

## WOMEN'S LIFESTYLE HABITS BOOST PSYCHOLOGICAL RESOURCES IN ACHIEVING EATING REGULATION

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### ABSTRACT

The study addresses the prevention of obesity among women through eating regulation. The role of mindfulness and psychological hardiness in women's eating regulation has received scarce attention in research. The study further examines the critical role of lifestyle habits in helping achieve eating regulation. 416 women answered an online survey on mindfulness, psychological hardiness, lifestyle habits and eating regulation. Results indicate the role of psychological factors and recognize the mediating role played by daily routine, physical activity, and social and mental balance. The mediation was tested using regression in SPSS. The unique contribution of this study is that it has adopted an integrated approach of researching psychological resources with lifestyle management for control of eating habits, particularly among Indian women, who are a vulnerable social group with lower levels of healthcare status. The findings that lifestyle habits play a mediating role between psychological factors and eating regulation can bring about a much-needed awareness of eating habits. The study can help healthcare professionals design suitable interventions for women aiming to achieve weight loss through eating regulation.

**Key Words:** Eating regulation, habits, hardiness, lifestyle, mindfulness, women's health

### INTRODUCTION

Women are adept at handling stressful situations and potentially have the ability to transform risky situations into less stressful ones. Their psychological hardiness can help them to manage their emotions and daily concerns, helping them adapt to and overcome health challenges. However, Indian women tend to accept a lack of help from others, a lack of personal time, and having to 'do it all' concerning the sacrifices they make for the family making them particularly vulnerable to health issues (Lansburgh et al., 2022).

In overweight and obese women, even modest weight loss can have profound benefits in reducing risks of Cardio Vascular Diseases and type 2 diabetes (Tonstad, 2007). Identification of risk factors and subsequent management of pre-existing diabetes mellitus, tobacco use, polycystic ovarian syndrome, high blood pressure, and micronutrient deficiencies can impact fertility, early pregnancy loss, pregnancy-specific conditions such as gestational diabetes, hypertension, and preterm birth (McAuliffe et al., 2020). This research thus endeavours to unearth the antecedents of eating regulation, particularly in the context of Indian women trying to balance multiple roles.

**What are the health challenges that women face?**

Women undergo significant physiological changes creating the potential for developing adverse health outcomes that can impact their health in the short term and are associated with worse health outcomes in the longer term (Sheiner et al., 2019). Overweight and obese women, on the other hand experience stigma. A study conducted in India found that women with low levels of physical activity perceived exercise as necessary only for those who are obese, demonstrating their perception of obesity management (Mathews et al., 2016). Women report having greater deal of stress, with married women reporting higher stress levels than single women (Upchurch & Johnson, 2019).

The regulation of eating habits is one of the important factors in the context of weight loss among women. Given the significant role that women play in the family and how it affects the people around them, the study examines how psychosocial factors and lifestyle-related practices can impact eating habits among women. While research has examined psychological hardiness in the context of depression, it has yet to be studied in relation to eating regulation.

**OBJECTIVES OF THE RESEARCH**

1. To explore whether an integrated approach of combining psychological resources like hardiness and mindfulness can lead to regulated eating habits.
2. To examine whether lifestyle practices mediate the relationship between psychological resources and the ability to regulate eating habits.

**Self-regulation**

Self-regulation mechanisms can potentially be relevant to a broad global audience rather than to a specific location of research (Paul & Cestero, 2021). The use of self-regulatory skills in improving body satisfaction and eating-related self-efficacy has been highlighted in a recent study (Annesi & Stewart, 2023). The importance of self-regulatory orientation and its long-term impact on consumer health and well-being is evidenced further from a broader perspective of life history strategies (Fennis, 2022). Hence, for attaining long-term sustainability in health care, self-regulation of eating is imperative. It is the core construct of this research, whose antecedents are proposed as the psychological prowess due to mindfulness and hardiness, accompanied by a conducive lifestyle.

**Mindfulness**

Mindfulness is defined as bringing one's complete attention to the experiences occurring in the present moment in a non-judgmental or accepting way. The literature on mindfulness suggests that it can foster well-being by preventing the onset of disease. Higher levels of mindfulness were positively associated with restrained eating behaviour and decreased emotional eating (Ouwens et al., 2015). Mindfulness could help women identify the triggers for eating and differentiate them from hunger. It could make them pay due attention and bring awareness to the quantity, content, timing and eating frequency. It is plausible that emotional women may turn to food in response to emotional stress. Mindfulness may help women become aware of situations which make them prone to overeating.

### **Hardiness**

Hardiness is a psychological style associated with resilience, good health, and good performance under stressful conditions and is potentially a valuable personality style for highly demanding situations and occupations (Bartone et al., 2008). Hardiness is conceptualized as a combination of the three attitudes (3Cs) of commitment, control, and challenge (Maddi & Kobasa, 1984). Persons high in hardiness involve themselves in whatever they are doing (commitment), believe and act as if they can influence the events forming their lives (control), and consider a change to be not only normal but also a stimulus to development (challenge) (Kobasa & Puccetti, 1983). Among women who had breast cancer, psychological hardiness improved their coping ability and bear the pain from the disease (Mayouf & Yasir, 2022). Mothers with psychological hardiness were better in their coping ability during the COVID-19 pandemic (Pradhanani & Sharma, 2022). Female nurses showed a negative association between health hardiness and the fear of COVID-19 (Ramak et al., 2022).

In the context of eating regulation, the three attitudes comprising hardiness may provide the stimulus and determination required to turn around an unhealthy habit. These attitudes may promote progressive (health-enhancing) eating habits, and suppress regressive (health-detrimental) eating habits. The absence of noteworthy studies linking hardiness and eating regulation justifies the inclusion of hardiness in the study, given its potential as a preventive factor impacting eating regulation, particularly among Indian women, who are known for possessing the components of hardiness such as commitment and control.

### **Lifestyle habits**

Health behaviours are not isolated phenomena but comprise routines and habits that make up a lifestyle (Bourdieu, 1987). Healthy lifestyles are broad orientations that organize patterns of behaviour derived from knowledge and norms about what constitutes healthy, stress-relieving, or pleasurable behaviours. The theory on lifestyle has highlighted the potential importance of healthy lifestyles in understanding how and why there are patterns of behaviour that promote or endanger health (Cockerham, 2000). There is an indication that low mental balance can adversely impact eating behaviour. Bidirectional effects between eating-related coping and adverse mental health in young people have been observed (Herman & Polivy, 2005). The importance of the timing of daily activities in weight regulation and the need to consider the timing of energy intake, physical activity and sleep were underscored in the design and evaluation of weight-loss interventions (Thomas et al., 2020). Associations were found between short sleep duration, high total energy intake, and low-quality diet. Short sleepers often display irregular eating behaviours and take their main meal late in the day (Vernia et al, 2021).

Women, though psychologically strong, may tend to compromise on lifestyle practices due to their propensity to prioritize family commitments over health. A study on self-regulation of eating habits can only be complete with acknowledging the role of lifestyle habits. Given the background of literature studying the impact of psychological factors and lifestyle habits, this research further focused on the mediating impact of lifestyle habits on women's eating regulation.

### HYPOTHESES

- H1: Mindfulness is positively related to eating regulation.  
 H2: Psychological hardiness is positively related to eating regulation.  
 H3: Lifestyle habits are positively related to eating regulation.  
 H4: Lifestyle habits mediate the relationship between mindfulness and eating regulation.  
 H5: Lifestyle habits mediate the relationship between hardiness and eating regulation.

### METHODOLOGY

A cross-sectional study investigated responses from 416 women in the age group of 18 to 80. The study used a convenience sampling method. Women who participated in the study were further classified as 18 to 40 years (45%), 41 to 60 years( 46%) and 61-80 years (9%). 86% of the respondents had a bachelor’s degree or higher. According to the respondents’ BMI data, 28% of the sample reported normal weight, 67% of the participants were overweight and obese, and 5% reported below normal weight. (Table 1). The survey was administered online, and only responses of those women who provided consent and completed the questionnaire in all respects were included in the study. The questionnaire consisted of items that assessed mindfulness, hardiness, lifestyle habits and eating regulation.

**Table 1 Socio-demographic characteristics of the study sample (416 respondents)**

Category of respondents		Percentage of the sample
<b>Age(years)</b>	18-40	45%
	41-59	46%
	60 and above	9%
<b>Highest level of education</b>	High school	14%
	Bachelor's degree	51%
	Postgraduate degree	35%
<b>Occupation</b>	Employed full time	38%
	Homemaker/ retired/student	27%
	Professional	23%
	Entrepreneur	12%
<b>BMI status</b>	Obese	47%
	Overweight	20%
	Normal weight	28%
	Underweight	5%

## **Measures**

### Mindfulness

The Mindfulness Attention and Awareness Scale (Brown & Ryan, 2003) was used for this study. It taps a unique quality of consciousness related to various self-regulation and well-being constructs. Participants indicated how often they have each experience (e.g., “I rush through activities without being really attentive to them”) on a five-point scale, ranging from never to always. Higher scores implied that the individual demonstrated lower levels of mindfulness. The MAAS showed high internal consistency (Cronbach's alpha = 0.86).

### Hardiness

Hardiness, defined as a psychological factor comprising of 3 attitudes: commitment, control and challenge, was measured using a Hardiness scale (Moreno et al., 2014). The measure consisted of three subscales: Control (e.g. I do everything I can to control the results of what I do), Commitment (e.g. I involve myself seriously in what I do), and Challenge (e.g. I feel attracted to tasks and situations involving a personal challenge). Participants were asked to indicate the extent to which they agreed with statements regarding hardiness on a five-point Likert scale ranging from strongly agree to strongly disagree. The scale showed high internal consistency (Cronbach's alpha=0.887).

### Lifestyle habits

Lifestyle habits are defined as a set of routine activities leading to the physical, mental, and social well-being of an individual. The questionnaire uses sub-scales from The Healthy Lifestyle and Personal Control Questionnaire (Darviri et al., 2014). Items in the questionnaire included organized physical exercise (representing the tendency to follow scheduled organized physical exercise), daily routine (representing the individual's control over daily activities and sleep) and social and mental balance (representing the individual's inclination to socialize, balance work, leisure, personal time and adopt positive thinking or cognitive control over stressors). Participants were asked to indicate how often they followed practices related to their lifestyle (e.g.: I follow a scheduled program for my daily activities, I feel that I have a good balance of time between work, personal life and leisure). Items were ranked on a five-point Likert scale ranging from never to always. The scale demonstrated good internal consistency (Cronbach's alpha= 0.89).

### Eating regulation

Eating regulation is defined as a system of conscious personal management that involves the process of guiding one's thoughts, behaviour, and feelings toward healthy eating. It was assessed using the valid and reliable 5-item Self-Regulation of Eating Behaviour Questionnaire (SREBQ) (Kliemann et al., 2016). (e.g., I can remember what I have eaten throughout the day, if I am not eating in the way I intend to, I make changes). Response options ranged from 1 (never) to 5 (always) on a five-point scale. The SREBQ demonstrated good internal reliability at baseline (Cronbach's alpha = 0.75).

### FINDINGS AND DISCUSSION

All the variables in the regression analysis were found to satisfy the assumptions of normality and linearity. A simple regression model was used to examine the main hypotheses, where mindfulness, hardiness, and lifestyle habits were the predictor variables and eating regulation was the outcome variable. The study first confirmed the relationship between mindfulness, hardiness and eating regulation. All three variables were significant predictors of eating regulation, as shown in Table-2. To confirm the mediation analysis, the direct and indirect effects of lifestyle habits was examined. Lifestyle habits partially mediated the relationship of mindfulness with eating regulation, as shown in Table-3. Mindfulness remained significant when lifestyle habits were entered into the regression equation. On the other hand, the relationship of hardiness with eating regulation was fully mediated by lifestyle habits as seen in Table -4. Hardiness was rendered insignificant when lifestyle habits were entered into the regression equation, confirming full mediation. The path estimates in Table-5 indicate that all relationships between the predictors of eating regulation are significant, and the mediator relationship with eating regulation is also significant.

**Table 2: Models including single predictors of eating regulation**

	B	S.E.	p-value	Adjusted R square
Mindfulness	0.229	1.188	.000	0.050
Hardiness	0.139	4.683	.000	0.017
Lifestyle habits	0.269	3.926	.000	0.309

S.E.= Standard Error

**Table 3 Mediation effects of lifestyle habits for mindfulness**

Effect	$\beta$	S.E.	p-value
Indirect	0.145	0.028	0.000
Direct	0.098	0.044	0.028
Total	0.242	0.051	0.000

S.E.= Standard Error

**Table 4 Mediation effects of lifestyle habits for hardiness**

Effect	$\beta$	S.E.	p-value
Indirect	0.049	0.018	0.000
Direct	0.034	.024	0.167
Total	.084	.029	0.004

S.E.=Standard Error

**Table 5 Path estimates of hardiness and lifestyle habits with eating regulation**

Path	B	S.E.	p-value
Mindfulness → Lifestyle habits	0.257	9.47	0.000
Hardiness → Lifestyle habits	0.149	9.69	0.002
Lifestyle habits → Eating regulation	0.557	3.92	0.000
Mindfulness → Eating regulation	0.229	0.051	0.000
Hardiness → Eating regulation	0.139	4.68	0.004

S.E.=Standard Error

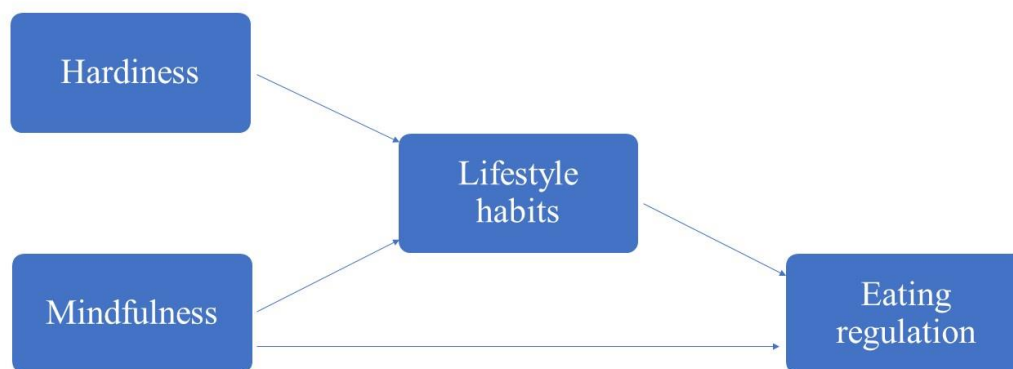


Figure 1 : Model depicting the mediating role of lifestyle habits between psychological resources and eating regulation.

The unique contribution of this research is that in the context of Indian women, lifestyle habits fully mediate the relationship between hardiness and eating regulation and partially mediate the relationship between mindfulness and eating regulation (Figure 1). This demonstrates that hardiness, with its components like commitment, control and challenge, should result first in lifestyle correction. Only then can it improve eating regulation and attain the consequent control over obesity. Without a conducive lifestyle, even women possessing characteristics like hardiness cannot achieve eating regulation. This contrasts findings that hardiness enabled mothers and nurses to cope better during the COVID-19 pandemic. The study found that despite having hardiness, lifestyle management should be primarily achieved which in turn would lead to eating regulation. The finding throws light on the central role played by lifestyle habits in the lives of Indian women, for their sustainable health goals. The finding about hardiness indicates that women who involve themselves seriously in what they do or can persist despite challenges can regulate their eating through the maintenance of healthy lifestyle habits.

Research has suggested a stage-wise approach to managing obesity (Wharton et al., 2020). It includes identifying the root causes of weight gain, targeting nutrition changes, and mental and social factors which the individual has to adapt to, and then devising a plan. A recent review has highlighted solutions such as nutrition, substance use, physical activity, stress, social connectedness and sleep with their potential in improving women’s health (Ba D & Ba S, 2021). These components reiterate the salience of lifestyle management to prevent weight gain. This

study can help to raise awareness about the salience of lifestyle in weight management, as prior research has revealed the negligent attitude of Indian women towards physical activity. In a study on women, the demotivating factors for attempting to reduce weight were a lack of self-acceptance and a bad mood (Krupa et al., 2023). The study elaborates on this observation by concluding that when women are mindful, they could be aware of their moods, and be careful of what they are eating in response to their moods, thereby accomplishing eating regulation.

### **SUMMARY, CONCLUSION AND IMPLICATIONS**

In addition, the study shows how being mindful and resilient can help achieve goals related to eating habits. This study highlights the importance of psychological resources like mindfulness and hardiness, which can enable as well as motivate women to focus on their weight-related goals through necessary lifestyle corrections. Healthcare providers could use a combination of mindfulness training and resilience-building activities parallel to lifestyle changes in controlling eating habits. Combining these strategies could lead to more effective eating habits in weight loss programs. The self-regulation of eating habits through mindfulness control and lifestyle habits could effectively prevent addictive behaviour like binge eating among women. The conscious consumption of food could be included in policies directed at the prevention of obesity-related diseases.

Self-regulation is gaining importance as a strategic tool for long-term social stability (Billore, Anisimova & Vrontis, 2023). The study emphasizes the use of self-regulation in the health domain to improve eating habits among women. The research enhances the findings of previous studies, which focus on cultivating personal strengths to improve self-management of behaviours and improve health outcomes (Tai-Seale et al., 2019). This study on women has reiterated that some of the components of lifestyle, like adhering to regular sleep timings, keeping good relations with family and friends, and regular physical activity support women in improving their eating habits. The focus of interventions should shift from weight loss to a healthy lifestyle and improved quality of life and well-being (Tylka et al., 2014).

Women tend to be the gatekeepers of nutrition and health for other family members. In an Indian context, it is quite common for mothers to cook and pack meals for other family members. These meals would be influenced by their patterns of self-regulation which in turn could be impacted by personal psychological factors, as evidenced in this study. When women are mindful, resilient and practice good lifestyle habits, they can give a fillip to their eating regulation and influence the habits of people who they care for. The study supports strategies based on lifestyle habit interventions to address obesity which has reached pandemic proportions. Future research could use longitudinal methods to examine the efficacy of an integrated approach highlighted in this study to achieve dietary objectives.

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