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Research Article

Doctors' Opinion about Importance of Olive Leaves in Oxidative and Physical Stress

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Abstract

Background: Olive leaves are known for multiple benefits, including those antioxidants, anxiolytics, and support of physical effort.

Objectives: The objective was to evaluate Medical Doctors (MD) opinion before and after a post-graduated medical course about the importance of Olive Leaves (OL) in Oxidative (OS) and Physical Stress (PS).

Methods: 103 MD answered a detailed questionnaire, which included questions such as:

a. How many OL-courses did you attend.

b. What are the native olive tree countries

c. How many olive tree products do you know?

d. What are the basic OL-constituents

e. What are the main OL-effects

f. On scale 1-10 how much OL can improve stress/ anxiety/ oxidative stress/ physical effort/ endurance/ fatigue.

g. What are the ages to which OL can be administered

h. Do you personally use/will use OL extract

i. Do you indicate/will indicate OL extract to patients.

j. What trading OL extract-forms do you know/use/indicate.

k. What results did you/ will you achieve from OL extract-use/indication

l. How can be explained the antioxidant effect/ sport benefits of OL.

m. On scale 1-10 how much this course helped you know more about OL. Statistical evaluation was done using the student test.

Results: Most MD responses:

a. To none.

b. Mediterranean countries

c. Olives and olive oil.

d. I don't know

e. Antioxidant, cardiovascular, immune protection.

f. 4/ 1/ 6/ 2/ 2/ 2

g. Any age.

h. Never indicate/ Occasionally will indicate

i. Never use/ Occasionally will use.

j. Do not know/ Do not use

k. I expect antioxidant, cardiovascular, metabolic, immune effects.

l. Due to the composition.

m. 9.4.

Conclusions:

a. This postgraduate course for MD, seems to be the first one regarding OL.

b. Most of the MD respondents do not know the composition of OL and have very brief information about OL.

c. Most MDs know that OL have anxiolytic effects, but they have very brief information about the importance of using OL in sports and physical stress.

d. We appreciate that this course has achieved its goal of informing MD about the role of OL in oxidative and physical stress, but additional information about the role of OL in physical effort would be useful for medical practice.

Keywords: Olive Leaves; Oxidative Stress; Physical Stress; Medical Doctors; Fresh Leaves; Human Health; Asthma; Bioactive Phenolic; Mediterranean; Anti-Oxidation; Exercise and Sports

Introduction

Olive leaves have been used in Mediterranean countries for human health, being beneficial [1]. Thus, they have been used for the realization of traditional remedies [1,2] and in the human diet in the form of extracts, tea, and powder [3]. Olive leaf tea has been used over time by pollination in the Mediterranean area to cure certain diseases [1]. Oral extract from the dried plant, orally, has been shown to be effective in treating asthma [4]. The infusion of fresh leaves, administered orally, has an important anti-inflammatory effect [5]. The decoction of dried fruits and leaves has been used orally to treat respiratory and urinary tract infections, as well as diarrhea [6] and diabetes [7]. Olive leaf tincture has been used orally in fever [8]. Olive leaves have a high content of bioactive phenolic compounds [9] of which hydroxytyrosol is an important anti-oxidation compound [10].

Hypothesis

Olive leaves and olive leaf extract are known for their many actions, the most important being those antioxidants, with beneficial effects including in exercise and sports.

Objectives

The objective was to evaluate Medical Doctors (MD) opinion before and after a post-graduated medical course about the importance of Olive Leaves (OL) in Oxidative (OS) and Physical Stress (PS).

Material and Methods

Study and measurements have been carried out in July 2019. Participation of all subjects in the study was voluntary. The subjects were MDs, of different specialties: 50 men and 53 women; totally 103 (=N). The average age of participants was: 42.3±4, for men; 44.9±9, for women. All the MD participants attended the same postgraduate course, on the topic of adaptogens. All MD subjects answered the same questionnaire, which contained 13 items, with their subitems (Table 1). Participants answered the first 12 items, 15 minutes before the course, and the last item, 13, 15 minutes after the end of the course. For data analysis we used the percentage of the total number of participants (% of N) who responded to each subitem.

Table 1: Items and sub-items of the applied questionnaire

S. No	Items	Subitems									
1	How many OL-courses did you attend	To none	1	2	3	4	More				
2	What are the native olive tree countries	I don't know	I know - enumeration:								
3	How many olive tree products do you know and which	None	1	2	3	4	More				
		I know-enumeration:									
4	What are the basic OL-constituents	I don't know	I know-enumeration:								
5	What are the main OL-effects	I don't know	I know-enumeration:								
6	On scale 1-10 how much can OL improve stress/ anxiety/ oxidative stress/ physical effort/ endurance/ fatigue.	1	2	3	4	5	6	7	8	9	10
7	What are the ages to which OL can be administered	I don't know	0-18	19-44	45-64	65-90	>90				
8	Do you indicate/will indicate OL extract to patients	Never	Rarely	Occasionally	Often						
9	Do you personally use/will use OL extract	Never	Rarely	Occasionally	Often						
10	What trading OL extract-forms do you know/use/indicate	I don't know/I don't use	I know - enumeration:								
11	What results did you/ will you achieve after this course, from OL extract-use/ indication	I don't know	I know - enumeration:								
12	How can be explained the antioxidant effect/ sport benefits of OL	I don't know	I know - enumeration:								
13	On scale 1-10 how much this course helped you know more about OL.	1	2	3	4	5	6	7	8	9	10

Results

The presentation is in the order of items in the questionnaire.

a. How many OL-courses did you attend (Figure 1). All participants (100%) mentioned that they have not attended yet another OL course.

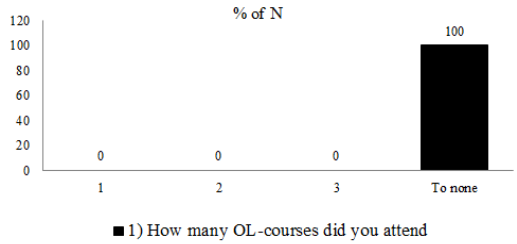

Figure 1: The percentage of respondents of N, for item 1.

b. What are the native olive tree countries (Figure 2). Most MD participants (99.0%) mentioned that the native countries for OL are Mediterranean countries, and the fewest (1%), mentioned that there are other countries than those mentioned, such as the Arab countries and India.

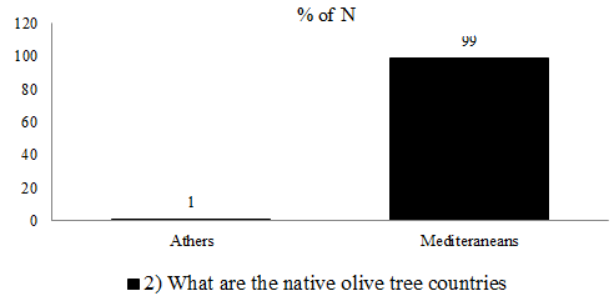

Figure 2: The percentage of respondents of N, for item 2.

c. How many olive tree products do you know and which (Figure 3). Most MD participants (91%) answered that they know two products (olive oil and olives), a small number know several products (9%), there was no participant who did not know any product or only one (0%).

d. What are the basic OL-constituents (Figure 4). Most MD participants (73%) responded that they did not know any OL constituent, some (12%), mentioned Oleuropein as a constituent and the fewest mentioned other elements (15%).

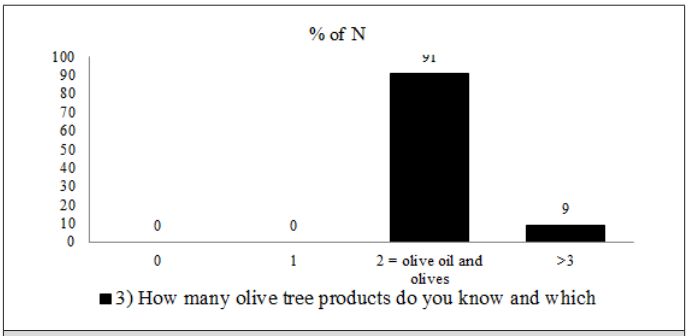

Figure 3: The percentage of respondents of N, for item 3.

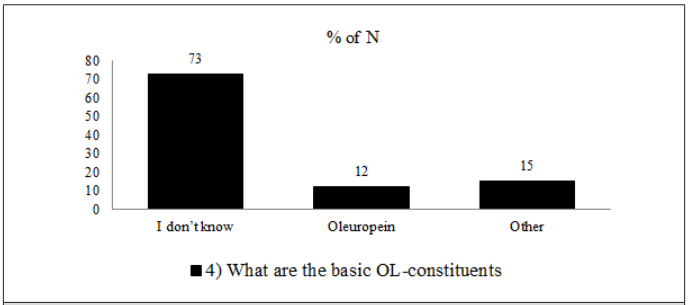

Figure 4: The percentage of respondents of N, for item 4.

e. What are the main OL-effects (Figure 5). Most MD participants (71%) responded that the main OL-effects are antioxidant, some of them (12%) mentioned cardiovascular protection, some of them (13%) mentioned immune protection and the fewest (4%) mentioned other effect.

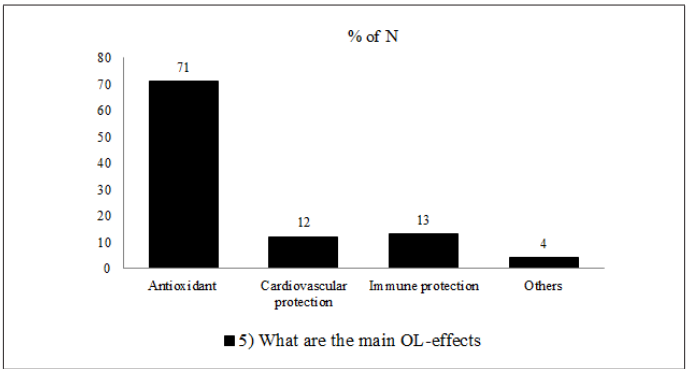

Figure 5: The percentage of respondents of N, for item 5.

f. On scale 1-10 how much can OL improve stress/anxiety/ oxidative stress/physical effort/ endurance/ fatigue (Figure 6). Most MD participants responded: with 4, for OL can improve stress (60%); with 1, for OL can improve anxiety (62%); with 6, for OL can improve oxidative stress (71%); with 2, for OL can improve physical effort (51%); with 2, for OL can improve endurance (64%); with 2, for OL can improve fatigue (53%).

g. What are the ages to which OL can be administered (Figure 7) the fewest MD participants responded that the ages at which OL can be administered are 65-90 years (9%) and >90 years (4%) respectively? Most MD participants responded that the administration age is between 19-44 (71%) and 45-64, respectively (51).

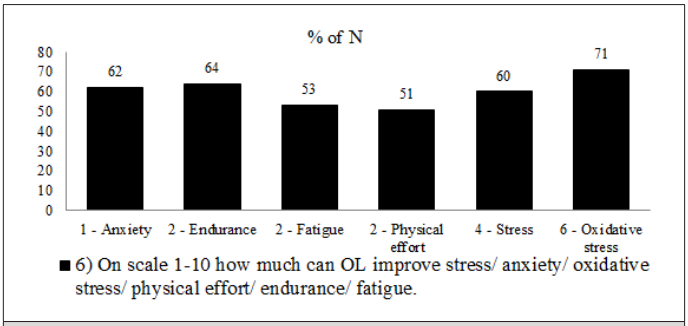

Figure 6: The percentage of respondents of N, for item 6.

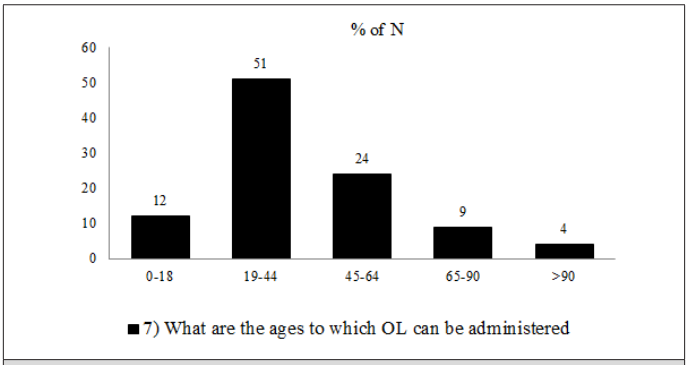

Figure 7: The percentage of respondents of N, for item 7.

h. Do you indicate/will indicate OL extract to patients (Figure 8). Most MD participants (99%) responded that they never indicate OL, the fewest responded that they rarely (1%) indicate OL. Most MD participants (64%) responded that they occasionally will indicate OL, the fewest responded that they often (24%) or rarely (12%) indicate OL.

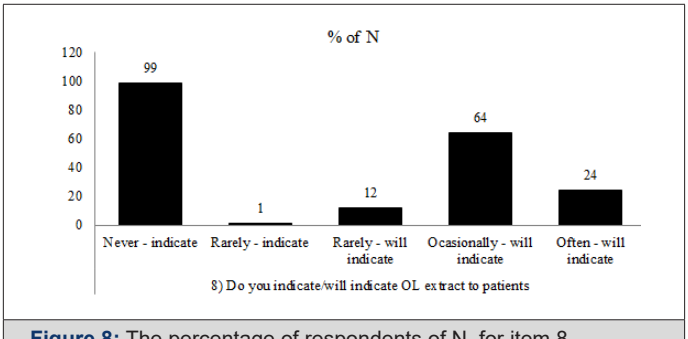

Figure 8: The percentage of respondents of N, for item 8.

i. Do you personally use/will use OL extract (Figure 9a,9b). Most MD participants (69%) responded that they never use OL, the fewest responded that they rarely (19%) or occasionally (12%) use OL. Most MD participants (73%) responded that they occasionally will use OL, the fewest responded that they rarely (15%) or often (12%) use OL.

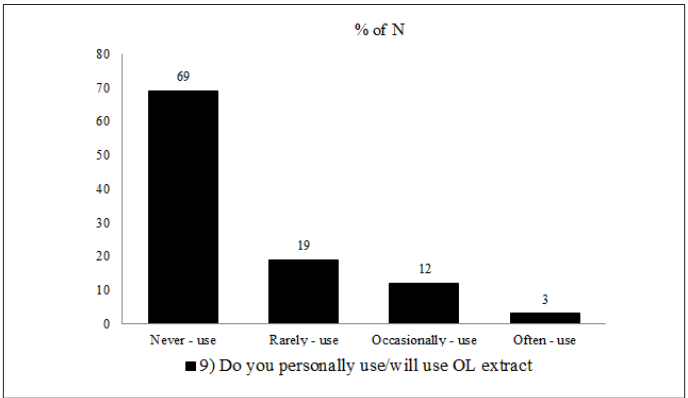

Figure 9a: The percentage of respondents of N, for item 9.

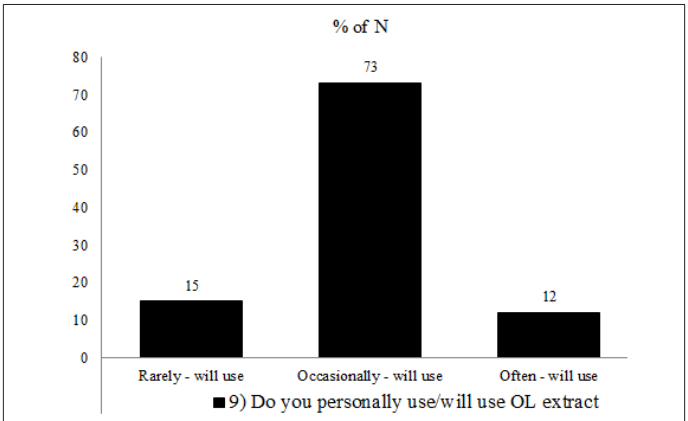

Figure 9b: The percentage of respondents of N, for item 9.

j. What trading OL extract-forms do you know/use/indicate (Figure 10). Most MD participants (94%) responded that they do not know any form of OL extract preparation; fewer MD participants (6%) responded that they know OL extract as liquid extract. Most MD participants (91%) responded that they do not use any form of OL extract preparation; fewer MD participants (9%) responded that they use OL extract as liquid extract.

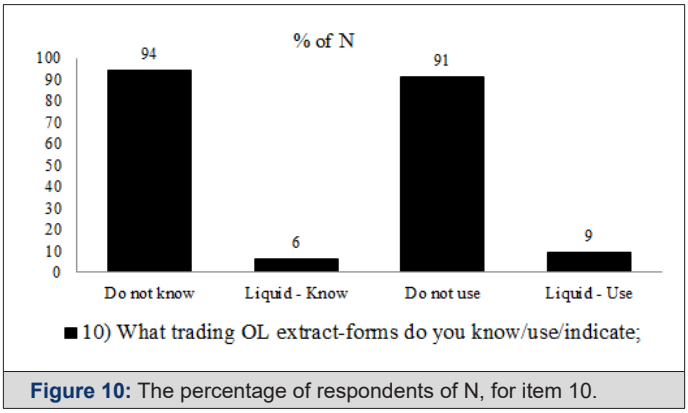

Figure 10: The percentage of respondents of N, for item 10.

k. What results did you/ will you achieve after this course, from OL extract-use/indication (Figure 11). Most MD participants responded that the main OL extract-use/indication are antioxidant (49%), cardiovascular protection (19%), some of them mentioned metabolic protection (15%), immune protection (13%), other effects (3) and the fewest (1%) did not mention any effect.

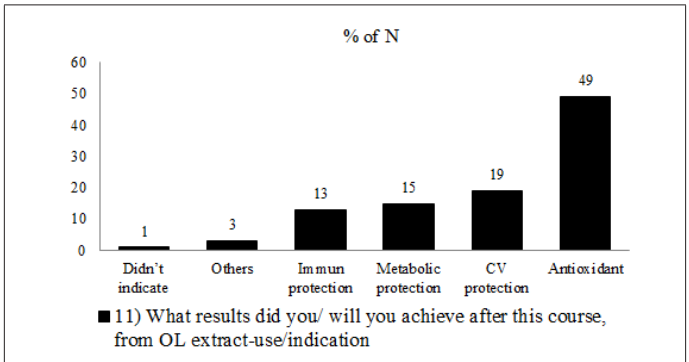

Figure 11: The percentage of respondents of N, for item 11.

l. How can be explained the antioxidant effect/ sport benefits of OL (Figure 12). Most MD participants responded that the actions are due to the OL composition (94%) and the fewest did not mention any answer (6%).

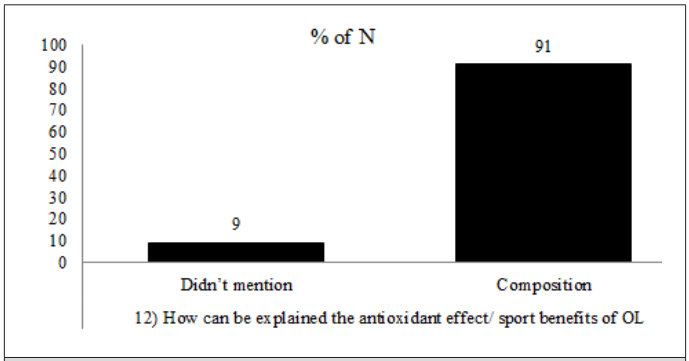

Figure 12: The percentage of respondents of N, for item 12.

m. On scale 1-10 how much this course helped you know more about OL (Figure 13). Most MD participants (94%) responded with 10 for how much the course helped them to understand OL, and the fewest (6%) responded with 6. There was no answer between 1 and 5. The differences between sexes and ages were not significant for all items in the applied questionnaire.

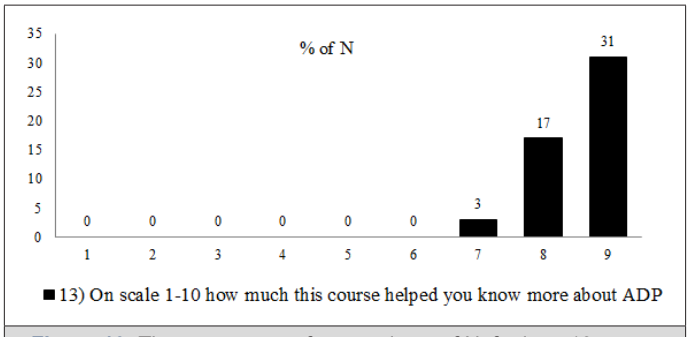

Figure 13: The percentage of respondents of N, for item 13.

Discussions

Specifications

This article is a continuation of previous research of the authors, regarding the topic of sport and plant supplements, sport, and stress [11-14]. This article is a continuation of the authors' previous research about stress and sports.

Analysis for the results of the present study

Many doctors (103) of both genders participated in this study, stating that this is the first OL course they participate in and that after applying the questionnaire, we found that MD participants have little or no information about OL and use and indicates low the OL in patients. A small number of MDs know and use OL but have found on the course, beneficial antioxidant, cardiovascular and immune effects of OL. The answers provided being comparable by MD men and women, regardless of their age, do not allow us to make a special comment about the differences in answers in relation to the sex or age of the participants. The answer to the last item shows that the information provided in the course helped most of the participating MDs to understand OL and to know, use and indicate OL in the future.

Publications related to OL. A Pubmed evidence

OL composition. Higher amounts of phenolic compounds have been found in aqueous olive leaf extract than in hydromethanolic extracts [15]. The leaves are important for their secondary metabolites, such as the secoiridoid compounds oleacein and oleuropein [16]. The main compounds in the hydromethanolic extracts were flavonoids, the main compound in the aqueous extract was oleuropein. Hydroxyethrosol comes from the hydrolysis of oleuropein [17]. Thus, the most abundant compound in olive leaves is oleuropein, followed by hydroxytyrosol [1]. OL applications. Olive leaf compounds have been shown in various studies to have multiple beneficial properties, such as antioxidants [18], antihypertensives, antiatherogens, anti-inflammatory, hypoglycemic, hypocholesterolemic and anxiolytic [3], antimicrobial and antiatherosclerotic [1]. The anti-inflammatory mechanisms exerted by oleuropein have also been studied [19]. OL relationship with stress and anxiety. Thus, oleuropein can be a valuable anti-stress supplement to prevent disorders caused by trauma and stress, such as PTSD [20]. OLE has similar anxiolytic effects on behavioral and biochemical symptoms like those seen in patients with PTSD [20]. OL relationship with oxidative stress.

Olive leaves are known to have a strong antioxidant effect [20-23], and metabolic regulation by the composition of phenolic compounds [1]. Oleuropein has traditionally been used in hypertension, atherosclerosis, rheumatism, gout, diabetes, and fever [24] and has antirheumatic, diuretic, antiatherogenic, antipyretic [25], antimicrobial [26] effects. Vasodilators, hypotensive, anti-inflammatory, neuroprotective [27] and, through the action against free radicals, antioxidants [28]. OL relationship with fatigue. Olive leaf extract, through its antioxidant and immunological action, is useful in combating chronic fatigue syndrome [29]. OL relationship with endurance. It has been found that the administration of olive leaf extract to physically inactive mice has led to an increase in endurance exercise capacity [30]. In addition, it has been shown that high-dose HT administration can prevent reduced performance by inducing a systemic pro-oxidant effect [31].

Conclusion

a. This postgraduate course for MD, seems to be the first one regarding OL.

b. Most of the MD respondents do not know the composition of OL and have very brief information about OL.

c. Most MDs know that OL have anxiolytic effects, but they have very brief information about the importance of using OL in sports and physical stress.

d. We appreciate that this course has achieved its goal of informing MD about the role of OL in oxidative and physical stress, but additional information about the role of OL in physical effort would be useful for medical practice.

Conflicts of Interest

Nothing to declare.

Acknowledgement

Nothing to declare.

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