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Aafiyat Employees' Knowledge, Attitudes, Barriers and Clinical Practices of Tocotrienols 70 Mg Softgel Consumption

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Abstract

The goal of this study was to learn more about the staff at Aafiyat's current levels of clinical practices, attitudes, and knowledge. It also sought to determine the association between certain demographic factors and consumption of Olive House Tocotrienols 70 mg softgels. Olive House has developed a pharmaceutical product called Tocotrienols 70 mg softgel. This product has a MAL number and has been registered with the NPRA. Three groups of respondents were used in this study: the control group, the case 1 beauty concern group, and the case 2 NCD concern group. There were 30 respondents in total, with 10 in each group, for this survey. To learn more about their concerns, respondents were given health surveys. For a month, the case group must take a dose of 140 mg of tocotrienols daily in the form of a 70 mg softgel. Before and after they take the softgel, a health examination will be done to assess its effectiveness. Following that, respondents are required to respond to survey questions about their views and prior knowledge of vitamin E. According to the research, vitamin E consumption caused systolic blood pressure readings to drop by 13–16% after a month of consumption. Similarly, there was a nearly 30% decrease in diastolic pressure readings. Blood sugar measurements also showed a nearly 6% decrease. This indicates that taking Tocotrienols softgels is very effective in treating NCD because he demonstrated a significant decrease in recurrence after taking them. Additionally, nearly 50% of respondents said getting enough vitamin E helps prevent scars and skin conditions. Six out of ten (60%) of the questions in the knowledge section were correctly answered by the respondents. This suggests that the respondents are knowledgeable about vitamin E. The results of the study showed that taking tocotrienols in the amount of 70 mg softgel had a significant impact on changes in blood pressure (both diastolic and systolic) and blood sugar levels. Additionally, Aafiyat staff members are knowledgeable about vitamin E derivative Tocotrienols consumption. The same can be said for employees who don't care whether they consume enough tocotrienols or vitamin E in their diet.

Keywords: Knowledge; attitudes, clinical practises, Tocotrienols, Vitamin E 70 mg softgel

1. Introduction

Red palm oil from Sime Darby Oil Sdn Bhd was used in the innovative product Tocotrienols 70 mg softgel, which was created especially for Olive House. Tocotrienols, a form of vitamin E derived from red palm oil, are 70 mg in each softgel capsule. Additionally, this softgel product is capsuled with the consideration that it comes from plants and is Halal. Depending on where the methyl groups are in their chemical structures, tocotrienols are divided into α, ß, ɣ, ʊ and isomers (Sailo et al., 2018). Although the characteristics of each of these isomers vary slightly, antioxidant actions are the most well-researched and have a greater antioxidant capacity than tocopherols (Albrahim et al., 2022).

The best sources of these vitamin E forms are vegetable oils, especially rice bran oil and palm oil, which have higher tocotrienol concentrations (Fairus et al., 2020). Oats, hazelnuts, maize, olive oil, buckthorn berry,

rye, flax seed, poppy seed, and sunflower oil are additional sources of tocotrienols (Ji et al., 2021). Tocotrienols, in contrast to tocopherols, are unsaturated and have an isoprenoid side chain. Vitamin E is a necessary vitamin that the body cannot produce on its own and must be obtained from food. Palm fruit is one of the best sources of tocopherols and tocotrienols, along with rice and annatto seed. The source of tocotrienols that is most abundant among all vegetable oils is palm fruit. (Okuyama et al., 2021). In palm oil, tocotrienols account for nearly 70% of the vitamin E, with tocopherols making up the remaining 30% (Xia & Mo, 2016).

Tocotrienols have properties that are frequently different from those of tocopherols, including neuroprotective, antioxidant, anticancer, and cholesterol-lowering abilities (Fairus et al., 2020). Tocotrienol can effectively penetrate tissues with saturated fatty layers, like the brain and liver, because its chain is unsaturated (Chandan K. Sen, Cameron Rink, 2011). Recent mechanistic studies have demonstrated that tocopherol's anti-chronic disease antioxidant and anti-inflammatory properties fall short of those of other forms of vitamin E, such as γ-T, δ-T and γ-T3. Tocotrienols can be found in plasma at detectable levels after supplements. Biodistribution studies have shown that tocotrienols accumulate in the body's vital organs, but the amount of information on the plasma concentrations of tocotrienols required to demonstrate a significant physiological effect is lacking. The current state of knowledge warrants further research into this less well-known form of vitamin E because tocotrienols have a wide range of potential health benefits against some common human ailments (Che Idris et al., 2014).

In fact, there aren't many studies that have looked at the efficacy and consumer acceptance of taking tocotrienol supplements. The goal of the current study is to investigate the Aafiyat ecosystems' knowledge, attitudes, barriers, and clinical practises. We suggest that in the Aafiyat ecosystem, palm tocotrienol may reduce blood pressure and blood sugar levels.

2. Literature Review

In contrast to tocopherols, tocotrienols have potent neuroprotective, antioxidant, anti-cancer, and cholesterol-lowering properties. Micromolar doses of tocotrienol inhibit HMG-CoA reductase, the hepatic enzyme in charge of cholesterol synthesis. It's possible that tocotrienols are stronger antioxidants than tocopherol. In tissues with saturated fatty layers, like the brain and liver, tocotrienol's unsaturated side chain allows for greater penetration (Frank et al., 2012).

Based on previous study, they found that tocotrienols significantly reduced TBARS levels in subjects. Meanwhile, some study found no significant change in TBARS levels with tocotrienol supplementation although the tocotrienols group had a marginally lower trend in TBARS levels compared to the placebo group at the 4th month. To summaries, taking tocotrienol supplements has numerous advantages, particularly for human health. Tocotrienol supplements are non-toxic and have a positive impact on human health (Patel et al., 2012).

Several studies have been conducted on the use of tocotrienol supplements in the daily diet. The Tocotrienols Rich Fraction (TRF) has immunostimulatory effects as well as potential clinical benefits for enhancing immune reaction to vaccines, according to a study by Mahalingam et al. (2011). The clinical trial of TRF supplementation significantly increased the total vitamin E level in the plasma of TRF-supplemented volunteers compared to the placebo group, indicating overall compliance, based on the study's findings. When compared to the control group, volunteers supplemented with TRF produced significantly more interferon-ɣ interleukin (IL)-4 by mitogen or TT-stimulated leukocytes. When compared to the placebo group, volunteers in the TRF group produced significantly ($P<0.05$) less of IL-6. Anti-TT IgG production was also increased (Xia & Mo, 2016).

Furthermore, there are indications from other studies that supplementation tocotrienols at the dosage of 400 mg per day for 14 days did not induce haematoxicity and hepatotoxicity in subjects with metabolic syndrome (Lin et al., 2016). In these studies, they are indicating that the subjects were supplemented with tocotrienols-rich fraction 200 mg or placebo capsules twice daily for two weeks followed by a post-intervention visit (Fairus et al., 2020). Results showed that tocotrienols supplementation had no significant adverse effect on the red blood cell (RBC), white blood cell (WBC) and platelet counts between TRF and placebo interventions (Ghazali et al., 2022).

Another study aims to determine the variables influencing consumers' preferences-based willingness to pay for palm vitamin E tocotrienols. The health advantages of palm vitamin E tocotrienols were found to be poorly understood by 419 vitamin users in Peninsular Malaysia (Sadikan et al., 2022). According to the study, these compounds in flavoured chewable tablets are valuable to consumers. the probability that consumers will buy tocotrienols. If these compounds were offered as chewable, flavored tablets instead of capsules, the likelihood that consumers would buy them would rise by 67.5%. Additionally, they were willing to pay an extra RM23.30 per bottle for tocotrienols in a flavor-enhanced chewable tablet, which is 19.0% more than the cost of tocotrienols in a capsule. They did anticipate a sizable price reduction of RM48.89 (41%), though, if the tocotrienols were sold online. The results of this study may serve as a guide for future research into the development of palm vitamin E tocotrienol products that are suitable for consumer needs and preferences (Chong et al., 2022).

In this study, the KAP model was used to examine the knowledge, attitudes, and adheres of the Aafiyat staff (measurements of blood pressure, glucose levels, and body mass index (BMI) before and after supplement intake). The core elements of a behavior change model

are knowledge, attitudes, and practices. The definition of knowledge is the conscious, non-symbolic perception of meaning. There are four different kinds of knowledge: scientific and social scientific knowledge, local knowledge, tacit knowledge, and self-reflective knowledge (Liao et al., 2022). Regular activities that are influenced by widely held social norms and beliefs are referred to as practises. The learning theory and the diffusion of innovation theory are the sources of the KAP model processing (Jensen, 2017).

3. Methods

3.1 Experimental Design

The case-control study design was used for the Aafiyatgroup study. Aafiyatgroup was split into three groups, the control group, case group 1 (which was concerned with beauty), and case group 2 (which was concerned with non-communicable disease). The corporate office and warehouse of Ampang Business Centre served as the site of this study. With regard to receiving vitamin E (supplements containing tocotrienols), each population has a list of 30 respondents. The months of February and March 2022 were used to carry out this study.

3.2 Survey and Measuring Instruments

The knowledge, attitude, and practise (KAPP) model were the foundation for the questionnaire designed for this study (Orr et al., 2018). Fig. 1 shows the five sections of the questionnaire:

Section I: Sociodemographic data about the participant, such as hospital level, age, years of employment, education level, current employment position, administrative title, and experience in programmes or courses related to nutrition.

Section II: Understanding of vitamin E. Ten multiple-choice questions in this section covered topics like caloric assessment, basic knowledge, and nutrition support. These questions also covered administration routes and nutrition support. The score for a correct response was 1, while a false response received a score of 0. All 10 questions, with scores ranging from 0 to 10, were added together to determine the final score. The level of knowledge was indicated by a higher score.

Section III: Perceptions of the use of supplements. 11 items made up this section, which evaluated respondents' attitudes towards nutrition support. A 5-point Likert scale was used to grade the responses (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree). The scores in this section were based on the mean average of all the items. A higher score demonstrated a more optimistic outlook.

Questionnaire and Measurements	
Section I	Sociodemographic
Section II	Knowledge of Vitamin E
Section III	Attitudes towards supplement intake
Section IV	Exploring clinical practice of suplement intake and anthropometric measurement
Section V	Participant self-reported barriers to nutrition support practice/vitamin E intake.

Fig. 1. Questionnaire and measurements

Section IV: Investigating the clinical usage of dietary supplement consumption and anthropometric measurement. This section included 4 questions about the current practises for assessing nutritional condition, checking blood sugar levels, providing initial nutrition support, and the actions taken by ED staff for patients who don't receive enough nutrition support.

Section V: A multiple-choice question about the barriers that participants themselves identified to nutrition support behavior or supplement (Vitamin E) consumption.

3.3 Inclusion and Exclusion Criteria for Subjects

Prior to beginning the study, a health checkup was required of each participant. After undergoing a health examination, participants were divided into 3 groups: the control group; case 1, which focused on beauty; and case 2, which focused on non-communicable diseases. It was not necessary for the control group to consume the Tocotrienols 70 mg Softgel. Clinical evaluations of each respondent were performed both before and after taking Tocotrienols 70 mg softgel, but case groups 1 and 2 had to take it for a full month.

3.4 Collection of Data

An organised questionnaire and medical techniques were used to collect the necessary data. The data collected included the sociodemographic details of the respondents as well as their understanding, attitudes, and clinical practices regarding the efficacy of taking supplements containing tocotrienols 70 mg softgels. With all the necessary approvals, the research was able to move forward (Książek et al., 2020).

4. Statistic Evaluation

To conduct the sociodemographic analysis, the percentages for each category were looked at. All statistical evaluations were completed utilising JMP Pro 16.0.

5. Findings and Discussion

38% of respondents are men, according to Table 1, and 63% of respondents are women. A total of 67.6% of respondents are still single, and 55% of respondents are between the ages of 20 and 30.

Table 1: Sociodemographic data

Characteristics	Values (Percentage %)
Gender	
Male	38
Female	63
Age	
41-50	3
31-40	43
20-30	55
Marital status	
Single	67.6
Married/Widowed	32.4
Housing	
Apartment	8.8
House (≤3 bedrooms)	32.4
House (> 3 bedrooms)	55.9
2 room terraces	2.9
Education levels	
SRP/PMR/SPM/STPM	3
Certificate/Diploma holder	3
Degree holder	80
Master/PhD holder	15

Sociodemographic information on respondents shows that up to 55.9% of respondents live in homes with four or more bedrooms. This implies that most survey respondents belong to the middle class. In their fields of study, nearly 80% of those polled have a degree or higher. These sociodemographic data reveal that most respondents are highly educated and earn a middle class living.

Most respondents correctly answered six out of ten questions, as shown in Fig. 2. Most respondents, 76.5 percent, claimed to be aware of vitamin E's importance to human health. According to 41.2 percent of respondents, meat is a food low in vitamin E. Eggs, on the other hand, are low in vitamin E. The percentage of respondents who said Aquasol E is a vitamin E supplement was just 20.6%. According to most respondents (41.2%), betacarotene is a vitamin E supplement. Nearly 44.1 percent of those surveyed were also aware that 15 mg of vitamin E is the daily recommended amount. Most survey participants were unaware of the recommended daily allowance of vitamin E for children aged 1-3.

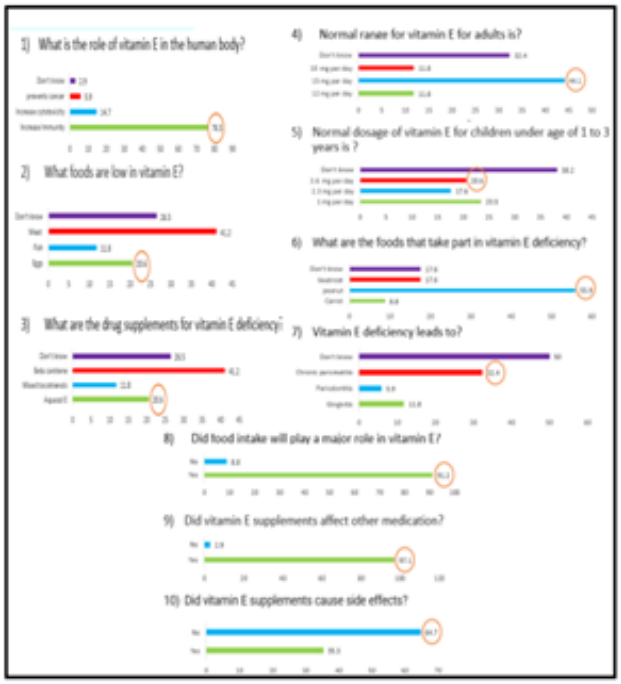

Fig. 2. Knowledge data

The attitudes of the population towards nutritional assistance were assessed using 5 items in this section (Fig. 3). Up to 38.2% of respondents to the survey stated they didn't give their vitamin E intake a second thought. In the survey, nearly 41.2 percent of those who took vitamin E (tocotrienols softgel) for a month reported similar results and changes to their skin.

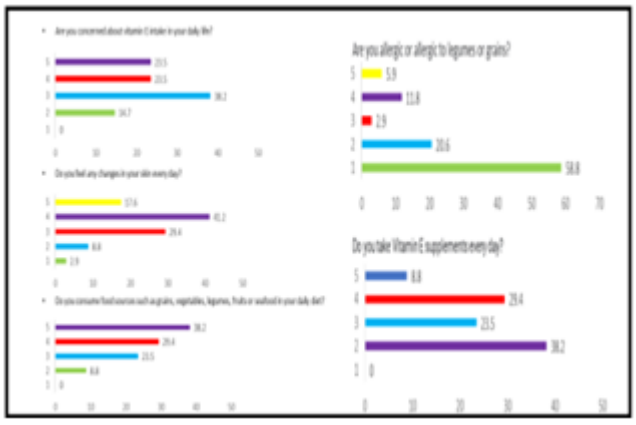

Fig. 3. Attitudes data

38.2% of survey participants firmly agreed that they ought to consume grains, vegetables, legumes, fruits, or seafood each day. Furthermore, most respondents (58.8%) reported that they had no allergies, including allergies to grains or legumes. In addition, 38.2% of them reported never taking vitamin E supplements. According to the study's findings, respondents do not regularly take vitamin E supplements and are unaware of how much vitamin E they are consuming daily.

The study's results, which are displayed in Fig. 4, indicate that 67.6% of respondents did not participate in webinars or talk about the benefits of taking supplements

and eating a healthy diet. Most of them (41%) believe that taking supplements frequently is essential. Most of them (32.4%) failed to take vitamin E supplements as prescribed. Additionally, 64.7 percent of respondents claimed they didn't attend any webinars, seminars, or talks about dietary supplements or nutrition. Unexpectedly, 85.3 percent of those polled claimed to be familiar with vitamin E supplements.

Fig. 4. Data barriers

Fig. 5 depicts the reduction in systolic blood pressure that occurred after a month of vitamin E consumption, which was between 13 and 16 percent. Similarly, there was a nearly 30% decrease in diastolic pressure readings. Readings of blood sugar also revealed a nearly 6% decrease. He showed a significant reduction in recurrence following vitamin E intake, proving that vitamin E intake is very effective in managing NCD. Almost fifty percent of those surveyed also said that getting sufficient vitamin E helps prevent marks and skin-related issues.

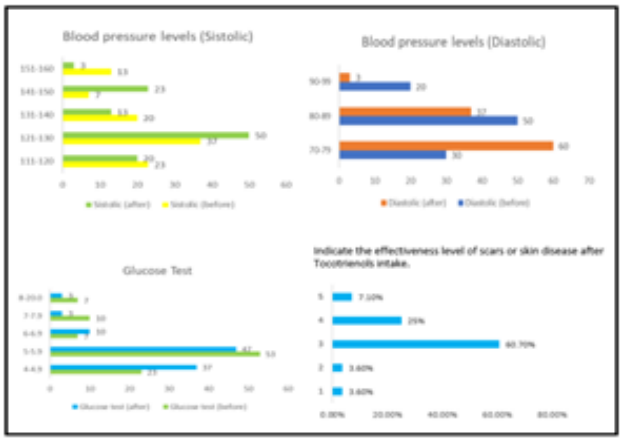

Fig. 5. Clinical practices data

6. Conclusion

The findings of this study show that most participants (76.5%) are aware of the importance of vitamin E supplements (tocotrienols) and that 42% either agree with this statement or have experienced changes in their skin because of taking vitamin E. Most participants (38.2%) did not know what vitamin E was and did not regularly consume it. Additionally, 67.6% of the respondents said they did not take part in any webinars, talks, conferences, or other events related to dietary supplements and healthy eating. Most respondents must have been unaware of the importance of including supplements in their diets, we can infer from this. Nevertheless, when Tocotrienols 70 mg Softgel is taken, the clinical methods yield fruitful experimental outcomes. Readings of the respondents' systolic and diastolic blood pressure taken before and after taking this supplement were found to have dropped, as is customary. Both before and following the vitamin supplementation, the blood sugar levels were significantly lower. In addition, a resounding majority of respondents were very satisfied with the product's results in the treatment of scars and skin conditions. Marketing can infer that vitamin E is well-known and that marketing and selling this product will be simple based on the results of this product testing. Most participants, though, are unaware of their daily vitamin E intake.

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