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Awareness of Risk Factors associated with obesity among Homemakers

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ABSTRACT

Obesity is a condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health. There are many reasons why a person becomes obese, and in case of homemakers, the main cause of obesity can be their sleeping habits, or the type of food they eat regularly, or lack of physical exercises. There are many risk factors of obesity which the homemakers should be aware of to reduce the chances of obesity and keep their lives healthy. The aim of the study was to create awareness on risk factors of obesity among homemakers. A questionnaire was prepared and circulated via an online platform. The data were collected, tabulated and analysed using SPSS software. Descriptive analysis and chi-square association test was performed. According to the results observed, an average of 83% of the participants is aware of the risk factors of obesity. 75.6% of the participants are aware that obesity causes heart diseases and digestive problems. The conclusion is that the majority of the homemakers are aware of the risk factors of obesity.

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INTRODUCTION

Obesity is a condition occurring when a person is carrying too much body fat for their height and gender. A person is considered obese if they have a body mass index of 30 or greater. Overweight and obesity are increasing problems that lead to significant health and social difficulties for people (Ofei, 2005). Obesity is directly linked to a number of different illnesses, including type 2 diabetes, hypertension, gallstones and gastro-oesophagal reflux diseases and as well as psychological and psychiatric abnormalities (Whitaker, 1998). Overweight and obesity are potent risk factors for cardiovascular diseases and type 2 diabetes are major contributors to premature death. Fat is the main source of stored energy and it also secretes a number of hormones and cytokines (Papakostas et al., 2005). Obesity is mainly caused by a combination of excessive food intake, lack of physical activity and genetic susceptibility. Awareness in childhood obesity has been one of the main factors that have been seen in kids (Shukri et al., 2016). Obesity can be prevented through a combination of social changes and personal choices. Changes in diet and regular exercising are the main treatments. Diet quality can be improved by reducing the consumption of high-fat food and by increasing the intake of dietary fibres.

According to the research done by (Song, 2019) revealed that the adults are facing the problem of obesity due to which they have become more lazy and mostly suffering from liver diseases as well. There is another study done by (Gupta *et al.*, 2018), which revealed that 82% of the homemakers have gone obese due to heavy food consumption. A study done by (Anteneh, 2015) gave a result that the research was done among the school kids and the BMI was checked and the results revealed that the maximum of them (80-90%) have junk food eating habits. According to another study done in Tamil Nadu among urban women revealed that (Aarthy, 2010), increased obesity can result in depression and weakness.

Physical inactivity considerably contributes to obesity, which increases the risk for various lifestyle diseases like diabetes, cardiovascular diseases, cancers etc. (Ponnulakshmi *et al.*, 2019; Gan, 2019). Thyroid cancer is the most widespread endocrine malignant cancer (Ma, 2019). Glioma is the prime cause of cancer in adolescent people and it accounts for about 80% of all malignant tumours (Li, 2020). Naturally occurring medicinal plants can inhibit the growth of various cancers (Rengasamy *et al.*, 2018). Physical activity increases the antioxidant status, which is potential to reduce the risk of cancer (Ramya *et al.*, 2018). Adiponectin is considered to be one of the key factors for obesity and it is believed to be an important link to the connection between obesity and breast cancer (Mohan *et al.*, 2015).

Being obese causes many health issues and has many health factors. When the homemakers are made aware of the risk factors of obesity, it will help them to be healthy and even lead a healthy life. The aim of the present study is to create and assess the awareness of the risk factors of obesity among homemakers.

MATERIALS AND METHODS

The type of population used for the study is homemakers. It is approved by the institutional review board, Saveetha Dental College, and the study population is 156. The sampling method used in the present study is the random sampling method. A questionnaire consisting of 10 questions was prepared and was circulated in an online platform. The questions are close-ended and yes or no type of questions. Google forms were used as a data collection platform. The data was then collected, tabulated, analysed using SPSS software. Pearson Chi-square test was done to evaluate the association of awareness with the age of the respondents.
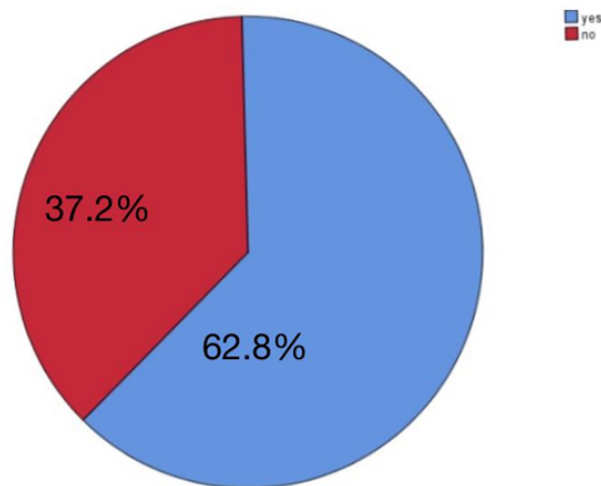

Figure 1: This pie chart represents the percentage distribution of awareness on the risk factors of obesity
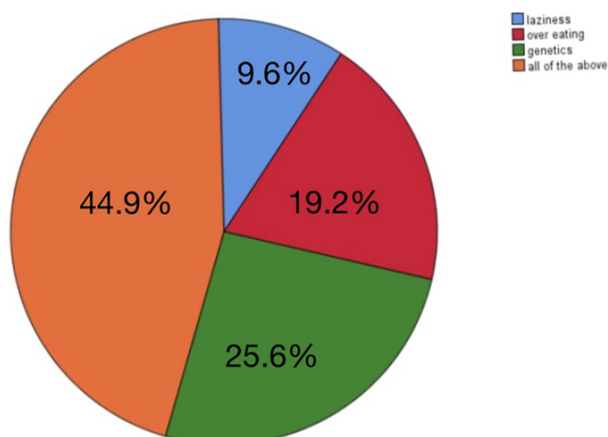

Figure 2: This pie chart represents the percentage distribution of awareness on the causes of obesity
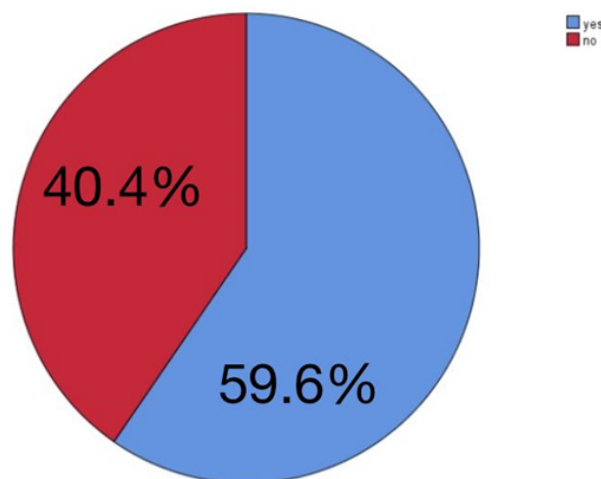

Figure 3: This pie chart represents the percentage distribution of habit of eating a lot of junk food
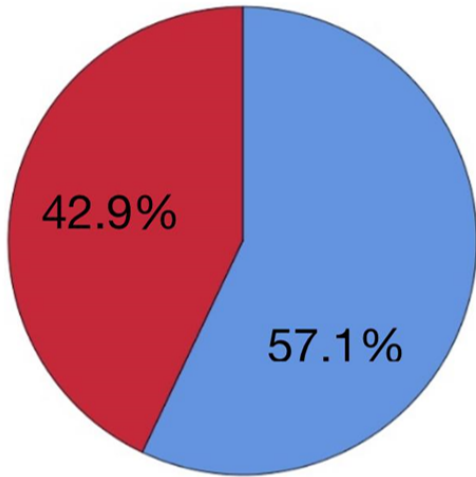
Figure 4: This pie chart represents the percentage distribution of the respondents' habit of monitoring their weight daily
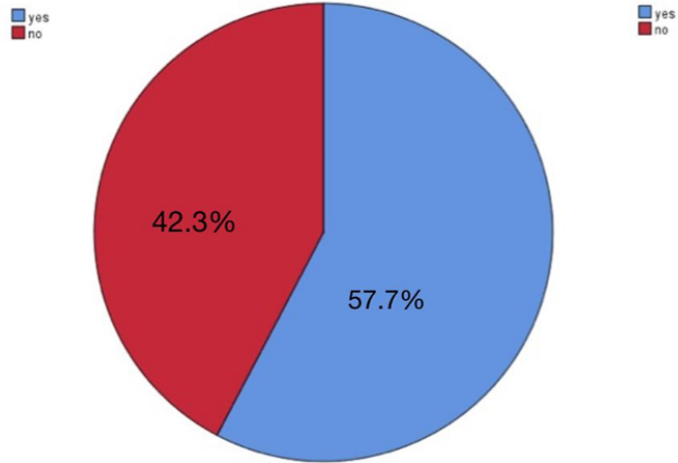

Figure 7: This pie chart represents the percentage distribution of awareness on the role of obesity in causing heart diseases
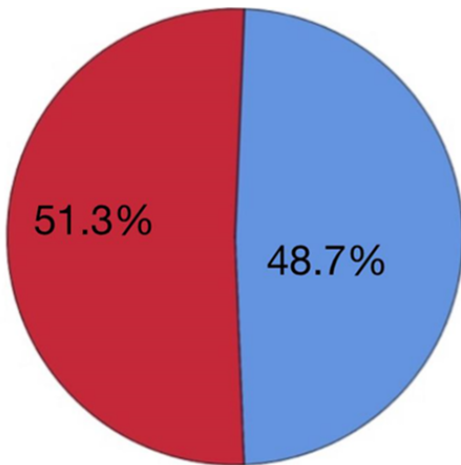

Figure 5: This pie chart represents the percentage distribution of awareness on the role of obesity in causing depression
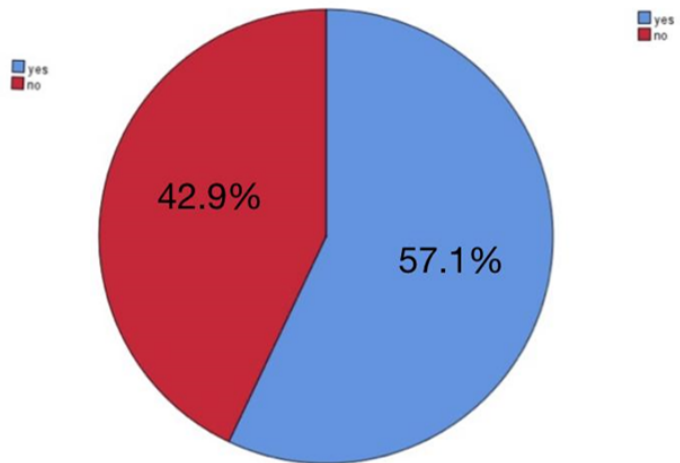

Figure 8: This pie chart represents the percentage distribution of response to practicing physical exercise regularly
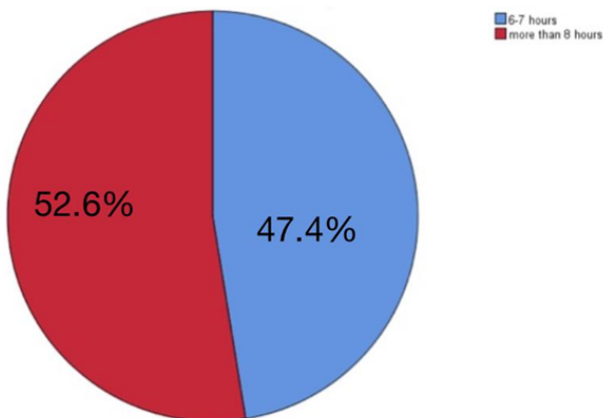

Figure 6: This pie chart represents the percentage distribution of sleep pattern
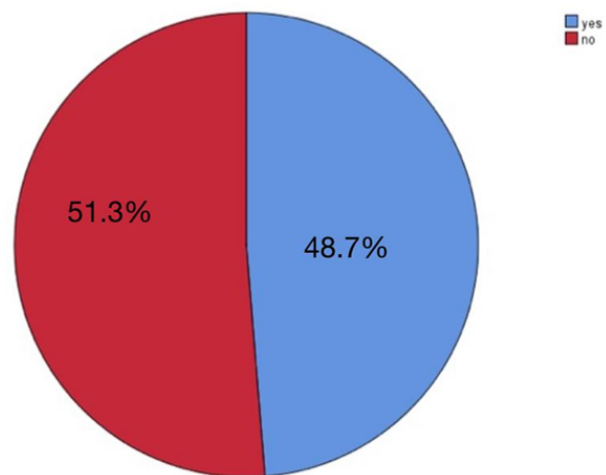

Figure 9: This pie chart represents the percentage distribution of habit of eating meals regularly with proper timing
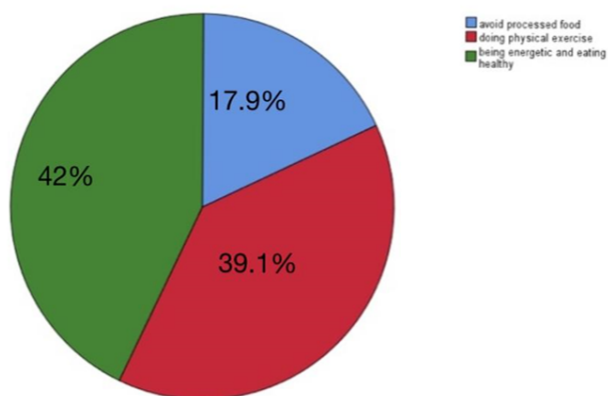
Figure 10: This pie chart represents the percentage distribution of awareness on different ways to prevent obesity

Figure 11: Bar graph showing the association of responses based on age group with the awareness on risk factors of obesity

Figure 12: Bar graph showing the association of responses based on age group with the causes of obesity
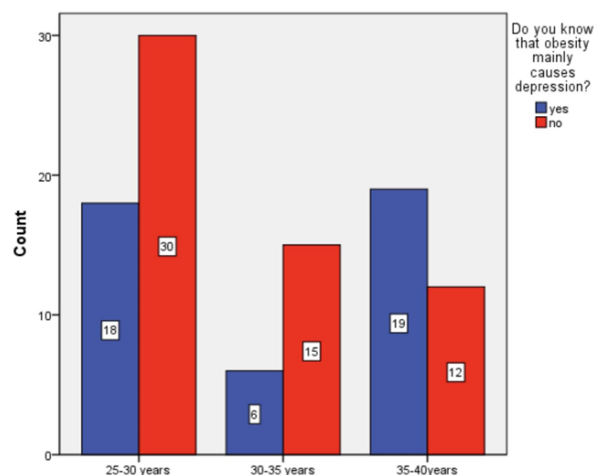

Figure 13: Bar graph showing the association of responses based on age group with the awareness on the role of obesity in causing depression
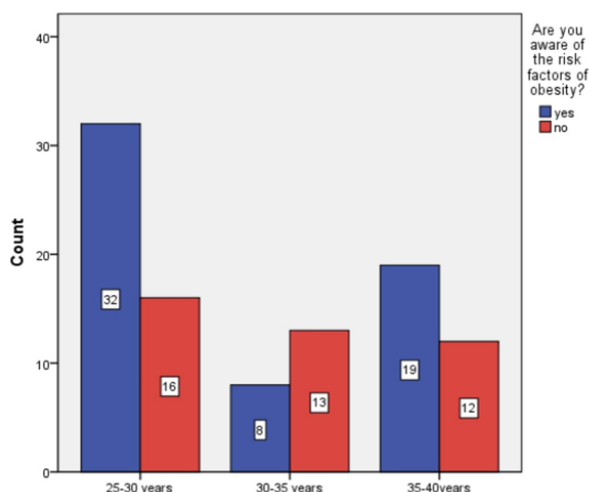

Figure 14: Bar graph showing the association of responses based on age group with the awareness on the role of obesity in causing heart diseases

RESULTS AND DISCUSSION

The results of the present survey are as follows

62.8% of the respondents were aware of the risk factors of obesity and 37.2% of the respondents were not aware of the risk factors of obesity (Figure 1). 10.3% opted as laziness, 19.2% opted as overeating, 25.6% opted as genetics and 44.9% opted all as the cause of obesity (Figure 2). For the question, the habit of eating a lot of junk foods, the responses were, 59.4% opted as yes and 40.6% opted as no (Figure 3). 57.1% of the respondents monitor their weight regularly and 42.9% don't monitor (Figure 4). For the question asked on the awareness that obesity mainly causes depression, the responses

Figure 15: Bar graph showing the association of responses based on age group with the awareness about the practises to prevent obesity
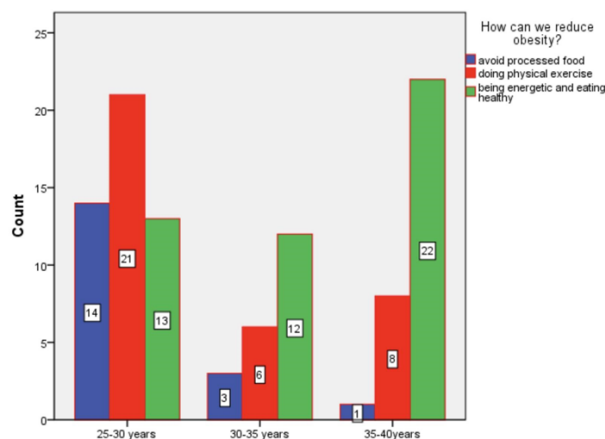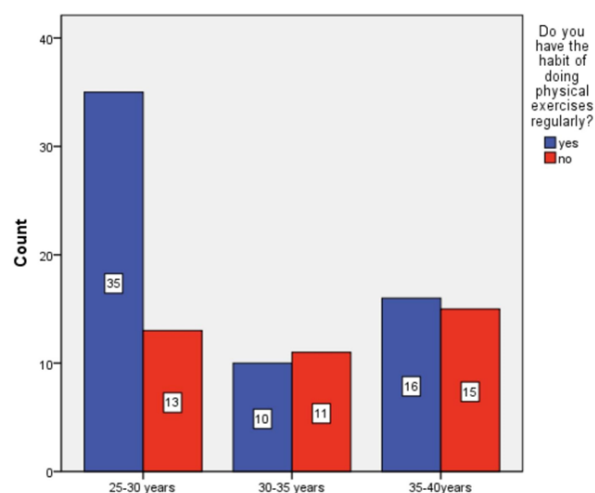

Figure 16: Bar graph showing the association of responses based on age group with the practice of regular physical exercises

were, 48.7% were aware and 51.3% are not aware that obesity causes depression (Figure 5). When asked about the time duration of sleeping and the responses were, 47.4% opted for 6-7 hours and 52.6% opted for more than 8 hours (Figure 6). 57.7% of the respondents were aware that obesity causes heart diseases, strokes and digestive problems and 42.3% were not aware (Figure 7). 57.1% of the respondents do physical exercise regularly and 42.9% of the respondents do not do physical exercise daily. (Figure 8). 48.7% of the respondents eat their meals regularly with proper timing and 51.3% of the respondents do not have their meals regularly with proper timing (Figure 9). 17.9% of the respondents opted as 'avoid processed food', 39.1% of the respondents opted as 'doing physical exercises' and 42.9% of the respondents opted as 'being energetic and eating healthy' for the ways by which obesity

can be reduced (Figure 10).

This study reports a statistically insignificant association of age group with awareness about risk factors of obesity (P-value = 0.059) Figure 11 shows that the difference in the awareness among different age groups is not statistically significant (Chi-square value-3.654, DF=8, p-value-0.059 >0.05). There is a statistically significant association of age group with awareness about causes of obesity (P-value = 0.010) and the age group 30-35 years were more aware about the causes of obesity than the other Figure 12 shows that the participants of 25-30 years (18 participants) are aware about the causes of obesity than the other age groups (Chi square value: 4.123, DF:2, p value: 0.010 <0.05). There is no statistically significant association of age group with awareness about the role of obesity in depression (P-value = 0.084) and majority in the age group of 25-30 years were not aware about the role of obesity in depression Figure 13 shows that the difference in the awareness among different age groups is not statistically significant (Chi-square value-3.665, DF= 10, p-value-0.084 >0.05). This study reports a statistically insignificant association of age group and awareness about the role of obesity in causing heart diseases (P-value = 0.301) Figure 14 shows that The difference in the awareness among different age groups is not statistically significant (Chi-square value- 2.852, DF=8, p-value-0.301 >0.05). There is a statistically significant association of age group and awareness about practices to prevent obesity (P-value = 0.047) and majority of 25-30 years and 30-35 years old individuals were aware that doing regular physical exercise will prevent obesity and majority of 35-40 years of individuals were aware of the fact that being energetic and eating healthy will prevent obesity Figure 15 shows that the participants in the age group of 35-40 years (22 participants) were aware than the other age groups (Chi square value: 5.854, DF:2, p value: 0.047 <0.05). This study reports a statistically insignificant association of age group with the practice of physical exercises regularly (P-value = 0.362) Figure 16 shows that The difference in the awareness among different age groups is not statistically significant (Chi-square value- 4.072, DF=8, p-value-0.362 >0.05).

The use of natural products is used widely nowadays to treat many lifestyle disorders (Menon et al., 2016; Rengasamy et al., 2016). The use of traditional and alternative medicine in various diseases is documented in many studies (Wu, 2019). Previous studies have demonstrated that 4-shogaol from ginger may be a novel anticancer agent for the treatment of metastasis in breast cancer (Chen, 2019). Garcinol has also shown strong activity against breast cancer

and leukemia (Jainu *et al.*, 2018). Bionanotechnology has a pivotal role in the development of a novel therapy in the treatment of cancer (Ke, 2019; Wang, 2019).

When the respondents were asked whether they are aware of the risk factors of obesity, 62.8% of participants said yes. There was a similar study, where the participants were 78.8% were also aware of the risk factors of obesity (Amoah, 2003). When the respondents were asked about the causes of obesity, 44.9% opted for all of the above. There was a similar study done by (Shafique, 2007), where 56.2% of the participants were having knowledge on the causes of obesity. When the respondents were asked whether they monitor their weight daily, 57.1% said yes for the question. A previous study revealed that 42% of the participants were aware of monitoring weight regularly, which is an opposing result compared to our study (Cole, 2000). When respondents were asked about their knowledge on the fact that obesity mainly causes depression, 48.7% said yes for the question. There was an opposing study in which the results showed that 82.3% agree obesity mainly causes depression (Phillips, 2018). When the respondents were asked about their time duration of sleeping, 52.6% said that they sleep for more than 8 hours. There was a similar study in which the participants were 62.2% aware of the sleep duration, which is an important factor of obesity (Han *et al.*, 1995). When the respondents were asked whether they know that obesity causes heart diseases, strokes and digestive problems, 57.7% said yes for the question. There was a similar study done by (Van Itallie, 1985), where 59.6% of participants are aware of the factors of obesity that causes digestive problems, cardiac arrest etc. When the respondents were asked about the advantages of doing physical exercises regularly, 57.2% said yes for the question. There was a similar study (Hruby and Frank, 2015), where the participants are 57.6% aware about the advantages of doing physical exercises regularly. When the respondents were asked about the ways to prevent obesity, 42.9% said being energetic and eating healthy can prevent obesity. There was a similar study (Keener, 2009), where 72.49% of the participants are having knowledge of ways to prevent obesity.

The limitations of the study were, there is no inclusion of measurement of height and weight and no calculation of BMI, which is a checking factor for obesity. The survey was conducted only among the homemaker's population. And the population size is 156, which is less.

CONCLUSION

The present survey showed that the awareness on the risks of obesity among homemakers is moderate. Within the limitation of the study, it concludes that the homemakers in the age group 25-30 years were more aware about the causes and risks of obesity. However, the respondents in the age group of 35-40 were more aware on how to reduce obesity. But still, there is a need to create awareness on the risks of obesity among homemakers.

Conflicts of Interest

The authors declare that they have no conflict of interest for this study.

REFERENCES

Aarthy, R. 2010. *Prevalence And Factors Related To Overweight Among Urban Women (19-49 Years*. Salem, Tamil Nadu.

Amoah, A. G. B. 2003. Obesity in adult residents of Accra. *Ethnicity & disease*, 13(2):97–101.

Anteneh, Z. A. 2015. Risk Factors of Overweight and Obesity among High School Students in Bahir Dar City, North West Ethiopia: School Based Cross-Sectional Study. *Advances in preventive medicine*, page 294902.

Chen, F. 2019. 6-shogaol, an active constituent of ginger prevents UVB radiation mediated inflammation and oxidative stress through modulating NrF2 signalling in human epidermal keratinocytes (HaCaT cells). *Journal of photochemistry and photobiology. B, Biology*, 197:111518–111518.

Cole, T. J. 2000. Establishing a standard definition for child overweight and obesity worldwide: international survey. *BMJ*, 320(7244):1240–1240.

Gan, H. 2019. Zingerone induced caspase-dependent apoptosis in MCF-7 cells and prevented 7,12-dimethylbenz(a)anthracene-induced mammary carcinogenesis in experimental rats. *Journal of biochemical and molecular toxicology*, 33(10):22387–22387.

Gupta, A., Rautela, Y., Reddy, B., Singh, A. 2018. The prevalence of obesity among adult population and its association with food outlet density in a hilly area of Uttarakhand. *Journal of Family Medicine and Primary Care*, 7(4):809–809.

Han, T. S., van Leer, E. M., Seidell, J. C., Lean, M. E. J. 1995. Waist circumference action levels in the identification of cardiovascular risk factors: prevalence study in a random sample. *BMJ*, 311(7017):1401–1405.

Hruby, A., Frank, B. 2015. The Epidemiology of Obesity: A Big Picture. *PharmacoEconomics*, 33(7):673–689.

Jainu, M., Priya, V., Mohan, S. 2018. Biochemical evidence for the antitumor potential of Garcinia mangostana Linn. On diethylnitrosamine-induced hepatic carcinoma. *Pharmacognosy Magazine*, 14(54):186–186.

Ke, Y. 2019. Photosynthesized gold nanoparticles from Catharanthus roseus induces caspase-mediated apoptosis in cervical cancer cells (HeLa). *Artificial cells, nanomedicine, and biotechnology*, 47:1938–1946.

Keener, D. 2009. Recommended community strategies and measurements to prevent obesity in the United States; implementation and measurement guide. *CDC stacks*, 58.

Li, Z. 2020. Apoptotic induction and anti-metastatic activity of eugenol encapsulated chitosan nanopolymer on rat glioma C6 cells via alleviating the MMP signalling pathway. *Journal of photochemistry and photobiology. B, Biology*, 203:111773–111773.

Ma, Y. 2019. Sesame Inhibits Cell Proliferation and Induces Apoptosis through Inhibition of STAT-3 Translocation in Thyroid Cancer Cell Lines (FTC-133). *Biotechnology and bioprocess engineering: BBE*, 24(4):646–652.

Menon, A., Priya, V. V., Gayathri, R. 2016. Preliminary Phytochemical Analysis And Cytotoxicity Potential Of Pineapple Extract On Oral Cancer Cell Lines. *Asian Journal of Pharmaceutical and Clinical Research*, 9:140–140.

Mohan, S. K., Veeraraghavan, V. P., Jainu, M. 2015. Effect of pioglitazone, quercetin and hydroxy citric acid on extracellular matrix components in experimentally induced non-alcoholic steatohepatitis. *Iranian Journal of basic medical sciences*, 18(8):832–836.

Ofei, F. 2005. Obesity - a preventable disease. *Ghana medical journal*, 39(3):98–101.

Papakostas, G. I., Petersen, T., Iosifescu, D. V., Burns, A. M., Nierenberg, A. A., Alpert, J. E., Rosenbaum, J. F., Fava, M. 2005. Obesity among outpatients with Major Depressive Disorder. *The International Journal of Neuropsychopharmacology*, 8(1):59–63.

Phillips, C. 2018. *Metabolically Healthy Obesity*. MDPI - Multidisciplinary Digital Publishing Institute.

Ponnulakshmi, R., Shyamaladevi, B., Vijayalakshmi, P., Selvaraj, J. 2019. In silicoandin vivoanalysis to identify the antidiabetic activity of beta sitosterol in adipose tissue of high fat diet and sucrose induced type-2 diabetic experimental rats. *Toxicology Mechanisms and Methods*, 29:276–290.

Ramya, G., Priya, V. V., Gayathri, R. 2018. Cytotoxicity of the strawberry extract on the oral cancer cell line. *Asian J Pharm Clin Res*, 11(9):353–355.

Rengasamy, G., Jebaraj, D. M., Veeraraghavan, V. P., Krishna, S. 2016. Characterization, Partial Purification of Alkaline Protease from Intestinal Waste of Scomberomorus Guttatus and Production of Laundry Detergent with Alkaline Protease Additive. *Indian Journal Of Pharmaceutical Education And Research*, 50(2):59–67.

Rengasamy, G., Venkataraman, A., Veeraraghavan, V. P., Jainu, M. 2018. Cytotoxic and apoptotic potential of Myristica fragrans Houtt. (mace) extract on human oral epidermal carcinoma KB cell lines. *Brazilian Journal of Pharmaceutical Sciences*, 54(3).

Shafique, S. 2007. Trends of under- and overweight among rural and urban poor women indicate the double burden of malnutrition in Bangladesh. *International journal of epidemiology*, 36(2):449–457.

Shukri, N. M. M., Vishnupriya, V., Gayathri, R., Mohan, S. K. 2016. Awareness in childhood obesity. *Research Journal of Pharmacy and Technology*, 9(10):1658–1658.

Song, N. 2019. Prevalence of overweight and obesity and associated risk factors among adult residents of northwest China: a cross-sectional study. *BMJ Open*, 9(9):28131–28131.

Van Itallie, T. B. 1985. Health Implications of Overweight and Obesity in the United States. *Annals of Internal Medicine*, 103(6_Part_2):983–983.

Wang, Y. 2019. Synthesis of Zinc oxide nanoparticles from Marsdenia tenacissima inhibits the cell proliferation and induces apoptosis in laryngeal cancer cells (Hep-2). *Journal of photochemistry and photobiology. B, Biology*, 201:111624–111624.

Whitaker, R. C. 1998. Early adiposity rebound and the risk of adult obesity. *Pediatrics*, 101(3):5–5.

Wu, F. 2019. Biologically synthesized green gold nanoparticles from Siberian ginseng induce growth-inhibitory effect on melanoma cells (B16). *Artificial cells, nanomedicine, and biotechnology*, 47(1):3297–3305.