

# Eco-Mindfulness Program and Its Impact on Energy Metabolism

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## ABSTRACT

In the recent days, every one of us is busy with their work schedules almost all the days. The demands for economy and to fulfill the desires of individuals, people are working very hard since morning to evening. The work burden, in turn, the stress, together makes people not to concentrate on their body conditions in the recent days. Both Males and Females are largely suffered by Fat Belly in their body. Although people (Male and Female) take enough measures to reduce the muscular bellies through reducing food contents, following a consistent exercise, performing yoga, sometimes, it is not supportive. On the contrary, people who consume more food three times in a day, sometimes, looks slim without bellies. This abnormal situation makes people with more confusion that what is the basic cause for bellies in the body. Additionally, the failure on the efforts made by people makes them unhappy and stress personally. This article reviews the basic reasons for the development of anxiety and bellies for adults, and highlights the appropriate techniques to attain the desirable level of mind relaxation. The population selected to participate in this research endeavors is comprised of, but not limited to, highly stressed career professionals, individuals adhering to a sedentary lifestyle, academic enrollees, and the demographic of emerging adults.

**Keywords:** Auto-Ethnography, Fat Belly, Gastritis, Hormonal bellies, Physical exercises, Stress, Stressed-out bellies, SKY Yoga

## INTRODUCTION

The high demands of academic life often led to a sedentary lifestyle, cognitive overload, and mental burnout. Engaging in sustained physical activity serves as a vital counterbalance; it improves the efficiency of energy use, hones intellectual performance, and increases one's capacity to withstand stress, thereby promoting superior academic results and a healthier state of being.

Stomach is a sensitive part of our body (Ramsay PT & Carr A. 2011), [1]. There are different types and shapes of bellies formed for males and females due to excess fats around stomach. Hormonal belly (Weight gain); Stressed-out belly; Alcohol belly; Mommy belly; Bloating belly are five major types of bellies. The estrogen imbalance and menopause lead to Hormonal bellies. When the thyroid gland doesn't produce enough thyroid hormones, hormonal bellies occur. This can make many of the body's processes go slower than usual (De-Ary-Pires B et al, 2003) [2]; (Rani A et al, 2013) [3].

Stress in life is labelled by Konturek PC, 2011, as acute threat to homeostasis [4]. Stressed-out bellies, usually due to an abnormal stress (fight-or-flight response) / mental tension of the individuals. The triggered stresses for the individuals might happen due to over work burden, living atmosphere, finance, relationships, and day-to-day inconveniences. The stresses are connected to stressed-out bellies through gut-brain-axis in the body [Hantsoo L et al, 2021), [5].

Alcohol is a psychoactive substance [6,7,8,9,10]. Even the young age groups are also addicted for alcohol consumption [11]. Very frequent consumption of beers and other alcohols can develop stomach acids abandonedly. Dry red wine, Soda, Vodka, Gin are the common beverages used by both sex groups. The main revenue for Tamilnadu state government in India is TASMAL. As per the recent report, the 48344 crore rupees is the net revenue value from TASMAL to Tamilnadu State Government in the year 2024-2025. This revenue picture shows the prevalence of alcohol consumptions in one particular state of India (Gowri et al, 2024), [12]; Vijayalakshmi S et al, 2017), [13]. Excessive alcohol consumption of the individuals could experience fat bellies and in turn, stress and anxiety. According to Eashwar VMA et al 2019, Gastritis (acute and chronic) and hypertension are the main outcome of regular alcohol consumptions [14], and in turn, ultimately gains more weight (Sultan Nawahirsha, 2021) [15], (Traversy et al, 2015) [16].

Bloated belly is mainly due to the digestive disorder for human being. A weak digestive system can affect how much weight a person gain. If the body isn't able to properly break down food or take in nutrients, it might lead to more hunger and eating too much. The body could feel like it needs more food to make up for missing nutrients, even if someone is already eating a lot (Black CJ et al, 2020), [17].

It is a common understanding that too much fat happens when you eat more calories than you use, and the main reason for this is eating too much food. However, some people think that obesity starts because of problems in the body's metabolism, which changes how the body uses energy from food, shifting it from burning and using energy to storing it as fat (Friedman MI et al, 2024), [18].

Yoga presents a comprehensive method for exploring and reshaping how your body interacts with adipose tissue. Moving beyond a singular focus on shedding pounds, this practice champions improving metabolic function, achieving hormonal equilibrium, and cultivating a conscious understanding of fat's role within your physiology.

**Attuned Movement:** Yoga fosters an inner dialogue with your body, aiding in the discernment of true physical nourishment versus emotional cravings [18].

**Self-Acceptance:** Through a practice free from judgment, yoga cultivates a sense of peace with your body, alleviating the stigma associated with body fat [18].

**Energetic Awareness:** Recognizing fat as stored vitality, yoga illuminates how your body manages and utilizes energy in response to your daily life, emotional states, and ingrained patterns [18].

## MATERIALS AND METHODS

**Method-1** A survey of scholarly sources is conducted in line with the subject matter to identify the valuable and appropriate theory. In addition, as suggested by Lau, A., & Bratby, M. (2023), Video statements are collected remotely [19]. Using video statements is another method used to gather information, which gained more detailed and useful insights about Fat Belly. In the organizational review, the qualitative research tools, such as review over PubMed and Scientific journals, interviews with friends, observation among colleagues and relatives, and group discussions with regular alcohol consumers are done systematically. The further consultation with the subject experts provided a deep understanding about the Fat Belly. A comprehensive systematic review was undertaken to ascertain the impact of SKY Yoga on elevated blood pressure. The search strategy encompassed PubMed, the Cochrane Library, SCOPUS, and EBSCO—to identify pertinent studies published through August 2025.

**Method-2** This study explores the effectiveness of music-based strategies for managing stress, specifically examining how singing contributes to a relaxed state of mind. The comparison centers on the mental tranquility achieved through vocalization versus the challenges encountered when attempting to sing.

**Method-3** An on-site intervention, centered on yoga practices, was implemented for Nursing students at *Utkarsh College of Nursing, Kanpur, India* with the goal of evaluating its efficacy in reducing anxiety. The scope of these findings broadened to encompass students. The level of improvement with the continuous yoga practices by the students over 2 months period is accessed through questionnaire survey as well direct interview with the sample size of 161 students. The body fitness, fitness of clothes, energy and strength levels are the main factors undertaken to ascertain the level of fat management.

**Method-4** Auto-Ethnography technique: Periodic improvements in stress levels and abdominal size were observed through consistent exercise, regular yoga practice, and adherence to a healthy diet including nutritious meals and snacks.

## RESULTS AND DISCUSSION

Table-1 shows various problems identified through PubMed and Scientific journals connected to anxiety among the community in different regions including Asia and Africa.

Table:1 Problems identified through PubMed and Scientific Journals

	Problems identified	Results	Ref.
01.	Chronic Alcoholism	35.7%	[20]
02.	Higher prevalence of alcohol consumption	Among lesser educated people	[21]
03.	Health issues among students' community	37.7%	[22], [23]
04.	Anxiety	Due to State Board Exams, mainly boys	[24]
05.	Abdominal obesity	23.5 % in Kerala and 28.7 % in Tamil Nadu are affected	[25]
06.	Abdominal obesity	Due to excess fat accumulation around the waist and abdomen	[26]
07.	Obesity issues in sub-Saharan Africa	Obesity is becoming more common in sub-Saharan Africa and around the world, and it is a major public health issue that requires immediate action. To lower the number of people who are overweight and the problems that come with it, public health efforts focus on healthy food choices and more physical activity, which are important for managing weight.	[27]
08.	High and rising prevalence of overweight and obesity	Risk nature	[28]

It is understood that 35.7% of people in a particular study area got affected with Chronic alcoholism and becoming risky due to the chances for the connected diseases like Kidney failures, and alcoholic fatty liver. Anxiety and Obesity are the other major problems associated with rising of overweight and Fat Bellies [29]. Hence, the hormonal changes need to be controlled through specific mechanisms.

According to GBD 2021 Adult BMI Collaborators, the rising prevalence of overweight and abdominal obesity are very danger and a global epidemic [30].

## Investigating the Propensity for Abdominal Weight Gain among policemen

A comprehensive SKY Yoga program (Fig.1), (Fig.2) was conducted at Utkarsh College of Nursing, Kanpur, India, targeting the nursing students of 161 participants, both males and females.

Table:2 Location of Yoga training, Participants and Age group

Location	Number of participants	Age group	Number of days for training
Utkarsh College of Nursing, Kanpur, India	Males: 55	18 -21	03
	Females: 106	18 - 23	

Table:3 Concepts over Training

01 .	Creating Awareness
02 .	Enhancement of intellectual sharpness and their knowledge
03 .	Simplified exercises
04 .	Simple Asanas
05 .	Growing will-power and attentiveness
06 .	Blood purification and collective vibrant energy
07 .	Refining body strength and relaxation
08 .	Collective intuition and lucidity of mind
09 .	Managing chronic related problems such as headaches, migraines, asthma, and allergies



Figure 1: SKY Yoga - Simplified exercises by Nursing students



Figure 2 SKY Yoga - Simplified authoritative breathing practice

The entire initiative was unified under the theme: "Transform mind, body, and life force". Each participating group received three days of instruction in the fundamental SKY Yoga practices, details of which are provided in *Table-3*. The energy and strength levels of students after regular yoga practices are quantified through questionnaire / interview through a particular subjective tracking systems including daily journaling, fatigue patterns and recovery time. The quality metrics (Performance indicators) shown in *Table-4* provide clarity on whether the intended results and goals are successfully being realized.



Figure 3 Body twist exercise - Ardha Matsyendrasana (Seated Spinal Twist)

In Aadhiyoga, body twist exercises (Fig. 3) are used to enhance spinal flexibility, stimulate digestion, and detoxify internal organs. These twisting poses are deeply rooted in traditional yogic practices and often incorporate breathwork and mindfulness.

Table:4 Quality metrics after Two months practices by students' community

Variables	Frequency	Percentage
Extreme improvement	52	32.29
High improvement	63	39.15
Moderate improvement	30	18.63
Low improvement	16	9.93
Very low improvement	0	0
<b>Total:</b>	161	100

Table:5 Statistical analysis over the quality matrices after practices

Variables	Assigned weight	Frequency	(Weight x Frequency)
Extreme improvement	5	52	260
High improvement	4	63	252
Moderate improvement	3	30	90
Low improvement	2	16	32
Very low improvement	1	0	0
<b>Total</b>		161	634
<b>Mean</b>			3.94



Table-5 shows that a mean score of 3.94 reveals a significant degree of reported improvement. This level of progress falls within the High to Extreme bracket, but is positioned nearer to the High mark. The frequency over the variables is shown in Fig.4.

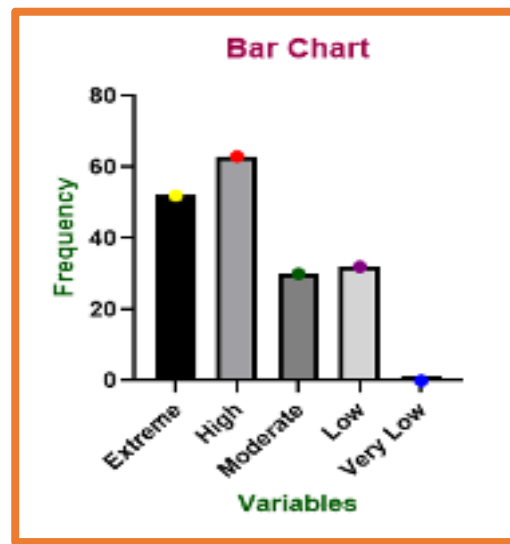


Figure 4 Bar chart: (Variables vs Frequency)

A closer examination reveals several key factors that contribute to why many police personnel tend to develop increased fat around their midsection:

**The Paradox of Inactivity:** Contrary to common perceptions of constant action, a significant portion of police duties involves extended periods of sitting. This includes long stretches in patrol vehicles, desk-bound administrative tasks, and protracted shifts with minimal physical movement. Over time, such a sedentary pattern frequently leads to weight gain, particularly concentrated in the abdominal area [31].

**The Impact of Chronic Stress and Cortisol:** Law enforcement is inherently a high-stress profession, demanding officers to confront danger, trauma, and unpredictable circumstances. This sustained psychological pressure elevates cortisol levels in the body. Elevated cortisol is scientifically linked to an increased appetite and a greater tendency for the body to store fat, especially visceral fat, which accumulates around the organs in the abdomen [31].

**Nutritional Challenges and Erratic Mealtimes:** Officers often find themselves compelled to eat quickly and at irregular hours due to their shift demands. Access to nutritious, freshly prepared food can be severely limited, particularly during night shifts or in certain operational zones. This often results in a reliance on fast food, calorie- dense snacks, and sugary beverages, all of which contribute unfavorably to weight management [31].

**Exhaustion and Its Dietary Consequences:** Working extended shifts, often exceeding ten or twelve hours, is a standard expectation. The profound mental and physical exhaustion that follows such arduous duty cycles significantly diminishes an officer's motivation and capacity to engage in physical exercise, prepare wholesome meals from scratch, or resist the urge for comfort eating [31].

**The Maturation Effect:** While many individuals enter the police force in peak physical condition, a standard often enforced by rigorous academy training, the passage of years in service, combined with the aforementioned occupational stressors, takes its toll. As officers age, their metabolic rates naturally slow, making the accumulation of central abdominal fat more pronounced [31].

**Post-Recruitment Fitness Oversight Gap:** Although most police departments mandate stringent physical assessments for initial entry, there is frequently a notable absence of sustained, compulsory fitness benchmarks for active-duty officers. Without ongoing requirements or strong incentives to maintain peak physical condition, fitness levels often

gradually decline over the course of an officer's career [31].

## REMEDIAL MEASURES

### Yoga as a Tool

Yoga is a profound spiritual system, renowned as the preeminent complementary path to health and well-being [32]. This ancient discipline, which unites the consciousness and the physical form, draws its genesis from Indian philosophical thought [33]. It offers a significant, drug-free pathway to managing obesity and lowering cardiovascular disease risk. Leveraging its profound mind-body synergy, it proves to be a highly effective complementary approach within holistic weight control programs, instrumental in forging sustainable lifestyle transformations and securing durable health benefits over time [34]. Its regimens have consistently proven valuable in mitigating core physical markers associated with obesity, specifically leading to reductions in body mass index (BMI), abdominal girth, and overall adiposity. These beneficial physiological alterations are intrinsically linked to significant enhancements in critical cardiovascular parameters. Such improvements encompass better blood pressure regulation, more favorable cholesterol profiles, and optimized endothelial and autonomic nervous system functions [34].

Beyond the physiological, yoga also serves as an effective mechanism for bolstering stress management capabilities and promoting a heightened sense of psychological well-being, thereby holistically addressing both the mental and physical dimensions contributing to obesity. The positive ripple effects of consistent yoga engagement transcend mere weight reduction, extending to a beneficial impact on systemic inflammation and metabolic health factors deemed indispensable for diminishing the risk of cardiovascular diseases [34].

Simplified Kundalini Yoga (SKY) encompasses a comprehensive set of practices, integrating mindfulness, controlled breathing exercises, and physical postures, often utilized to alleviate mental strain. Research subsequently demonstrated that the SKY breathwork component significantly boosted the well-being of medical staff confronting the pandemic's demands [35]. Those who participated reported noticeable enhancements in their sleep quality, a deeper sense of contentment with life, and fortified adaptive capabilities after engaging with SKY [36].

### Modifications to Diet - Cut back on calories:

It can be done by consuming a well-rounded diet by emphasizing whole foods such as fruits, vegetables, lean meats (fish, poultry, and legumes), whole grains, and healthy fats (olive oil, avocado, and nuts); Reducing refined carbohydrates and sugars: Limiting the processed foods, sugary beverages, sweets, and white bread; Increasing intake of soluble fiber, which lowers visceral fat and is present in vegetables, beans, flaxseeds, and oats; avoiding fried foods which cause belly fat [37].

### Exercise / Sports activity / Walking

*Frequent aerobic exercise:* At least 150 minutes a week of moderate-intensity aerobic activity or 75 minutes of vigorous aerobic activity (such as jogging, cycling, or brisk walking) is prime importance [38].

After engaging in sports (Fig.5), people often experience a dynamic mix of energetic moods - a blend of physical sensations, emotional states, and mental clarity. Additionally, climbing over hill by walk (Fig.6) is the direct consequence of this activation is a substantial optimization of physical power, prolonged stamina, and heightened stability and equilibrium. Hill climbing can be physically demanding, it also trains mental toughness and perseverance [39].



Figure 5 Energetic moods of Cricketers after the games

Reducing stress on the other hand therefore, helps in lowering the levels of cortisol in the body reduce abdominal fat; this can be achieved through meditation, yoga or deep breathing exercises [40], [41].

*Improvement of sleep quality:* Targeting for 7-9 hours of quality sleep per night is required since poor sleep quality may lead to weight gain. Also, restricting alcohol intake is mandatory because over consumption of alcohol, especially of beer and sweetened mixed drinks contributes to belly fat [41].

## Life style modification

### i) *Behavioral therapy:*

It may assist with lifestyle changes and related emotional factors contributing to overeating.

### ii) *Medication:*

Sometimes, weight-loss medications are prescribed or bariatric surgery is considered; these are mostly for severe obesity [42], [43].



Figure 6 Hill Climbing: A Multifaceted Approach to Physical Health (Method: *Auto-Ethnography*)

## Music based interventions

Music-based interventions (Fig.7) are employed across diverse environments to mitigate stress, owing to their beneficial influence on physiological markers like heart rate, blood pressure, and hormonal balance, as well as psychological states such as restlessness, anxiety, and nervousness [44], [45].





Figure 7 Music based intervention using Smule App (Method: *Auto-Ethnography*)

The experience of singing is frequently recognized for its ability to uplift spirits and even contribute to physical conditioning. Through sustained vocal activity, personally felt that the pulmonary and circulatory systems are put to work.

This consistent effort leads to stronger muscles vital for breathing and an overall improvement in respiratory efficiency. Additionally, the act of singing provokes specific hormonal changes that serve to boost immunological resilience and foster a greater sense of cheerfulness. *Table-6* below shows Impacts of personal interventions in various activities.

Table 6: Impacts of personal interventions in various activities  
Method followed: *Auto-Ethnography by students' community*

S. No.	Type of interventions	Duration	Condition of body	Proof / Ref.
01.	Singing songs	3 to 4 hours / day	Anxiety / Stress: Absolutely Free	[46], [47]
02.	Hearing songs	1 hour / day	Anxiety / Stress: Absolutely Free	[48], [49]
03.	Bhajans and Prayer	30 minutes / day	Anxiety / Stress: Absolutely Free	[50]
04.	Nature based green space exposure	Atleast 1 hour/ day	Anxiety / Stress: Absolutely Free	[51]

## Breathing Exercises

There are many techniques upon breathing exercise, mainly:

### i) *Abdominal Retraction Maneuver*

This exercise focuses on deeply engaging the core muscles. To begin by kneeling on the floor, positioning the hands lightly upon knees, expelling out all air from lungs, then powerfully draw the navel inward towards spine, aiming for the maximum possible contraction. Sustaining this intense inward pull for approximately ten seconds before gently releasing the tension and performing this sequence ten times during daily regimen, [52].

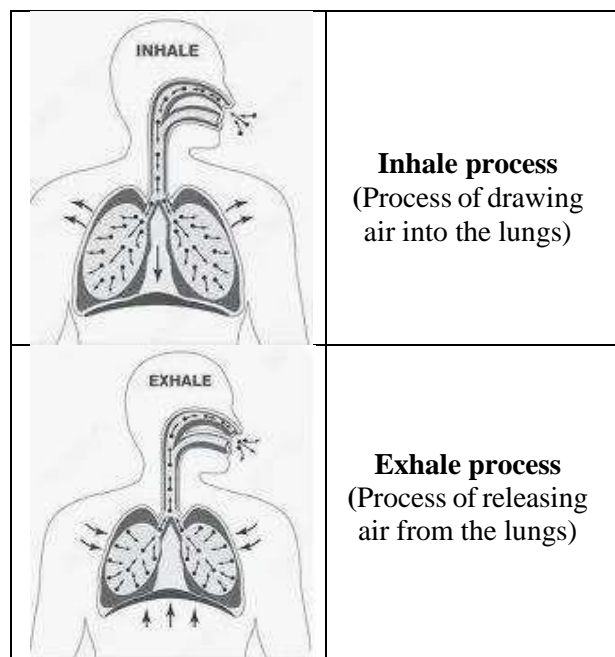


Figure 8 Process of Inhale and Exhale

i) *Diaphragm-Focused Respiration (Deep Belly Breathing)*

This technique (Fig.8) promotes efficient lung use and relaxation. A comfortable spot to either sit upright or recline is required. Gently by placing one or both hands over lower abdomen, a slow, profound breath is to be taken in through nostrils, consciously allowing belly to expand outward as it fills with air. Then, gradually release the air by exhaling smoothly through lips slightly pursed, as if whistling. Five to Ten minutes of this mindful breathing practice every day is helpful to reduce stress as well as belly [53].

ii) *Skull Shining Breath (Kapalabhati)*

Positioning with an erect and aligned spine (Fig.9), initiating by drawing a complete, substantial breath.

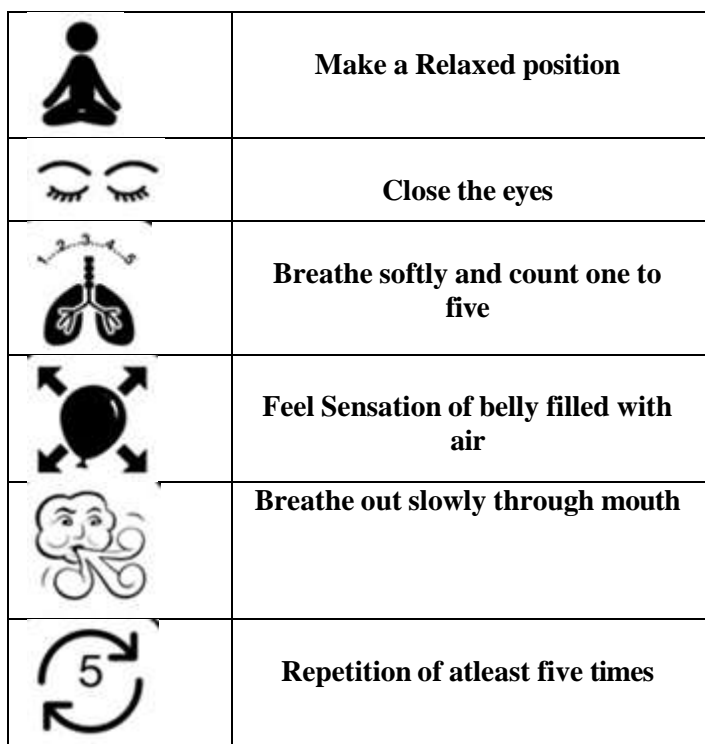


Figure 9 Process of Breathing

Subsequently, with considerable intensity, expel the air through nasal passages, simultaneously engaging your core by pulling abdomen inward towards spine. Allowing the next intake of air to occur spontaneously and without active effort. Cycle through this precise rhythmic pattern, performing between thirty and sixty rapid respiratory movements within each session [54], [55]. Systematic breath control represents an invaluable instrument for fortifying bodily systems, elevating intellectual precision, and maintaining psychological equilibrium. These purposeful respiration methods (Fig.9) involve consciously governing the speed and capacity of inhalation and exhalation, leading directly to profound internal serenity, heightened concentration, and comprehensive personal flourishing.

## Diet snacks

Widely recognized as a culinary staple, the pumpkin is also esteemed for its profound therapeutic qualities. These benefits stem from its exceptional array of naturally occurring bioactive compounds. Specifically, its biochemical profile reveals the presence of various plant-derived constituents, encompassing essential categories such as alkaloids and flavonoids, in addition to vital fatty acids like palmitic, oleic, and linoleic [56]. Pumpkin seeds (pepitas) can support weight loss and belly fat reduction when used wisely as part of a balanced diet. Over time, a disciplined approach to healthy eating including balanced meals and wholesome snacks resulted in noticeable reductions in stress and abdominal fat. These changes were tracked periodically, highlighting the effectiveness of this holistic lifestyle [57].

## Green Space Exposure

This beneficial influence stems (Fig.10) from diverse botanical elements (majestic trees, dense shrubs, verdant ground cover like grass and even small indoor potted plants) contribute to alleviating tension. Complementing this, the tranquil acoustics generated by water features such as bubbling fountains, serene ponds, or gently flowing streams further deepen this profound sense of calm [58].



Figure 10 Green space exposure - Personal experiences (*Auto-Ethnography*)

## Statistical Analysis on various activities (*Auto-Ethnography*) over level of stress / anxiety

The relaxation levels among students by various activities are shown in Fig.11. As an impactful qualitative research framework, auto-ethnography masterfully integrates personal storytelling with broader cultural interpretation.

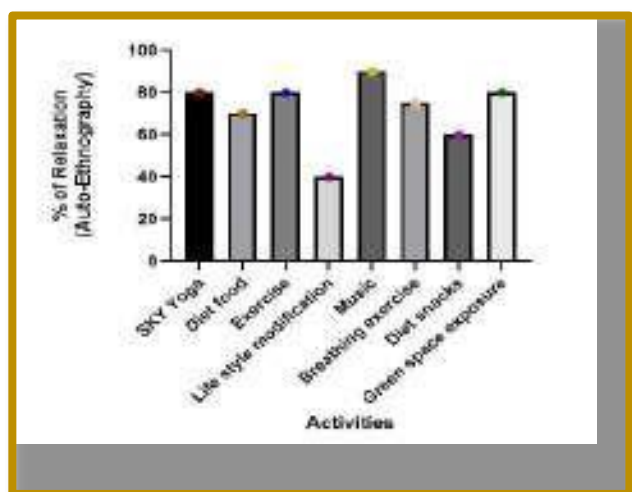


Figure 11 Level of Relaxation in % over various activities

When applied to the investigation of psychological strain, this methodology empowers individuals to delve into their firsthand experiences of stress, simultaneously drawing crucial links to expansive social, mental, and environmental factors [59]. *Table-7* shows the approximate relaxation levels (%) based on auto-ethnographic reflection. The percentage of relaxation levels are fixed based on physical sensations [60].

Table 7: Approximate Relaxation level by activity judged through Student's Auto-Ethnography

Deep Breathing Exercises	85-95%	Activates the parasympathetic nervous system, calming the body.	[61]
Gentle SKY Yoga	70-80%	Combines movement with breath for holistic relaxation.	[62]
Diet food and Snacks	70-80%	Easy digestion	[63]
Sports	70-80%	Relaxing or energizing depending on the setting.	[64]
Life style modifications (Meditation etc.)	80-90%	Promotes mental clarity and emotional balance.	[65], [66]
Listening to Calm Music, Singing	75-85%	Soothes the mind and reduces cortisol levels.	[67], [68]
Green space exposure	65–80%	Exposure to greenery and fresh air reduces stress.	[69], [70]

## CONCLUSIONS

Stress can lead to health issues and illnesses, and since modern Western society moves fast, it's really important to find ways to manage stress for better health over time. Activities like focusing on positive things, using art or music, practicing mindfulness, doing yoga, and spending time in nature or staying active can help reduce stress; make free from Fat Bellies and make people feel better.

Additionally, boosting of metabolism is prime importance through SKY. Simplified Kundalini Yoga (SKY) presents an integrated framework for optimizing metabolic function. It achieves this through a synergistic combination of physical movements, deliberate breathwork, contemplative practices, and heightened lifestyle consciousness.

## SKY Yoga's Impact on Metabolic Efficiency

*Postural Practice (Asanas):* Through its vigorous and rotational body forms, such as Revolved Crescent Lunge (Parvrit Anjaneyasana), SKY Yoga invigorates inner systems, optimizes digestive efficiency, and triggers essential metabolic processes.

*Breath Regulation (Pranayama):* Deliberate respiratory exercises within SKY Yoga elevate oxygen absorption and contribute to caloric consumption. Sustained, profound breaths are key to modulating vital energy and fostering metabolic equilibrium.

**Stress Mitigation:** The practice prioritizes contemplative and present-moment awareness, effectively diminishing cortisol levels. This stress hormone is notoriously associated with sluggish metabolic rates and the buildup of visceral fat around the abdomen.

**Enhanced Restorative Sleep:** Consistent engagement with SKY Yoga cultivates inner tranquility and enhances the quality of rest. Adequate, restorative sleep is paramount for upholding metabolic stability and maintaining the body's natural balance.

## ACKNOWLEDGEMENT

Our sincere thanks to *Utkarsh College of Nursing, Kanpur, India; The World Community Service Centre (WCSC), Tirunelveli, India, KAAF University, Ghana* for their motivations to the community research on Yoga, helping individuals through yogic practices, meditation techniques and spiritual doctrines.

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