International Journal of Community Medicine and Public Health
Chacko JP et al. Int J Community Med Public Health. 2025 May;12(5):2140-2146
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20251366

Original Research Article

Evaluation of the physiological and psychological impact of easter lent fasting in obese individuals: emphasis on anthropometry, lipid profiles, liver functions, and mood

Jincemol Poikunnel Chacko*, Prashanth Shetty, Geetha B. Shetty

Department of Dietetics and Nutrition, SDM College of Naturopathy and Yogic Sciences, Ujire, Dakshina Kannada, Karnataka, India

Received: 30 January 2025
Revised: 18 April 2025
Accepted: 19 April 2025

***Correspondence:**
Dr. Jincemol Poikunnel Chacko,
E-mail: jincepoikunnel@gmail.com

ABSTRACT

Background: Obesity is a significant global public health concern due to its persistent metabolic disorder status. While dietary interventions during religious fasting have shown benefits in weight and biochemical improvements, limited evidence exists on the effects of Easter Lent fasting. The current study aimed to evaluate the physiological and psychological impact of easter lent fasting in obese individuals.
Methods: The study was conducted on 60 subjects, including overweight and grade 1 obese individuals, in two different periods, specifically a normal routine dietary regimen and a period of the Easter lent in Kerala. The baseline assessment was done on anthropometry, lipid profile, liver enzymes, and profile mood states at the beginning and after six weeks, where participants followed a non-vegetarian diet as a normal routine diet. After a week's hiatus the assessment was repeated, and they abstained from all animal-based foods and followed a vegetarian diet, time-restricted eating on Fridays, accompanied by prayer and meditation.
Results: Easter Lent fasting resulted in significant reductions in body weight, BMI, waist-hip ratio, total cholesterol, triglycerides, LDL, VLDL, lipid ratios (TC/HDL, LDL/HDL), and liver enzymes (SGOT, SGPT). A significant reduction in negative thoughts and total mood disturbance was also observed, indicating a positive impact on both the psychological and physiological well-being of obese individuals.
Conclusion: The practice of Easter lent fasting has demonstrated notable decreases in body mass, lipid profiles, and hepatic function, accompanied by a pronounced reduction in total mood disturbance.

Keywords: Easter lent fasting, Lipid profile, Liver enzymes, Mood, Obesity

INTRODUCTION

Obesity is a chronic disease with serious health risks, including cardiovascular diseases, type 2 diabetes mellitus, non-alcoholic fatty liver disease, certain cancers, and musculoskeletal disorders significantly impairing quality of life, and creating financial burden due to increased medical expenses and decreased productivity.[1,2] Over one-third of the global population is overweight or obese, with 1.9 billion expected by 2030.[3] India is a developing nation that is in a transitional state of undernutrition due to poverty and obesity due to industrialization and rapid urbanization. It is estimated that over 135 million people in India are affected by obesity.[4] Obesity is a chronic illness influenced by environmental and hereditary factors, including sedentary lifestyles, improper food consumption, lack of exercise, and smoking.[5] Research suggests that meat consumption increases cardiovascular disease risk, particularly for meat eaters.[6] The integrated management of obesity involves pharmacological approaches, bariatric surgery, and lifestyle modification that focuses on dietary

modification caloric restrictions, physical exercise regimens, and behavioral therapies.[7-10] While these methodologies demonstrate efficacy in the short term, they present significant challenges in the long-term adherence, empirical research suggests that individuals classified as obese are increasingly seeking alternative medical practices as a means to achieve weight reduction.

Diets used in traditional, behavioral weight loss interventions have primarily focused on energy restriction to promote weight loss.[11] Vegetarian diets, primarily focusing on fruits, vegetables, grains, and legumes, have been linked to weight reduction, reduced coronary heart disease, type 2 diabetes, and overall mortality rates, benefiting public health.[12,13] Religious fasting is made for spiritual purposes, but it also has an impact on health. The most documented religious fasting in the scientific literature is Islamic Ramadan, Greek Orthodox Christianity's Nativity, Lent, and Assumption, and the Biblical-based Daniel Fast.[14]

Religious fasting, especially during Lent, has potential health benefits and need for scientific documentation of its effects. Despite the expanding corpus of evidence that endorses religious fasting practices as a viable intervention for weight management, there exists a paucity of research that specifically investigates the effects of Easter Lent fasting on obese individuals.[15]

The majority of extant studies predominantly concentrate on Ramadan or other forms of religious fasting, thereby creating a lacuna in our comprehension of how fasting practices specific to Easter Lent influence metabolic health; furthermore, the psychological states of individuals, particularly those classified as obese, have not been scrutinized in prior research alongside dietary practices. By addressing these gaps in the existing literature, the present study aims to assess the impact of Easter Lent fasting on anthropometric measurements, lipid profiles, liver enzyme levels, and mood status among obese individuals.

Lent season in Christianity is 40 days of prayer, penance, and spiritual preparation for Easter, focusing on fasting, abstinence, and refraining from meat-based foods during Lent and diets that involve whole grains, cereals, green leafy vegetables, legumes, peas, beans, fruit.[16] This study has profound implications for patients, physicians, and researchers. By emphasizing the distinctive features of Easter Lent fasting, it adds to the expanding corpus of research on fasting and obesity.

These results can be used by clinicians to provide tailored dietary recommendations for obese patients, particularly those who observe religious fasts. Patients may be better able to make judgments about include fasting in their weight-management plans if they are aware of the possible health advantages and hazards associated with Easter Lent fasting.

METHODS

Study design

This study was designed as an observational, self as control study conducted among adult obese individuals in a Christian community belongs to St. Thomas church-Kunnoth, Kerala, India. This study was performed from 01 January 2023 to 06 April 2023 and who intended to follow the dietary rules of Easter Lenten fasting for 40 days was identified and no prior sample size was calculated. The Institutional Ethical Clearance (EC-542) was obtained Registration trial protocol was registered in CTRI/2023/11/059437 (Registered on: 02/11/2023).

Participants recruitment

Randomization was not utilized because the primary aim was to evaluate the natural changes occurring within individuals who voluntarily adhered to a specific religious fasting regimen embedded in their tradition. The sample size was not calculated and participants were selected through oral announcements in church. The subjects were screened by a qualified medical doctor with extensive experience in obesity management, who assessed participants according to the study's inclusion and exclusion criteria. Only individuals meeting both criteria were included in the study. Inclusion criteria were subjects who were diagnosed as obese according to the WHO classification of BMI>25.0 kg/m2 both male and female, aged 25 to 50 years who were planning to follow the Easter Lenten regimen.[17] There of 100 Christians who intended to follow the dietary rules of Easter Lenten fasting for 40 days. From this group, 60 participants, 39 males, and 21 females, fulfilled inclusion criteria and were selected for the study. This current study involves obese individuals classified as overweight (BMI 25.0–29.9) and obese (BMI 30.0–34.9). Key exclusion criteria included the subjects who had Morbid obesity (BMI > 40 kg/m2), Obesity with Diabetes mellitus, Obesity with hypertension, Obesity secondary to hormonal imbalances and drug therapy, Thyroid disorder, and acute illness individuals.

Procedure and intervention

After baseline screening, participants were informed about the procedures and purposes of the study and gave written informed consent to participants. The baseline assessment was done on anthropometry, lipid profile, liver enzymes, and profile mood states at the beginning and after six weeks, where 60 participants followed a non-vegetarian diet as a normal routine diet. It encompasses grains, legumes, vegetables, and fruits in addition to being abundant in red meat, organ meats, poultry, seafood, eggs, and dairy products. Subsequently, the same baseline assessment was repeated on the same 60 participants after one week and they abstained from all animal-based foods and followed a vegetarian diet, time-restricted eating on Fridays and they were also asked to

limit sugar and all types of junk foods. Since Easter Lent fasting, profoundly embedded in Christian tradition, incorporates spiritual and psychological dimensions that go beyond dietary restrictions. Consequently, participants were also instructed in practices such as prayer, meditation, mindfulness, and other forms of mental discipline for 6 weeks of the Easter Lent period, and post-assessment was performed before Easter.

All measurements were made between 6.00–10.00 am and they included fasting blood collection, anthropometric measurements, and the completion of questionnaires. Anthropometric measurements were performed in all subjects wearing light clothing without shoes. Weight and height were measured, and the BMI was calculated as weight (kilograms) by height squared (square meters). Waist circumference (WC) and hip circumference were also measured by the same observer, and the waist-hip ratio (WHR) was calculated. For the estimation of lipid profile and liver enzymes 5ml of venous blood was drawn from the subjects and then the sample were transferred to the sterile sample bottles without the anticoagulant, and then blood will be put into the centrifuge tube. This was allowed to clot and centrifuge at 3000 rpm for 3-5 minutes at room temperature.

POMS Questionnaire was given through electronic forms and printed forms in hands as pre-assessment, after 6 weeks of normal routine days, starting of lent and before Easter.

Statistical analysis

Data were analysed using the Jamovi project (2022). jamovi. (Version 2.3) software for statistical analysis. Outcomes data is presented as the mean ± standard deviation (SD) and median with effect size and 95% confidence intervals (CIs). Kolmogorov-Smirnov test was performed to check the normality of the data. The between-group comparison was done using the Mann-Whitney U test and Wilcoxon signed ranks test was used to assess within-group comparison. P value < 0.05 was considered significant.

RESULTS

The present study aims to compare the effect of lent fasting on anthropometry, lipid profile, liver function test, and POMS score in obese individuals. Out of the 100 screened volunteers, were enrolled in the trial because they matched the eligibility criteria. Sixty people were enrolled in the study and observed as a control group in a normal routine diet period, and later, after the completion of the control period, they were enrolled in the Easter Lent period. Four subjects were dropped out of the study due to various reasons. The final analysis included 56 participants from both groups (normal routine diet and easter lent period). The trial was conducted from 01 January 2023 to 06 April 2023 and involved subject recruitment, randomization, evaluations, and intervention. The trial ended after the completion of the expected study samples.

Anthropometric measurement

The mean age in the group was 34±8.28. The group had 70% male and 30% female volunteers ranging from 25 to 50 years. The result showed that significant reduction in Body weight, BMI, WC, HC, and WHR at the end of lent fasting. However, in the period of normal routine diet shows significance only in WC, HC, WHR, and LDL as shown in (Table 1). There was no significant reduction in anthropometry during the lent period when compared to the normal routine diet.

Lipid profile and liver enzymes

There was a significant reduction in TC ($p<0.001$), TG ($p<0.001$), LDL-C ($p<0.001$), HDL-C ($p<0.001$), VLDL ($p<0.001$), TC/HDL ($P <0.001$) and LDL/HDL ($p<0.001$) at the end of easter lent fasting. However, the HDL cholesterol did not significantly increase during Lent. When the liver function test was compared before and after Lent fasting showed a significant decrease in SGOT and SGPT levels, but no change was noted during the control period. ALP did not have any significant changes. There was no significant reduction in liver enzymes when lent fasting compared with a normal routine diet period.

Profile of mood states (POMS) score

After the easter lent fasting subjects were shown a significant decrease in tense ($p<0.001$), anger ($p<0.001$), fatigue ($p<0.001$), depression ($p<0.001$), confusion ($p<0.001$), Vigor ($p<0.001$), and Total mood disturbance ($p<0.001$) but no changes were observed during the control period as shown in (Table 2). Comparison between the lent fasting and control period showed a significant reduction in tense, anger, depression, and confusion. Fatigue was not statistically significant. As well as Esteem Related effects and vigor did not increase significantly. However total mood status in subjects showed a significant reduction after the lent period compared with normal routine days.

DISCUSSION

The current study conducted among obese individuals during one of the main periods of 40 days of Lent fasting in Christianity before Easter which is a day of prayer, penance, and spiritual endeavor in preparation for Easter and during these days Catholics used to observe fasting and abstinence; refrain from meat-based foods and festivities and try to follow vegetarian diet which involved whole grains, cereals, green leafy vegetables, legumes, peas, beans, fruits. The results showed a significant reduction in anthropometric measurements, lipid profile, liver enzymes, and POMS score at the end of lent fasting.

The result of this study showed that significant reduction in Body weight, BMI, WC, HC, and WHR at the end of lent fasting. However, the control period shows significance only in WC, HC, and WHR. The study found that generally people assigned to the vegetarian diet groups lost significantly more weight than those assigned to the non-vegetarian diet groups who received the intervention for a median period of 18 weeks and owing to its tendency to reduce energy intake and increase postprandial energy expenditure.[12,18]

Increased intake of meat alternatives, like pulses and soya products during lent was associated with weight loss and these changes can be proven by clinical trials that found that eating one serving of pulses daily reduced body weight by 1.74 kg on diets designed for weight loss (negative energy balance) and 0.29 kg on diets designed for weight maintenance (neutral energy balance). Legumes may support weight loss by increasing post-meal satiety, possibly because of their high fiber and protein content; the soluble fiber in legumes also causes gel formation, slowing gastric emptying, triggering the release of appetite-reducing peptide YY, and may influence gut microbiota in ways that promote satiety. Pulse protein was an alternative for red meat, poultry, and egg during Lent which may be the one reason to reduce changes in body weight during Lent.[19,20]

Decreases in egg intake were associated with decreases in body weight, consistent with a previous study in which high egg intake was associated with an increased risk of weight gain by 54% compared with low egg consumption.21 Similarly, decreased intake of high-fat dairy products was associated with reductions in body weight and fat mass, whereas low-fat dairy yielded no significant association change in body weight.22The study shows changes in WC after lent fasting can be associated with the intake of fruits resulting in a reduction in body weight and waist circumference.[23]

The correlation observed between decreased consumption of overall meat, seafood, and poultry and decreased body mass and adipose tissue corresponds with results obtained from the national health and nutrition examination survey. This research illustrates a connection between elevated total meat intake (encompassing red meat, poultry, seafood, shellfish, and other meat items) and increased body mass index, waist circumference, obesity, and central adiposity.[24,25] There was no significant reduction in anthropometry when compared to the control period (normal routine life) which may be due to less sample size and a longer period of energy restriction may be required.[26]

Vegetarian diet in individuals during the lent season found significant changes in serum lipid profile as well as compared with normal routine live where there was no restriction of animal-based food. TC, TG, LDL-C, VLDL, TC/LDL ratio, and LDL/HDL ratio reduced significantly, at the end of Lent fasting from baseline profile. However, not many changes were seen in individuals when they were adopting meats, poultry, eggs, and high-fat dairy products during their routine lifestyle. HDL was not increased significantly. The beneficial changes seen in a faster diet during the lent period, especially regarding energy intake, total fat, and fiber consumption can also explain the reduction in the biochemical and obesity indices.

Present results corroborated those of other studies on religious fast and vegetarian diets. In Greek Orthodox Christian fasting found that both TC and LDL-C decreased during lent fasting although the LDL-C/HDL-C ratio does not appear to change.[27] The diet, which is based on vegetables, fruits, and cereals, with periodic abstinence from meat and other animal products during the fasting periods supports the reduction in biochemical indices. Carbohydrate intake appears to increase, while the intake of protein, total fat, saturated fat, and trans fatty acids decreases, and fiber intake increases during fasting periods, which may partly explain the change in serum lipids.[14]

Other studies are also supported by our results TC, LDL-C and TG decreased significantly during the lent period but HDL-C did not significantly increase during the study period. LDL/HDL ratio and TC/HDL ratio reduced significantly at the end of the study. In scientific studies, results are conflicting for TG and HDL-C.2[7,28] One study reported a decrease in HDL-C levels, while other studies reported no change.[29,30]

Studies pointed out that a favorable lipid profile is more common among vegans and vegetarians than in non-vegetarians.[10] This may be true due to vegetarians; especially vegans may have more fiber intake than non-vegetarians.31 A systematic review and meta-analysis provide evidence that vegetarian diets effectively lower blood concentrations of total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, and non–high-density lipoprotein cholesterol.[32]

Liver enzymes were under normal limits in the participants. Although abstaining from meat, poultry, eggs, and high-fat dairy products for 6 weeks during lent showed significant changes in SGOT and SGPT levels no changes were observed in ALP and also when compared with normal days. Sample size strength and lesser duration restricting animal-based food might have affected in outcome results. Vegan diet advice mechanism/s of action is/are unclear, but a complex interplay between avoiding offending meat byproducts and increasing vegetable antioxidant compounds is speculated.[33] Another study found that fruits and vegetables are major sources of antioxidants, polyphenols, fiber, vitamins and minerals is associated with reduced liver enzymes (ALT and AST), indicating improved liver function and lower risk of liver-related diseases.[34] Adopting a Mediterranean diet also showed a

significant reduction in liver enzymes AST and GGT, indicating potential improvement in liver function, though no significant effect on ALT was observed.[35] Alternatively, beneficial modulation of the gut microbiota due to the increased assumption of fermentable fibers might be as relevant in improving liver enzymes.[36]

Since Easter Lent fasting, profoundly embedded in Christian tradition, incorporates spiritual and psychological dimensions that go beyond dietary restrictions. Consequently, participants were also instructed in practices such as prayer, meditation, mindfulness, and other forms of mental discipline during Lent period to achieve purity of mind, spiritual growth, mental psychological wellbeing, and union with God.

The effect of prayers and rituals on the mental health of an individual was assessed by the abbreviated profile of mood states (POMS) questionnaire and it showed a significant decrease in tension, anger, fatigue, depression, confusion, Vigor, and Total mood disturbance at the end of fasting. However, no changes were observed during the control period. Comparison between the lent fasting and control period showed a significant reduction in tense, anger, depression, and confusion. Fatigue was not statistically significant. As well as Esteem Related effects and vigor did not increase significantly. However total mood status in subjects showed a significant reduction after the lent period compared with normal routine days. St. Theresa of Avila's literature suggests prayer involves moving from outer to inner mansion, active recollection, quieting the mind and all sense perception dramatically decreases. This practice increases inner vitality and energy and improves mental health.[37]

The literature demonstrates that disclosing distressing information can improve mental health, and self-disclosure would mediate the association between prayer types involving meaningful communication with God and mental health. Religious coping, such as benevolent reappraisals and seeking spiritual support, leads to stress-related growth, spiritual growth, positive affect, and higher self-esteem significantly associated with psychological adjustment to stress.[38] A 2-week contemplative prayer for Christians with daily stress showed a reduction in stress levels.[39] Other studies also report that Christian meditation, prayer, and mindfulness reduce anxiety, depression, and poor self-esteem and increase confidence, capability, and overall well-being.[40]

The compliance was monitored by using food dairy, whereas the easter lent fasting was done as a spiritual practice the adherence rate was good, there were 4 dropouts noticed without any adverse events.

Strength of the study

It was an observational study among obese individuals and no earlier studies were performed during a religious easter lent among obese individuals in the parameters of anthropometry and biochemical variables as per the knowledge. The impacts of rituals and spiritual practices were also assessed for psychological well-being among obese individuals.

Limitations

The present study was characterized by a limited sample size. The reduced period of restriction on the consumption of animal-derived food may have influenced the outcomes when compared with a routine lifestyle. The follow-up period was not studied.

CONCLUSION

Easter lent fasting has demonstrated notable decreases in body mass, lipid profiles, and hepatic function, accompanied by a pronounced reduction in Total Mood Disturbance. The current study shows that religious fasting, irrespective of the religion, has the potential to bring out significant improvements in health. Religious fasting practices, accompanied by healthy dietary regimens, can lead to physical and mental well-being.

Recommendations

The study can include a larger sample size for a better outcome. Specific dietary interventions and integrated approaches also can be included during religious fasting practices for better outcomes of obesity management.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Kerver JM, Yang EJ, Bianchi L, Song WO. Dietary patterns associated with risk factors for cardiovascular disease in healthy US adults. Am J Clin Nutr. 2003;78(6):1103–10.
2. Wang YC, McPherson K, Marsh T, Gortmaker SL, Brown M. Health and economic burden of the projected obesity trends in the USA and the UK. The Lancet. 2011;378(9793):815–25.
3. Kolahi AA, Moghisi A, Soleiman Ekhtiari Y. Socio-demographic determinants of obesity indexes in Iran: findings from a nationwide STEPS survey. Health Promot Perspect. 2018;8(3):187–94.
4. Overweight Exceeds Underweight among Women in Kerala: An Analysis of Trends and Determinants: J Human Ecol. 2009;25(2):141.
5. Gaining weight: how media exposure, socioeconomic status, sedentary lifestyle and dietary habits work together. a secondary analysis of a nationally representative study. Available atz: https://www.researchgate.net. Accessed on 21 August 2024.

6. Tong TYN, Appleby PN, Bradbury KE, Perez-Cornago A, Travis RC, Clarke R, et al. Risks of ischaemic heart disease and stroke in meat eaters, fish eaters, and vegetarians over 18 years of follow-up: results from the prospective EPIC-Oxford study. BMJ. 2019;2:45-9.
7. Hollander PA, Elbein SC, Hirsch IB, Kelley D, McGill J, Taylor T, et al. Role of orlistat in the treatment of obese patients with type 2 diabetes. A 1-year randomized double-blind study. Diabetes Care. 1998;21(8):1288–94.
8. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults--the evidence report. National Institutes of Health. Obes Res. 1998;6(2):51-209.
9. Mozaffarian D, Ludwig DS. The 2015 US dietary guidelines: lifting the ban on total dietary fat. JAMA. 2015;313(24):2421–2.
10. Donnelly JE, Blair SN, Jakicic JM, Manore MM, Rankin JW, Smith BK, et al. American college of sports medicine position stand. Appropriate physical activity intervention strategies for weight loss and prevention of weight regain for adults. Med Sci Sports Exerc. 2009;41(2):459–71.
11. Fleming JA, Kris-Etherton PM. Macronutrient Content of the Diet: What Do We Know About Energy Balance and Weight Maintenance. Curr Obes Rep. 2016;5(2):208–13.
12. Huang RY, Huang CC, Hu FB, Chavarro JE. Vegetarian Diets and Weight Reduction: a Meta-Analysis of Randomized Controlled Trials. J Gen Intern Med. 2016;31(1):109–16.
13. Fraser GE. Vegetarian diets: what do we know of their effects on common chronic diseases? Am J Clin Nutr. 2009;89(5):1607-12.
14. Trepanowski JF, Bloomer RJ. The impact of religious fasting on human health. Nutr J. 2010;9:57.
15. Abdou Khadir S, Agne F, Eacute A, Eacute B, Ogo Ogo, Diaw M, et al. Effects of lenten fasting on body composition and biochemical parameters. Int J Res Med Sci. 2016;4:339.
16. Summerlin TL. The Code of Canon Law: A Text and Commentary. Edited by James A. Coriden, Thomas J. Green, and Donald E. Heintschel. J of Church and State. 1986;28(2):343-4.
17. Singh A, Chattopadhyay A. Age-appropriate BMI cut-offs for malnutrition among older adults in India. Sci Rep. 2024;14(1):15072.
18. Kahleova H, Petersen KF, Shulman GI, Alwarith J, Rembert E, Tura A, et al. Effect of a low-fat vegan diet on body weight, insulin sensitivity, postprandial metabolism, and intramyocellular and hepatocellular lipid levels in overweight adults: a randomized clinical trial. JAMA Netw Open. 2020;3(11):2025454.
19. Kim SJ, de Souza RJ, Choo VL, Ha V, Cozma AI, Chiavaroli L, et al. Effects of dietary pulse consumption on body weight: a systematic review and meta-analysis of randomized controlled trials. Am J Clin Nutr. 2016;103(5):1213–23.
20. Paddon-Jones D, Westman E, Mattes RD, Wolfe RR, Astrup A, Westerterp-Plantenga M. Protein, weight management, and satiety. Am J Clin Nutr. 2008;87(5):1558-61.
21. Schlesinger S, Neuenschwander M, Schwedhelm C, Hoffmann G, Bechthold A, Boeing H, et al. Food groups and risk of overweight, obesity, and weight gain: a systematic review and dose-response meta-analysis of prospective studies. Adv Nutr Bethesda Md. 2019;10(2):205–18.
22. Schmidt KA, Cromer G, Burhans MS, Kuzma JN, Hagman DK, Fernando I, et al. The impact of diets rich in low-fat or full-fat dairy on glucose tolerance and its determinants: a randomized controlled trial. Am J Clin Nutr. 2021;113(3):534–47.
23. Howarth NC, Saltzman E, Roberts SB. Dietary fiber and weight regulation. Nutr Rev. 2001;59(5):129–39.
24. Wang Y, Beydoun M. Meat consumption is associated with obesity and central obesity among US adults. Int J Obes 2005. 2009;33(6):621–8.
25. Khodayari S, Sadeghi O, Safabakhsh M, Mozaffari-Khosravi H. Meat consumption and the risk of general and central obesity: the Shahedieh study. BMC Res Notes. 2022;15:339.
26. Schulz M, Kroke A, Liese AD, Hoffmann K, Bergmann MM, Boeing H. Food groups as predictors for short-term weight changes in men and women of the EPIC-Potsdam cohort. J Nutr. 2002;132(6):1335–40.
27. Sarri KO, Tzanakis NE, Linardakis MK, Mamalakis GD, Kafatos AG. Effects of Greek Orthodox Christian Church fasting on serum lipids and obesity. BMC Public Health. 2003;3:16.
28. Papadaki A, Vardavas C, Hatzis C, Kafatos A. Calcium, nutrient and food intake of Greek Orthodox Christian monks during a fasting and non-fasting week. Public Health Nutr. 2008;11(10):1022–9.
29. Howarth NC, Saltzman E, Roberts SB. Dietary fiber and weight regulation. Nutr Rev. 2001;59(5):129–39.
30. Verma M, Verma P, Parveen S, Dubey K. Comparative study of lipid profile levels in vegetarian and non-vegetarian person. Int J Life Sci Sci. Res. 2015;1(2):89-93.
31. Sacks FM, Lichtenstein A, Van Horn L, Harris W, Kris-Etherton P, Winston M. Soy protein, isoflavones, and cardiovascular health: a summary of a statement for professionals from the american heart association nutrition committee. Arterioscler Thromb Vasc Biol. 2006;26(8):1689–92.
32. Wang F, Zheng J, Yang B, Jiang J, Fu Y, Li D. Effects of Vegetarian Diets on Blood Lipids: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. J Am Heart Assoc. 2015;4(10):2408.
33. Hardy T, Anstee QM, Day CP. Nonalcoholic fatty liver disease: new treatments. Curr Opin Gastroenterol. 2015;31(3):175–83.

34. Mollahosseini M, Daneshzad E, Rahimi MH, Yekaninejad MS, Maghbooli Z, Mirzaei K. The Association between Fruit and Vegetable Intake and Liver Enzymes (Aspartate and Alanine Transaminases) in Tehran, Iran. Ethiop J Health Sci. 2017;27(4):401–10.
35. Sangouni AA, Hassani Zadeh S, Mozaffari-Khosravi H, Hosseinzadeh M. Effect of Mediterranean diet on liver enzymes: a systematic review and meta-analysis of randomised controlled trials. Br J Nutr. 2022;128(7):1231–9.
36. Shen F, Zheng RD, Sun XQ, Ding WJ, Wang XY, Fan JG. Gut microbiota dysbiosis in patients with non-alcoholic fatty liver disease. Hepatobiliary Pancreat Dis Int HBPD INT. 2017;16(4):375–81.
37. Baesler EJ. A model of interpersonal Christian prayer. J Communication & Religion. 1999;22:482.
38. Ano GG, Vasconcelles EB. Religious coping and psychological adjustment to stress: a meta-analysis. J Clin Psychol. 2005;61(4):461–80.
39. Knabb JJ, Vazquez VE. A randomized controlled trial of a 2-week internet-based contemplative prayer program for Christians with daily stress. Spiritual Clin Pract. 2018;5(1):37–53.
40. Timbers VL, Hollenberger JC. Christian Mindfulness and Mental Health: Coping through Sacred Traditions and Embodied Awareness. Religions. 2022;13(1):62.

Cite this article as: Chacko JP, Shetty P, Shetty GB. Evaluation of the physiological and psychological impact of easter lent fasting in obese individuals: emphasis on anthropometry, lipid profiles, liver functions, and mood. Int J Community Med Public Health 2025;12:2140-6.