AWARENESS ON THE BENEFICIAL EFFECTS OF NATURAL MEDICINE AMONG ADULTS

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ABSTRACT

Introduction: There has been a global rise in the use of natural products and natural medicine among people. Proper regulation of natural medicine and products ensure good quality to control standards, enhance the consumers safety that facilitate their modern healthcare system, mainly because of their lack of side effects.

Aim: The aim of the study is to determine the knowledge, awareness and attitude, towards natural medicine and products among adults.

Materials and methods: A cross sectional study was conducted among the adults [101people]. The questionnaire was circulated online through google forms and the collected data were analysed using SPSS software. The Pearson Chi square test was done in association with the gender of the respondents.

Results: The survey results showed that 79.2% of the people have knowledge about natural medicine. 90.1% of the participants believe natural medicines are effective, 75% of the participants use natural medicine products in their regular life, 61.4% said natural medicine is more effective than pills.

Conclusion: The present study showed that the awareness and knowledge on natural medicine among adults is quite good.

KEYWORDS: Natural medicine, adults, knowledge, awareness, beneficial effects, natural products.

INTRODUCTION

Natural health products and natural medicine are defined as vitamins, minerals, herbal remedies, homemade remedies and other products like amino acids and essential fatty acids. These products are made from the natural ingredients to prevent disease and maintain good health promotion [1] In addition, the World Health Organization estimates that approximately 80% of the world's population use traditional medicine as their pri-mary source for health care [2] Herbal medicine includes herbs, which contain active plant products. Herbal medicine can be described as traditional medicine that is derived from plants and alternative natural medicine [3]. Phytotherapy is the study of the extracts made by natural medicine or

products, which is safer. But some of the herbal remedies and therapies have potentially harmful side effects. [4]The potency of herbal products may increase the possibility of adverse effects. Potential benefits and possible risks associated with consumption of herbal products should be considered so that conventional treatments can be made more safe and effective. Comparative alternative medicine is the most dominant treatment used by various people. Studies have been done in comparative alternative medicine for the treatment of cancer using natural products [5]. The use of complementary alternative medicine and natural health products has increased in recent years. The consumption of herbal medicines is increasing throughout the world as an alternative treatment for various health problems which include heart diseases, diabetes, high blood pressure, and even certain types of cancer [6] [7] Studies on natural medicine is an emerging field for research nowadays. Studies based on pharmacological activities of plant extracts and its active principles against various disorders have been done by our team. The studies cytotoxic activity of Myristica fragrans houtt (Mace) [8], strawberry extract [9], pineapple extract [10], antitumor potential of Garcinia mangostana, [11] anticancer activity of sesame 12] are some of the studies. The studies on nanoparticles using plant extract are also studied extensively in various fields mainly in cancer biology [13] [14] [15] [16]. Not only the plant extracts, the active components and phytochemicals isolated from plant extract are also used extensively for the treatment of various deadly disorders [17] [18] [19] [20] [21] [22] The aim of the study is to assess the knowledge, awareness, and beneficial effects of natural medicine among adults to lead a good and healthy lifestyle.

MATERIALS AND METHODS

The study was conducted among adults. A sample size of 101 adults have been randomly enrolled in an online survey through google forms. The clear explanation has been given to the participants about this survey. A validated questionnaire consists of 20 closed ended and yes/no questions were distributed among adults to assess their knowledge, attitude and awareness on natural medicine (or) products and its benefits. The data collected were analysed using SPSS Software. The Pearson chi square analysis was also done in association with the gender of the responses.

RESULTS AND DISCUSSION

The results of the present survey is as follows: About 58.4% of the participants were females and 41.6% were males (Figure 1). (Figure 2) shows that 79.2% of the respondents have knowledge about natural medicine and 20.8% don't have. 61.4% of people say natural medicine is more effective than pills, 15.8% said it is not effective and 22.8% of people said they don't know about it (Figure 3).(Figure 4) shows that 29.7% people said natural medicine is effective, and41.6% said no for it.(Figure 5)depicts that 86.1% people say turmeric and ginger is a natural medicine, while 8.9% people don't know about it. The (Figure 6) explains 55.4% use natural products for health promotion, 27.7% people use for disease prevention. 84.2% of people were willing to take natural medicine if they are advised to consume, 15.8% said no (Figure 7). (Figure 8) shows that 53.5% use natural products by doctor's advice, and 36.6% use by self interest. When the respondents were asked about whether they think herbal tea as a natural medicine, 70.3% people said yes and 29.7% said no (Figure 9). 72.3% of the participants said that natural medicine or products include ayurveda, siddha medicine, while 9.9% said no, and 17.8% people don't know about this (Figure 10). The (figure 11) explains that 30% of the respondents said that natural medicine and herbal products have side effects, 42% said no, and 29% said they don't know.

The responses to the remaining survey questions are as follows. The respondents explained that 44.6% of them use 75% of the natural products in their regular life. 24.8% use 100% of natural products in their regular life, 18.8% use 50% of the natural product in their regular life, 11.9% use less than 50% of the natural products in their regular life. 40.6% of the participants said turmeric is used for fever, 35.6% of them said turmeric is used for anxiety, 11.9% said it is used for headache and 11.9% said that it is used for body pain. The results also showed that 32.7% of respondents said ginger is used for fever, 35.6% people

said ginger is used for migraines, 60.7% said for headache. 30% of the respondents said that they experience some side effects when they use natural medicine in which 38.6% of them have the allergic reaction, 13.9% have diarrhoea, 19.8% people have vomiting, 27.7% said that they have all these side effects when they use natural products. The responses also showed that 65.3% people get updates about natural medicine by friends and families, 20.8% through online, 13.9% through books / newspapers and magazines.

Association of the gender with the responses regarding the awareness of natural medicine and its effects was analysed using chi-square tests and depicted as bar graphs (Figure 12-16). The statistical analysis showed that there is no association between the awareness and gender of the respondents. In a previous study the overall rate for use of alternative medicine by the respondent is 76.3%. The study showed that the respondents use their alternative medicine to boost their immune system. 62% of the population use natural products by the food containing vitamins / minerals, herbal medicine, green tea food. In another study 1260 cancer patients were interviewed out of which 60.9% reported using herbs, 92.3% used decoctions, 22.5% used Arum palaestinum used in the cancer treatments. [23] Most alternative medicine uses age was about 40 years [24] In another study 4575 hypertension patients were interviewed, out of which 85.7% used alternative medicine, 62.13% reported taking herbs, 62.9% claimed to have obtained desired effect from taking herbs [25] The results of another study in which 2474 adults with diabetes and 28,635 adults without diabetes were participated showed that people with diabetes prefer natural medicine or alternative medicine [26] A previous study in which 1200 participants are randomly selected, showed that 62.9% use alternative or natural medicine 28.3% use herbal supplements [27]. Most of the previous studies support our findings. The preference for natural medicine and products among adults might be due to its lesser side effects and affordability.

CONCLUSION

The study revealed that the knowledge and awareness of beneficial effects of natural medicine among adults are good. Nowadays people prefer alternative medicine and natural products to have a healthy life.

ACKNOWLEDGEMENT

The team extends our sincere gratitude to the Saveetha Dental College and Hospitals for their instant support and successful completion of this work.

AUTHOR CONTRIBUTIONS

Shreejha M.V, carried out the study, collected data and drafted the manuscript.vDr. Kavitha S designed the study and supervised it in preparation of the manuscript. Dr. Kavitha S, Dr. Vishnupriya and Dr. Gayathri have coordinated in developing and final approval of the manuscript.

CONFLICT OF INTEREST

The author has none to declare

REFERENCES

- [1] Awad A, Al-Shaye D. Public awareness, patterns of use and attitudes toward natural health products in Kuwait: a cross-sectional survey. BMC Complement Altern Med. 2014 Mar 19;14:105.
- [2] Barnes PM, Powell-Griner E, McFann K, Nahin RL. Complementary and alternative medicine use among adults: United States, 2002. Adv Data. 2004 May 27;(343):1–19.

- [3] Liwa A, Roediger R, Jaka H, Bougaila A, Smart L, Langwick S, et al. Herbal and Alternative Medicine Use in Tanzanian Adults Admitted with Hypertension-Related Diseases: A Mixed-Methods Study. Int J Hypertens. 2017 May 28;2017:5692572.
- [4] Zaffani S, Cuzzolin L, Benoni G. Herbal products: behaviors and beliefs among Italian women. Pharmacoepidemiol Drug Saf. 2006 May;15(5):354–9.
- [5] Verhoef MJ, Balneaves LG, Boon HS, Vroegindewey A. Reasons for and characteristics associated with complementary and alternative medicine use among adult cancer patients: a systematic review. Integr Cancer Ther. 2005 Dec;4(4):274–86.
- [6] Abdel-Aziz SM, Aeron A, Kahil TA. Health Benefits and Possible Risks of Herbal Medicine. In: Garg N, Abdel-Aziz SM, Aeron A, editors. Microbes in Food and Health. Cham: Springer International Publishing; 2016. p. 97–116.
- [7] Stout CW, Weinstock J, Homoud MK, Wang PJ, Estes NAM 3rd, Link MS. Herbal medicine: beneficial effects, side effects, and promising new research in the treatment of arrhythmias. Curr Cardiol Rep. 2003 Sep;5(5):395–401.
- [8] Rengasamy G, Venkataraman A, Veeraraghavan VP, Jainu M. Cytotoxic and apoptotic potential of Myristica fragrans Houtt. (mace) extract on human oral epidermal carcinoma KB cell lines [Internet]. Vol. 54, Brazilian Journal of Pharmaceutical Sciences. 2018. Available from: http://dx.doi.org/10.1590/s2175-97902018000318028
- [9] Ramya G, Priya VV, Gayathri R. Cytotoxicity of strawberry extract on oral cancer cell line. Asian J Pharm Clin Res. 2018;11:353–5.
- [10] Menon A, Priya PV, Gayathri R. Preliminary phytochemical analysis and cytotoxicity potential of pineapple extract on oral cancer cell lines. Asian J Pharm Clin Res. 2016;9:140–3.
- [11] Priya VV, Jainu M, Mohan SK. Biochemical Evidence for the Antitumor Potential of Garcinia mangostana Linn. On Diethylnitrosamine-Induced Hepatic Carcinoma. Pharmacogn Mag. 2018 Apr;14(54):186–90.
- [12] Ma Y, Karunakaran T, Veeraraghavan VP, Mohan SK, Li S. Sesame Inhibits Cell Proliferation and Induces Apoptosis through Inhibition of STAT-3 Translocation in Thyroid Cancer Cell Lines (FTC-133). Biotechnol Bioprocess Eng. 2019 Aug 1;24(4):646–52.
- [13] Gan H, Zhang Y, Zhou Q, Zheng L, Xie X, Veeraraghavan VP, et al. Zingerone induced caspase-dependent apoptosis in MCF-7 cells and prevents 7,12-dimethylbenz(a)anthracene-induced mammary carcinogenesis in experimental rats. J Biochem Mol Toxicol. 2019 Oct;33(10):e22387.
- [14] Wu F, Zhu J, Li G, Wang J, Veeraraghavan VP, Krishna Mohan S, et al. Biologically synthesized green gold nanoparticles from Siberian ginseng induce growth-inhibitory effect on melanoma cells (B16). Artif Cells Nanomed Biotechnol. 2019 Dec;47(1):3297–305.
- [15] Ke Y, Al Aboody MS, Alturaiki W, Alsagaby SA, Alfaiz FA, Veeraraghavan VP, et al. Photosynthesized gold nanoparticles from Catharanthus roseus induces caspase-mediated apoptosis in cervical cancer cells (HeLa). Artif Cells Nanomed Biotechnol. 2019 Dec;47(1):1938–46.
- [16] Wang Y, Zhang Y, Guo Y, Lu J, Veeraraghavan VP, Mohan SK, et al. Synthesis of Zinc oxide nanoparticles from Marsdenia tenacissima inhibits the cell proliferation and induces apoptosis in laryngeal cancer cells (Hep-2). J Photochem Photobiol B. 2019 Dec;201:111624.

- [17] Li Z, Veeraraghavan VP, Mohan SK, Bolla SR, Lakshmanan H, Kumaran S, et al. Apoptotic induction and anti-metastatic activity of eugenol encapsulated chitosan nanopolymer on rat glioma C6 cells via alleviating the MMP signaling pathway. J Photochem Photobiol B. 2020 Jan;203:111773.
- [18] Rengasamy G, Jebaraj DM, Veeraraghavan VP, Krishna S. 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. 2016;50(2):S59–67.
- [19] Mohan SK, Veeraraghavan VP, Jainu M. Effect of pioglitazone, quercetin and hydroxy citric acid on extracellular matrix components in experimentally induced non-alcoholic steatohepatitis. Iran J Basic Med Sci. 2015 Aug;18(8):832–6.
- [20] Chen F, Tang Y, Sun Y, Veeraraghavan VP, Mohan SK, Cui C. 6-shogaol, a active constituents of ginger prevents UVB radiation mediated inflammation and oxidative stress through modulating NrF2 signaling in human epidermal keratinocytes (HaCaT cells). J Photochem Photobiol B. 2019 Aug;197:111518.
- [21] Ponnulakshmi R, Shyamaladevi B, Vijayalakshmi P, Selvaraj J. In silico and in vivo analysis to identify the antidiabetic activity of beta sitosterol in adipose tissue of high fat diet and sucrose induced type-2 diabetic experimental rats. Toxicol Mech Methods. 2019 May;29(4):276–90.
- [22] Shukri NMM, Vishnupriya V, Gayathri R, Mohan SK. Awareness in childhood obesity. Research Journal of Pharmacy and Technology. 2016;9(10):1658–62.
- [23] Boon H, Stewart M, Kennard MA, Gray R, Sawka C, Brown JB, et al. Use of complementary/alternative medicine by breast cancer survivors in Ontario: prevalence and perceptions. J Clin Oncol. 2000 Jul;18(13):2515–21.
- [24] Ali-Shtayeh MS, Jamous RM, Jamous RM. Herbal preparation use by patients suffering from cancer in Palestine. Complement Ther Clin Pract. 2011 Nov;17(4):235–40.
- [25] Ali-Shtayeh MS, Jamous RM, Jamous RM, Salameh NMY. Complementary and alternative medicine (CAM) use among hypertensive patients in Palestine. Complement Ther Clin Pract. 2013 Nov;19(4):256–63.
- [26] Garrow D, Egede LE. National patterns and correlates of complementary and alternative medicine use in adults with diabetes. J Altern Complement Med. 2006 Nov;12(9):895–902.
- [27] Cheung CK, Wyman JF, Halcon LL. Use of complementary and alternative therapies in community-dwelling older adults. J Altern Complement Med. 2007 Nov;13(9):997–1006.

Figures title

- Figure 1: Pie chart showing the percentage distribution of gender of the respondents.
- Figure 2: Pie chart showing the percentage distribution of knowledge about natural medicine.
- Figure 3 : Pie chart showing the percentage distribution of opinion on whether natural medicine is more effective than pills.
- Figure 4: Pie chart showing the percentage distribution of the participants opinion on whether natural medicine is effective.
- Figure 5 : Pie chart showing the percentage distribution of the responses regarding whether turmeric and ginger is a natural product.
- Figure 6: Pie chart showing the percentage distribution of response on the reason for which the participants use natural medicine in their regular life.

- Figure 7: Pie chart showing the percentage distribution of responses on whether they consume natural medicine if they are advised to take.
- Figure 8: Pie chart showing the percentage distribution of responses regarding why they consume natural medicine.
- Figure 9: Pie chart showing the percentage distribution of participants taking herbal tea as a natural medicine.
- Figure 10: Pie chart showing the percentage distribution of participants having the opinion that siddha and ayurveda is a natural medicine
- Figure 11: Pie chart showing the percentage distribution of participants having the opinion that natural medicine has any side effects.
- Figure 12: The Bar graph represents the association between gender and knowledge about natural medicine.
- Figure 13: The bar graph represents the association between gender and responses regarding the effectiveness of natural medicine.
- Figure 14: The bar graph represents the association between the gender and responses regarding the side effects of the natural medicine.
- Figure 15: The bar graph represents the association between the gender and the reason for which the natural products are consumed by the respondent.
- Figure 16: The bar graph represents the association between the gender and option on whether natural medicine includes siddha and ayurveda.

Figures

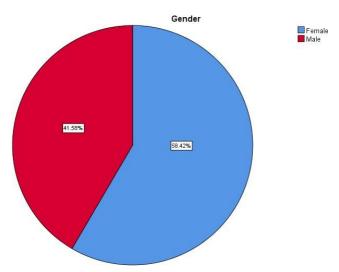


Figure 1: Pie chart showing the percentage distribution of gender of the respondents. 58% of the respondents were female (Blue) and 42% were male (Red)

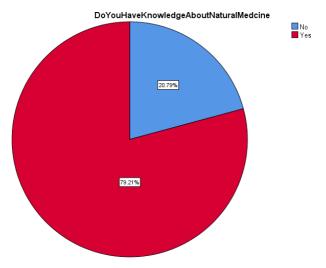


Figure 2 : Pie chart showing the percentage distribution of knowledge about natural medicine. 79% of the respondents were said yes (red) and 21% said no (Blue)

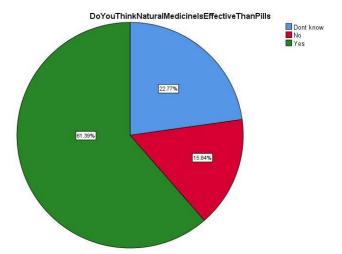


Figure 3: Pie chart showing the percentage distribution of opinion on whether natural medicine is more effective than pills. Majority of the respondents said yes which is 61% (Green), 16% said no (Red) and 23% said they don't know (Blue).

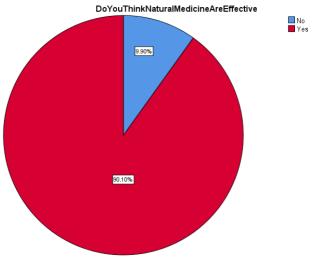


Figure 4: Pie chart showing the percentage distribution of the participants opinion on whether natural medicine is effective. Majority of the respondents said yes 90% (Red) and 10% of the respondents said no (Blue)

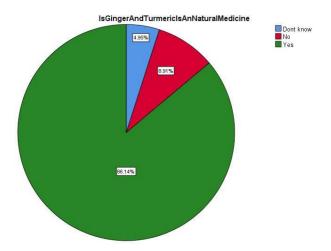


Figure 5: Pie chart showing the percentage distribution of the responses regarding whether turmeric and ginger is a natural product. Majority of the respondents (86%) said yes (green), which is followed by those (9%) who said no (Red) and 5% said they don't know (Blue).

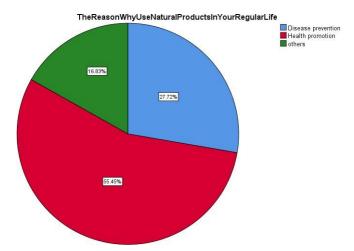


Figure 6: Pie chart showing the percentage distribution of response on the reason for which the participants use natural medicine in their regular life. Majority of the participants (55%) responded as health promotion (Red), followed by disease prevention (28%) (Blue) and others 17% (Green)

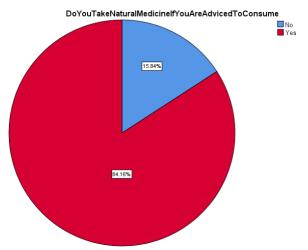


Figure 7: Pie chart showing the percentage distribution of responses on whether they consume natural medicine if they are advised to take. Majority of the respondents(84%) said yes (Red) and 16% said no (Blue)

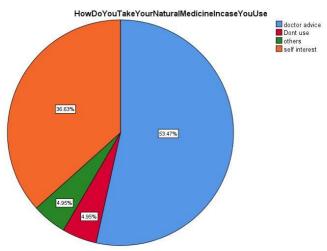


Figure 8: Pie chart showing the percentage distribution of responses regarding why they consume natural medicine. Majority of the respondents (53%) said by doctors advice (Blue), self interest 37% (Orange), 5% said they don't use (Red) nd remaining 5% said other reasons (Green)

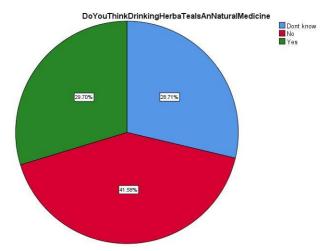


Figure 9: Pie chart showing the percentage distribution of participants taking herbal tea as a natural medicine. Majority of the respondents (30%) said yes (Green) and 42% said no (Red) and 29% said don't know (Blue).

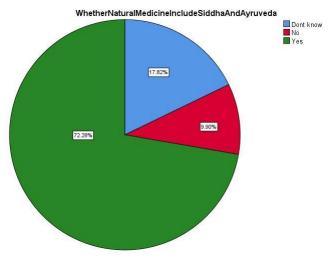


Figure 10: Pie chart showing the percentage distribution of participants having the opinion that siddha and ayurveda is a natural medicine. Majority of the respondents (72%) said yes (Green) 10% said no (Red), and 18% said don't know (Blue).

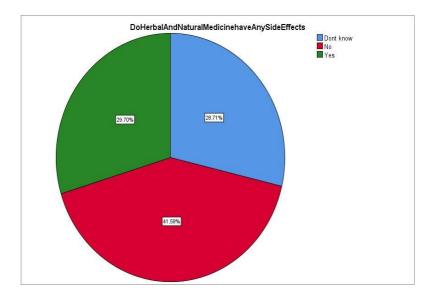


Figure 11: Pie chart showing the percentage distribution of participants having the opinion that natural medicine has any side effects. Majority of the respondents (30%) said yes (Green) 42% said no (Red), and 29% said don't know (Blue).

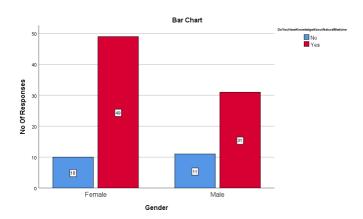


Figure 12: The Bar graph represents the association between gender and knowledge about natural medicine. X axis represents gender and Y axis represents the number responses, of which blue no male and red denotes yes. Majority of the females (49 participants) were aware of natural medicine. Pearson Chi square value= 1.272, p value = 0.259 (>0.05), which is statistically not significant, proving there is no association between age and knowledge about natural medicine.

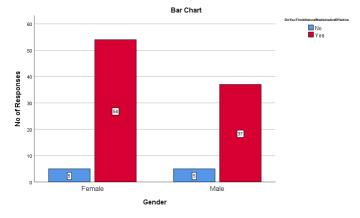


Figure 13: The bar graph represents the association between gender and responses regarding the effectiveness of natural medicine. X axis represents gender and Y axis represents the number responses, of which blue no male and red denotes yes. Majority of the females (54 participants) responded as natural medicine is effective. Pearson chi square value = 0.234, p value= 0.569 (>0.05), which is statistically not

significant. Hence there is no association between the gender and responses regarding the effectiveness of natural medicine.

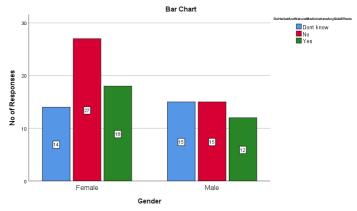


Figure 14: The bar graph represents the association between the gender and responses regarding the side effects of the natural medicine. X axis represents gender and Y axis represents the number responses, of which blue represents don't know, red represents no, and green represents yes. Majority of the females (27 participants) responded as natural medicine shows some side effects. Pearson chi square value = 1.854, p value = 0.396, Which is statistically not significant. Hence there is no association between the gender and responses regarding the side effects of the natural medicine.

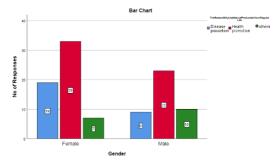


Figure 15: The bar graph represents the association between the gender and the reason for which the natural products are consumed by the respondent. X axis represents gender and Y axis represents the number of responses, of which blue denotes disease prevention, Red denotes health promotion and green denotes others. Majority of the females (33 participants) responded for health promotion. Pearson chi square value = 3.113 p value = 0.211 which is statistically not significant. Hence there is no association between the gender and responses regarding the reason for consuming the natural medicine.

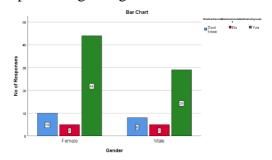


Figure 16: The bar graph represents the association between the gender and option on whether natural medicine includes siddha and ayurveda. X axis represents the gender and Y axis represent the number of responses, of which blue denotes don't know, red denotes no, Green denotes yes. Majority of the females (44 participants) responded as siddha and ayurveda is a natural medicine. Pearson chi square test = 0.456, P value = 0.101 which is statistically not significant. Hence there is no association between the gender and responses regarding the siddha and ayurveda as a natural medicine.

S.No Question Options Res	onses
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1	Gender	Male	41.6%
		Female	58.4%
2	Do you have knowledge about natural medicine	Yes	79.2%
		No	20.8%
3	Do you think natural medicine is more effective than pills	Yes	61.4%
		No	15.8%
		Don't know	22.8%
4	Do natural and herbal medicine have side effects	Yes	29.7%
		No	41.6%
		Don't know	28.7%
5	Is tumeric and ginger is a natural medicine	Yes	86.1%
		No	8.1%
		Don't know	5%
6	The reason why you use natural products in daily life for	Health	55.4%
		promotion	27.7%
		Disease prevention	16.8%
		Others	
7	Do you take natural medicine if you are advised to consume	Yes	84.2%
		No	15.8%
8	How do you take your natural medicine incase you use	Doctor advice	53.5%
		Self interest	36.6%
		Don't use	5%
		others	5%

9	Do you recognize drinking herbal tea as medicine	Yes	70.3%
		No	29.7%
10	Whether natural medicine and products include ayurveda, siddha medicine	Yes	72.3%
	ayar read, sadana medieme	No	9.9%
		Don't know	17.8%
11	Do herbal and natural medicine have any side effects	Yes	30%
		No Don't know	42% 29%

Table: Responses of participants regarding the awareness on natural medicine