.375 (6.084)	2.650	0.009**
WEL-Physical Discomfort	23.951 (7.988)	25.594 (5.673)	1.850	0.066
WEL-Positive Activities	22.268 (7.399)	23.469 (4.600)	1.380	0.169
WEL Total	110.601 (29.659)	123.250 (22.930)	2.620	0.010**

** Significant at 0.01, * Significant at 0.05

Table 4A2 reflects the comparison between the mean scores of obese and non obese groups for older age on Weight Efficacy Lifestyle (WEL). Significant difference was found on two sub domains and total of the WEL for the older age obese and non obese groups. On negative emotions sub domain significant difference was found (t=2.630, p=0.009) and the mean of non obese older age was higher (27.344 ± 6.178) than the obese (23.642 ± 9.009) older age. On social pressure significant difference (t=2.650, p=.009) was found between the obese and non obese older age and the mean of non obese older age was higher (25.375± 6.084) than the obese older age (21.886± 6.980). Significant difference on the total of WEL (t=2.620, p 0.010) was found with the mean of non obese older age (123.250±22.930) being higher than the obese older age (110.601±29.659).

Figure 5: Graph depicting the mean of obese and non obese groups for age on Weight Efficacy Lifestyle

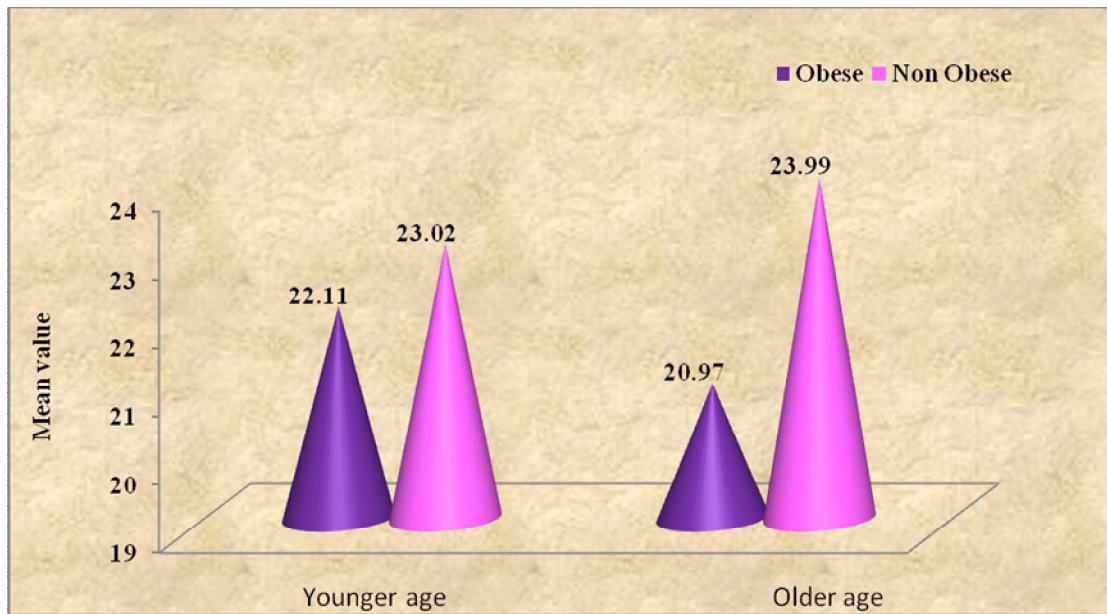


Figure 5 reveals the mean of obese and non obese groups for age on Weight Efficacy Lifestyle and shows the non obese mean being higher for both younger and older age.

Table 4B1: Comparison between the mean scores of obese and non obese groups for age (younger age) on Psychological Well- Being (PWB)

Sub Domains and Total of the PWB Scores	Younger Age		t	p
	Obese Mean(SD) N = 77	Non Obese Mean(SD) N = 67		
PWB-Positive Relations	36.857(8.375)	39.478(6.429)	1.190	0.235
PWB-Autonomy	34.325(6.360)	38.806(5.758)	2.440	0.016*
PWB- Environmental Mastery	35.660 (6.832)	38.780 (6.307)	2.240	0.027*
PWB-Personal Growth	36.710 (6.937)	38.900 (6.313)	0.350	0.727
PWB-Purpose in Life	36.506 (7.647)	37.746 (6.153)	0.890	0.375
PWB-Self Acceptance	35.470 (7.261)	38.930 (5.115)	2.250	0.260
PWB Total	215.532 (33.250)	232.626 (26.406)	1.540	0.124

** Significant at 0.01, * Significant at 0.05

Table 4B1 reflects the comparison between the mean scores of obese and non obese groups for younger age on Psychological Well- Being (PWB). Significant difference was found on two sub domains autonomy ($t= 2.440$, $p = 0.016$) and environmental mastery ($t= 2.240$, $p= 0.027$) for the younger age obese and non obese groups. The mean was higher for the autonomy sub domain non obese younger age group (38.806 ± 5.758) as compared to the obese younger age group (34.325 ± 6.360). The mean was also higher for the environmental mastery sub domain of the non obese younger age group (38.806 ± 6.307) as compared to the obese younger age group (35.660 ± 6.832).

Table 4B2: Comparison between the mean scores of obese and non obese groups for age (older age) on Psychological Well- Being

Sub Domains and Total of the PWB Scores	Older Age		t	p
	Obese Mean(SD) N = 123	Non Obese Mean(SD) N = 33		
PWB-Positive Relations	38.626 (7.181)	36.937 (6.278)	0.08	0.935
PWB-Autonomy	35.764 (5.946)	34.125 (6.369)	0.98	0.327
PWB-Environmental Mastery	36.970 (6.305)	37.780 (6.656)	0.85	0.396
PWB-Personal Growth	37.260 (6.915)	35.590 (6.247)	0.46	0.644
PWB-Purpose in Life	38.959 (6.155)	35.969 (6.306)	0.52	0.605
PWB-Self Acceptance	36.960 (5.875)	36.220 (6.142)	0.42	0.674
PWB Total	224.536 (29.085)	216.625 (28.533)	0.51	0.608

** Significant at 0.01, * Significant at 0.05

Table 4B2 reflects the comparison between the mean scores of obese and non obese groups for older age on Psychological Well- Being (PWB). No significant difference was found on any sub domains or total of the PWB for older age participants.

Figure 6: Graph depicting the mean of obese and non obese groups for age on Psychological Well-Being

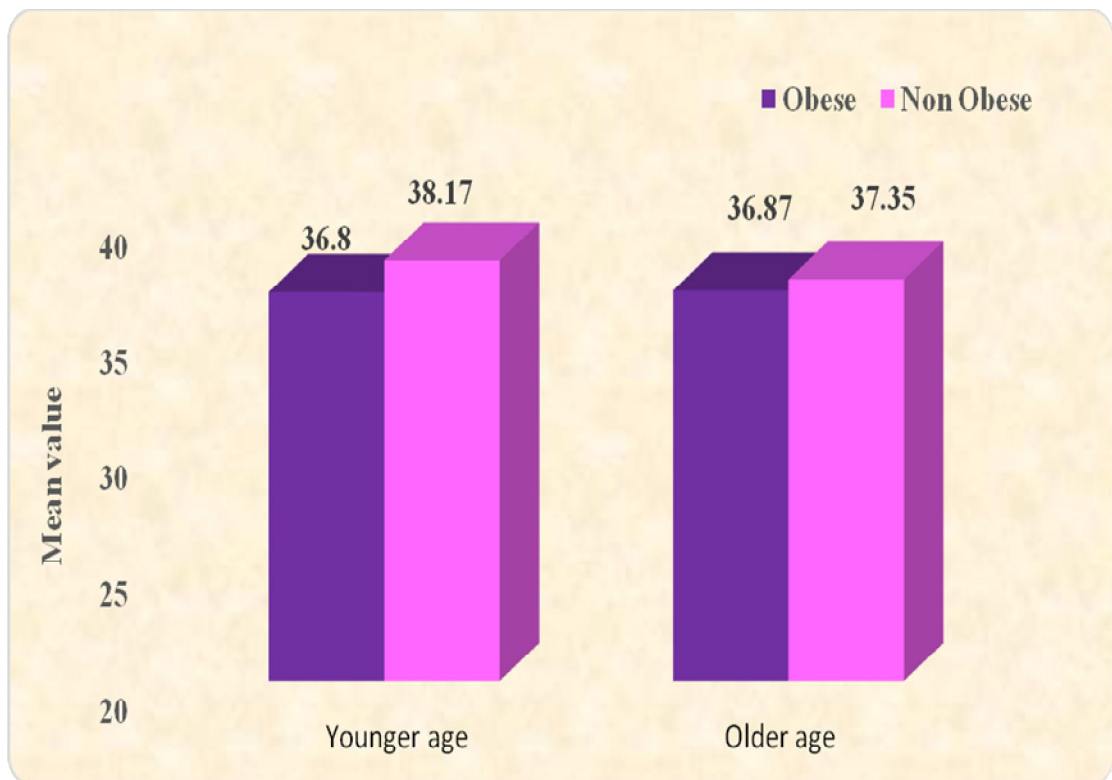


Figure 6 reveals the mean of obese and non obese groups for age on Psychological Well –Being. The graph shows the non obese mean being higher for both younger and older age.

Table 4C1: Comparison between the mean scores of obese and non obese groups for age (younger age) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Younger Age		t	p
	Obese Group	Non Obese Group		
	Mean (SD) N= 77	Mean (SD) N= 67		
WLOC	16.039 (2.953)	14.537 (3.513)	2.490	0.014*
Internal				
WLOC-	12.442 (3.306)	11.209 (3.431)	1.470	0.144
External				
WLOC-	12.494 (3.988)	12.567 (3.168)	1.000	0.319
Chance				
WLOC-Total	40.974 (6.507)	38.313 (7.112)	2.260	0.025*

** Significant at 0.01, * Significant at 0.05

Table 4C1 reflects the comparison between the mean scores of obese and non obese groups for younger age on Weight Locus of Control (WLOC). On the weight locus of control there was significant difference on the Internal (t=2.490, p .014) sub domain. The mean was higher of the obese younger age participants (16.039 ± 2.953) than the non obese younger age participants (14.537 ± 3.513) on the internal sub domain of the weight locus of control. There was also significant difference on the total of WLOC (t= 2.260, p = .025) where the mean of obese younger age was higher (40.974 ± 6.507) than the non obese younger age participants (38.313 ± 7.112).

Table 4C2: Comparison between the mean scores of obese and non obese groups for age (older age) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Older Age		t	p
	Obese Group	Non Obese Group		
	Mean (SD)	Mean (SD)		
	N= 123	N= 33		
WLOC	16.163 (3.204)	14.000 (2.651)	3.950	0.001**
Internal				
WLOC-	12.220 (3.814)	11.656 (3.668)	2.110	0.036*
External				
WLOC-	12.626 (3.859)	11.875 (3.270)	0.090	0.930
Chance				
WLOC-Total	41.008 (7.302)	37.531 (6.425)	3.140	0.002**

** Significant at 0.01, * Significant at 0.05

Table 4C2 reflects the comparison between the mean scores of obese and non obese groups for younger age on Weight Locus of Control (WLOC). On the weight locus of control there was significant difference on the Internal (t=3.950, p .001) sub domain. The mean was higher of the obese younger age participants (16.163 ± 3.204) than the non obese younger age participants (14.000 ± 2.651) on the internal sub domain of the weight locus of control. Significant difference was also found on the external sub domain (t=2.110, p .036). The mean was higher of the obese younger age participants (12.220 ± 3.814) than the non obese younger age participants (11.656 ± 3.668) on the internal sub domain of the weight locus of control. There was also significant difference on the total of WLOC (t= 3.140, p = .002) where the mean of obese younger age was higher (41.008 ± 7.302) than the non obese younger age participants (37.531 ± 6.425).

Figure 7: Graph depicting the mean of obese and non obese groups for age on Weight Locus of Control

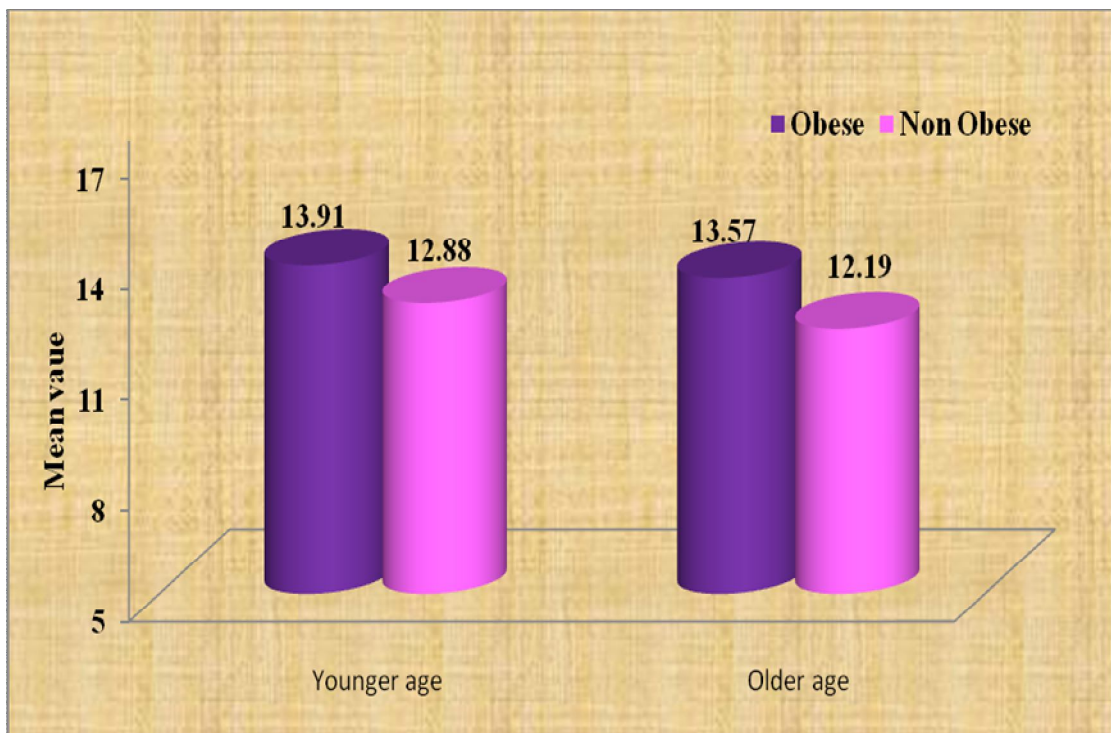


Figure 7 reveals the mean of obese and non obese groups for age on Weight Locus of Control. The graph shows the obese mean being higher than the non obese mean for both younger and older age.

Table 5A1: Comparison between the mean scores of obese and non obese groups for education (12th std) on Weight Efficacy Lifestyle (WEL)

Scores on the sub domains of the WEL	12 th std		t	p
	Obese Group	Non obese Group		
	Mean (SD) N= 28	Mean (SD) N= 2		
WEL-Negative Emotions	22.679 (9.618)	20.500 (7.778)	0.311	0.758
WEL-Availability	18.429 (6.898)	17.500 (3.535)	0.186	0.853
WEL-Social Pressure	21.964 (6.033)	21.500 (7.778)	0.104	0.918
WEL-Physical Discomfort	21.500 (8.888)	24.500 (6.364)	0.465	0.645
WEL-Positive Activities	19.964 (6.379)	27.000 (2.828)	1.529	0.138
WEL Total	104.535 (22.128)	111.000 (2.727)	0.404	0.689

** Significant at 0.01, * Significant at 0.05

Table 5A1 reflects the comparison between the mean scores of obese and non obese groups for education of 12th standard participants on Weight Efficacy Lifestyle (WEL). No significant difference was found on any sub domains or total of the WEL for participants educated upto 12th standard.

Table 5A2: Comparison between the mean scores of obese and non obese groups for education (Graduate) on Weight Efficacy Lifestyle (WEL)

Scores on the sub domains of the WEL	Graduate		t	p
	Obese Group	Non obese Group		
	Mean (SD) N= 77	Mean (SD) N= 56		
WEL-Negative Emotions	22.597 (8.784)	27.455 (6.740)	3.545	0.001**
WEL-Availability	17.234 (8.759)	19.600 (7.337)	1.550	0.124
WEL-Social Pressure	20.662 (7.190)	24.873 (7.073)	3.424	0.001**
WEL-Physical Discomfort	23.247 (7.912)	26.327 (6.197)	2.452	0.016*
WEL-Positive Activities	19.286 (7.883)	22.309 (5.801)	2.387	0.018*
WEL Total	103.026 (30.103)	120.563 (26.839)	3.437	0.001**

** Significant at 0.01, * Significant at 0.05

Table 5A2 reflects the comparison between the mean scores of obese and non obese groups for education of graduate participants on Weight Efficacy Lifestyle (WEL). Significant difference was found on many sub domains like negative emotions (t = 3.545, p= .0.001), social pressure (t= 3.424, p=0.001), physical discomfort (t=2.452, p=0.016), positive activities (t= 2.387,p= 0.018) and total of the WEL (t=3.437, p=0.001) for participants educated upto 12th standard. The mean was lower for the obese participants (22.597 ± 8.784) as compared to the non obese participants (27.455 ± 6.740) for negative emotions. The mean was also lower for the social pressure sub domain for obese graduate participants (20.662 ± 7.190) as compared to the non obese (24.873 ± 7.073). On physical discomfort the mean of obese participants 23.247 ± 7.912) was lesser than the non obese participants (26.327 ± 6.197) and also for positive activities sub domain the mean of obese participants (19.286 ± 7.883)

was lesser than the non obese graduate participants (22.309 ± 5.801). On the total of WEL the mean of obese graduate participants (103.026 ± 30.103) was also lesser as compared to the non obese graduate participants (120.563 ± 26.839).

Table 5A3: Comparison between the mean scores of obese and non obese groups for education (Post Graduate and Above) on Weight Efficacy Lifestyle (WEL)

Scores on the sub domains of the WEL	Post Graduate and Above			
	Obese Group	Non obese Group	t	p
	Mean (SD)	Mean (SD)		
	N= 95	N= 42		
WEL-Negative Emotions	24.274 (8.495)	25.024 (6.505)	0.510	0.610
WEL-Availability	17.758 (8.177)	18.571(6.432)	0.571	0.569
WEL-Social Pressure	21.316 (7.255)	22.286(6.974)	0.730	0.467
WEL-Physical Discomfort	25.189 (7.330)	24.310(5.911)	0.685	0.494
WEL-Positive Activities	22.684 (7.873)	21.452(6.797)	0.879	0.381
WEL Total	111.221 (28.379)	111.642 (26.615)	0.082	0.935

** Significant at 0.01, * Significant at 0.05

Table 5A3 reflects the comparison between the mean scores of obese and non obese groups for education of post graduate and above participants on Weight Efficacy Lifestyle (WEL). No significant difference was found on any sub domains or total of the WEL for these participants.

Figure 8: Graph depicting the mean of obese and non obese groups for education on Weight Efficacy Lifestyle

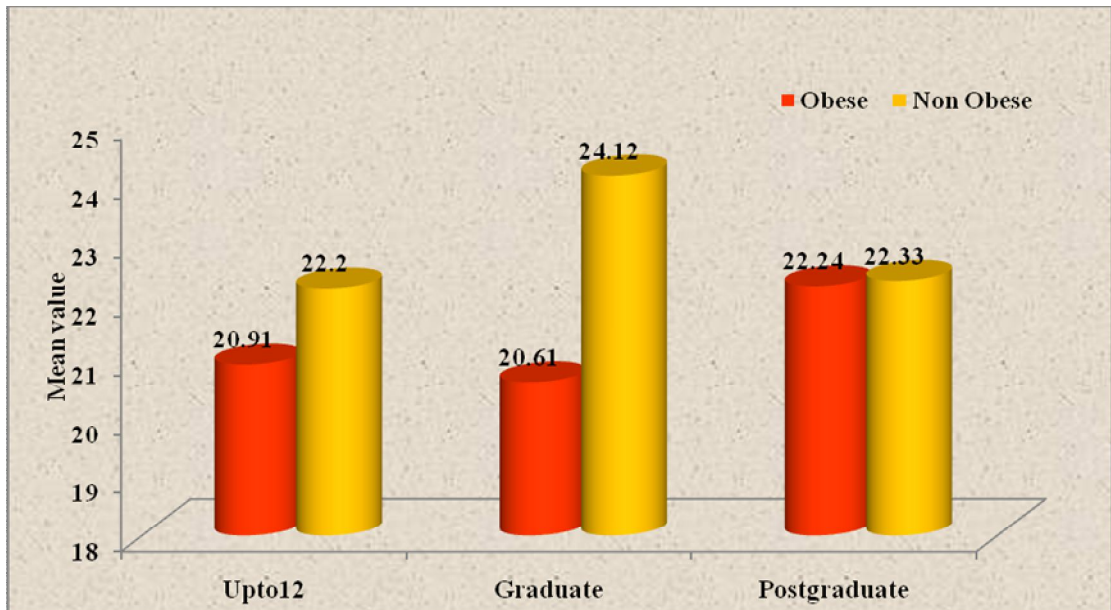


Figure 8 reveals the mean of obese and non obese groups for education on Weight Efficacy Lifestyle. The graph shows the obese mean being lower for the 12th std and graduates than the non obese mean for both. The mean of postgraduates and above for both obese and non obese was almost the same as depicted by the graph.

Table 5B1: Comparison between the mean scores of obese and non obese groups for education (12th std) on Psychological Well- Being (PWB)

Sub Domains and Total of the PWB Scores	12 th std		t	p
	Obese Mean(SD) N = 28	Non Obese Mean(SD) N = 2		
PWB-Positive Relations	34.571 (6.718)	38.500(6.364)	0.800	0.430
PWB-Autonomy	33.643(4.900)	33.000(1.414)	0.182	0.857
PWB-Environmental Mastery	34.140 (5.205)	37.500(.707)	0.897	0.376
PWB-Personal Growth	37.140(6.399)	36.500(.707)	0.140	0.890
PWB-Purpose in Life	36.679 (6.560)	33.500(.707)	0.674	0.504
PWB-Self Acceptance	37.110(4.157)	38.000(2.828)	0.296	0.769
PWB Total	213.285(22.863)	217.000(7.071)	0.226	0.823

** Significant at 0.01, * Significant at 0.05

Table 5B1 reflects the comparison between the mean scores of obese and non obese groups for education of post graduate and above participants on Psychological Well-Being (PWB). No significant difference was found on any sub domains or total of the PWB for these participants.

Table 5B2: Comparison between the mean scores of obese and non obese groups for education (Graduates) on Psychological Well- Being (PWB)

Sub Domains and Total of the PWB Scores	Graduates		t	p
	Obese	Non Obese		
	Mean(SD) N = 77	Mean(SD) N = 56		
PWB-Positive Relations	36.065(7.244)	39.091(6.703)	2.489	0.014*
PWB-Autonomy	33.961(5.608)	38.345(6.242)	4.289	0.001**
PWB-Environmental Mastery	35.260(5.752)	38.710(6.505)	3.233	0.002**
PWB-Personal Growth	34.960(6.248)	38.040(6.452)	2.688	0.008**
PWB-Purpose in Life	36.299(6.380)	37.455(6.226)	1.006	0.316
PWB-Self Acceptance	34.700(6.456)	38.350(5.752)	3.382	0.001**
PWB Total	211.246(26.561)	229.981(27.414)	3.963	0.001**

** Significant at 0.01, * Significant at 0.05

Table 5B2 reflects the comparison between the mean scores of obese and non obese groups for graduate participants on Psychological Well- Being (PWB). Significant difference was found on many sub domains like positive relations ($t = 2.489$, $p = .014$), autonomy ($t = 4.289$, $p = 0.001$), environmental mastery ($t = 3.233$, $p = 0.002$), personal growth ($t = 2.688$, $p = 0.008$), self acceptance ($t = 3.382$, $p = 0.001$) and total of the PWB ($t = 3.963$, $p = 0.001$) for graduate participants. The mean was lower for the obese participants (36.065 ± 7.244) as compared to the non obese participants (39.091 ± 6.703) for positive relations. The mean was also lower for obese graduate participants (33.961 ± 5.608) as compared to the non obese participants (38.345 ± 6.242) on the autonomy sub domain. On environmental mastery sub domain the mean of obese participants (35.260 ± 5.752) was lesser than the non obese participants (38.710 ± 6.505) and also for personal growth sub domain the mean of obese participants (34.960 ± 6.248) was lesser than the non obese graduate participants (38.040 ± 6.452).

The mean was lower for the obese participants (34.700 ± 6.456) as compared to the non obese participants (38.350 ± 5.752) for self acceptance. On the total of PWB the mean of obese graduate participants (211.246 ± 26.561) was also lesser as compared to the non obese graduate participants (229.981 ± 27.414).

Table 5B3: Comparison between the mean scores of obese and non obese groups for education (Post Graduate and above) on Psychological Well- Being (PWB)

Sub Domains and Total of the PWB Scores	Postgraduate and above		t	p
	Obese Mean(SD) N = 95	Non Obese Mean(SD) N = 42		
PWB-Positive Relations	40.463 (7.559)	38.095 (6.246)	1.778	0.078
PWB-Autonomy	36.684 (6.566)	36.119 (6.359)	0.469	0.640
PWB-Environmental Mastery	38.130 (7.076)	38.170 (6.488)	0.030	0.976
PWB-Personal Growth	38.720 (7.171)	37.620 (6.662)	0.843	0.401
PWB-Purpose in Life	39.800 (6.932)	36.976 (6.387)	2.250	0.026*
PWB-Self Acceptance	37.540 (6.787)	37.670(5.520)	0.109	0.913
PWB Total	231.326 (33.297)	224.642(29.330)	1.122	0.264

** Significant at 0.01, * Significant at 0.05

Table 5B3 reflects the comparison between the mean scores of obese and non obese groups for postgraduate and above participants on Psychological Well- Being (PWB). Significant difference was found on purpose in life sub domain ($t = 2.250$, $p = .026$) where the mean of the obese participants (39.800 ± 6.932) was higher as compared to the non obese participants (36.976 ± 6.387).

Figure 9: Graph depicting the mean of obese and non obese groups for education on Psychological Well-Being

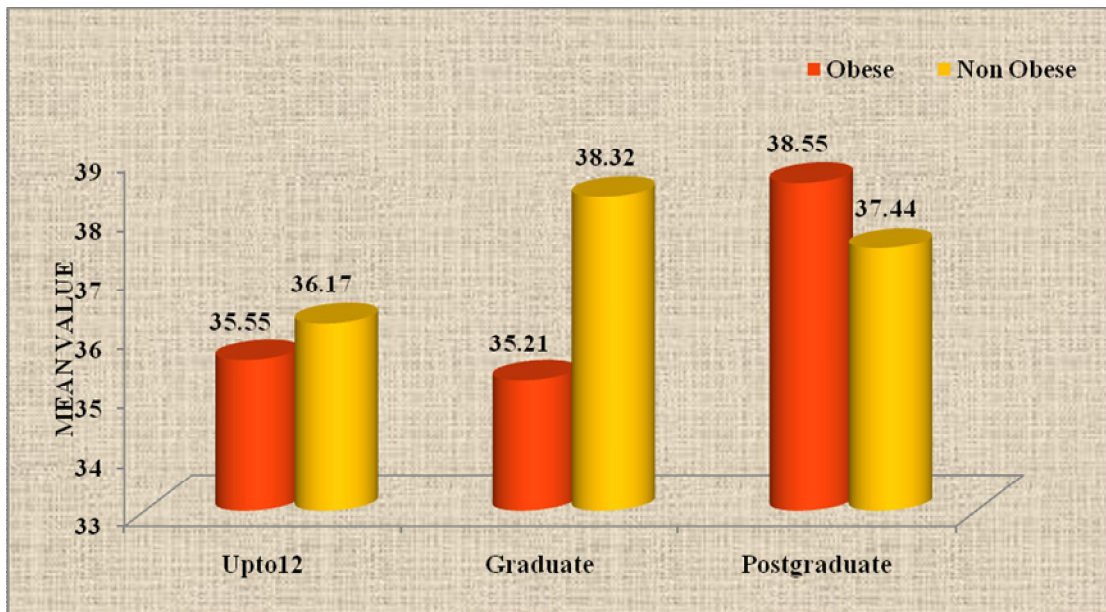


Figure 9 reveals the mean of obese and non obese groups for education on Psychological Well- Being. The graph shows the obese mean being lower for the 12th std and graduate participants than the non obese mean for both the 12th standard and graduate participants. The mean of obese participants was higher as compared to the non obese participants for postgraduates and above as depicted by the graph.

Table 5C1: Comparison between the mean scores of obese and non obese groups for education (12th std) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	12th std		t	p
	Obese	Non Obese		
	Mean (SD) N = 28	Mean (SD) N = 2		
WLOC -Internal	15.179 (3.621)	12.500 (.707)	1.028	0.313
WLOC-External	12.179 (3.277)	8.500 (.707)	1.560	0.130
WLOC-Chance	13.571 (3.315)	13.500 (.707)	.030	0.976
WLOC-Total	40.928 (5.689)	34.500 (.707)	1.572	0.127

** Significant at 0.01, * Significant at 0.05

Table 5C1 reflects the comparison between the mean scores of obese and non obese groups for participants educated upto 12th std on Weight Locus of Control (WLOC). No significant difference was found on any sub domain or total of the WLOC.

Table 5C2: Comparison between the mean scores of obese and non obese groups for education (Graduate) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Graduate		t	p
	Obese	Non Obese		
	Mean (SD) N = 77	Mean (SD) N = 56		
WLOC -Internal	15.987 (2.958)	14.473 (3.054)	2.963	0.004**
WLOC-External	13.039 (3.679)	11.618 (3.608)	2.361	0.020*
WLOC-Chance	12.883 (3.976)	12.091 (2.875)	1.274	0.204
WLOC-Total	41.909 (7.041)	38.181 (6.295)	3.266	0.001**

** Significant at 0.01, * Significant at 0.05

Table 5C2 reflects the comparison between the mean scores of obese and non obese groups for graduate participants on Weight Locus of Control (WLOC). Significant difference was found on the internal ($t= 2.963 \pm 0.004$) and external ($t= 2.361$, $p=.020$) sub domains as well as the total of the WLOC ($t=3.266 \pm 0.001$). The mean of the obese participants (15.987 ± 2.958) was higher as compared to the non obese participants (14.473 ± 3.054) for the internal sub domain. On external sub domain too the mean of the obese participants (13.039 ± 3.679) was higher as compared to the non obese participants (11.618 ± 3.608). On the total of the WLOC the mean of the graduate obese participants (41.909 ± 7.041) was higher as compared to the non obese graduate participants (38.181 ± 6.295).

Table 5C3: Comparison between the mean scores of obese and non obese groups for education (Post graduate and above) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Postgraduate and above		t	p
	Obese Mean (SD) N = 95	Non Obese Mean (SD) N = 42		
WLOC -Internal	16.495 (3.020)	14.310 (3.585)	3.682	0.001**
WLOC-External	11.747 (3.599)	11.143 (3.397)	0.922	0.358
WLOC-Chance	12.032 (3.947)	12.619 (3.655)	0.821	0.413
WLOC-Total	40.273 (7.269)	38.071 (7.753)	1.602	0.113

** Significant at 0.01, * Significant at 0.05

Table 5C3 reflects the comparison between the mean scores of obese and non obese groups for postgraduate and above participants on Weight Locus of Control (WLOC). Significant difference was found on the internal ($t= 3.682 \pm 0.001$) sub domain where the mean of the obese (16.495 ± 3.020) was higher as compared to the non obese (14.310 ± 3.585) participants.

Figure 10: Graph depicting the mean of obese and non obese groups for education on Weight Locus of Control

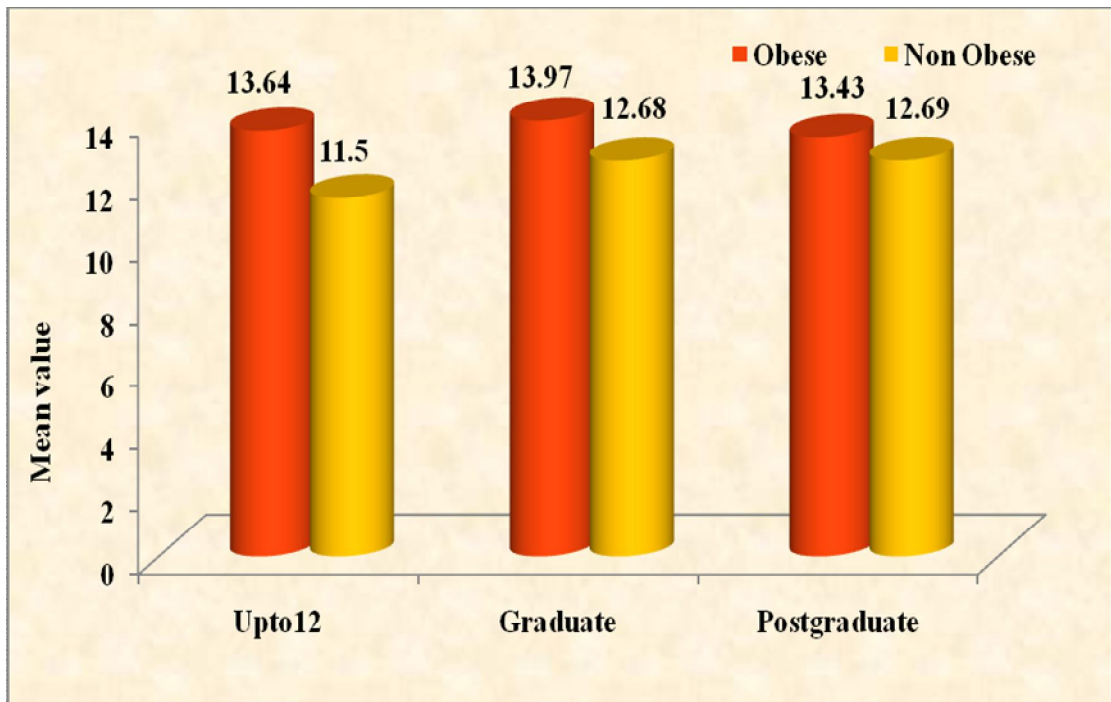


Figure 10 reveals the mean of obese and non obese groups for education on Weight Locus of Control. The graph shows the obese mean being higher for the 12th std, graduate and post graduate and above participants than the non obese mean for all the three education groups.

Table 6A1: Comparison between the mean scores of obese and non obese groups for marital status (married) on Weight Efficacy Lifestyle (WEL)

Scores on the sub domains of the WEL	Married		t	p
	Obese Group	Non obese Group		
	Mean (SD) N= 150	Mean (SD) N= 44		
WEL-Negative Emotions	23.540 (8.526)	28.047 (5.847)	3.380	0.001**
WEL-Availability	18.313 (8.018)	21.209 (5.505)	2.080	0.039*
WEL-Social Pressure	21.633 (7.136)	25.558 (5.778)	3.410	0.001**
WEL-Physical Discomfort	24.133 (7.753)	26.442 (5.662)	1.870	0.064
WEL-Positive Activities	22.120 (7.489)	23.442 (4.333)	1.030	0.304
WEL Total	109.740 (28.042)	124.697 (21.241)	3.260	0.001**

** Significant at 0.01, * Significant at 0.05

Table 6A1 reflects the comparison between the mean scores of obese and non obese groups for married participants on Weight Efficacy Lifestyle (WEL). Significant difference was found on three sub domains and total of the WEL for the obese and non obese groups. On negative emotions sub domain significant difference was found ($t=3.380$, $p=0.001$) and the mean of obese was lesser (23.540 ± 8.526) than the non obese (28.047 ± 5.847). Significant difference was found on availability sub domain ($t= 2.080$, $p= 0.039$) where the mean of obese was lesser (18.313 ± 8.018) than the mean of the non obese (21.209 ± 5.505) for the married participants. On social pressure significant difference ($t=3.410$, $p=0.001$) was found between the obese and non obese married participants and the mean of married obese was lesser (21.633 ± 7.136) than the married non obese (25.558 ± 5.778). Significant difference on the total

of WEL ($t=3.260$, $p 0.001$) was found with the mean of obese (109.740 ± 28.042) being lesser than the non obese (124.697 ± 21.241) for the married participants on WEL.

Table 6A2: Comparison between the mean scores of obese and non obese groups for marital status (unmarried) on Weight Efficacy Lifestyle (WEL)

Scores on the sub domains of the WEL	Unmarried			
	Obese Group	Non obese Group	t	p
	Mean (SD)	Mean (SD)		
	N= 50	N= 56		
WEL-Negative Emotions	23.000 (9.521)	24.929 (7.116)	1.190	0.237
WEL-Availability	15.660 (8.558)	17.518 (7.437)	1.200	0.234
WEL-Social Pressure	19.720 (6.661)	22.286 (7.702)	1.820	0.071
WEL-Physical Discomfort	23.300 (8.219)	24.661 (6.356)	0.960	0.340
WEL-Positive Activities	17.620 (7.899)	20.964 (7.198)	2.280	0.025*
WEL Total	99.300 (28.436)	110.357 (28.954)	1.970	0.050*

** Significant at 0.01, * Significant at 0.05

Table 6A2 reflects the comparison between the mean scores of obese and non obese groups for unmarried participants on Weight Efficacy Lifestyle (WEL). Significant difference was found on positive activities sub domain and total of the WEL for the obese and non obese groups. On positive activities sub domain significant difference was found ($t=2.280$, $p=0.025$) and the mean of obese was lesser (17.620 ± 7.899) than the non obese (20.964 ± 7.198). Significant difference on the total of WEL ($t=1.970$, $p 0.050$) was found with the mean of obese (99.300 ± 28.436) being lesser than the non obese (110.357 ± 28.954) for the unmarried participants on WEL.

Figure 11: Graph depicting the mean of obese and non obese groups for marital status on Weight Efficacy Lifestyle

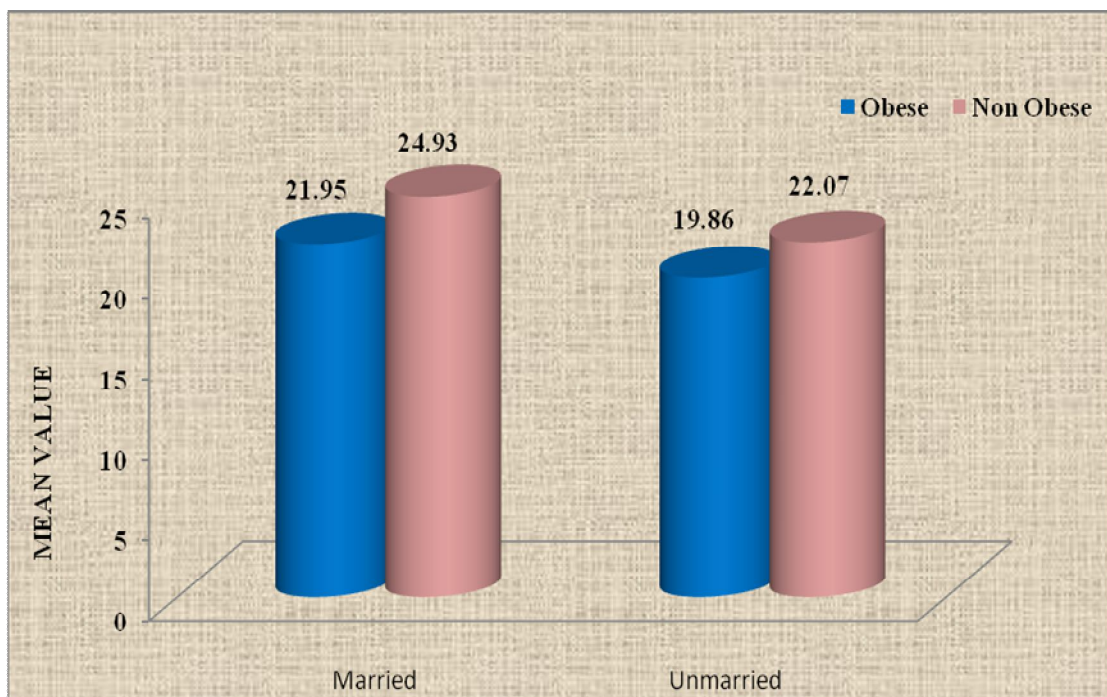


Figure 11 reveals the mean of obese and non obese groups for marital status on Weight Locus of Control. The graph shows the obese mean being lower for the married and unmarried participants than the non obese mean.

Table 6B1: Comparison between the mean scores of obese and non obese groups for marital status (married) on Psychological Well- Being (PWB)

Sub Domains and Total of the PWB Scores	Married		t	p
	Obese Mean(SD) N = 150	Non Obese Mean(SD) N = 44		
PWB-Positive Relations	38.507 (7.411)	37.093 (5.789)	1.090	0.276
PWB-Autonomy	35.400 (6.412)	35.488 (6.344)	0.170	0.862
PWB-Environmental Mastery	36.850 (6.338)	38.000 (6.291)	1.070	0.288
PWB-Personal Growth	37.270 (7.056)	37.910 (6.301)	0.450	0.654
PWB-Purpose in Life	38.407 (6.678)	37.349 (6.043)	0.990	0.322
PWB-Self Acceptance	36.740 (6.470)	36.980 (5.902)	0.260	0.795
PWB Total	223.166 (30.796)	222.814 (25.198)	0.050	0.192

** Significant at 0.01, * Significant at 0.05

Table 6B1 reflects the comparison between the mean scores of obese and non obese groups for married participants on Psychological Well-Being (PWB). No significant difference was found on any sub domain or total of the PWB for the married obese and non obese groups.

Table 6B2: Comparison between the mean scores of obese and non obese groups for marital status (unmarried) on Psychological Well- Being (PWB)

Sub Domains and Total of the PWB Scores	Unmarried		t	p
	Obese Mean(SD) N = 150	Non Obese Mean(SD) N = 44		
PWB-Positive Relations	36.260 (8.329)	39.857 (6.737)	2.460	0.016*
PWB-Autonomy	34.640 (5.228)	38.679 (6.003)	3.670	0.001**
PWB-Environmental Mastery	35.320 (7.006)	38.800 (6.527)	2.650	0.009**
PWB-Personal Growth	36.400 (6.484)	37.770 (6.617)	1.070	0.286
PWB-Purpose in Life	36.840 (7.304)	37.036 (6.415)	0.150	0.884
PWB-Self Acceptance	35.320 (6.406)	38.880 (5.230)	3.140	0.002**
PWB Total	214.780 (31.009)	231.017 (29.696)	2.750	0.007**

** Significant at 0.01, * Significant at 0.05

Table 6B2 reflects the comparison between the mean scores of obese and non obese groups for unmarried participants on Psychological Well-Being (PWB). Significant difference was found on four sub domains and total of the PWB for the unmarried obese and non obese groups. On positive relations ($t = 2.460$, $p = .016$) where the mean of obese group (36.260 ± 8.329) is lesser than the non obese (39.857 ± 6.737) group. On the sub domain of autonomy too ($t = 3.670$, $p = .001$) the mean of obese group (34.640 ± 5.228) is lesser than the non obese (38.679 ± 6.003) group. On Environmental mastery ($t = 2.650$, $p = .009$) too the mean of the obese group (35.320 ± 7.006) was lesser than the non obese group (38.800 ± 6.527). On the self acceptance domain ($t = 3.140$, $p = .002$) the mean of the obese group (35.320 ± 6.406) was lesser

than the non obese group (38.880 ± 5.230). On the PWB total ($t= 2.750, p = .007$) the mean of the obese group (214.780 ± 31.009) was lesser than the non obese group (231.017 ± 29.696).

Figure 12: Graph depicting the mean of obese and non obese groups for marital status on Psychological Well-Being

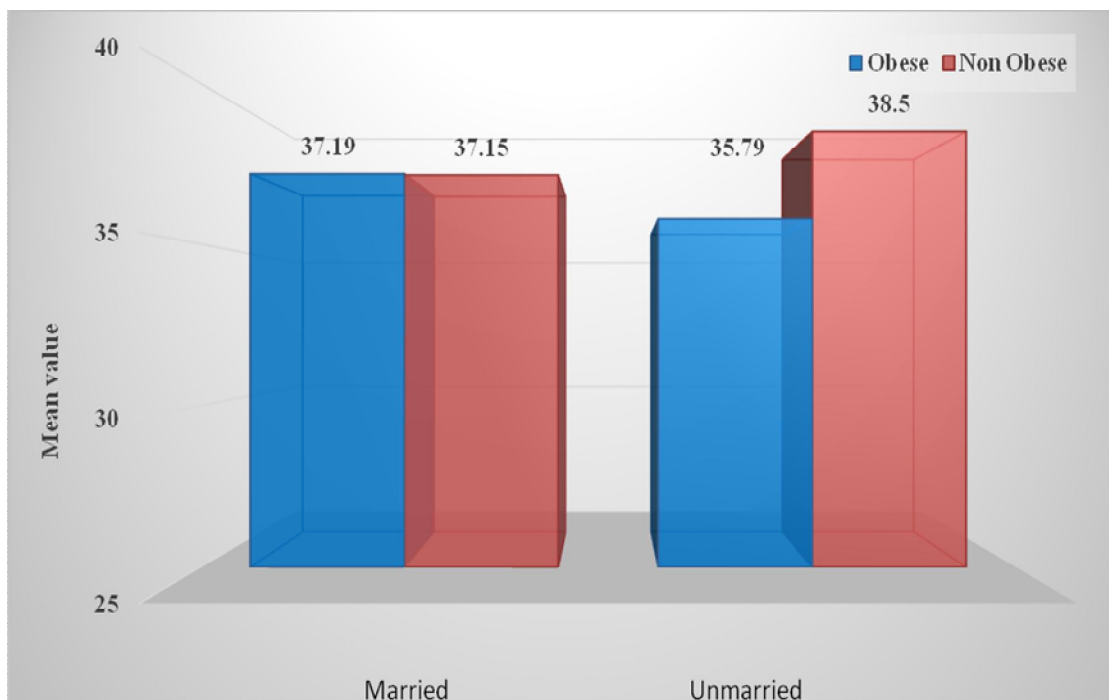


Figure 12 reveals the mean of obese and non obese groups for marital status on Psychological Well-Being. The graph shows the obese and non obese mean being almost equal for the married and unmarried participants. As for the unmarried participants the graph reveals the obese mean being lesser than the non obese mean.

Table 6C1: Comparison between the mean scores of obese and non obese groups for marital status (married) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Married		t	p
	Obese Mean (SD) N = 150	Non Obese Mean (SD) N = 44		
WLOC -Internal	16.173 (3.157)	14.372 (2.573)	3.600	0.001**
WLOC-External	12.293 (3.733)	11.349 (3.740)	1.660	0.098
WLOC-Chance	12.533 (3.873)	11.395 (2.961)	1.780	0.077
WLOC-Total	41.000 (7.096)	37.116 (6.067)	3.430	0.001**

** Significant at 0.01, * Significant at 0.05

Table 6C1 reflects the comparison between the mean scores of obese and non obese groups for married participants on Weight Locus of Control (WLOC). Significant difference was found on the Internal sub domain ($t= 3.600$, $p= 0.001$) and total of the WLOC ($t = 3.430$, $p = 0.001$) for the married obese and non obese groups. The mean of the obese group (16.173 ± 3.157) was higher than the non obese (14.372 ± 2.573) group for the internal sub domain as well as the mean was higher of the obese group (41.000 ± 7.096) as compared to the non obese group (37.116 ± 6.067) for the WLOC total.

Table 6C2: Comparison between the mean scores of obese and non obese groups for marital status (unmarried) on Weight Locus of Control (WLOC)

Sub Domains and Total of the WLOC Scores	Unmarried		t	p
	Obese	Non Obese		
	Mean (SD) N = 150	Mean (SD) N = 44		
WLOC -Internal	15.940 (2.958)	14.357 (3.719)	2.400	0.018*
WLOC-External	12.340 (3.292)	11.357 (3.332)	1.520	0.130
WLOC-Chance	12.700 (4.016)	13.071 (3.212)	0.510	0.598
WLOC-Total	40.980 (6.729)	38.785 (7.406)	1.590	0.114

** Significant at 0.01, * Significant at 0.05

Table 6C2 reflects the comparison between the mean scores of obese and non obese groups for unmarried participants on Weight Locus of Control (WLOC). Significant difference was found on the Internal sub domain ($t= 2.400$, $p= 0.018$) where the mean of the obese group (15.940 ± 2.958) was higher than the non obese (14.357 ± 3.719) group.

Figure 13: Graph depicting the mean of obese and non obese groups for marital status on Weight Locus of Control

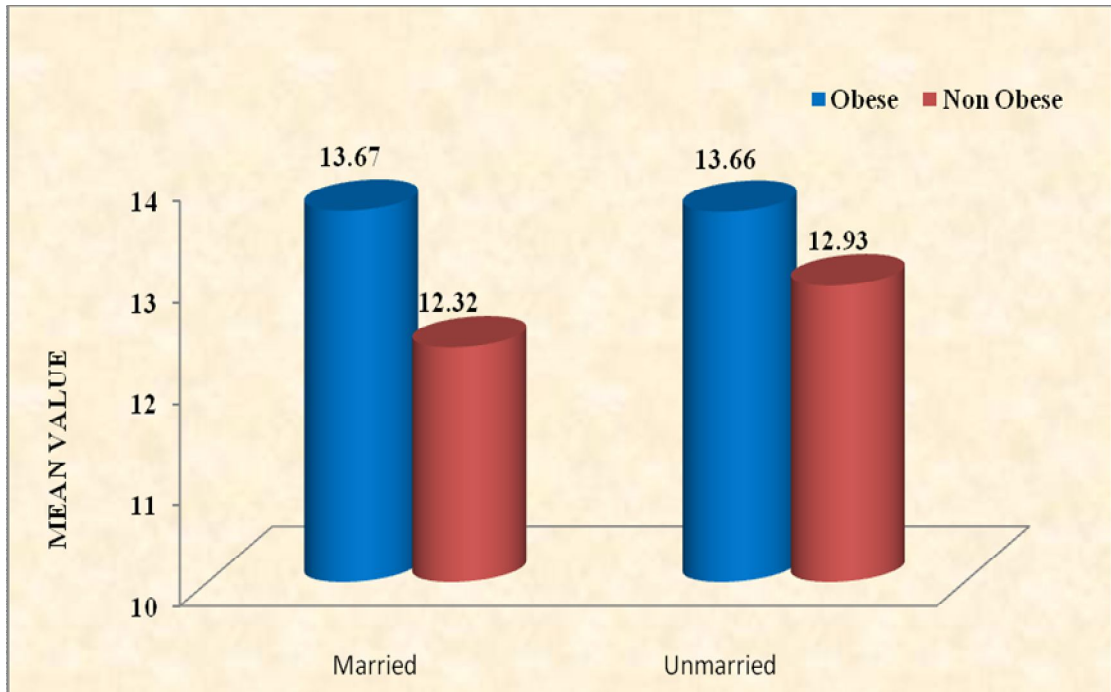


Figure 13 reveals the mean of obese and non obese groups for marital status on Weight Locus of Control. The graph shows the obese mean being higher than the non obese mean for both the married and unmarried participants.

Table 7: Correlation Matrix of Age, Body Mass Index (BMI) ,Waiste Size with Weight Efficacy Lifestyle Scale for Obese (n=200) and Non Obese Groups (n= 100)

Variables	Groups	Age	BMI	Waist Size	WEL-NE	WEL-Av	WEL-SP	WEL-PD	WEL-PA	WEL-Total
Age	Obese	1	.141*	.210**	.079	.199**	.168**	.048	.283**	.215**
	Non Obese		.249*	.302**	.141	.309**	.227*	.062	.183	.232*
BMI	Obese		1	.603**	-.061	.031	.003	-.030	-.059	-.034
	Non Obese			.447**	-.114	.159	.018	-.039	.086	.028
Waist Size	Obese			1	-.038	.029	.011	.007	-.074	-.019
	Non Obese				-.085	.088	.119	.067	.064	.063
WEL-NE	Obese				1	.194	.373**	.663**	.429**	.758**
	Non Obese					.405**	.609**	.699**	.432**	.779**
WEL-AV	Obese					1	.517**	.127	.437**	.632**
	Non Obese						.669**	.431**	.613**	.778**
WEL-SP	Obese						1	.393**	.423**	.738**
	Non Obese							.631**	.538**	.861**
WEL-PD	Obese							1	.362**	.714**
	Non Obese								.653**	.835**
WEL-PA	Obese								1	-.089**
	Non Obese									.791**

** Significant at 0.01, * Significant at 0.05

Table 7 reflects the correlation matrix for the obese and non obese groups for the variables of age, body mass index, waist size and the five sub domains of the Weight Efficacy Lifestyle Scale (WEL) which are Negative emotions (WEL-NE), Availability (WEL-AV), Social pressure (WEL-SP), Physical discomfort (WEL-PD) and Positive activities (WEL-PA) as well as the total of the WEL Scale. The correlation for age of the obese group was significantly and positively correlated for

the BMI ($r = .141$), waist size ($r=.210$), availability subdomain ($r=.199$), social pressure ($r = .168$), positive activities sub domain ($r =.283$) and total of the weight efficacy lifestyle ($r = .215$). As for the non obese group age was significantly and positively correlated to the BMI ($r = .249$), waist size ($r=.302$), availability subdomain ($r=.309$), social pressure ($r =.227$) and total of the weight efficacy lifestyle ($r = .232$). BMI was significantly and positively correlated to the waist size for both the obese ($r=.603$) and non obese ($r=.447$) groups. WEL – NE subdomain is significantly and positively correlated to the WEL –SP ($r= .373$), WEL – PD ($r= .663$), WEL –PA ($r=.429$) and WEL Total ($r= .758$) for obese the group whereas for the non obese group WEL – NE subdomain was significantly and positively correlated to all the sub domains which are the WEL –Av ($r = .405$), WEL –SP ($r= .609$), WEL – PD ($r=.669$), WEL –PA ($r=.432$) and WEL Total ($r= .779$). WEL –AV was significantly and positively correlated to the WEL –SP ($r= .517$), WEL –PA ($r=.437$) and WEL Total ($r= .632$) for the obese group and for the non obese group also for the subdomains WEL –SP ($r= .669$), WEL –PD ($r=.431$) and WEL-PA($r=.613$) and WEL Total ($r= .778$). WEL –SP is significantly and positively correlated to the WEL – PD ($r= .393$), WEL –PA ($r=.423$) and WEL Total ($r= .738$) for the obese group whereas for non obese group it was significantly and positively correlated to the sub domains WEL – PD ($r= .631$), WEL –PA ($r=.538$) and WEL Total ($r= .861$). WEL – PD was significantly and positively correlated to the WEL –PA ($r=.362$) sub domain and WEL Total ($r= .714$) for the obese group and for the non obese group WEL – PD was significantly and positively correlated to the WEL –PA ($r=.653$) sub domain and WEL Total ($r= .835$). WEL –PA was significantly and negatively correlated to the WEL –Total ($r = -.089$) for the obese group and for the non obese group WEL –PA was significantly and positively correlated to the WEL –Total ($r=.791$).

Table 8 : Correlation Matrix of Age, Body Mass Index (BMI) ,Waiste Size with Psychological Well-Being (PWB) for Obese (n=200) and Non Obese Groups (n=100)

Variables	Groups		BMI	Waiste Size	PWB- PR	PWB- AU	PWB- EM	PWB- PG	PWB - P	PWB- SA	PWB- Total
Age	Obese	1	.141*	.210**	.089	.055	.045	.006	.178*	.064	.096
	Non		.249*	.302**	-.203*	-.341**	-.112	-.203*	-.102	-.241*	-.268**
BMI	Obese		1	.603**	.021	.086	-.056	-.051	-.124	-.055	-.021
	Non			.447**	-.142	-.117	-.042	-.064	-.066	-.210*	-.141
Waiste Size	Obese			1	-.006	-.048	-.051	-.065	-.117	-.025	-.067
	Non				-.040	-.143	.034	-.064	-.105	-.111	-.094
PWB-PR	Obese				1	.374**	.682**	.537**	.559**	.572**	.829**
	Non					.452**	.627**	.376**	.353**	.618**	.768**
PWB- AU	Obese					1	.434**	.445**	.311**	.469**	.648**
	Non						.497**	.397**	.326**	.486**	.708**
PWB- EM	Obese						1	.451**	.432**	.663**	.800**
	Non							.400**	.440**	.626**	.804**
PWB-PG	Obese							1	.650**	.400**	.767**
	Non								.595**	.363**	.706**
PWB-P	Obese								1	.441**	.749**
	Non									.429**	.703**
PWB-SA	Obese									1	.770**
	Non										.778**

** Significant at 0.01, * Significant at 0.05

Table 8 reflects the correlation matrix for the obese and non obese groups for the variables of age, body mass index, waist size and the six sub domains of the Psychological Well-Being Scale (PWB) which is Positive Relations (PWB –PR), Autonomy (PWB-AU), Environmental Mastery (PWB-EM), Personal Growth (PWB-PG), Purpose in Life (PWB –P), Self Acceptance (PWB –SA) as well as the Total of the PWB scale. The correlation for age was significantly and positively correlated to the BMI ($r = .141$), waist size ($r=.210$) and the PWB –P ($r=.178$) sub domain for the

obese group whereas for the non obese group age was significantly and positively correlated to the BMI ($r = .249$) and waist size ($r=.302$). Age was significantly and negatively correlated with the sub domains PWB –PR ($r = -.203$), PWB –AU ($r = -.341$), PWB-PG ($r = -.203$), PWB- SA ($r = -.241$) and total PWB ($r = -.268$). BMI was significantly and positively correlated to the waist size ($r=.603$) for the obese group and for non obese group it was significantly and positively correlated to the waist size ($r=.447$) and significantly and negatively correlated to the PWB-SA sub domain ($r = -.210$). PWB –PR subdomain is significantly and positively correlated to the PWB-AU($r=.374$), PWB-EM($r=.682$), PWB-PG($r=.537$), PWB –P ($r=.559$), PWB –SA($r=.572$) subdomains as well as the Total of the PWB scale ($r=.829$) for the obese group and for the non obese group for all the sub domains of PWB-AU($r=.452$), PWB-EM($r=.627$), PWB-PG($r=.376$), PWB –P ($r=.353$), PWB –SA($r=.618$) and Total of the PWB scale ($r=.768$). PWB- AU subdomain is significantly and positively correlated to the PWB-EM($r=.434$), PWB-PG($r=.445$), PWB –P ($r=.311$), PWB –SA($r=.469$) subdomains as well as the Total of the PWB scale ($r=.648$) for the obese group and for non obese group also significantly and positively correlated with PWB-EM($r=.497$), PWB-PG($r=.397$), PWB –P ($r=.326$) and PWB –SA($r=.486$) subdomains and Total of the PWB scale ($r=.708$) . PWB- EM subdomain is significantly and positively correlated to the PWB-PG($r=.451$), PWB –P ($r=.432$), PWB –SA($r=.663$) subdomains as well as the Total of the PWB scale ($r=.800$) for obese group whereas for non obese group it was significantly and positively correlated for PWB-PG($r=.400$), PWB –P ($r=.440$), PWB –SA($r=.626$) subdomains as well as the Total of the PWB scale ($r=.804$). PWB- PG subdomain is significantly and positively correlated to the PWB-P($r=.650$), PWB –SA($r=.400$) subdomains as well as the Total of the PWB scale ($r=.767$) for the obese group whereas for the non obese group also for PWB-P($r=.595$), PWB –SA($r=.363$) and total PWB ($r=.706$).PWB- P subdomain is significantly and positively correlated to the PWB –SA($r=.441$) subdomain as well as the Total of the PWB scale ($r=.749$) for the obese group and for the non obese group also significantly and positively correlated for the same subdomains of PWB –SA($r=.429$) and Total PWB ($r=.703$). PWB- SA subdomain was significantly and positively correlated to the Total of the PWB scale ($r=.770$) for the obese group and for non obese group ($r=.778$) as well.

Table 9 : Correlation Matrix of Age, Body Mass Index (BMI) ,Waiste Size with Weight Locus of Control (WLOC) for Obese (n=200) and Non Obese Adults (n=100)

Variables	Groups	Age	BMI	Waiste Size	WLOC- Internal	WLOC- External	WLOC- Chance	WLOC- Total
Age	Obese	1	.141*	.210**	.003	.003	.017	.012
	Non Obese		.249*	.302**	-.030	.112	.132	-.017
BMI	Obese		1	.603**	-.011	-.034	.046	.003
	Non Obese			.447**	.275**	.085	.043	.194
Waiste Size	Obese			1	-.066	.088	.142*	.096
	Non Obese				.059	.084	.158	.144
WLOC- Internal	Obese				1	.068	-.106	.420**
	Non Obese					.329**	.011	.649**
WLOC- External	Obese					1	.423**	.784**
	Non Obese						.272**	.798**
WLOC- Chance	Obese						1	.730**
	Non Obese							.608**

** Significant at 0.01, * Significant at 0.05

Table 9 reflects the correlation matrix of age, Body Mass Index (BMI) and waist size on the three sub domains of the Weight Locus of Control (WLOC) - WLOC –Internal, WLOC – External, WLOC –Chance as well as the total of the WLOC for the obese and non obese groups. Age was significantly and positively correlated to the BMI (r=.141) and waist size (r=.210) for the obese group. As for the non obese group age was here also significantly and positively correlated to the BMI (r=.249) and waist size (r=.302). BMI was significantly and positively correlated to the waist size (r=.603) for the obese group and the non obese (r=.447) group too. Age for the non obese group was also significantly and positively correlated to the weight Internal

locus of control ($r = .275$) sub domain. Waist size was significantly and positively correlated to the WLOC –chance ($r = .142$) sub domain. WLOC –Internal sub domain was significantly and positively correlated to the WLOC –Total ($r = .420$) for the obese group whereas for the non obese group was significantly and positively correlated to the WLOC –External ($r = .329$) sub domain as well as the WLOC –Total ($r = .649$). WLOC – External sub domain is significantly and positively correlated to the WLOC –Chance ($r = .423$) and WLOC –Total ($r = .784$) for the obese group and for the non obese group also WLOC –external sub domain was significantly and positively correlated to the WLOC – chance ($r = .272$) sub domain as well as WLOC Total ($r = .798$). WLOC –Chance was significantly and positively correlated to the WLOC –Total ($r = .730$) for the obese group and also for non obese group ($r = .608$)

Table 10: Regression Analysis for Obese Adults to predict Psychological Well-Being

S.No.	Predictor	R Square	Beta	t	p
1	WLOC- External	.136	-.239	-3.289	.001
2	WEL- Total	.036	.217	3.295	.001
3	WLOC- Chance	.032	-.200	-2.815	.005

Table 10 reflects the regression analysis for obese adults of the criterion variable Psychological Well-Being. Out of all the variables 3 number of variables came out to be significant. Weight Locus of Control – External(WLOC-External) sub domain came out to be the most important variable contributing to Psychological Well-Being ($\beta = -.239, P < .001$), ($F(1, 198) = 31.266, p < .000$) which contributed to 13.6% variance in the experience of Psychological Well-Being. The second most important variable contributing to Psychological Well-Being was Weight Efficacy Lifestyle total ($\beta = .217, p < .001$), ($F(2, 197) = 20.463, p < .000$) which contributed to 3.6% variance in the experience of Psychological Well-Being. The third most important variable contributing to Psychological Well-Being was Weight Locus of Control – Chance

(WLOC-Chance) (β .200, $p < .005$), ($F (3,196) = 16.763$, $p < .000$) which contributed to 3.2% variance in the experience of Psychological Well-Being.

Table 11: Regression Analysis for Non Obese Adults to predict Psychological Well-Being

S.No.	Predictor	R Square	Beta	t	P
1	WEL- Negative Emotions	.147	.430	4.817	.000
2	Age	.097	-.314	-3.518	.001

Table 11 reflects the regression analysis for non obese adults of the criterion variable Psychological Well-Being. Out of all the variables 2 number of variables came out to be significant. Weight Efficacy Lifestyle- Negative Emotions sub domain (WEL-Negative Emotions) sub domain came out to be the most important variable contributing to Psychological Well-Being (β .430, $p < .000$), ($F (1,98) = 16.858$, $p < .000$) which contributed to 14.7% variance in the experience of Psychological Well-Being. The second most important variable contributing to Psychological Well-Being was Weight Efficacy Lifestyle total (β -.314, $p < .001$), ($F (2,97) = 15.596$, $p < .000$) which contributed to 9.7% variance in the experience of Psychological Well-Being.

Table 12 : ANOVA for Weight Efficacy Lifestyle, Psychological well-being and Weight Locus of Control

Variables		Sum of Squares	df	Mean Square	F	Sig.
Wel total	Between Groups	6708.420	3	2236.140	2.874	.037*
	Within Groups	230290.580	297	778.009		
	Total	236999.000	300			
Wloc total	Between Groups	664.180	3	221.393	4.563	.004**
	Within Groups	14360.790	297	48.516		
	Total	15024.970	300			
Pwb total	Between Groups	3108.667	3	1036.222	1.147	.330
	Within Groups	267480.120	297	903.649		
	Total	270588.787	300			

** Significant at 0.01, * Significant at 0.05

Table 12 reflects the ANOVA for weight efficacy lifestyle, psychological well-being and weight locus of control. Findings revealed that weight efficacy lifestyle and weight locus of control are significant at .05 and .01 level respectively.

Table 13 : Post hoc for weight efficacy lifestyle, psychological well-being and weight locus of control for gender

Tukey HSD

Variable	(I) gender obese	(J) gender obese	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
weltotal	male obese	female obese	1.04000	3.94464	.994	-9.1517	11.2317	
		male non obese	-11.49000	4.83118	.084	-23.9722	.9922	
		female non obese	-6.49000	4.83118	.536	-18.9722	5.9922	
		male obese	-1.04000	3.94464	.994	-11.2317	9.1517	
	female obese	male non obese	-12.53000*	4.83118	.049*	-25.0122	-.0478	
		female non obese	-7.53000	4.83118	.404	-20.0122	4.9522	
	male non obese	male obese	11.49000	4.83118	.084	-.9922	23.9722	
		female obese	12.53000*	4.83118	.049*	.0478	25.0122	
	female non obese	female non obese	female non obese	5.00000	5.57856	.807	-9.4132	19.4132
			male obese	6.49000	4.83118	.536	-5.9922	18.9722
		female obese	female obese	7.53000	4.83118	.404	-4.9522	20.0122
			male non obese	-5.00000	5.57856	.807	-19.4132	9.4132
		male obese	female obese	-.09000	.98505	1.000	-2.6351	2.4551
			male non obese	2.21000	1.20644	.260	-.9070	5.3270
loctotal	female obese	female non obese	3.73000*	1.20644	.012*	.6130	6.8470	
		male obese	.09000	.98505	1.000	-2.4551	2.6351	
		male non obese	2.30000	1.20644	.228	-.8170	5.4170	
		female non obese	3.82000*	1.20644	.009**	.7030	6.9370	
	male non obese	male obese	-2.21000	1.20644	.260	-5.3270	.9070	
		female obese	-2.30000	1.20644	.228	-5.4170	.8170	
	female non obese	female non obese	1.52000	1.39307	.695	-2.0793	5.1193	
		male obese	-3.73000*	1.20644	.012*	-6.8470	-.6130	

pwbtotal	obese	female obese	-3.82000*	1.20644	.009**	-6.9370	-.7030	
		male non obese	-1.52000	1.39307	.695	-5.1193	2.0793	
		female obese	1.14000	4.25123	.993	-9.8438	12.1238	
		male non obese	-3.96000	5.20668	.872	-17.4124	9.4924	
		female non obese	-7.64000	5.20668	.459	-21.0924	5.8124	
		male obese	-1.14000	4.25123	.993	-12.1238	9.8438	
		male non obese	-5.10000	5.20668	.761	-18.5524	8.3524	
		female obese	-8.78000	5.20668	.333	-22.2324	4.6724	
		male obese	3.96000	5.20668	.872	-9.4924	17.4124	
		female obese	5.10000	5.20668	.761	-8.3524	18.5524	
		female non obese	-3.68000	6.01215	.928	-19.2135	11.8535	
		male obese	7.64000	5.20668	.459	-5.8124	21.0924	
		female non obese	8.78000	5.20668	.333	-4.6724	22.2324	
		obese	male non obese	3.68000	6.01215	.928	-11.8535	19.2135

** Significant at 0.01, * Significant at 0.05

Table 13 reveals the post hoc for weight efficacy lifestyle, psychological well-being and weight locus of control for gender. Findings show that female obese and male non obese had significant differences at .05 level. Male obese and female non obese also showed significant differences at .05 level. Female obese and female non obese also showed significant differences at .01 level as well as male obese and male non obese showed significant differences at .05 level.

Discussion

Obesity in India is becoming a rapid phenomenon. The various health hazards associated with obesity are numerous and extensive research has been done on the physical aspects related to obesity as well as mental disorders related with obesity. However obesity has not been explored from the perspective of positive psychology. Obesity specific measures have also not been used in research studies done on obesity itself. Keeping these lacunae in mind from previous research done on obesity, the present study was designed to overcome these gaps in obesity research.

In the present study a large sample of 200 obese adults and 100 non obese adults of the age group 18 to 42 years were selected. The current research data was collected from May 2015 to September 2016 from hospitals and clinics in Delhi and NCR. Written consent was taken from the participants. Weight efficacy lifestyle, psychological well-being and weight locus of control were administered to the participants and then the data was analyzed with appropriate statistics.

As far as the socio demographic details for the present study is concerned gender was equally distributed in both the groups . There were more participants of middle age in the obese group and more young age participants in the non obese group. Maximum candidates were graduates in both the obese and non obese group. More participants were married than unmarried in the obese group and vice versa in the non obese group.

The first hypothesis for the present study was that there will be a significant role of weight locus of control and weight efficacy lifestyle in predicting psychological well-being among the obese and the non obese groups. Findings for the obese group reveal that weight locus of control – external sub domain and chance sub domain contributed to 13.6% variance and 3.2% variance in the experience of psychological well-being (Table 10). Weight efficacy lifestyle total also contributed 3.6% variance to the experience of psychological well-being for obese group (Table 10). No prior study has examined if weight locus of control and weight efficacy lifestyle can predict psychological well-being in obese adults. Weight locus of control – external and chance sub domains contributed to the psychological well-being for obese adults. The

more external or chance locus of control for weight the less distress is experienced by the obese adults and results in contributing to better psychological well-being of obese adults. It can be that they don't experience guilt for eating as they blame their obesity on external circumstances (like social pressure to eat at parties) and chance factors more. Hence it might contribute to better psychological well-being in obese adults. Weight efficacy lifestyle total also contributed to the obese adults. There may be times when obese adults restrain from eating (due to pain, headache) and hence this may have contributed to their psychological well-being too.

In the non obese group weight efficacy lifestyle - negative emotions sub domain contributed 14.7% variance in the experience of psychological well-being and weight efficacy lifestyle total contributed 9.7% variance in the experience of psychological well-being (Table 11). No prior study has examined if weight locus of control and weight efficacy lifestyle can predict psychological well-being in non obese adults also. Findings show weight efficacy lifestyle –negative emotions sub domain contributed most to the psychological well-being of the non obese group. It could be that negative emotions when experienced restrain an individual from eating as the desire to eat is less and hence it can contribute to the psychological well-being of non obese adults. Overall also the weight efficacy lifestyle which indicates the ability to restrain from eating also contributes to the psychological well-being of non obese adults.

When we compare the variance in the experience of psychological well-being for both the obese and non obese groups we can see that weight efficacy lifestyle overall (total) contributed to psychological well-being for both obese and non obese groups. However, the percentage of variance in the experience of psychological well-being was higher for the non obese group (9.7%) than the obese group (3.6%). The more an individual can restrain from eating when not required the better will be the psychological well-being of the individuals as it will not contribute to obesity. Hence the non obese have a better experience of psychological well-being as compared to obese adults which is evident by the difference in percentage of variance contribution to psychological well-being for both the obese and the non obese groups. Apart from this, weight locus of control- external and chance sub domains contribute to the psychological well-being of obese adults whereas negative emotions sub domain of

weight efficacy lifestyle contributes to the psychological well-being of non obese adults. Hence the first hypothesis is accepted that there will be a significant role of weight locus of control and weight efficacy lifestyle in predicting psychological well-being among the obese and the non obese groups.

The second hypothesis was that there will be significant correlation between age, BMI, waist size, weight efficacy lifestyle, psychological well-being and weight locus of control across the obese and non obese groups. On weight efficacy lifestyle the correlation matrix for the obese group revealed that age was positively and significantly correlated with BMI ($p = .05$) and waist size ($p=.01$) (Table 7). The findings revealed that as age increases BMI and waist size increases of obese adults. Age was also significantly and positively correlated with availability ($p=.01$), social pressure ($p=.01$) and positive activities ($p=.001$) sub domains of weight efficacy lifestyle as well as the total of weight efficacy lifestyle ($p=.01$) (Table 7). BMI was positively and significantly correlated with waist size ($p=.001$) (Table 7). This finding indicates that as BMI increases the waist size also increases of obese adults which is a obvious fact. The correlation matrix for the non obese group with weight efficacy lifestyle reveals that age here also was positively and significantly correlated with BMI ($p = .05$) and waist size ($p=.01$) (Table 7). The findings reveal that as age increases BMI and waist size increases of non obese adults also. Age was also significantly and positively correlated with availability ($p=.01$) and social pressure ($p=.05$) sub domains of weight efficacy lifestyle as well as the total of weight efficacy lifestyle ($p=.05$) (Table 7). BMI was positively and significantly correlated with waist size ($p=.01$) (Table 7). This finding indicates that as BMI increases the waist size also increases of non obese adults also. Among the five sub domains of weight efficacy lifestyle, almost all of them were significantly and positively correlated for both the obese and the non obese group as weight efficacy lifestyle is internally positively strongly correlated (Table 7).

The correlation matrix for psychological well-being of obese group reflects that age is significantly and positively correlated with BMI ($p=.05$) and waist size ($p=.01$) (Table 8). This indicates that as age of the obese individual increases the BMI and waist size also increases which is a known fact. Age was also significantly and positively correlated with purpose in life sub domain ($p=.05$) which suggests that as age

increases the purpose in life of obese individuals also increases. BMI was positively and significantly correlated with waist size ($p=.01$) (Table 8). This finding indicates that as BMI increases the waist size also increases of obese adults which is a obvious fact. The correlation matrix for psychological well-being of non obese group reflects that age is significantly and positively correlated with BMI ($p=.05$) and waist size ($p=.01$) (Table 8). This indicates that as age of the non obese individuals also increases the BMI and waist size also increases. Age for non obese individuals was also significantly and negatively correlated with positive relations ($p=.05$), autonomy ($p=.01$), personal growth ($p=.05$) and self acceptance sub domains ($p=.05$) as well as the total of psychological well-being ($p=.01$) suggesting that as age increases positive relations, autonomy, personal growth and self acceptance decreases of non obese individuals. BMI was positively and significantly correlated with waist size ($p=.001$) (Table 8). This finding indicates that as BMI increases the waist size also increases of non obese adults. BMI was also significantly and negatively correlated with self acceptance sub domain of psychological well-being ($p=.05$). Hence this finding suggests that as BMI increases the self acceptance of non obese individuals decreases. All the six sub domains of psychological well –being are significantly and positively correlated as psychological well-being factor is internally positively and strongly correlated.

The correlation matrix for weight locus of control of the obese group reflects that age was significantly and positively correlated with BMI ($p=.05$) and waist size ($p=.01$) (Table 9). BMI was positively and significantly correlated with waist size ($p=.01$) (Table 9). This finding indicates that as BMI increases the waist size also increases of obese adults which is a obvious fact. Waist size was also significantly and positively correlated with the chance sub domain of the weight locus of control which suggests that as the waist size increases for obese individuals their attribution of their weight to chance also increases (Table 9).The correlation matrix for weight locus of control of the non obese group reflects that age was significantly and positively correlated with BMI ($p=.05$) and waist size ($p=.01$) (Table 9). BMI was positively and significantly correlated with waist size ($p=.01$) (Table 9). This finding indicates that as BMI increases the waist size also increases of obese adults which is a obvious fact. BMI was also significantly and positively correlated with the internal sub domain ($p=.05$) of the weight locus of control factor. This finding indicates that as BMI increases the

internal locus of control in non obese individuals also increases. All the three sub domains of weight locus of control are significantly and positively correlated for almost all sub domains as weight locus of control factor is internally positively and strongly correlated.

The third hypothesis was that there will be significant group difference for weight efficacy lifestyle, psychological well-being and weight locus of control. Difference in the present study apart from group was seen for gender, age, education and marital status for weight efficacy lifestyle, psychological well-being and weight locus of control. The findings of the comparison between the mean scores of obese and non obese groups for weight efficacy lifestyle revealed significant differences on negative emotions sub domain ($p = .002$) and social pressure sub domain ($p = .004$) with the non obese group for both sub domains having better weight efficacy lifestyle than the obese groups (Table 2A). The mean score of weight efficacy lifestyle – total was also significantly different ($p = .006$) for the obese and the non obese group with the non obese group having better weight efficacy lifestyle than the obese group (Table 2A). Navidian, Kermansaravi and Imani (2012) in their research also found that weight efficacy lifestyle was low in the obese group as compared to the normal weight group. Hence the findings of the present study is consistent with the previous research as in the current study too the weight efficacy lifestyle of the obese group was lesser than the non obese group. On psychological well-being there was no significant difference ($p = .084$) between the obese and the non obese group (Table 2B). The findings for psychological well-being are not consistent with previous research where significant difference was found between the obese and non obese group with the non obese having higher psychological well-being than the obese group (Magallares et al., 2014). The reason for this could be that psychological well-being is not an obesity specific indicator. Hence further research studies may be required for the same. On weight locus of control also there was a significant difference ($p = .000$) between the obese and the non obese group with the obese having higher weight locus of control than the non obese group (Table 2C). No prior research has been done on weight locus of control alone. The non obese group are not concerned as much with overweight issues and hence causal attribution of weight will obviously be less only as compared to the obese group. It is evident that weight locus of control will be higher in the obese group only which is what the findings of the current research

reveal. The graphical depiction shows the mean of non obese group being higher than obese group for psychological well being and weight efficacy lifestyle and obese group being higher than obese group for weight locus of control (Figure 1).

The comparison of weight efficacy lifestyle, psychological well-being and weight locus of control as per gender between the obese and the non obese groups was seen. On weight efficacy lifestyle significant differences was found on two sub domains for males - negative emotions (p .011) and social pressure (p .007) with the obese males experiencing lesser negative emotions and social pressure as compared to the non obese males (Table 3A1). Significant difference (p.016) was also there in the total of weight efficacy lifestyle with the obese males experiencing lesser weight efficacy lifestyle as compared to the non obese males (Table 3A1). As for the obese and non obese females significant difference was found on the negative emotions (p .013) sub domain only (Table 3A2). Significant differences has been noted for both obese and non obese males as well as females for negative emotions. The graphical depiction shows the mean of obese group being lesser than the non obese group for weight efficacy lifestyle for both males as well as females (Figure 2). On psychological well-being no significant difference was found between the obese and non obese males (Table 3B1) on any sub domain or total of psychological well-being. Previous research on psychological well-being also found no significant difference between obese and normal weight males (Bookwala and Boyar, 2008). The reason for this can be that for men a higher body weight is linked to power and masculinity (Grogan and Richards, 2002). The media and the cultural norms of the Indian society also promote such an image for men. As per the females significant difference was found on the autonomy sub domain (p.004) and environmental mastery (p.017) sub domain (Table 3B2). Previous research on psychological well-being revealed no significant difference between obese and non obese females (Ogbeide et al., 2010). On the total of psychological well-being no significant difference was found in the current study also which is consistent with the previous research. However the two sub domains of autonomy and environmental mastery were significant between the obese and non obese females. It could be that obesity does affect the self confidence of the females and it has an effect on the autonomy and environmental mastery aspects in the obese females. Overall the means showed that the obese males and females had lesser psychological well-being than the non obese males and females (Figure 3). As for

gender on the weight locus of control significant difference was found between the obese and non obese males on the internal sub domain (p.001) as well as between the obese and non obese females (p.008) (Table 3C1 and Table 3C2). Significant difference was also found between the obese and non obese females on the total of the weight locus of control (p.002) (Table 3C2). No prior study has been done on weight locus of control from the perspective of gender. Internal weight locus of control has been significant for both males and females. This could be an important distinguishing variable in understanding obesity. Weight is a major concern for obese individuals and hence it could be the reason for obese individuals weight locus of control for obese females especially. Overall the means showed that the obese males and females had higher weight locus of control than the non obese males and females (Figure 4).

The age (younger and older age) was also compared for the obese and non obese groups for weight efficacy lifestyle, psychological well-being and weight locus of control. On weight efficacy lifestyle no significant difference was found between the younger age (18-30 years) of obese and non obese group (Table 4A1). However in the older age group (31-42 years) significant difference was found on the negative emotions (p.009) and social pressure (p.009) sub domains (Table 4A2). Significant differences was also seen on the total of the weight efficacy lifestyle (p.010) for the older age group between the obese and non obese groups (Table 4A2) with the obese having lesser weight efficacy lifestyle than the non obese. No prior research study has been done on weight efficacy lifestyle from the perspective of gender. This finding may indicate that at a younger age probably due to the youth spirit or energy there is no difference experienced for weight efficacy lifestyle between the obese and the non obese group. However as age increases negative emotions, social pressure and overall weight efficacy lifestyle does differ between the obese and the non obese group. Age may play a role with obesity then. Overall the means showed that the younger age obese and older age obese had lesser weight efficacy lifestyle than the non obese younger and older age (Figure 5). On psychological well being for the younger age group significant difference was found on the autonomy (p.016) and environmental mastery (p.027) sub domains for the obese and non obese groups (Table 4B1) with the obese group having lesser autonomy and environmental mastery than the non obese group. No significant difference was found on any sub domain or

total of the psychological well being for the older age group. Overall the means showed that the younger age obese and older age obese had lesser psychological well being than the non obese younger and older age (Figure 6). No previous research was found on psychological well-being from the perspective of age. Autonomy and environmental mastery may be significant as at a younger age as individuals strive for independence and control over the environment much more at a younger age than at an older age. However for obese individuals this may be less due to less self confidence as compared to their non obese counterparts. On weight locus of control for younger age significant difference was found on the internal (p.014) sub domain as well as the total weight locus of control (p.025) between the obese and the non obese groups (Table 4C1) with the obese group having higher internal locus of control than the non obese group. In the older age group also significant difference was found on the internal (p.001) sub domain, external sub domain (p.036) as well as the total weight locus of control (p.002) between the obese and the non obese groups (Table 4C2) with the obese group having higher internal, external and chance weight locus of control than the non obese group. There is a paucity of studies on weight locus of control as per gender. Significant differences are present between the two groups for younger as well as older age. Weight locus of control seems to be a crucial factor in understanding obesity irrespective of age. Overall the means showed that the younger age obese and older age obese had higher weight locus of control than the non obese younger and older age (Figure 7).

Education has also been compared between the obese and the non obese groups for weight efficacy lifestyle, psychological well-being and weight locus of control. On weight efficacy lifestyle no significant difference was found between the obese and the non obese groups for participants educated till 12th std (Table 5A1) or post graduates and above (Table 5A3). Significant differences were present between the two groups of graduates (Table 5A2) on negative emotions (p .001), social pressure (p.001), physical discomfort (p.016), positive activities (p.018) as well as the total of the weight efficacy lifestyle (p .001) with the non obese group having better weight efficacy lifestyle than the obese group. On the average the means revealed non obese group having better weight efficacy lifestyle than the obese group for all the three groups of education (Figure 8). No prior study was found on the same. In the present study maximum candidates were graduates only for both the obese (35.5%) and the

non obese (55.55%) group as compared to the other education categories. This may have contributed to the findings. Another reason for this finding may be that people with lesser education have to struggle much more for their daily needs and people with higher education have their own challenges of job pressure and so on. So obesity may not affect their weight efficacy lifestyle much for obese and non obese individuals. Hence the graduates may have lesser challenges as compared to the other education group. So the non obese graduates have better weight efficacy lifestyle than the obese group graduates. On psychological well being significant difference was not present between the obese and the non obese participants for 12th std education (Table 5B1). Significant difference was present for graduates (Table 5B2) between the two groups for positive relations (p.014), autonomy (p.001), environmental mastery (0.002), personal growth (p.008), self acceptance (p .001) and total of psychological well being (p.001). Significant difference was found between the two groups for purpose in life sub domain (p.026) for post graduate and above (Table 5B3). The graphical depiction shows the obese group being lesser for 12th std and graduates as compared to the non obese groups and the obese group being higher for the post graduate and above as compared to the non obese group (Figure 9). There is a paucity of studies related to this. On weight locus of control also no significant differences was present between the obese and the non obese group for 12th std education (Table 5C1). Significant differences was present for the internal sub domain (p .004), external sub domain (p.020) and total of weight locus of control (p.001) for the graduates on weight locus of control (Table 5C2). As for the post graduate and above significant difference was present for the internal sub domain (p.001) between the obese and the non obese groups (Table 5C3).The means of the obese and non obese groups for education reveal the obese group being higher than the non obese group for 12th std, graduation and post graduate and above categories of education (Figure 10).

Marital status was also compared for the obese and non obese group for the three factors. On weight efficacy lifestyle significant differences were present between the obese and non obese groups for married participants (Table 6A1) on negative emotions (p .001), availability (p .039), social pressure (p.001) as well as the total of the weight efficacy lifestyle (p .001) where the obese group experienced lesser negative emotions, availability and social pressure as compared to the non obese group as well as the total of weight efficacy lifestyle. On comparing the unmarried

obese and non obese groups significant difference was found on positive activities sub domain (p.025) and total of the weight efficacy lifestyle (p.050) with the obese having lesser positive activities and overall lesser weight efficacy lifestyle as compared to the non obese group (Table 6A2). Graphically too the same can be seen with the obese group having lesser weight efficacy lifestyle as compared to the non obese group for both married and unmarried participants (Figure 11). On psychological well-being no significant difference was present on any sub domain or total of psychological well-being between the obese and non obese group for married participants (Table 6B1). As for the unmarried participants significant difference was present between the obese and non obese groups for positive relations sub domain (p.016), autonomy sub domain (p.001), environmental mastery (p.009), self acceptance sub domain (p.002) and total of psychological well-being (p.007) where the non obese group had better positive relations, autonomy, environmental mastery, self acceptance and total psychological well being than the obese group (Table 6B2). Graphically when seen the means of the married obese and non obese were almost equal and for unmarried the non obese had better psychological well being than obese group (Figure 12). On weight locus of control significant difference was found between the married obese and married non obese group on internal sub domain (p .001) and total of weight locus of control (p.001) where the obese group had better internal locus of control as well as overall weight locus of control than the non obese group for the married participants (Table 6 C1). As for the unmarried participants significant difference was found between the obese and non obese group on the internal sub domain (p.018) where the obese had better internal weight locus of control than the non obese group (Table 6 C2). Graphically when seen the obese group had better weight locus of control than the non obese group for both married as well as unmarried participants (Figure 13).

The fourth hypothesis was that there will be significant gender difference across factors (psychological well- being, weight efficacy lifestyle and weight locus of control) among obese and non obese adults. Significant difference was found for weight efficacy lifestyle and weight locus of control and no significant difference for psychological well being (Table 12). On weight efficacy lifestyle female obese and male non obese (p .049) as well as male obese and female non obese (p.012) were significantly different (Table 13). On weight locus of control also significant

difference was found between the obese and non obese females ($p = .009$) as well between the obese and non obese males ($p = .012$). This indicates that obesity specific measures would reveal differences rather than general measures.

No previous research has been done on weight efficacy lifestyle from the perspective of gender. Non obese males are able to restrain themselves better from eating as compared to the obese males and hence able to maintain their weight. No significant difference was found between the obese and non obese males on weight locus of control and psychological well-being. Previous research on psychological well-being also found no significant difference between obese and normal weight males (Bookwala and Boyar, 2008). The reason for this can be that for men a higher body weight is linked to power and masculinity (Grogan and Richards, 2002). The media and the cultural norms of the Indian society also promote such an image for men.

However there was significant difference between the obese and the non obese females when considered on psychological well-being, weight efficacy lifestyle and weight locus of control ($p = .015$). This finding is consistent with our hypothesis. When each factor is seen separately a significant difference was found between the obese and the non obese females for weight locus of control ($p = .002$) with the obese females having higher weight locus of control than non obese females. No significant difference was found between the obese and non obese females on weight efficacy lifestyle and psychological well-being. No prior study has been found on weight efficacy lifestyle from a gender perspective. Previous research on psychological well-being also revealed no significant difference between obese and non obese females (Ogbeide et al, 2010). One possible explanation for not observing significant differences could be that females in general use better defense mechanisms of avoidance or reaction formation (Hughes and Degher, 1993). Another explanation can be the presence of mediating factors like high social support and good social skills which can act as protective factors for obese females (Dierk et al., 2006).

Limitations and suggestions for future research

The current study has certain limitations as well.

- 1) The obese and the non obese group were from only Delhi and NCR. One needs to conduct a multicity study in order to substantiate the findings.
- 2) Secondly the present study is not a longitudinal study and the time trends of obesity of the participants were not assessed. Many participants may not remain obese or the grade of obesity may change over the years.
- 3) Self –report questionnaires was used so socially desirable answers or response bias by the participants may have been present.
- 4) The personality of the obese and the non obese participants was not taken into consideration.
- 5) Other factors like body image, social skills was also not investigated.

Summary of the Results

- 1) Weight locus of control and weight efficacy lifestyle does predict psychological well-being among the obese and the non obese groups. Weight locus of control – external sub domain, chance sub domain and weight efficacy lifestyle total are predictors of psychological well-being for the obese group. Age and negative emotions of weight efficacy lifestyle are significant predictors of psychological well-being in non obese adults.
- 2) The correlation matrix across group reflects no co-relational difference for the sub domains of the various factors of psychological well-being, weight locus of control and weight efficacy lifestyle but difference is only in the supportive factors of age, BMI and waist size.
- 3) Significant group differences for weight locus of control and weight efficacy lifestyle between obese and non obese adults but not for psychological well-being.
- 4) Significant differences for female obese and male non obese for weight efficacy lifestyle was found.
- 5) Significant differences for male obese and female non obese for weight locus of control was found.
- 6) No significant difference between obese and non obese males or females on

psychological well-being.

Conclusion

- 1) Weight locus of control and weight efficacy lifestyle does predict psychological well-being among the obese and the non obese groups.
- 2) The study reveals that there are significant differences between obese and non obese adults on obesity specific measures like weight efficacy lifestyle and weight locus of control rather than general measures like psychological well-being.
- 3) However there is a need to conduct similar studies in multi cities to generalize these findings.

Future Implications

The prevalence of obesity is increasing worldwide and along with it there will be an increase in the mental health disorders also like depression, anxiety etc. Human resource is an essential wealth for any country. Unhealthy people will not be able to contribute to the productivity for any country. Understanding obesity from the perspective of Positive Psychology can give us new insight in the treatment of obesity. Hence obesity needs to be looked into efficiently. Obesity specific indicators like understanding the concept of weight efficacy lifestyle and weight locus of control will help in the further treatment of obesity.

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Appendix

INFORMED CONSENT FORM FOR PARTICIPATION IN THE STUDY

Title: ‘WEIGHT EFFICACY LIFE STYLE AND WEIGHT LOCUS OF CONTROL AS PREDICTORS OF PSYCHOLOGICAL WELL-BEING AMONG OBESE ADULTS’

I..... (Name of participant), state that I have been informed of the above mentioned study, and all my questions have been satisfactorily answered. I understand that my participation in this study is voluntary.

I have been informed that any results obtained from this study may be published or presented in scientific meets. However, in such circumstances, my identity will not be disclosed.

I give my willful consent for participation in this study .

Signature of participant	Name	Date
Signature of witness	Name	Date
Signature of investigator	Name	Date

Demographic Information sheet:

Participant No.

Date

Assessment Point

Age

Gender

Education

Marital Status

Number of family members

Socioeconomic status

Occupation

Residence

Any Medical Illness – Thyroid, Blood Pressure, Diabetes, Cardiac problems, etc...

Family History of Obesity – Yes / No

Biological Indexes

Height :

Weight:

Waist circumference:

Weight Efficacy Lifestyle Questionnaire (WEL)

LISTED BELOW ARE A NUMBER OF SITUATIONS THAT LEAD SOME PEOPLE TO USE EAT. WE WOULD LIKE TO KNOW HOW CONFIDENT YOU ARE THAT YOU WOULD NOT EAT IN EACH SITUATION. CIRCLE THE NUMBER THAT BEST DESCRIBES YOUR FEELINGS OF CONFIDENCE TO NOT EAT FOOD IN EACH SITUATION ACCORDING TO THE FOLLOWING SCALE:

0 1 2 3 4 5 6 7 8 9
 NOT CONFIDENT VERY CONFIDENT

1. I CAN RESIST EATING WHEN I AM ANXIOUS (NERVOUS)

0 1 2 3 4 5 6 7 8 9

2. I CAN CONTROL MY EATING ON THE WEEKENDS.

0 1 2 3 4 5 6 7 8 9

3. I CAN RESIST EATING EVEN WHEN I HAVE TO SAY "NO" TO OTHERS.

0 1 2 3 4 5 6 7 8 9

4. I CAN RESIST EATING WHEN I FEEL PHYSICALLY RUN DOWN.

0 1 2 3 4 5 6 7 8 9

5. I CAN RESIS EATING WHEN I AM WATCHING TV.

0 1 2 3 4 5 6 7 8 9

6. I CAN RESIST EATING WHEN I AM DEPRESSED (OR DOWN).

0 1 2 3 4 5 6 7 8 9

7. I CAN RESIST EATING WHEN THERE ARE MANY DIFFERENT KINDS OF FOOD AVAILABLE.

0 1 2 3 4 5 6 7 8 9

8. I CAN RESIST EATING EVEN WHEN I FEEL IT'S IMPOLITE TO REFUSE A SECOND HELPING.

0 1 2 3 4 5 6 7 8 9

9. I CAN RESIST EATING EVEN WHEN I HAVE A HEADACHE.

0 1 2 3 4 5 6 7 8 9

10. I CAN RESIST EATING WHEN I AM READING.

0 1 2 3 4 5 6 7 8 9

11. I CAN RESIST EATING WHEN I AM ANGRY (OR IRRITABLE).

0 1 2 3 4 5 6 7 8 9

12. I CAN RESIST EATING WEVEN WHEN I AM AT A PARTY.

0 1 2 3 4 5 6 7 8 9

13. I CAN RESIST EATING EVEN WHEN OTHERS ARE PRESSURING ME TO EAT.

0 1 2 3 4 5 6 7 8 9

14. I CAN RESIST EATING WHEN I AM IN PAIN.

0 1 2 3 4 5 6 7 8 9

15. I CAN RESIST EATING JUST BEFORE GOING TO BED.

0 1 2 3 4 5 6 7 8 9

16. I CAN RESIST EATING WHEN I HAVE EXPERIENCED FAILURE.

0 1 2 3 4 5 6 7 8 9

17. I CAN RESIST EATING EVEN WHEN HIGH-CALORIE FOODS ARE AVAILABLE.

0 1 2 3 4 5 6 7 8 9

18. I CAN RESIST EATING EVEN WHEN I THINK OTHERS WILL BE UPSET
IF I DON'T EAT.

0 1 2 3 4 5 6 7 8 9

19. I CAN RESIST EATING WHEN I FEEL UNCOMFORTABLE.

0 1 2 3 4 5 6 7 8 9

20. I CAN RESIST EATING WHEN I AM HAPPY.

0 1 2 3 4 5 6 7 8 9

RYFF SCALES OF PSYCHOLOGICAL WELL-BEING

The following set of statements deals with how you might feel about yourself and your life. Please remember that there are neither right nor wrong answers.

Circle the number that best describes the degree to which you agree or disagree with each statement.	Strongly Disagree	Disagree	Disagree Slightly	Agree Slightly	Agree	Strongly Agree
1. Most people see me as loving and affectionate.	1	2	3	4	5	6
2. I am not afraid to voice my opinion, even when they are in opposition to the opinions of most people.	1	2	3	4	5	6
3. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
4. I am not interested in activities that will expand my horizons.	1	2	3	4	5	6
5. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
6. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
7. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5	6
8. My decisions are not usually influenced by what everyone else is doing.	1	2	3	4	5	6
9. The demands of everyday life often get me down.	1	2	3	4	5	6
10. I don't want to try new ways of doing things—my life is fine the way it is.	1	2	3	4	5	6
11. I tend to focus on the present, because the future always brings me problems.	1	2	3	4	5	6

Circle the number that best describes the degree to which you agree or disagree with each statement.	Strongly Disagree	Disagree	Disagree Slightly	Agree Slightly	Agree	Strongly Agree
12. In general, I feel confident and positive about myself.	1	2	3	4	5	6
13. I often feel lonely because I have few close friends with whom to share my concerns.	1	2	3	4	5	6
14. I tend to worry about what other people think of me.	1	2	3	4	5	6
15. I do not fit very well with the people and the community around me.	1	2	3	4	5	6
16. I think it is important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5	6
17. My daily activities often seem trivial and unimportant to me.	1	2	3	4	5	6
18. I feel like many of the people I know have gotten more out of life than I have.	1	2	3	4	5	6
19. I enjoy personal and mutual conversations with family members or friends.	1	2	3	4	5	6
20. Being happy with myself is more important to me than having others approve of me.	1	2	3	4	5	6
21. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
22. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6

Circle the number that best describes the degree to which you agree or disagree with each statement.	Strongly Disagree	Disagree	Disagree Slightly	Agree Slightly	Agree	Strongly Agree
23. I don't have a good sense of what it is I'm trying to accomplish in my life.	1	2	3	4	5	6
24. I like most aspects of my personality.	1	2	3	4	5	6
25. I don't have many people who want to listen when I need to talk.	1	2	3	4	5	6
26. I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
27. I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6
28. I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6
29. I used to set goals for myself, but that now seems a waste of time.	1	2	3	4	5	6
30. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	1	2	3	4	5	6
31. It seems to me that most other people have more friends than I do.	1	2	3	4	5	6
32. I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
33. I generally do a good job of taking care of my personal finances and affairs.	1	2	3	4	5	6
34. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
35. I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6

Circle the number that best describes the degree to which you agree or disagree with each statement.	Strongly Disagree	Disagree	Disagree Slightly	Agree Slightly	Agree	Strongly Agree
36. In many ways, I feel disappointed about my achievements in my life.	1	2	3	4	5	6
37. People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
38. It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6
39. I am good at juggling my time so that I can fit everything in that needs to be done.	1	2	3	4	5	6
40. For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
41. I am an active person in carrying out the plans I set for myself.	1	2	3	4	5	6
42. My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
43. I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
44. I often change my mind about decisions if my friends or family disagree.	1	2	3	4	5	6
45. I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
46. I gave up trying to make big improvements or change in my life a long time ago.	1	2	3	4	5	6
47. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6

Circle the number that best describes the degree to which you agree or disagree with each statement.	Strongly Disagree	Disagree	Disagree Slightly	Agree Slightly	Agree	Strongly Agree
48. The past has its ups and downs, but in general, I wouldn't want to change it.	1	2	3	4	5	6
49. I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
50. I judge myself by what I think is important, not by the values of what others think is important.	1	2	3	4	5	6
51. I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
52. There is truth to the saying that you can't teach an old dog new tricks.	1	2	3	4	5	6
53. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
54. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4	5	6

WEIGHT LOCUS OF CONTROL

For each statement below, decide how much you agree or disagree with it. Of the four answer choices, select the one that best expresses how you feel about the statement: if you agree totally without reservations, then circle "a" agree; "b" if you agree slightly; "c" if you disagree slightly; or "d" if you disagree completely.

Part A.

Internal Weight Locus of Control

1. Gaining, losing, and maintaining weight is entirely up to me.
 - a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.

2. I am overweight as a result of my eating habits.
 - a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.

3. I am overweight as a result of being inactive or not getting enough exercise.
 - a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.

4. If I set realistic, measurable goals, I can lose weight no matter what.
 - a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.

5. Failure to keep my weight off is due to poor effort on my part.
 - a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.

Part B. External Weight Locus of Control

6. Family history has most determined my weight and size.
 - a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.

7. I need a structured, formal diet program, or else I have difficulty losing weight.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.
8. I depend on good doctors or nutritionists to help me lose weight.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.
9. I need prescription diet pills or other diet aids to lose weight.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.
10. I overeat because there is too much tempting food in my environment.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.

Part C. Chance Weight Locus of Control

11. Being at my ideal weight is a matter of good fortune.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.
12. My failure to lose weight is just bad luck.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.
13. I will go off my diet if I have a bad day.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.
14. No matter if I gain weight, lose weight, or stay the same, it is just going to happen, and that's life.
- Agree.
 - Agree slightly.
 - Disagree slightly.
 - Disagree.

15. I am very lucky if I stick to my exercise program.
- a. Agree.
 - b. Agree slightly.
 - c. Disagree slightly.
 - d. Disagree.