

Awareness On Intermittent Fasting Plan Among College Students – A Survey

Shalini Sathiyamoorthy

Saveetha Dental College And Hospitals
Saveetha Institute Of Medical And Technical Sciences (Simats)
Saveetha University,
Chennai- 600077

Vishnu Priya V

Department Of Biochemistry,
Saveetha Dental College And Hospitals
Saveetha Institute Of Medical And Technical Sciences (Simats)
Saveetha University,
Chennai-600077
Email Id: Vishnupriya@Saveetha.Com

Gayathri. R

Department Of Biochemistry,
Saveetha Dental College And Hospitals
Saveetha Institute Of Medical And Technical Sciences (Simats)
Saveetha University,
Chennai-600077
Email Id: Gayathri.Sdc@Saveetha.Com

Abstract

Intermittent Fasting (If) Is A Dietary Strategy In Which Periods Of Normal Food And Drink Consumption Are Punctuated By Periods Of Energy Restriction Or Fasting. The Objective Of If Is To Create A Net Reduction In Energy Intake That Causes It To Fall Below Energy Expenditure, Thereby Creating A State Of Negative Energy Balance And Inducing Weight Loss. The Aim Of Our Study Is To Create Awareness Of Intermittent Fasting Plan Among College Students. This Was A Cross - Sectional Questionnaire Based Study Which Was Conducted Among College Students. The Study Was Approved By Institutional Review Board, Saveetha Dental College. A Validated And Structured Questionnaire Containing 10 Questions Was Framed And It Was Circulated Through An Online Forum. The Sample Size Was 100 People And The Results Were Tabulated In The Excel Sheet And Analysed Using Spss Software. This Study Reveals That 78% Of Total Participants Were Aware Of Intermittent Fasting And 22% Of The Participants Were Not Aware And The Association Was Statistically Not Significant; P Value: 0.284 ($P > 0.05$). 39% Of Total Participants Are Aware That Intermittent Fasting Can Reduce Insulin Resistance And 61% Of The Participants Are Not Aware And The Association Was Statistically Significant; P Value: 0.012 ($P < 0.05$). Within The Limitation In This Study Reveals That Females Have Better Knowledge And Awareness About Intermittent Fasting. The Findings Of The Study Suggests That The Awareness Of Intermittent Fasting Was Low Among The College Students. Due To The Increasing Prevalence Of Overweight And Obesity It Is Important To Share The Knowledge And Awareness On If Among People.

Keywords: Obesity; Insulin Resistance; Survey Planet; Time Restricted Feeding; Intermittent Fasting.

Introduction

In Recent Years, People Worldwide Have Developed An Increased Popularity For Weight Loss Programs, Diet Plans And Weight Maintenance Programs With Little Research Done On The Effectiveness Of Those Programs. Meanwhile, Obesity Has Been Increasing In Prevalence Due To Many Social Determinants Such As Easy Access To Various Fast Foods, And Lack Of Physical Activity . Obesity Is A Worldwide Epidemic Due To The Availability Of Many Unhealthy Food Options And Limited Physical Exercise. Obesity Is A Public Health Problem That Has Raised Concern Worldwide. Obesity Can Be Defined As A Condition Of Abnormal Or Excess Fat Accumulation In Adipose Tissue, To The Extent That Health May Be Impaired (Ulijaszek, 2003). According To The World Health Organization (Who), There Will Be About 2.3 Billion Overweight People Aged 15 Years And Above, And Over 700 Million Obese People Worldwide In 2015 (Lerouge *Et Al.*, 2020). Although A Few Developed Countries Such As The United Kingdom And Germany Experienced A Drop In The Prevalence Rate Of Obesity In The Past Decade, The Prevalence Of Obesity Continues To Rise In Many Parts Of The World, Especially In The Asia Pacific Region (Yoshiike, Kaneda And Takimoto, 2002; Chew *Et Al.*, 2018).

There Is A Wealth Of Evidence To Show That Excess Weight Is An Important Risk Factor In The Development Of Illness Like Cardiovascular Diseases , Diabetes Mellitus , Respiratory Diseases (Murugan And Sharma, 2008), Chronic Kidney Diseases (Ting *Et Al.*, 2009), Musculoskeletal Disorders (Wearing *Et Al.*, 2006; Medina, 2016), Gastrointestinal And Hepatic Disorders (Tsai *Et Al.*, 2004; Batty *Et Al.*, 2008), Lower Physical Functioning Performance (Woo, Leung And Kwok, 2007) And Psychological Problems. The Etiology Of Obesity Is Multifactorial, Involving Complex Interactions Among The Genetic Background, Hormones And Different Social And Environmental Factors, Such As Sedentary Lifestyle And Unhealthy Dietary Habits (Ulijaszek, 2003).

Fasting, Called “The Next Big Weight Loss Fad”, Has Long Been Integral To Many Religious And Ethnic Cultures (Golbidi *Et Al.*, 2017). Intermittent Fasting (If) Is A Dietary Strategy In Which Periods Of Normal Food And Drink Consumption Are Punctuated By Periods Of Energy Restriction Or Fasting. The Objective Of If Is To Create A Net Reduction In Energy Intake That Causes It To Fall Below Energy Expenditure, Thereby Creating A State Of Negative Energy Balance And Inducing Weight Loss. Intermittent Fasting (If) Has Many Forms; The Basic Premise Involves Taking Periodic Breaks From Eating. Common Forms Of If Include Fasting For Up To 24 Hours Once Or Twice A Week Food Intake For The Remaining Days, Which Is Known As Periodic Prolonged Fasting (Pf) Or Intermittent Calorie Restriction (Icr) (Fairburn, 2008); Time-Restricted Feeding (Trf), Such As Eating For Only 8 Hours Then Fasting For The Other 16 Hours Of The Day; And Alternate-Day Fasting (Adf). Most Adf Programs Involve Alternating Feast And Fast Days With Some Protocols Allowing No Caloric Intake On Fast Days.

In 2007, Varady And Hellerstein Reviewed Alternate Day Fasting Studies In Animals And Concluded That This Fasting Regimen Was As Effective As Simple Caloric Restriction In Decreasing Fasting Insulin And Glucose Concentration. Alternate Day Fasting In Animals Also Reduced Total Plasma Cholesterol And Triglyceride (Tg) Concentrations, And Had Beneficial Effects On Cancer Risk Factors Such As Cell Proliferation. Rothschild *Et Al* Recently Reviewed The Animal Literature On Time-Restricted Feeding. Twelve Studies Were Identified With Daily Fasting Intervals Ranging From 12 To 20 Hours, In Numerous Mouse Models, With Variability In Coordination With Light/Dark Phases . In Spite Of The Heterogeneity Of These Studies, The Authors Concluded That In Mice, Time-Restricted Feeding Was Associated With Reductions In Body Weight, Total Cholesterol, Tgs, Glucose, Insulin, Interleukin-6 (Il-6), And Tnf-A; As Well As Improvements In Insulin Sensitivity. It Is Notable That These Health Outcomes Occurred Despite Variable Effects Of Intermittent Fasting On Weight Loss (Varady *Et Al.*, 2009; Collier, 2013). Previously Our Team Has A Rich Experience In Working On Various Research Projects Across Multiple Disciplines The (Somasundaram *Et Al.*, 2015; Hafeez And Others, 2016; Krishnan *Et Al.*, 2018)(Choudhari And Thenmozhi, 2016; Dhinesh *Et Al.*, 2016; Gurunathan And Shanmugaavel, 2016; Sneha And Others, 2016; Govindaraju And Gurunathan, 2017; Kumar And Rahman, 2017; Felicita And Sumathi Felicita, 2018; Saravanan *Et Al.*, 2018; Vijayakumar Jain *Et Al.*, 2019; Wu *Et Al.*, 2019; Palati *Et Al.*, 2020; Paramasivam, Vijayashree Priyadharsini And Raghunandhakumar, 2020). The Aim Of Our Study Is To Create Awareness On Intermittent Fasting Plans Among College Students .

Materials And Method

This Was A Cross - Sectional Questionnaire Based Study, Which Was Done In December 2019 Among Students Of Saveetha Dental College. Ethical Approval Was Given By The Institutional Review Board, Saveetha Dental College And A Predesigned Validated Questionnaire Was Used To Assess The Awareness Of Intermittent Fasting. A Validated And Structured Questionnaire Containing 10 Questions Was Framed And It Was Circulated Through An Online Forum. It Consisted Of Two Parts: Section I Demographic Data Of The Participants, In This Part Information Regarding Name, Gender. Section Ii Knowledge And Awareness On Intermittent Fasting Diet Plan As Assessed. The Sample Size Was 100 People And The Sampling Method Used Was A Simple Random Sampling Method. In Order To Minimise Bias All Variables Were Included (Randomisation) And No Sorting Process Was Done. Data Collection Verified By 2 Reviewers And Internal Validity Was A Pretested Questionnaire.

Data Analysis Was Done In The Statistical Product And Service Solutions (Spss) Software And The Statistical Test Used Was The Chi - Square Test. Type Of Analysis Used Was Association And The Results Were Tabulated In Excel Sheet And Transferred To Spss Software To Analyse And Represent In The Bar Graph.

Results And Discussion

A Total Of 100 College Students Participated In This Study. Among The Total Participants, The Distribution Of Females (51%) Were Slightly Higher Than Males (49%) (Figure 1). 78% Of Total Participants Were Aware Of Intermittent Fasting And 22% Of The Participants Were Not Aware And Observed That Both Males And Females Are Aware Of It Which Showed No Statistical Significant Association Of Gender With Awareness Of Intermittent Fasting ($P = 0.284$) (Figure 2). 54% Of Total Participants Agree That Intermittent Fasting Is Good For Health And 46% Of The Participants Disagreed And Observed That Females Are More Aware Than Males Which Showed No Statistical Significant Association Of Gender With Healthiness ($P = 0.028$) (Figure 3). 70% Of Total Participants Are Aware That Intermittent Fasting Is The Effective Way To Lose Weight And 30% Of The Participants Are Not Aware And Observed That Females Have More Awareness Than Males Which Showed Statistical Significant Association Of Gender With Weight Reduction ($P = 0.013$) (Figure 4). 39% Of Total Participants Are Aware That Intermittent Fasting Can Reduce Insulin Resistance And 61% Of The Participants Are Not Aware And Observed That Females Have Better Knowledge Than Males Which Showed Statistical Significant Association Of Gender With Insulin Resistance ($P = 0.012$) (Figure 5). 39% Of Total Participants Agree That Intermittent Fasting Reduces The Risk Of Cancer And 61% Of The Participants Disagreed And Observed That There Was Not Much Difference In Responses Among Males And Females Which Showed No Statistical Significant Association Of Gender With Risk Of Cancer ($P = 0.649$) (Figure 6). 53% Of Total Participants Agree That Intermittent Fasting Boosts The Metabolic Rate And 47% Of The Participants Disagreed And Observed That There Was Not Much Difference In Responses Among Males And Females Which Showed No Statistical Significant Association Of Gender With Metabolic Rate ($P = 0.112$) (Figure 7). 22% Of Total Participants Agree That Intermittent Fasting Increases Autophagy And 78% Of The Participants Disagreed And Observed That Males Have Better Knowledge Than Females Which Showed No Statistical Significant Association Of Gender With Autophagy ($P = 0.284$) (Figure 8). 13% Of Total Participants Agree That Intermittent Fasting Protects From The Effect Of Alzheimer's And Parkinson's Disease And 87% Of The Participants Disagreed And Observed That There Was Not Much Difference In Responses Among Males And Females Which Showed No Statistical Significant Association Of Gender With The Effect Of Alzheimer's And Parkinson's Disease ($P = 0.826$) (Figure 9). 37% Of Total Participants Agree That Intermittent Fasting May Extend Your Lifespan And 63% Of The Participants Are Not Aware And Observed That Females Have More Awareness Than Males Which Showed Statistical Significant Association Of Gender With Lifespan ($P = 0.034$) (Figure 10).

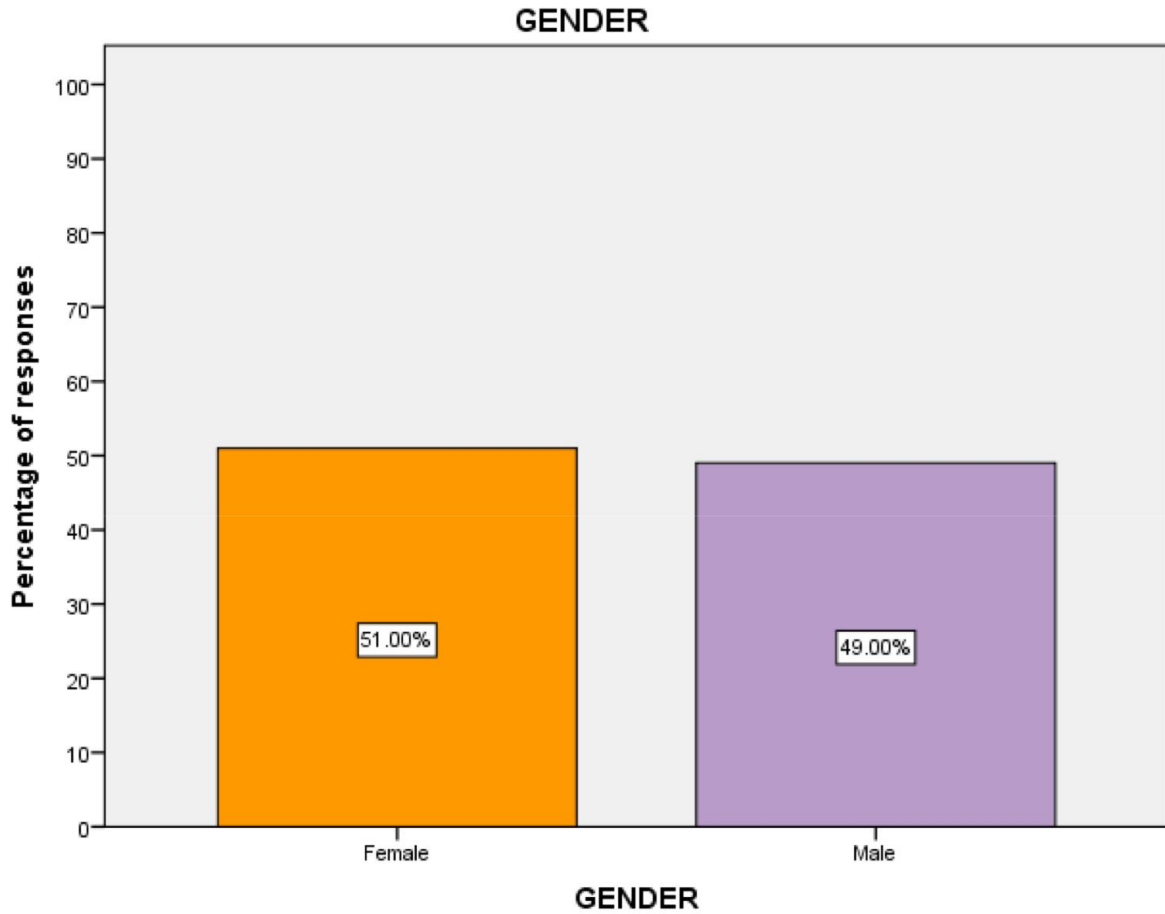


Figure 1: Bar Chart Depicts The Frequency Distribution Of Gender Participated In This Study. X Axis Represents Gender Of The Participants And Y Axis Represents Percentage Of Responses. This Bar Graph Shows 51% Of Females (Orange) And 49% Of Males (Violet) Participated In This Survey. Females Were Slightly Higher When Compared To Males.

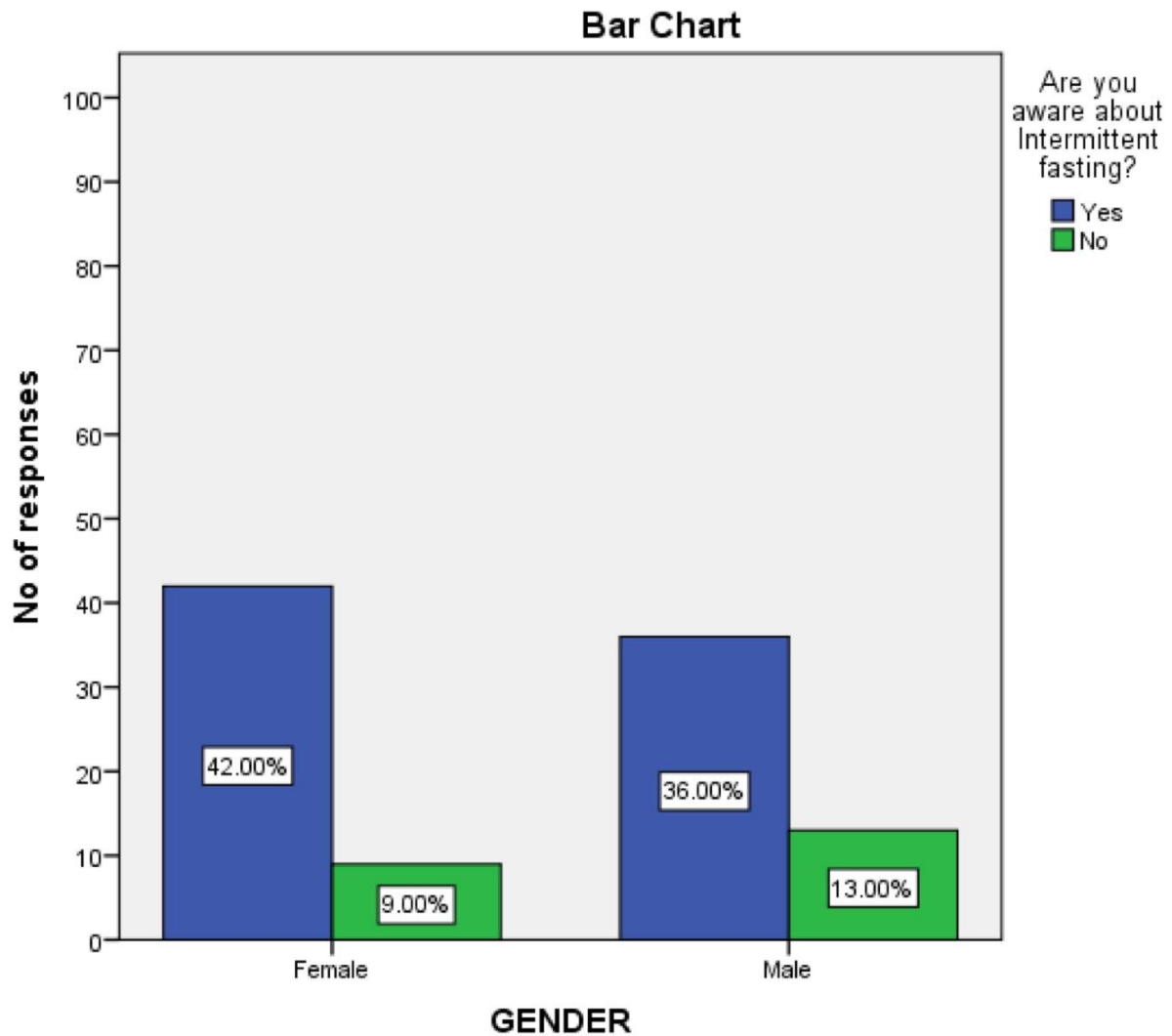


Figure 2: Bar Chart Depicts The Association Between Gender And Awareness On Intermittent Fasting. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That 78% Of Total Participants Were Aware Of Intermittent Fasting (Blue) And 22% Of The Participants Were Not Aware (Green). Chi Square Test Was Done And Association Was Statistically Not Significant. Pearson's Chi Square Value: 1.149, P Value: 0.284 (>0.05). However Both Males And Females Are Aware Of Intermittent Fasting.

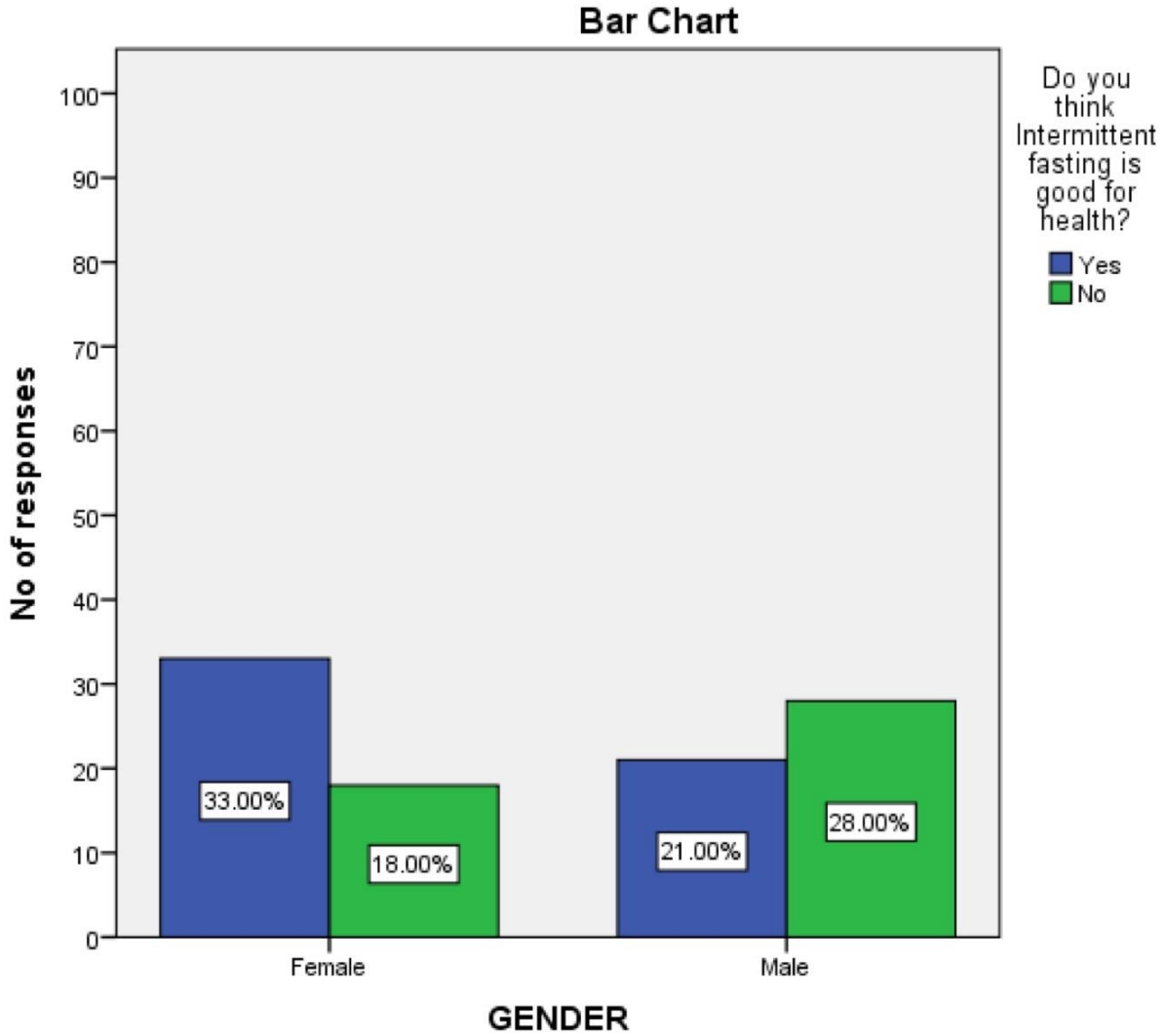


Figure 3: Bar Chart Depicts The Association Between Gender And Healthiness. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That 54% Of Total Participants Agree That Intermittent Fasting Is Good For Health (Blue) And 46% Of The Participants Disagreed (Green). Chi Square Test Was Done And Association Was Statistically Significant. Pearson’s Chi Square Value: 4.803, P Value: 0.028 (<0.05). However Females Have Better Knowledge Than Males.

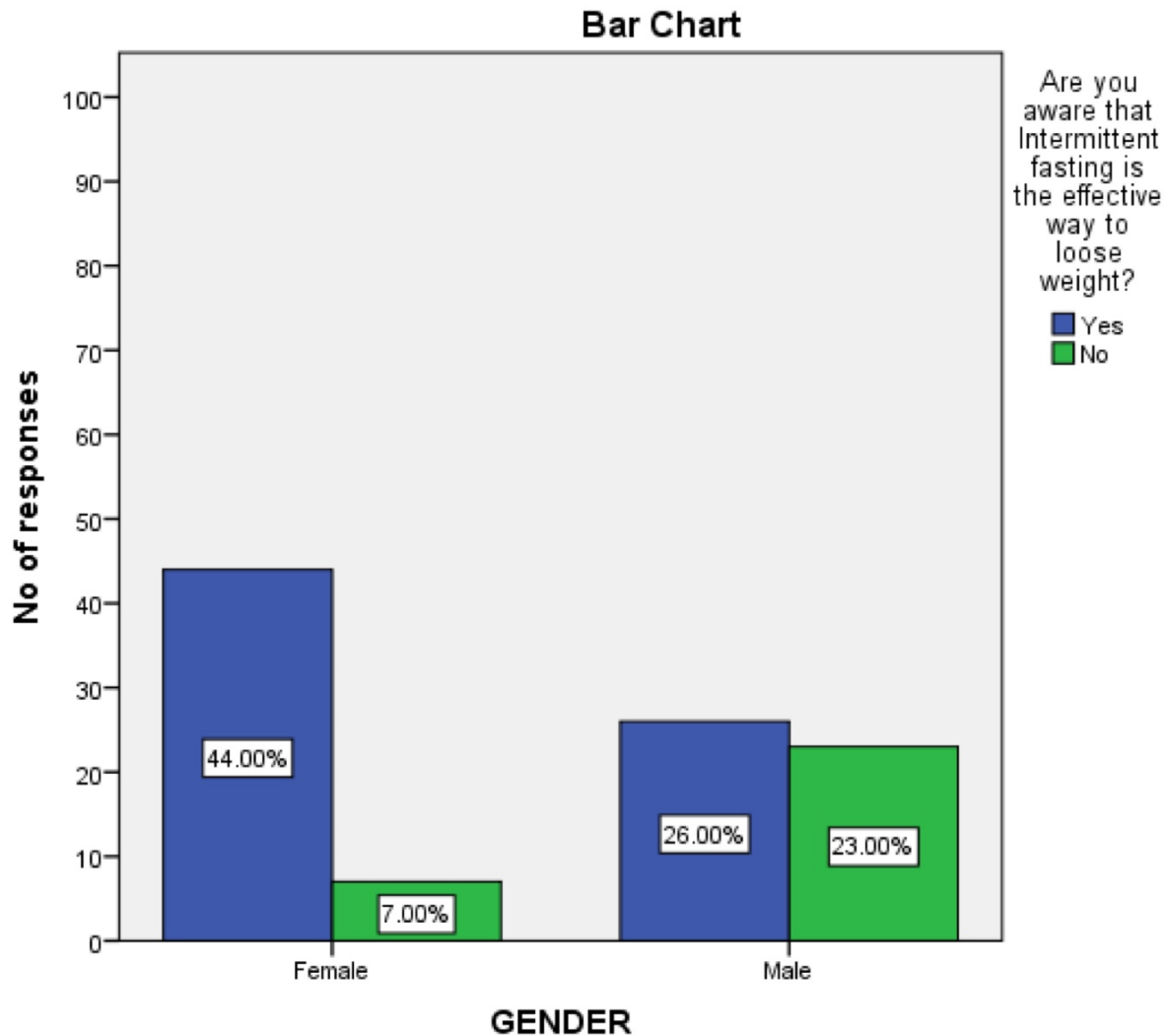


Figure 4: Bar Chart Depicts The Association Between Gender And Weight Reduction. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That 70% Of Total Participants Are Aware That Intermittent Fasting Is The Effective Way To Lose Weight (Blue) And 30% Of The Participants Are Not Aware (Green). Chi Square Test Was Done And Association Was Statistically Significant. Pearson's Chi Square Value: 13.127, P Value: 0.013 (<0.05). However Females Were More Aware Than Males.

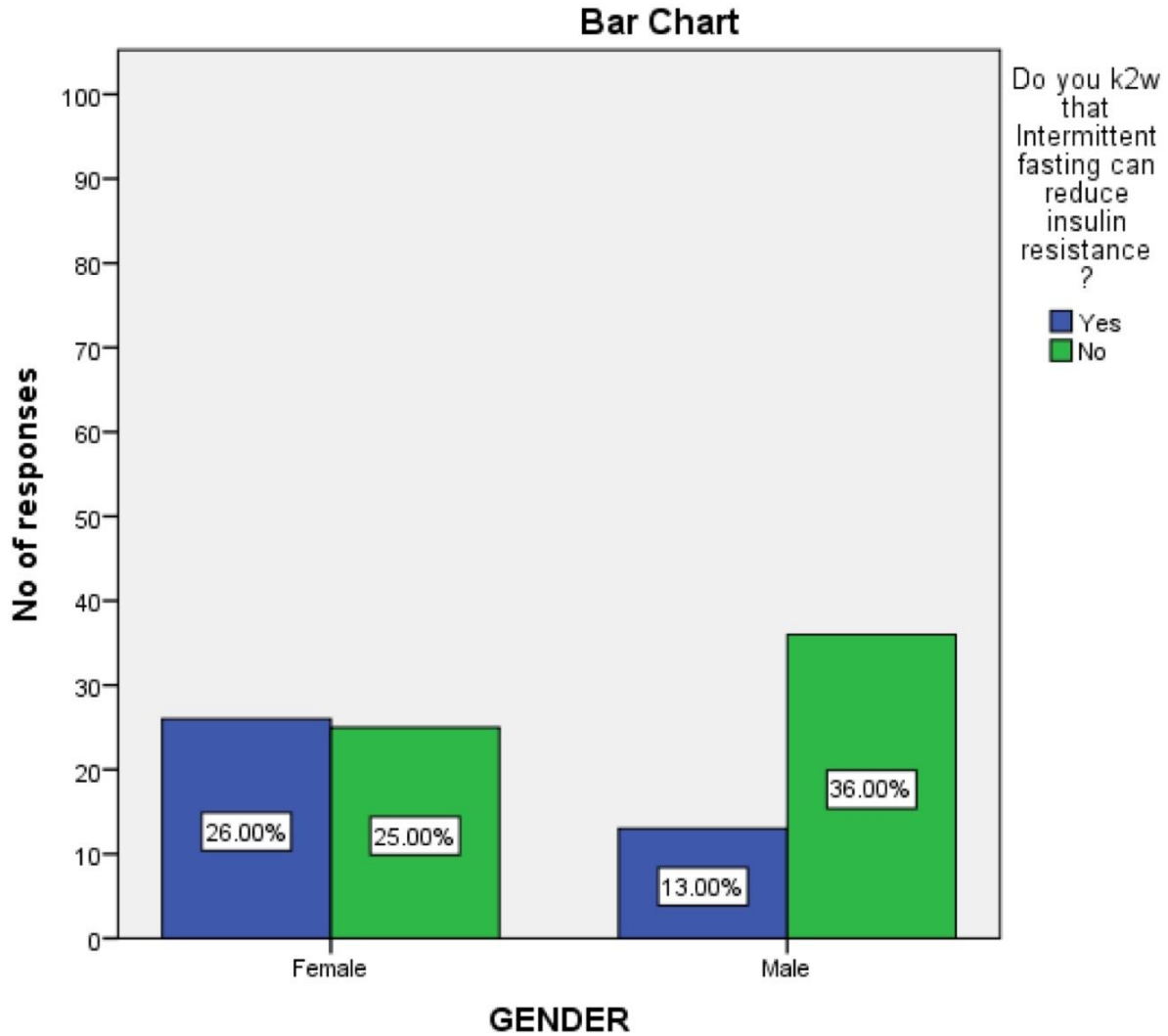


Figure 5: Bar Chart Depicts The Association Between Gender And Insulin Resistance. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That Only 39% Of Total Participants Are Aware That Intermittent Fasting Can Reduce Insulin Resistance (Blue) And 61% Of The Participants Are Not Aware (Green). Chi Square Test Was Done And Association Was Statistically Significant. Pearson’s Chi Square Value: 6.279, P Value: 0.012 (<0.05). However Females Have Better Knowledge Than Males.

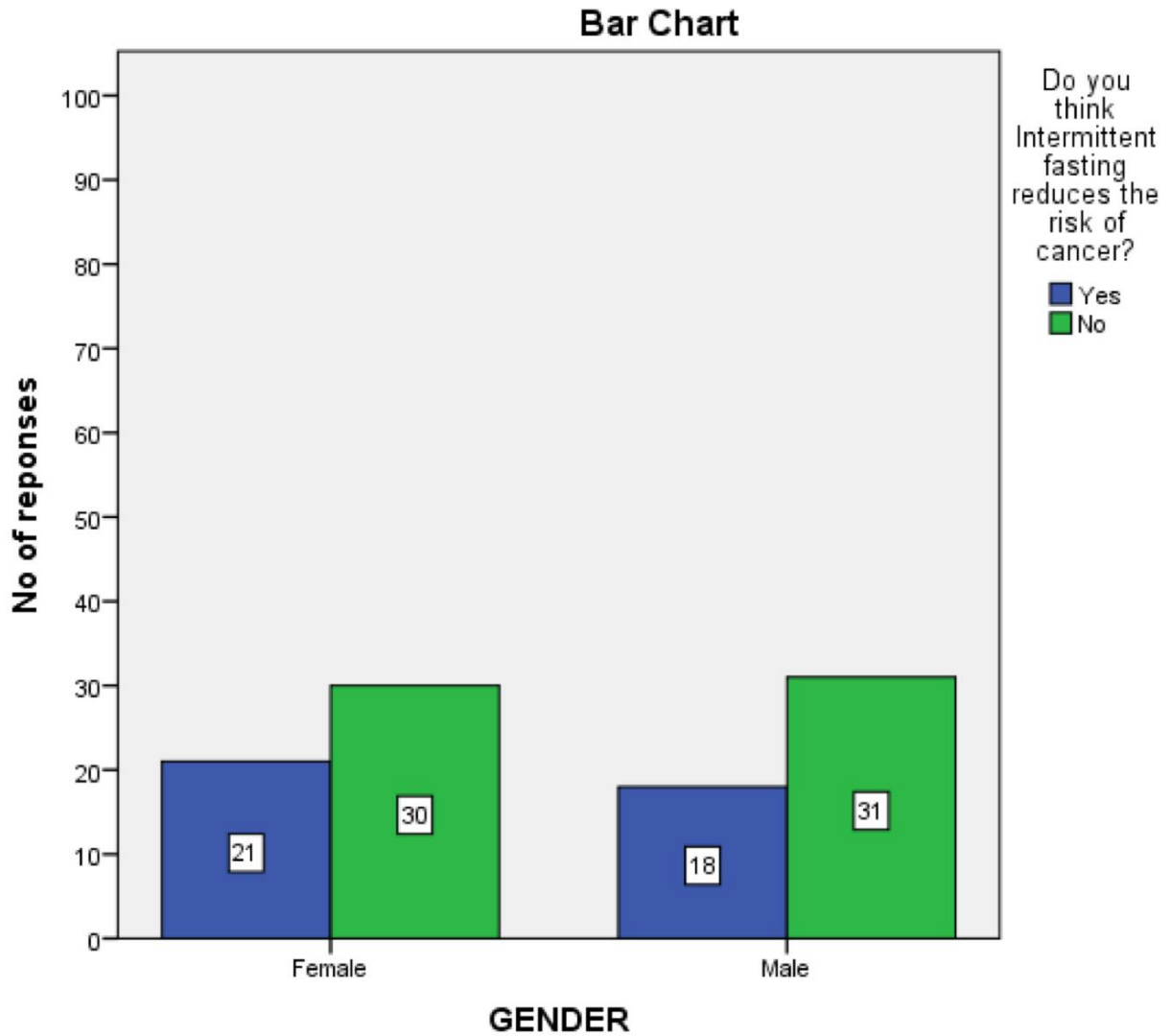


Figure 6: Bar Chart Depicts The Association Between Gender And Risk Of Cancer. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That Only 39% Of Total Participants Agree That Intermittent Fasting Reduces The Risk Of Cancer (Blue) And 61% Of The Participants Disagreed (Green). Chi Square Test Was Done And Association Was Statistically Not Significant. Pearson's Chi Square Value: 0.207, P Value: 0.649(>0.05). Hence There Was Not Much Difference In Responses Among Males And Females.

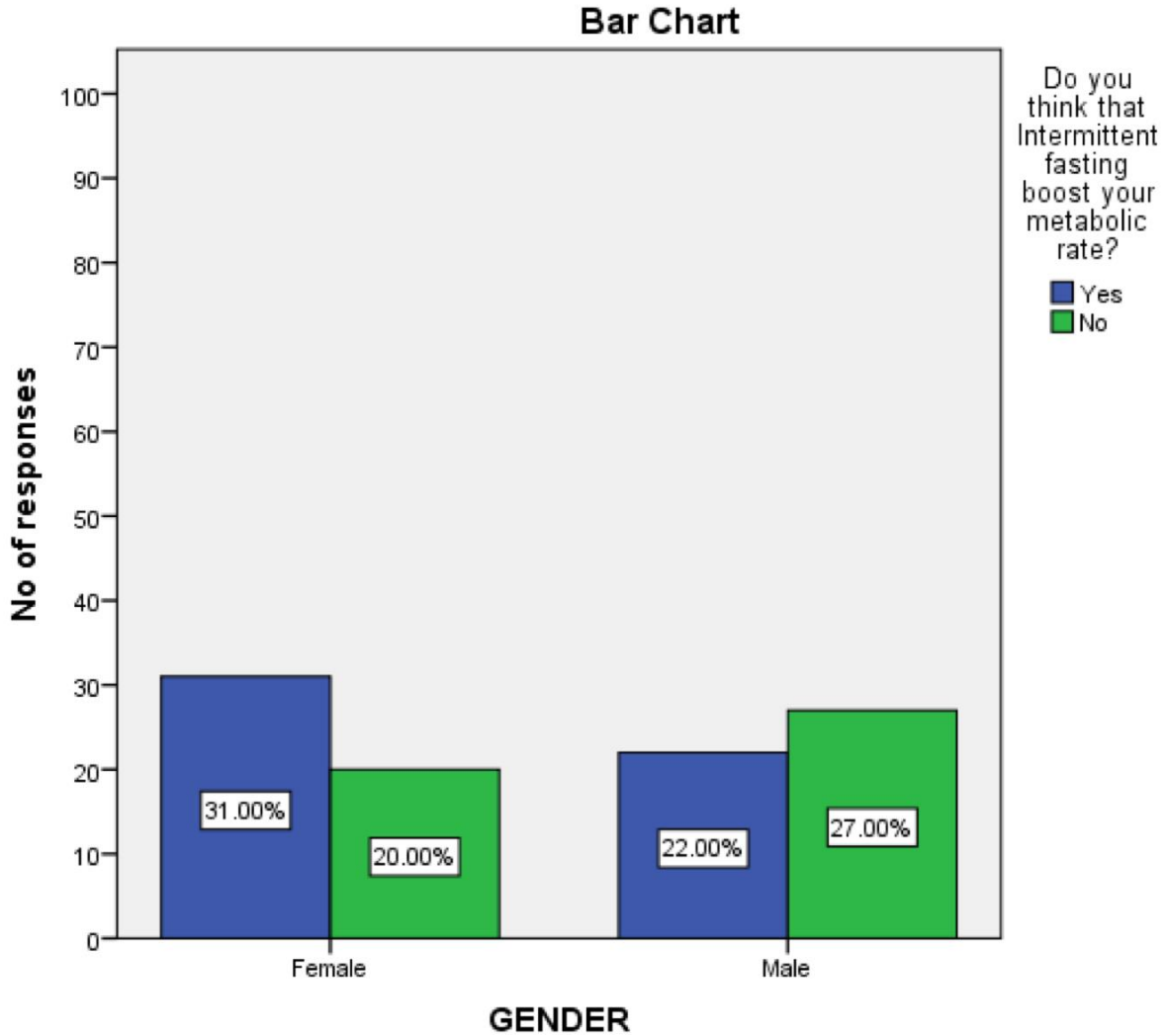


Figure 7: Bar Chart Depicts The Association Between Gender And Metabolic Rate. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That Only 53% Of Total Participants Agree That Intermittent Fasting Boosts The Metabolic Rate (Blue) And 47% Of The Participants Disagreed (Green). Chi Square Test Was Done And Association Was Statistically Not Significant. Pearson’s Chi Square Value:2.532, P Value: 0.112 (>0.05). Hence There Was Not Much Difference In Responses Among Males And Females.

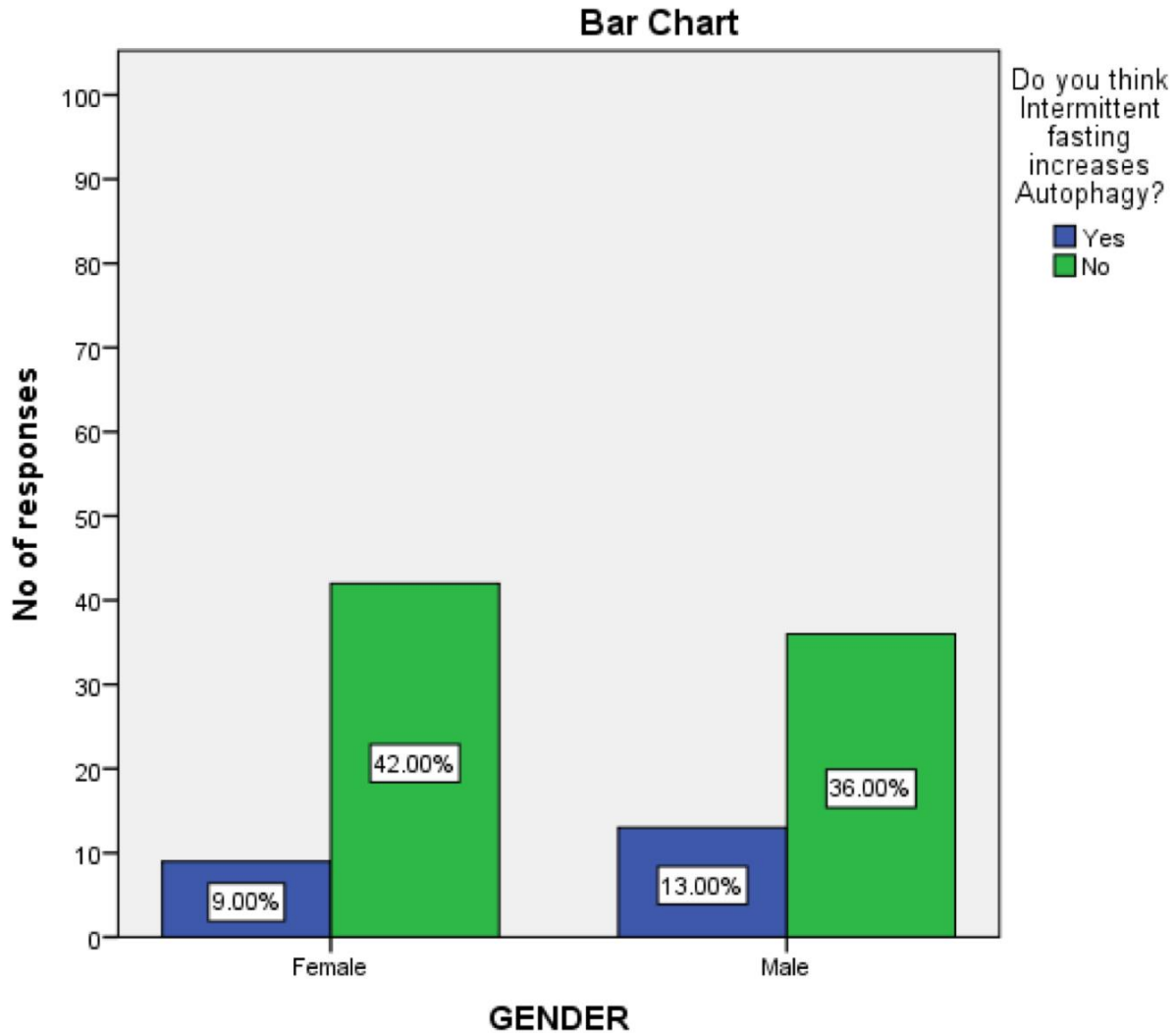


Figure 8: Bar Chart Depicts The Association Between Gender And Autophagy. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That Only 22% Of Total Participants Agree That Intermittent Fasting Increases Autophagy (Blue) And 78% Of The Participants Disagreed (Green). Chi Square Test Was Done And Association Was Statistically Not Significant. Pearson's Chi Square Value: 1.149, P Value: 0.284 (>0.05). Males Have Better Knowledge Than Females.

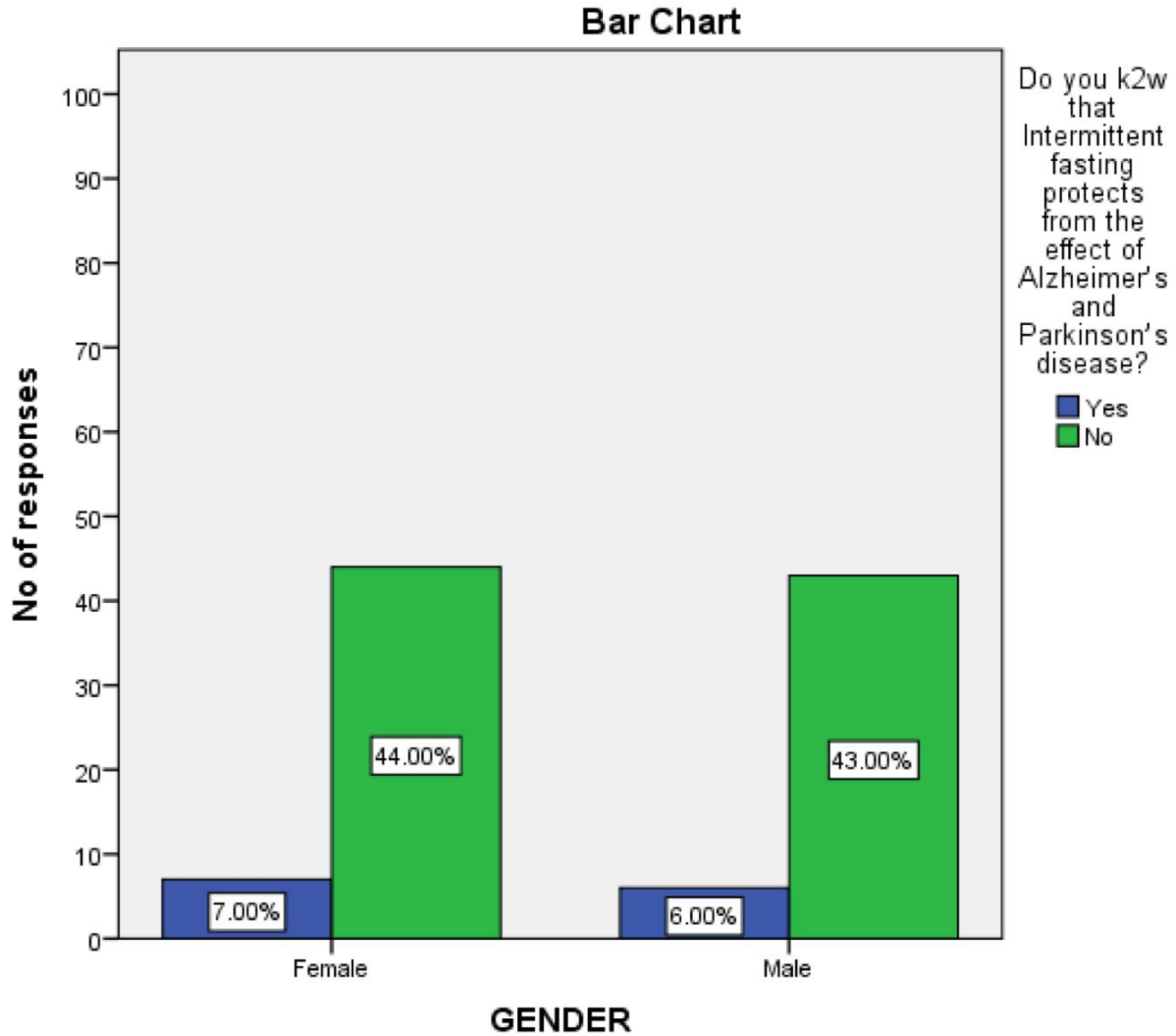


Figure 9: Bar Chart Depicts The Association Between Gender And Effect Of Alzheimer’s And Parkinson’s Disease. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That Only 13% Of Total Participants Agree That Intermittent Fasting Protects From The Effect Of Alzheimer’s And Parkinson’s Disease (Blue) And 87% Of The Participants Disagreed (Green). Chi Square Test Was Done And Association Was Statistically Not Significant. Pearson’s Chi Square Value: 0.048, P Value: 0.826 (>0.05). Hence There Was Not Much Difference In Responses Among Males And Females.

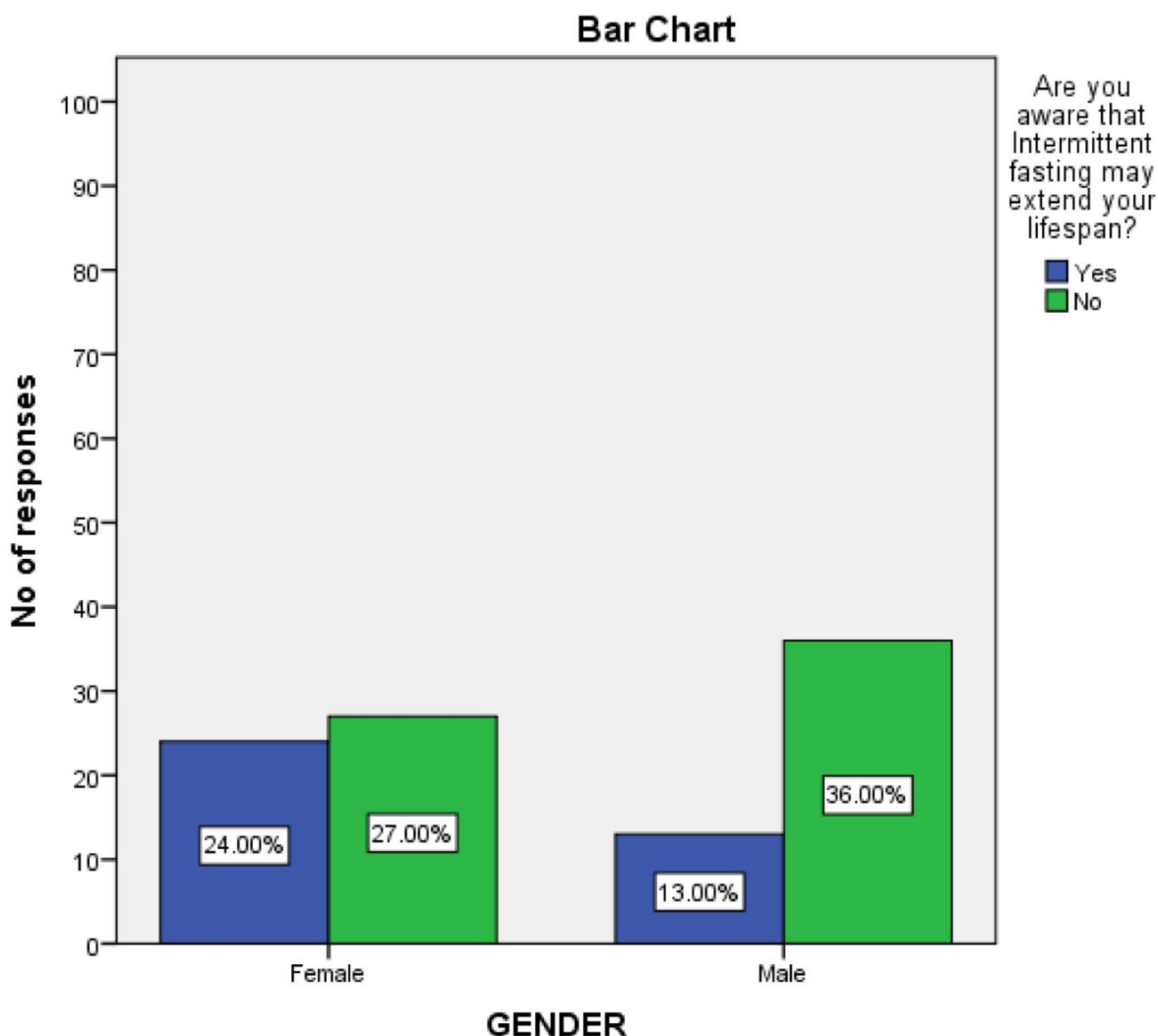


Figure 10: Bar Chart Depicts The Association Between Gender And Lifespan. X Axis Represents The Gender And Y Axis Represents The Number Of Respondents. This Bar Graph Shows That Only 37% Of Total Participants Agree That Intermittent Fasting May Extend Your Lifespan (Blue) And 63% Of The Participants Are Not Aware (Green). Chi Square Test Was Done And Association Was Statistically Significant. Pearson’s Chi Square Value: 4.518, P Value: 0.034 (<0.05). Females Have More Awareness Than Males.

The Term Intermittent Fasting, When Used For Health Reasons Or Weight Loss, Has Been Used To Describe Various Types Of Caloric Restriction. When Some People Withholds Caloric Intake For Several Consecutive Hours During The Day (Often 16 H With All Energy Intake During The Other 8 H Of The Day) (Furmlı *Et Al.*, 2018), Others For A Full Day Once Or Twice A Week (Corley *Et Al.*, 2018), And Others Three Or Four Days Per Week (Harris *Et Al.*, 2018). Some Protocols Allow Protein Intake But No Carbohydrates And Still Label It Intermittent Fasting . Others Allow Carbohydrates Or Macro/Micro-Nutrients Up To A Limit That Will Still Promote Ketosis And, Although It Is Simply A Low-Calorie Diet, Due To The Popularity Of Fasting This Has Been Labeled A Diet That Mimics Fasting (Wei *Et Al.*, 2017). In All Instances, Non-Caloric Fluid Intake Is Permitted And Therefore Significantly Reduces The Risk Of Dehydration And Hypotension, A Prominent Consideration In Religious Fasting. The Potential Impact On Intermittent Fasting On The Human Microbiome, The Human Growth Hormone/Insulin-Like Growth Factor-1 Axis, Mitochondriogenesis, Immune System Efficiency, And Autophagy. Autophagy Regulates The Amino Acid Supply, And This Was Recently Reported To Be Controlled In Specific Patterns During Water-Only Fasting In Humans (Horne *Et Al.*, 2013; Paoli *Et Al.*, 2019; Washburn *Et Al.*, 2019).

Insulin Resistance, The Most Prominent Feature Of Type 2 Diabetes, Has Long Been Known To Improve With Caloric Restriction (Weindruch And Walford, 1988). After A Period Of Fasting, Insulin Sensitivity Rises And Insulin Levels Fall (Varady, 2011; Klempel *Et Al.*, 2012). These Result In Improved Fasting And Postprandial Glucose Levels. In Addition, As Insulin Induces Adipose Tissue Growth, There Is Less Propensity To Weight Gain And Potentially Even Weight Loss. Furmli *Et Al.* (Furmli *Et Al.*, 2018) Reported On Three Patients Who Were Able To Discontinue Insulin Treatment 5–18 Days After Beginning Intermittent Fasting, During Which They Ate Dinner But Skipped Breakfast And Lunch On Either Alternate Days Or 3 Days Per Week. Intermittent Fasting Decreased Skin Temperature And Fat Mass, And Improved Glucose Tolerance With Decreasing Food Intake. Intermittent Fasting Also Prevented Memory Loss: Short-Term And Special Memory Loss. Therefore, Intermittent Fasting May Prevent Some Of The Metabolic Pathologies Associated With Menopause And Protect Against Age-Related Memory Decline (Montasser *Et Al.*, 2015; Au *Et Al.*, 2016). Future Scope Of The Study Is To Conduct The Study In A Larger Population, Particularly For A Certain Speciality/Age/Experience Group Should Be Studied. Our Institution Is Passionate About High Quality Evidence Based Research And Has Excelled In Various Fields ((Pc, Marimuthu And Devadoss, 2018; Ramesh *Et Al.*, 2018; Vijayashree Priyadharsini, Smiline Girija And Paramasivam, 2018; Ezhilarasan, Apoorva And Ashok Vardhan, 2019; Ramadurai *Et Al.*, 2019; Sridharan *Et Al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *Et Al.*, 2020; Mathew *Et Al.*, 2020; R *Et Al.*, 2020; Samuel, 2021).

Conclusion

Within The Limitation, This Study Reveals That Females Have Better Knowledge And Awareness About Intermittent Fasting. The Findings Of The Study Suggests That The Awareness Of Intermittent Fasting Was Low Among The College Students. It Is Well Known That In Humans, Even A Single Fasting Interval (E.G., Overnight) Can Reduce Basal Concentrations Of Metabolic Biomarkers Associated With Chronic Disease Such As Insulin And Glucose. Due To The Increasing Prevalence Of Overweight And Obesity It Is Important To Share Knowledge And Awareness On If Among People. Further Studies Are Needed To Address The Intermittent Fasting Diet Plans In Different Population. Intermittent Fasting May Prove To Be A Promising Approach To Improving Health Once It Is Determined Which Individuals Will Best Benefit And Be Able To Sustain It.

Acknowledgement

The Authors Thank Saveetha Dental College For Extending Full Support To Complete This Study.

Conflict Of Interest: Nil

References

- Au, A. *Et Al.* (2016) ‘Estrogens, Inflammation And Cognition’, *Frontiers In Neuroendocrinology*, 40, Pp. 87–100.
- Batty, G. D. *Et Al.* (2008) ‘Obesity And Overweight In Relation To Liver Disease Mortality In Men: 38 Year Follow-Up Of The Original Whitehall Study’, *International Journal Of Obesity*, Pp. 1741–1744. Doi: 10.1038/Ijo.2008.162.
- Chandrasekar, R. *Et Al.* (2020) ‘Development And Validation Of A Formula For Objective Assessment Of Cervical Vertebral Bone Age’, *Progress In Orthodontics*, 21(1), P. 38.
- Chew, W. F. *Et Al.* (2018) ‘Risk Factors Associated With Abdominal Obesity In Suburban Adolescents From A Malaysian District’, *Singapore Medical Journal*, Pp. 104–111. Doi: 10.11622/Smedj.2017013.
- Choudhari, S. And Thenmozhi, M. S. (2016) ‘Occurrence And Importance Of Posterior Condylar Foramen’, *Laterality*, 8, Pp. 11–43.
- Collier, R. (2013) ‘Intermittent Fasting: The Science Of Going Without’, *Canadian Medical Association Journal*, Pp. E363–E364. Doi: 10.1503/Cmaj.109-4451.

- Corley, B. T. *Et Al.* (2018) 'Intermittent Fasting In Type 2 Diabetes Mellitus And The Risk Of Hypoglycaemia: A Randomized Controlled Trial', *Diabetic Medicine: A Journal Of The British Diabetic Association*, 35(5), Pp. 588–594.
- Dhinesh, B. *Et Al.* (2016) 'An Assessment On Performance, Emission And Combustion Characteristics Of Single Cylinder Diesel Engine Powered By Cymbopogon Flexuosus Biofuel', *Energy Conversion & Management*, 117, Pp. 466–474.
- Ezhilarasan, D., Apoorva, V. S. And Ashok Vardhan, N. (2019) 'Syzygium Cumini Extract Induced Reactive Oxygen Species-Mediated Apoptosis In Human Oral Squamous Carcinoma Cells', *Journal Of Oral Pathology & Medicine: Official Publication Of The International Association Of Oral Pathologists And The American Academy Of Oral Pathology*, 48(2), Pp. 115–121.
- Fairburn, C. G. (2008) *Cognitive Behavior Therapy And Eating Disorders*. Guilford Press.
- Felicita, A. S. And Sumathi Felicita, A. (2018) 'Orthodontic Extrusion Of Ellis Class Viii Fracture Of Maxillary Lateral Incisor – The Sling Shot Method', *The Saudi Dental Journal*, Pp. 265–269. Doi: 10.1016/J.Sdentj.2018.05.001.
- Furmlı, S. *Et Al.* (2018) 'Therapeutic Use Of Intermittent Fasting For People With Type 2 Diabetes As An Alternative To Insulin', *Bmj Case Reports*, 2018. Doi: 10.1136/Bcr-2017-221854.
- Golbidi, S. *Et Al.* (2017) 'Health Benefits Of Fasting And Caloric Restriction', *Current Diabetes Reports*, 17(12), P. 123.
- Govindaraju, L. And Gurnathan, D. (2017) 'Effectiveness Of Chewable Tooth Brush In Children-A Prospective Clinical Study', *Journal Of Clinical And Diagnostic Research: Jcdr*, 11(3), P. Zc31.
- Gurnathan, D. And Shanmugaavel, A. K. (2016) 'Dental Neglect Among Children In Chennai', *Journal Of The Indian Society Of Pedodontics And Preventive Dentistry*, 34(4), P. 364.
- Hafeez, N. And Others (2016) 'Accessory Foramen In The Middle Cranial Fossa', *Research Journal Of Pharmacy And Technology*, 9(11), P. 1880.
- Harris, L. *Et Al.* (2018) 'Intermittent Fasting Interventions For Treatment Of Overweight And Obesity In Adults', *Jbi Database Of Systematic Reviews And Implementation Reports*, Pp. 507–547. Doi: 10.11124/Jbisrir-2016-003248.
- Horne, B. D. *Et Al.* (2013) 'Randomized Cross-Over Trial Of Short-Term Water-Only Fasting: Metabolic And Cardiovascular Consequences', *Nutrition, Metabolism, And Cardiovascular Diseases: Nmcd*, 23(11), Pp. 1050–1057.
- Klempel, M. C. *Et Al.* (2012) 'Intermittent Fasting Combined With Calorie Restriction Is Effective For Weight Loss And Cardio-Protection In Obese Women', *Nutrition Journal*. Doi: 10.1186/1475-2891-11-98.
- Krishnan, R. P. *Et Al.* (2018) 'Surgical Specimen Handover From Operation Theater To Laboratory: A Survey', *Annals Of Maxillofacial Surgery*, 8(2), Pp. 234–238.
- Kumar, S. And Rahman, R. (2017) 'Knowledge, Awareness, And Practices Regarding Biomedical Waste Management Among Undergraduate Dental Students', *Asian Journal Of Pharmaceutical And Clinical Research*, 10(8), P. 341.
- Lerouge, C. M. *Et Al.* (2020) 'Designing For The Co-Use Of Consumer Health Technology In Self-Management Of Adolescent Overweight And Obesity: Mixed Methods Qualitative Study', *Jmir Mhealth And Uhealth*, 8(6), P.

E18391.

Mathew, M. G. *Et Al.* (2020) 'Evaluation Of Adhesion Of Streptococcus Mutans, Plaque Accumulation On Zirconia And Stainless Steel Crowns, And Surrounding Gingival Inflammation In Primary Molars: Randomized Controlled Trial', *Clinical Oral Investigations*, Pp. 1–6.

Medina, S. (2016) *Knee Osteoarthritis: Diagnoses, Management And Health Effects*.

Montasser, M. E. *Et Al.* (2015) 'A Potentially Functional Variant In The Serotonin Transporter Gene Is Associated With Premenopausal And Perimenopausal Hot Flashes', *Menopause*, Pp. 108–113. Doi: 10.1097/Gme.0000000000000291.

Murugan, A. T. And Sharma, G. (2008) 'Obesity And Respiratory Diseases', *Chronic Respiratory Disease*, Pp. 233–242. Doi: 10.1177/1479972308096978.

Palati, S. *Et Al.* (2020) 'Knowledge, Attitude And Practice Survey On The Perspective Of Oral Lesions And Dental Health In Geriatric Patients Residing In Old Age Homes', *Indian Journal Of Dental Research*, P. 22. Doi: 10.4103/Ijdr.Ijdr_195_18.

Paoli, A. *Et Al.* (2019) 'The Influence Of Meal Frequency And Timing On Health In Humans: The Role Of Fasting', *Nutrients*, P. 719. Doi: 10.3390/Nu11040719.

Paramasivam, A., Vijayashree Priyadharsini, J. And Raghunandhakumar, S. (2020) 'N6-Adenosine Methylation (M6a): A Promising New Molecular Target In Hypertension And Cardiovascular Diseases', *Hypertension Research: Official Journal Of The Japanese Society Of Hypertension*, 43(2), Pp. 153–154.

Pc, J., Marimuthu, T. And Devadoss, P. (2018) 'Prevalence And Measurement Of Anterior Loop Of The Mandibular Canal Using Cbct: A Cross Sectional Study', *Clinical Implant Dentistry And Related Research*. Available At: <https://Europepmc.Org/Article/Med/29624863>.

Ramadurai, N. *Et Al.* (2019) 'Effectiveness Of 2% Articaine As An Anesthetic Agent In Children: Randomized Controlled Trial', *Clinical Oral Investigations*, 23(9), Pp. 3543–3550.

Ramesh, A. *Et Al.* (2018) 'Comparative Estimation Of Sulfiredoxin Levels Between Chronic Periodontitis And Healthy Patients - A Case-Control Study', *Journal Of Periodontology*, 89(10), Pp. 1241–1248.

R, H. *Et Al.* (2020) 'Cyp2 C9 Polymorphism Among Patients With Oral Squamous Cell Carcinoma And Its Role In Altering The Metabolism Of Benzo[A]Pyrene', *Oral Surgery, Oral Medicine, Oral Pathology And Oral Radiology*, Pp. 306–312. Doi: 10.1016/J.Oooo.2020.06.021.

Samuel, S. R. (2021) 'Can 5-Year-Olds Sensibly Self-Report The Impact Of Developmental Enamel Defects On Their Quality Of Life?', *International Journal Of Paediatric Dentistry / The British Paedodontic Society [And] The International Association Of Dentistry For Children*, 31(2), Pp. 285–286.

Saravanan, M. *Et Al.* (2018) 'Synthesis Of Silver Nanoparticles From Phenerochaete Chrysosporium (Mtcc-787) And Their Antibacterial Activity Against Human Pathogenic Bacteria', *Microbial Pathogenesis*, 117, Pp. 68–72.

Sneha, S. And Others (2016) 'Knowledge And Awareness Regarding Antibiotic Prophylaxis For Infective Endocarditis Among Undergraduate Dental Students', *Asian Journal Of Pharmaceutical And Clinical Research*, Pp. 154–159.

Somasundaram, S. *Et Al.* (2015) 'Fluoride Content Of Bottled Drinking Water In Chennai, Tamilnadu', *Journal Of Clinical And Diagnostic Research: Jcdr*, 9(10), P. Zc32.

Sridharan, G. *Et Al.* (2019) 'Evaluation Of Salivary Metabolomics In Oral Leukoplakia And Oral Squamous Cell

Carcinoma', *Journal Of Oral Pathology & Medicine: Official Publication Of The International Association Of Oral Pathologists And The American Academy Of Oral Pathology*, 48(4), Pp. 299–306.

Ting, S. M. S. *Et Al.* (2009) 'Overweight, Obesity And Chronic Kidney Disease', *Nephron Clinical Practice*, Pp. C121–C127. Doi: 10.1159/000214206.

Tsai, C.-J. *Et Al.* (2004) 'Prospective Study Of Abdominal Adiposity And Gallstone Disease In Us Men', *The American Journal Of Clinical Nutrition*, Pp. 38–44. Doi: 10.1093/Ajcn/80.1.38.

Ulijaszek, S. J. (2003) 'Obesity: Preventing And Managing The Global Epidemic. Report Of A Who Consultation. Who Technical Report Series 894. Pp. 252. (World Health Organization, Geneva, 2000.) Sfr 56.00, Isbn 92-4-120894-5, Paperback', *Journal Of Biosocial Science*, Pp. 624–625. Doi: 10.1017/S0021932003245508.

Varady, K. A. *Et Al.* (2009) 'Short-Term Modified Alternate-Day Fasting: A Novel Dietary Strategy For Weight Loss And Cardioprotection In Obese Adults', *The American Journal Of Clinical Nutrition*, Pp. 1138–1143. Doi: 10.3945/Ajcn.2009.28380.

Varady, K. A. (2011) 'Intermittent Versus Daily Calorie Restriction: Which Diet Regimen Is More Effective For Weight Loss?', *Obesity Reviews: An Official Journal Of The International Association For The Study Of Obesity*, 12(7), Pp. E593–601.

Vijayakumar Jain, S. *Et Al.* (2019) 'Evaluation Of Three-Dimensional Changes In Pharyngeal Airway Following Isolated Lefort One Osteotomy For The Correction Of Vertical Maxillary Excess: A Prospective Study', *Journal Of Maxillofacial And Oral Surgery*, 18(1), Pp. 139–146.

Vijayashree Priyadharsini, J. (2019) 'In Silico Validation Of The Non-Antibiotic Drugs Acetaminophen And Ibuprofen As Antibacterial Agents Against Red Complex Pathogens', *Journal Of Periodontology*, 90(12), Pp. 1441–1448.

Vijayashree Priyadharsini, J., Smiline Girija, A. S. And Paramasivam, A. (2018) 'In Silico Analysis Of Virulence Genes In An Emerging Dental Pathogen *A. Baumannii* And Related Species', *Archives Of Oral Biology*, 94, Pp. 93–98.

Washburn, R. *Et Al.* (2019) 'Pilot Study Of Novel Intermittent Fasting Effects On Metabolomic And Trimethylamine N-Oxide Changes During 24-Hour Water-Only Fasting In The Feelgood Trial', *Nutrients*, P. 246. Doi: 10.3390/Nu11020246.

Wearing, S. C. *Et Al.* (2006) 'Musculoskeletal Disorders Associated With Obesity: A Biomechanical Perspective', *Obesity Reviews*, Pp. 239–250. Doi: 10.1111/J.1467-789x.2006.00251.X.

Wei, M. *Et Al.* (2017) 'Fasting-Mimicking Diet And Markers/Risk Factors For Aging, Diabetes, Cancer, And Cardiovascular Disease', *Science Translational Medicine*, 9(377). Doi: 10.1126/Scitranslmed.Aai8700.

Weindruch, R. And Walford, R. L. (1988) *The Retardation Of Aging And Disease By Dietary Restriction*. Charles C Thomas Pub Limited.

Woo, J., Leung, J. And Kwok, T. (2007) 'Bmi, Body Composition, And Physical Functioning In Older Adults*', *Obesity*, Pp. 1886–1894. Doi: 10.1038/Oby.2007.223.

Wu, F. *Et Al.* (2019) 'Biologically Synthesized Green Gold Nanoparticles From Siberian Ginseng Induce Growth-Inhibitory Effect On Melanoma Cells (B16)', *Artificial Cells, Nanomedicine, And Biotechnology*, 47(1), Pp. 3297–3305.

Yoshiike, N., Kaneda, F. And Takimoto, H. (2002) 'Epidemiology Of Obesity And Public Health Strategies For Its

Control In Japan', *Asia Pacific Journal Of Clinical Nutrition*, Pp. S727–S731. Doi: 10.1046/J.1440-6047.11.S8.18.X.