

Case Report

The Effect of “Seiza” Sitting Position During Dzikir After Moslem Prayer on Stomach Circumference Changes: A Case Report

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Abstract

Introduction. The Japanese floor-sitting Seiza is reflected of femoral artery pinched, which improved of tissues oxygenation and circulation. It might play role on body metabolism, also the nerves system. **Methods:** Study was conducted on a 20-year-old obese man performed routinely dzikir with Seiza sitting, so the time duration counted. Stomach circumference and body weight was monitoring twice weekly until 1 month. **Results:** The stomach circumference measurements of 114 cm observed improvement, as at week 1 (1.75%), week 2 (0.88%), week 3 (63%), and week 4 (3.51%) underwent 316 to 334 seconds weekly of Seiza sittings. A 100,4 kg of body weight showed gradually improvement: 0.55%, 0.35%, 0.25%, and 1.89% in each weeks. **Discussion:** The Seiza sitting might be relate to St36 Meridian points. It stimulated of parasympathetic system, digest and absorption, aliementary glands activated, also fat metabolism. **Conclusions:** The Seiza sitting during dzikir after prayer might improve of body metabolism.

Keywords: stomach, circumference, metabolism, Seiza, sitting, dzikir, Moslem prayer

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Introduction

Seiza is a sitting position popularized in Japanese culture. This is done by bending the knees and extending the ankle joints. This sitting position is commonly used in formal occasions, religious rituals, and accepting guests.¹ Former research studies suggested, that Seiza sitting position may help with digestive system function, food absorption, and defecation.² Obesity is a condition marked by the high amount of fat deposits inside the body. This high body fat might affect physical activities and induce underlying diseases. Obesity can be measured by using a BMI scale, where we compare body weight to body height (in meters) squared. The results then can be classified as lean,

overweight, and obese. We recommend the Seiza sitting position for obese patients to help improve digestive functions, ease the process of defecation, and increase peristaltic activity.

Obese patients in Indonesia increase as time goes by, with the prevalence of obese patients over 18 years old at 11,7% in 2010, 15,4% in 2013, and 21,8% in 2018. The risk factors for obesity in Indonesia are over-eating above the recommended daily intake coupled with a sedentary lifestyle. This is further proven by an independent survey conducted by the Ministry of Health in 2014, where 40,7% of participants consumed fatty foods; 53,1% of participants consumed sweets, and; 26,1% of participants lived a sedentary

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lifestyle. Commonly body weight or fat deposit treatment is difficult, as it needs self-commitment and discipline. Managing obesity is also difficult on older patients as they may need more attention and they may have developed degenerative conditions that limits physical ability. In regards to this issue, we proposed the idea of Seiza sitting as it is possible to be done on a wide range of patients, provided they didn't suffer from muscle atrophy or neuropathy.

Methods

This is a case report on a single subject, which was conducted by training the subject to sit in a Seiza sitting position for the duration of their Dzikir. The subject did this for 4 weeks and was asked to record the duration with a stopwatch. The results were rounded up/down accordingly. Then, body weight and stomach circumference were measured twice a week –at the beginning of the week and the end of the week.



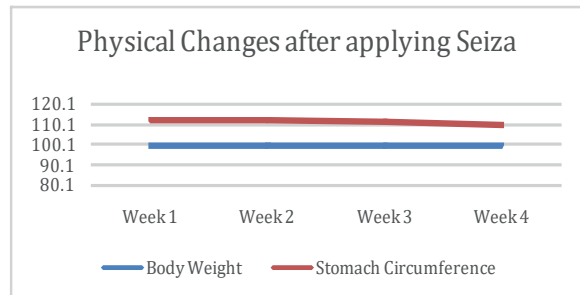
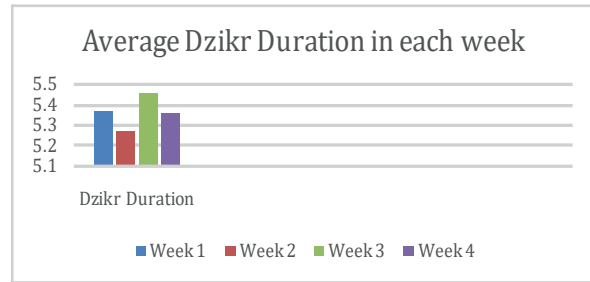
The Seiza sitting posture as practiced by the subject. Note the plantar-flexion followed by knee-flexion and straight back

Results

Dzikir duration varies between 316 to 334 seconds during the observation. Weekly Dzikir duration averaged 337 seconds on week 1, 327 on week 2, 346 on week 3, and 336 on week 4. Stomach circumference started at 114 cm, then goes as low as 112 cm at the end of the first week. Then, week

2 stayed at 112 cm, and weeks 3 and 4 showed a reduction of up to -1cm in stomach circumference. Body weight starts at 100,4kg, then goes down and stayed between 99,4 to 99,6kg for the rest of the week.

From these results, we conclude that there is a correlation between the habituation of the Seiza sitting position to stomach circumference and body weight. The subject also reported less effort in defecating followed by an increase in frequency.



Charts showing a. Average Dzikir Duration per week of observation and; b. Physical changes after applying Seiza by measuring body weight and stomach circumference of the subject

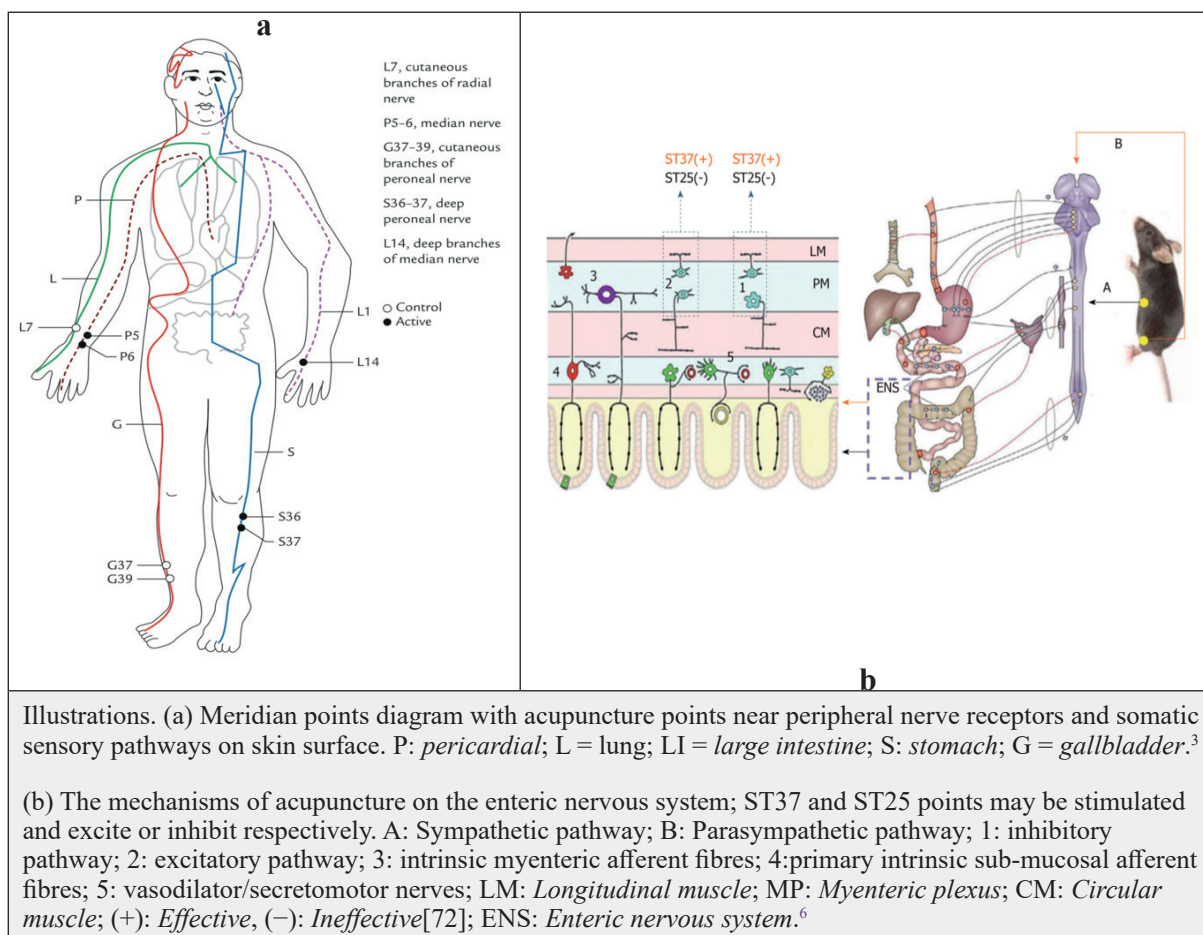
Discussion

Body position may affect the digestion process and defecation. In anatomic relations, the rectum and anus are facing towards the dorso-posterior of the body. This causes a folding in the recto-anal junction, effectively creating a hard corner which affects an increasing effort to defecate. While squatting, intraabdominal pressure drops, but the recto-anal lumen opens. This also affects the *Gut-Brain Circuit* which controls the normal microbiota in the gut and affects physiologic functions in digestion.³Seiza sitting can be an alternative or supplementary therapy for patients with obesity. Despite the lack of evidence on weight loss, we saw an improvement in digestive functions.

The acupuncture meridian points sit near peripheral nerve receptors and pathways, nerve plexus, capillary beds, and lymphatic vessels (Figure 1). It

was also found that stimulating these acupuncture points, may also induce nerve activity. These signals may be carried to the CNS and affect the nervous system, visceral organs, and muscle tone.^{4,5} ST37 Meridian points may be stimulated to affect the autonomic nervous system and inhibit gastric peristalsis between 6.67% to 13.3%. Whereas ST36 Meridian points may stimulate the vagus nerve and inhibit *non-adrenergic non-cholinergic* pathways in neurotransmitters.⁶ Seiza's sitting posture may stimulate lower extremity acupressure points and

align the recto-anal junction. It was also found in mice, that inducing hypoxia through femoral artery ligation has the effect of increased lower limb muscle exercise and the joining between main and collateral circulation. Seiza sitting induces hypoxia in the same way an artery ligation would, where this may induce *hypoxia-inducible factor-1* and *vascular-endothelial growth factor* to join the collateral vessels with main arteries, thus increasing oxygenation and load capacity.⁷⁻⁹



St36 Meridian points (Zu san li) (Figure 1a) have been proven to improve abdominal and gastric functions in digestion and food absorption. Lab rats were tested with ST36 Meridian stimulation in CV4 (Guan yuan), which stimulates nerve receptors in intestines, and K11 (Yon Quan) for maintaining vascular tone; showed improved metabolism. Bowel movements and intestinal glands are more active, and lab rats saw a reduction in weight up to 19,57%, with abdominal fats being the biggest contributor (72,7% fat lost). Lab rats also showed a reduction in fat absorption and low

blood fat levels.¹²

In the beginning, the subject's stomach circumference starts at 114 cm, then saw a reduction after Seiza sitting habituation by 1,75% in week 1; 0,88% in week 2; 2,63% in week 3, and; 3,51% in week 4. Body weight starts at 100,4 kg, then saw a reduction up to 0,55% in week 1; 0,35% in week 2; 0,25% in week 3, and; 1,89% in week 4. This may be affected by the duration of Seiza's sitting posture during Dzikir. The Seiza sitting also pressurizes Meridian points and affects the intestinal lumen size.¹³ Therefore,

we found that the longer duration of Seiza sitting is, the more it affects digestion, metabolism, and fat accumulation in the abdomen. Despite our findings, we're still short on clinical trials and long-term habituation.

Conclusion

Seiza sitting may trigger acupuncture effects on the ST36 Meridian points in the lower extremities. This stimulates the digestive system which aids in peristalsis and muscle contraction to help digestion and defecation. We found that there are correlations between weight loss and Seiza in aiding the digestive and excretion of food. So in the end, we can recommend the Seiza sitting posture be practiced daily during Dzikir followed by a diet program to enhance its effects.¹⁴⁻¹⁵

Limitations

Our results were based from a single case report, and observation was only done for four weeks. We should also consider adding more variables such

as age groups, gender, and physical activities.

Acknowledgement

The study is conducted in SebelasMaret University, and all measurements are done by RZM after consulting TB, NS, and AK for methods and interpretations.

Author Contributions

RZM performed the experiment and became the study's object. Observations were done by RZM with consulting towards TB, NS, and AK so as to measure physical changes and RZM noted some changes i.e. less effort in defecating etc. NS provided prevalence data and survey results for obesity, while TB and AK concerns more on data collecting and formatting of the article.

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Conflicts of Interest

The authors declare no conflicts of interest.

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