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MAVA-CYTARABINE POLİMER İLAÇ KONJUGATININ ANTİMİKROBİYAL VE ANTİKANSER ETKİLERİNİN İNCELENMESİ (1)

INVESTIGATION OF ANTIMICROBIAL AND ANTICANCER EFFECTS OF MAVA-CYTARABINE POLYMER-DRUG CONJUGATE

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Öz: Amaç: Kemoterapötik ilaçların etkinliğinin artırılması ve yan etkilerinin azaltılması ya da tamamen giderilmesine yönelik çalışmalara sıklıkla rastlanmaktadır. Bizim çalışmamızda, lösemi tedavisinde kullanılan Siterabin (CYT) ilacına, maleik anhidrit vinil asetat (MAVA) kopolimeri eklenmesi suretiyle dizayn edilen polimer-ilaç konjugatı (MAVA-CYT) kullanılarak, bu ilacın yan etkilerinin azaltılması ve antikanser ve antimikrobiyal etkilerinin araştırılması amaçlandı. **Yöntem**: Konjugasyon reaksiyonu 70 o C'de dimetilformamid (DMF) içinde trietilamin (TEA) katalizörlüğünde gerçekleştirildi. Kopolimerin yapısal karakterizasyonu yapıldı. Antikanser aktivitesi meme kanseri hücre hattında (MCF-7) ve sağlıklı Mouse fibroblast (L929) hücre hatlarında çalışıldı. Antimikrobiyal aktivitesi ise disk difüzyon tekniği kullanılarak değerlendirildi. Bulgular: FTIR and 1 H-NMR spektrumları aynı zamanda konjugasyon reksiyonunu da doğrulamıştır. Konjugatın, çalışılan 6 mikroorganizma üzerinde inhibisyon zonu oluşmamıştır. MAVA-CYT çiftinin inhibisyon yüzdesi (% 60,64) iken Siterabin'in ise en yüksek konsantrasyonda kanser hücrelerini öldürme oranı (% 70,17) olarak bulunmuştur. Sitotoksik aktivite testleri sonucunda, kopolimer-ilaç çiftinin (% 100), sadece ilacın ise (%89,86) canlılık oranına sahip olduğu görülmüştür. kopolimer-ilaç çiftinin L929 hücre hattı üzerinde 6 farklı konsantrasyonda sitotoksisitesi araştırıldığında, hücre canlılık oranı % 100'e yakın bulunmuştur. **Sonuç**: MAVA-CYST umut verici bir yeni antikanser ajan kaynağı olarak gözüküyor. Bu kanser hücrelerinde sitotoksik aktivite mekanizmalarını tanımlamak için ileri çalışmalara ihtiyaç vardır.

Anahtar Kelimeler: Siterabin, Kopolimer-İlaç Konjugatı, Antikanser

Abstract: Aim: Studies to increase the efficacy of chemotherapeutic drugs and to reduce or completely eliminate the side effects are frequently encountered. In this study, we aimed to reduce the side effects of anticancer and antimicrobial effects of the new conjugate by using newly obtained polymer-drug conjugate (MAVA-CYT) to Cytarabine (CYT) drug used in the treatment of leukemia. **Method**: The conjugation reaction was carried out at 70° C in dimethylformamide under triethylamine catalysis. Structural characterization of copolymer was performed. Anticancer and antimicrobial activity were determined by XTT test in breast cancer (MCF-7) Mouse fibroblast (L929) cell lines, and disc diffusion technique, respectively. **Results**: Conjugate was confirmed by FTIR and 1H-NMR spectra. No zone of inhibition was formed on the synthesized Conjugate 6 microorganism. While the inhibition percentage of MAVA-CYT pair was 60.64%, Cytarabine was found to have the highest concentration of cancer cells (70.17%). As a result of the cytotoxic activity tests, it was found that the copolymer-drug pair (100%) had only viability of the drug (89.86%). The toxic effect of the copolymer-drug pair on the L929 cell line at 6 different concentrations was not observed and cell viability was found to be 100%.**Conclusion**: MAVA-CYT appear to be a promosing source of new anticancer agent. Further studies are needed to identify the cytotoxic activity mechanisms on these cancer cells.

Key Words: Cytarabine, Copolymer-Drug Conjugate, Anticancer

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INTRODUCTION

There are many factors limiting the effectiveness of the drugs used in chemotherapy. These include drug resistance, toxicity, tumor drug interaction, drug pharmacokinetics and pharmacology, and patient-related factors (Akyol, et al.,2004:162-163, Avcu, et al., 2008:62, Cingi, et al.,1996:213). The clinical use of many chemotherapy drugs is limited by their low therapeutic index due to toxic side effects (Li, et al., 2008: 886, Duncan, et al., 2003, 349). For this reason, various recommendations are being developed in order to ensure that the drugs are localized in the body where they need to go and to reduce their side effects (Young, et al., 2010:58). The serious side effects of the drugs used in the treatment of breast cancer and the insufficient effect of the drug on the tumor led researchers to develop new drug systems using polymers.

Due to the superior physicochemical properties of polymeric drugs, the fact that they have therapeutic properties not found in conventional small molecule drugs leads them to a new field of research. In other words, these macromolecules, also known as bioactive polymers, have been developed by interacting with drug active substances and useful molecules have been obtained for drug delivery systems (ISP) (Karakus, 2011:101).

In this type of synthesis; It is aimed that a drug active substance with an anti-tumor active substance can be bound to a synthetic polymer sample by chemical conjugation and the drug can be administered to the tumor cell in a controlled manner and the desired side effects can be minimized by increasing the effect in the desired direction (Pack, et al., 2005:582).

The Cytarabine molecule is also known as the cytosine β-D-arabinofuranoside hydrochloride crystal. This drug is a very effective antimetabolite in the treatment of leukemia. Cytarabine with antitumor effect is effective in acute non-lymphoblastic / lymphoblastic leukemia, chronic myelocytic leukemia, blast crisis, prophylaxis with treatment of meningeal leukemia, and diffuse histiocytic lymphomas (Galmarini, et al., 2001:879).

The essential feature of an antimicrobial agent is selective toxicity. The concept of selective toxicity was first introduced by Paul Ehrlich. The antimicrobial agent used in chemotherapy should be effective or even slightly toxic, even at low concentrations. For such an effect to occur; the antimicrobial agent should select microorganism cells as the target rather than mammalian cells (Derbentli, 2003:141-142).

In this study, we aimed to reduce the side effects of anticancer and antimicrobial effects of the new conjugate by using newly obtained polymer-drug conjugate (MAVA-CYT) to

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(2015/04315- 2015-GE-18972)

Cytarabine (CYT) drug used in the treatment of leukemia.

Materials and Methods

Synthesis and Purification of Copolymer

The maleic anhydride-vinyl acetate copolymer was synthesized and purified in a previous study. Briefly, the monomers of maleic anhydride (MA) and vinyl acetate (VA) were polymerized in a 1: 1 molar ratio of methyl ethyl ketone (MEK) in the presence of a benzoyl peroxide (BPO) initiator at 80 ° C for 24 hours. The unreacted monomer was removed from the residue by purification by standing at -20 ° C for 1 hour and drying in a vacuum incubator at 50° C for 24 hours (Karakus, et al., 2013:1593).

Synthesis and Purification of Conjugate

In a previous study, maleic anhydride vinyl acetate-Cyterabine (MAVA / CYT) conjugate of pure MAVA copolymer with CYT antitumor agent in 1: 1 molar ratio of dimethylformamide (DMF) in triethylamine (TEA-catalyzed 50° C (2 hours) and 70 The conjugate was last incubated with excess of cold ethyl alcohol for 1 hour at -20° C and purified by drying in a vacuum incubator at 50° C for 24 hours (Karakus, et al., 2015:77).

Structural Characterization of Copolymer and Conjugate

MAVA copolymer and MAVA-CYT conjugate were prepared as KBr pellets (2 mg sample, 100 mg KBr) for FTIR spectrophotometer (MATTSON 1000 Unicam, USA) and recorded at 400-4000 cm -1 at 4 cm -1 intervals. Nuclear magnetic resonance, 1H-the NMR analysis NMR 400 MHz (Bruker Avance III, Karlsruhe, Germany), 6 mg samples of 0.8 ml dimethyl sulfoxide (DMSO) were made by preparing (Technology Research Center, University of Erciyes, Antalya, Turkey) (Karakus, et al., 2015:78).

Water Solubility of Conjugate

MAVA copolymer dissolves slowly in water due to its high molar mass. It is the anhydride ring that slows down the dissolution (Figure X). On the other hand, after conjugation, the anhydride ring in maleic anhydride is opened to form an amide bond, which results in the continuous carboxyl group after the binding of the CYT drug (Figure 1). Here, in the MVA-CYT conjugate consisting of n units, the blue colored part is the CYT drug and the remaining black part is the main chain of the MAVA copolymer. Thus, increasing carboxyl groups showed the solubility enhancing properties in water as can be predicted theoretically.

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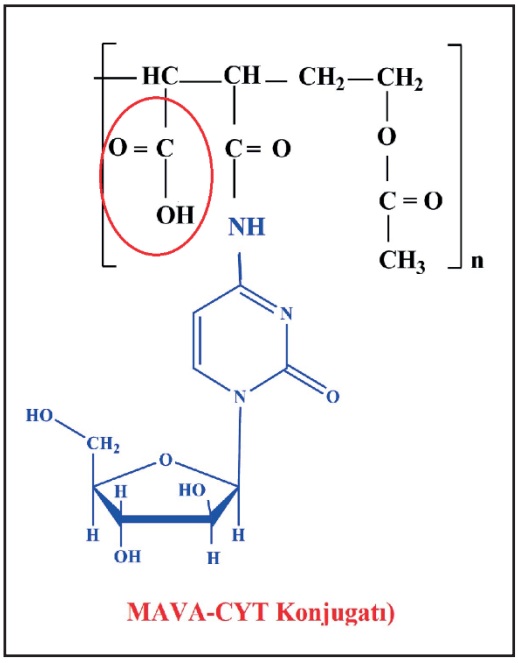

Figure 1. Prescribed chemical structure of the MAVA-CYT conjugate (Karakus, et al., 2015:79).

Antimicrobial Activity

Staphylococcus aureus of MAVA and MAVA-CYT (ATCC 25923), *Escherichia coli* (ATCC 25922), *Pseudomonas aeruginosa* (ATCC 27853), Meticillin-Resistant *Staphylococcus aureus* (ATCC 43300), *Enterococcus faecalis* (ATCC 29212) and *Candida albicans* (ATCC 29212); antimicrobial effects on microorganisms were investigated by using Disk Diffusion test. Bacterial strains were inoculated into Brain Heart Infusion Broth at 37 ± 0.1° C and fungal strains were inoculated into Sabouraud Dextrose Broth and incubated at 25 ± 0.1° C for 24 hours. Bacterial and yeast solutions from these cultures were adjusted to the standard of 0.5 in the McFarland apparatus (0.5 McFarland standard = 1-2 x 10^8 CFU / ml) (CLSI, 2011:45-48).

MAVA and MAVA-CYT were diluted in sterile tubes containing 1 ml of DMSO starting from high doses (4/1, 2/1, 1/1, 1/2, 1/4, 1/8). Dilutions were impregnated with 25 µl of sterile 6 mm blank discs (OXOID blanc disc). Mueller - Hinton Agar and Sabouraud Dextrose Agar surface, 0.5 McFarland standard bacteria and yeast solutions prepared by spreading the whole plaque surface with the help of sterile swab. After waiting for a while to dry their surfaces, the diluted samples were prepared and the impregnated discs were gently pressed and placed 20 mm between them. Only sterile discs impregnated with DMSO were used for negative control (Tunc, 2013:49, CLSI, 2011:47).

Anticancer Activity

Anticancer activities of MAVA-CYT conjugate and CYT at 6 different concentrations were determined using XTT test on MCF-7 and L929 fibroblast cell lines. Cells were grown in DMEM (Dulbecco's Modified Eagle's Medium) medium and 10% FBS + 1% Penicillin-Streptomycin medium in an oven at 37 ° C and 5% CO_2. For the XTT cell

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metabolic activity assay, 96 well plates were prepared in 100 µl ($1x10^4$ cells / well) per well. 6 different concentrations of MAVA-CYT and CYT, 500 µg / ml, 250 µg / ml, 125 µg / ml, 62.5 µg / ml, 31.25 µg / ml, 15.62 µg / ml were added to the wells and Incubated for 24 hours. XTT (Cell proliferation kit, Roche) solution was prepared and 10 µl was added to each well and incubated at 37 ° C for 4 hours. Optical density at 450 nm was measured by ELISA. Results were calculated with the formula using positive and negative control values as % inhibition for MCF-7 and % viability for L929 (Tunc, 2013:55-58, Arik, et al., 2017:9).

Statistical analysis

Statistical analysis of the results was performed with SPSS (Mann-Whitney U Test, 16.0 for Windows) program. A p value of <0.05 was considered statistically significant.

RESULTS

Structural Characterization of Copolymer and Conjugate

In our previous study, FTIR and ^{1}H-NMR analysis of the synthesized, purified and structural characterized MAVA-CYT conjugate showed that conjugation was performed successfully and the expected copolymer and conjugate main structures were obtained. (Karakus, et al., 2013:1593, Karakus, et al., 2015:79).

Antimicrobial Activity

Staphylococcus aureus of MAVA and MAVA-CYT (ATCC 25923), *Escherichia* coli (ATCC 25922), *Pseudomonas aeruginosa* (ATCC 27853), Meticillin-Resistant *Staphylococcus aureus* (ATCC 43300), *Enterococcus faecalis* (ATCC 29212) and *Candida albicans* (ATCC 29212); There was no antimicrobial effect on microorganisms. Inhibition zones were formed around the antibiotic discs used as positive controls. (Figures 2)

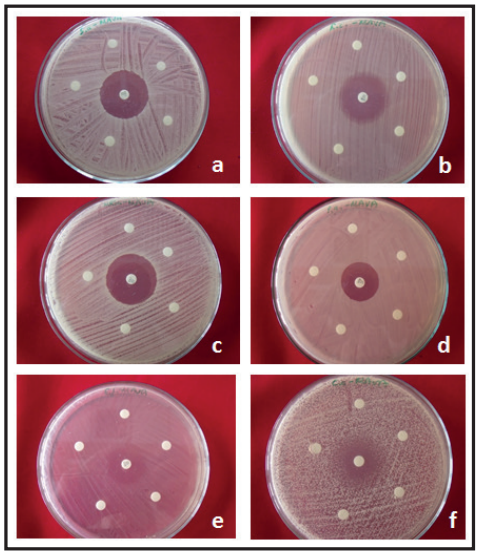

Figure 2: a, b, c, d, e, f

Anticancer Activity

Anticancer activities of MAVA-CYT conjugate and CYT at 6 different concentrations were determined using XTT test on MCF-7 and L929 cell lines. The MAVA-CYT pair

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had an inhibition percentage (60.64%) close to the control (88.53%). Cytarabine's highest concentration of cancer cells (70.17%) is close to the negative control (88.53%). The killing rate of MAVA-CYT was significantly lower than the percentage of copolymer-drug pair compared to the killing rate of Cytarabine. ($p < 0.05$) (Figure 3).

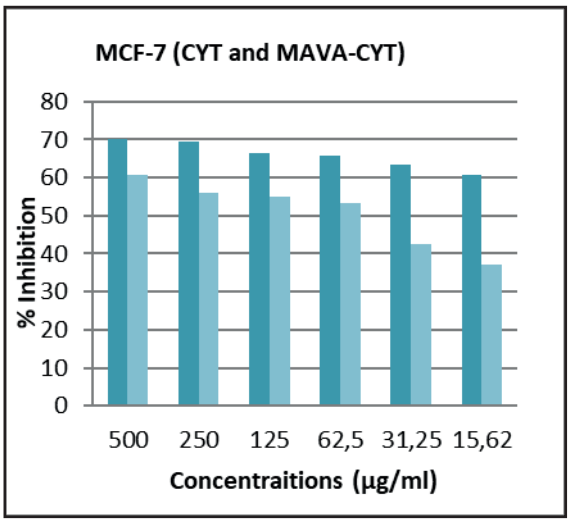

Figure 3: MCF-7 of different concentrations of CYT and MAVA-CYT percentage of killing cells.

For the positive and negative control and for each different drug and copolymer-drug concentration, 6 wells were averaged separately. % Viability was calculated using the relevant formula and the graph on the right was obtained (Figure 4).

When the lowest concentrations of Cytarabine and MAVA-CYT were compared, a significant difference was observed between the two data. ($p < 0.05$). Furthermore, the copolymer-drug pair (100%) had a higher viability rate than the drug (89.86%) alone. In fact, the toxicity of the copolymer-drug pair is almost non-existent.

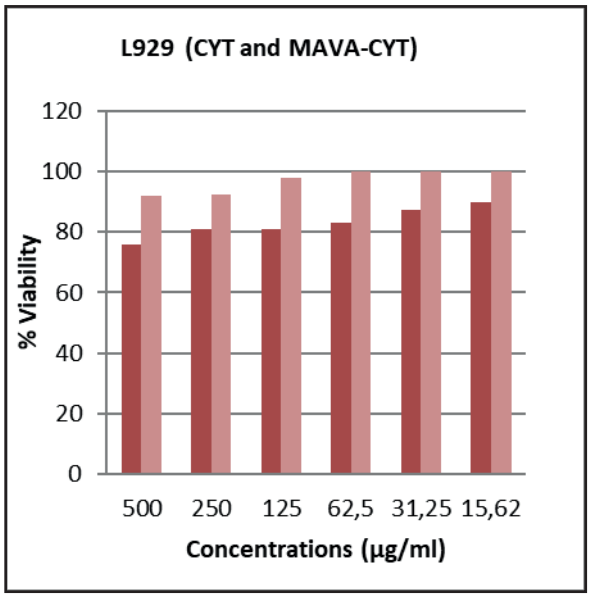

Figure 4: L929 cells of different concentrations of CYT and MAVA-CYT percentage of viability on.

DISCUSSION

In the study of Karakuş et al., MAVA copolymer was synthesized in methyl ethyl ketone (MEK) by free radical polymerization using benzoyl-peroxide (BPO) as a radical initiator at 80 ºC. Karakus et al. In his study in 2008, conjugation with Cytosine β-D-arabinofuranoside hydrochloride (CYT), an

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anti-leukemic chemotherapeutic agent, was successfully carried out in dimethylformamide at 70 °C under the catalysis of triethylamine (TEA) (Karakus, et al., 2013:1592). Structural characterization of copolymer and copolymer-drug (MAVA-CYT) conjugate was performed by Fourier Transform Infrared (FTIR) and Nuclear Magnetic Resonance (^{1}H-NMR). These spectra confirm the conjugation reaction. Antiproliferative activity of MAVA-CYT was also performed by BrdU-cellproliferation-ELISA analysis using C6 and HeLa cells (cisplatin and 5-fluorouracil positive control). It was observed that the conjugate had a slight antiproliferative effect against C6 cells, whereas it did not have antiproliferative effect against HeLa cells, especially at low concentrations (<100 µg / ml) (Karakus, et al., 2013:1593). Saito et al. Chemically modified L-asparaginase enzyme obtained from *E.coli* and showed antitancer properties with poly ethylene glycol and maleic anhydride. They tested this modified enzyme on mouse lymphoma cells and showed that it increased anti-activity by suppressing anti-asparaginase antibody production (Saito, et al., 2007:408). Yadav et al., Binding to siterabine PEGylated PLGA (poly (lactic-co-glycolic acid)) nanoparticles, mouse lymphoid leukemia cells reported that they increase the concentration of drug in the blood compared to pure drug (Yadav, et al., 2011:740). Visco et al. Demonstrated that bendamusitne and cytarabine exert a very potent and significant effect on inducing apoptosis on MCL cells. Similar results were obtained by measuring mitochondrial damage or decreased metabolic activity in all cell lines (Visco, et al., 2012:74). Stella et al. Have linked poly (H (2) NPEGCA-co-HDCA) copolymer to this anticancer drug to accelerate the metabolism of gemcitabine in plasma. They tested the cytotoxicity of this conjugate on human cervical carcinoma cell lines (KB3-1) and human breast cancer cell lines (MCF-7) and reported that they reduce toxic effects at a certain concentration (Stella, et al., 2007:75).

CONCLUSION

In this study, this conjugate showed a lower anticancer effect on the MCF-7 cell line than Cytarabine drug. However, when the cytotoxicity of the copolymer-drug pair (MAVA-CYT) was investigated at 6 different concentrations on the

L929 cell line, cell viability was found to be close to 100%. When compared with drug toxicity, conjugate; it has been shown that there is no significant toxic effect compared to the drug.

RECOMMENDATIONS

According to all results, it can be said that MAVA / CYT conjugate has very promising properties. MAVA / CYT conjugate animal

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assays may be a new cancer drug candidate looking at the anticancer effects.

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INTERNATIONAL REFEREED ACADEMIC JOURNAL OF SPORTS, HEALTH AND MEDICAL SCIENCES

MEASUREMENT AND COMPARISON NUTRITION KNOWLEDGE LEVEL OF JUDO ATHLETES (1)

JUDO SPORCULARININ BESLENME BİLGİSİ DÜZEYLERİNİN ÖLÇÜLMESİ VE KARŞILAŞTIRILMASI

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Öz: Amaç: Bu çalışmanın amacı; sporcuların sporcu beslenmesi bilgi düzeylerini saptamak, cinsiyetler arası karşılaştırmalar yapmak, spor yapma süreleri, ekonomik durumlarının bilgi düzeylerine oranlarını belirlenmesi esas alınmış, besin maddeleri, sıvı maddeler, toparlanma (yenileme), kilo kontrolü, kilo alımı, kilo kaybı, gıda takviyeleri ile ilgili bilgi düzeylerinin tespiti ve karşılaştırmaları yapılmıştır. **Yöntem**: Bu çalışmamızda 'sporcu beslenmesi bilgi düzeyi' anketi 'Qustionnaire psychometricalvalid and reliable and suitable for use in sporting groups (Zinn, Scofield&Wall) uygulanmıştır. Araştırmamız 2017 yılında Sivas, Edirne ve Konya illerinde rastgele seçilen 66 profesyonel sporculara anket uygulaması ile yapılmıştır. İstatiksel hesaplamalarda IBM-SPSS 20 programı kullanılmış, verilere T testi ve Anova testi uygulanmıştır. Uygulanan testlerin Normallik dağılımı, Parametrik Anova uygulaması, Nonparametrik uygulaması yapılmıştır. **Bulgular**: Judo sporu yapan kadın ve erkek öğrencilerin toplam besin maddeleri, toplam sıvı maddeleri, toplam yenileme (toparlanma), toplam kilo kontrolü, toplam gıda takviyeleri ve tüm toplam puan karşılaştırıldığında farklılık önemsiz bulunmuştur (P>0,05). Gelir düzeyine göre toplam besin maddeleri, toplam sıvı maddeleri, toplam kilo kontrol, toplam gıda takviyeleri ve tüm toplam puanları karşılaştırıldığında farklılık önemsiz bulunmuştur. Toplam yenilenme yönünden farklılık önemli bulunmuştur.(P<0,05) Gelir düzeyine göre puanlar karşılaştırıldığında geliri yüksek olanların yenileme puanı yüksektir. **Sonuç**: Yapılan araştırmada basketbolcular sporcu beslenmesi konusundaki bilgilerinin yeterli olduğu belirlenmiştir.

Anahtar Kelimeler: Spor, Beslenme, Sporcu Beslenmesi, Judo

Abstract: Aim: The aim of this study was to determine nutrition knowledge of athletes athletes, to make comparisons between the Sexes, the time to do sports, Economic rate determination on the basis of their level of knowledge of the situation, nutrients, liquid ingredients, the recovery (renew), weight control, weight gain, weight loss, and comparisons were made determination of the level of knowledge about food supplements. **Methods**: In this study, the 'athlete nutrition information level' questionnaire was administered to 'Qustionnaire psychometricalvalid and reliable and suitable for use in sporting groups (Zinn, Scofield&Wall). Our research was conducted in 2017 with a survey application to 66 professional athletes selected randomly in the provinces of Sivas, Edirne and Konya. The IBM-SPSS 20 program was used for statistical calculations and the T test and ANOVA test were applied to the data. Normality distribution, parametric Anova application, nonparametric application were performed. **Results**: The difference between total nutrients, total liquids, Total Refreshment (recovery), total weight control, total food supplements and all total scores of male and female students engaged in Judo were found to be insignificant (P>0.05). The difference between total nutrients, total liquid ingredients, total weight control, total food supplements and all total scores by income level was found to be insignificant when compared. The difference in terms of total regeneration was found to be significant.(P<0.05) compared to income level scores, those with higher income have higher renewal scores. **Conclusion**: In the research, it was determined that basketball players have sufficient knowledge about athlete nutrition.

Key Words: Sports, Nutrition, Athlete Nutrition, Judo

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INTRODUCTION

The physical movements that began with the first human East continued throughout man's life. In time, people felt the need to live in a community, and because of the responsibilities of living in a community, they had to develop their physical activities in a multifaceted way. Judo is an art with a sporting side, a branch of philosophy. It whips up feelings of body, intelligence and morality. Judo can also be described as a branch of knowledge of the art of unarmed combat that teaches the way in which the weak defeat the strong. Therefore, training and teaching methods should not be viewed as simple actions. Both the changes in the world and the developments in science and technique reflected the principles of technique, tactics and training in judo and led to the formation of judo in today's modern sense. In sport, the center of gravity is important. The center of gravity is the point at which the weight, which can rotate freely around the body, is equal in all kinds of opposite directions, and where the coordinate planes intersect. According to the center of gravity branches, the athlete gives advantage and disadvantage. In high jump, the higher the athlete's center of gravity, the more successful it is. In wrestlers and judoists, the fact that the center of gravity is close to the ground means that the balance is solid, and that is an advantage. A variety of body composition research is being done and methods are being developed. What should be the amount of fat and fat content in the body for both sedanters and athletes? his question has been the subject of research. Many views and conclusions have been put forward on this issue. "In general, the daily energy needs of Sports users vary according to age, gender, body weight, physical condition, place of sport, economic situation and sports branches (Güneş 2005).

The aim of this study is to determine the nutritional levels of the athletes active in Judo.

LITERATURE REVİEW

Nutrition: to meet the energy needs of the vital activities in our body, protect our health, physical growth and development to make it possible to practice and adapt your workout to maximize the effects of essential nutrients; carbohydrates, fats, proteins, vitamins, minerals and water can be defined as consuming a balanced diet (Zorba, 2001).

Athlete nutrition: according to the sex of the athlete, age, daily physical activities and the type of sport he does, training and competition periods by making arrangements for food intake in an adequate and balanced manner (Güneş, 2009). Nutrition support products: all kinds of training techniques, mechanical devices, nutritional support, paralogic support or physiologic technical ergogenic aid which aim to increase exercise performance

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and adaptation to training. These aids are effective in preparing the individual for exercise, increasing the efficiency of exercise, or increasing post-exercise recovery (Kreider et all, 2004).

Athletes ' energy and nutrient requirements

Ensuring performance in sport is possible with a balanced diet. For a balanced diet, 55-60% of the total energy should be provided from carbohydrates, 10-12% from proteins, 25-30% from fats (A.D.A, 2009).

All kinds of chemical substances needed by the body that provide heat and energy, which have the task of making and renewing tissues and regulating the life process are called "food items" (Muratlı, 2007). Studies to date have shown that human beings need more than 50 types of food elements in order to sustain their growth, development and healthy lives (Baysal, 2010).

Energy can be defined as the capacity to do a job in general. Our body needs energy in every event from jogging to breathing to even digestion of nutrients. Muscle contraction can only be achieved by the release of energy. Nov. Food is indirect sources of energy. The potential energy in food (carbohydrates, fats, proteins) is synthesized from adenosine tri phosphate (ATP) through a series of chemical reactions called metabolic functions, ATP is the direct source of energy

Energy formation by aerobic means: in the presence of O2 by aerobic system, ATP is synthesized as a result of burning carbohydrates, fats and proteins. This energy system, which has the highest capacity, is used as the main energy source for long-term, low-intensity exercises, for example, in sports such as marathons, skiing, and football. Energy generation by anaerobic means: it is the energy system that acts most quickly. Creatine phosphate (CP) and glycogen are destroyed in an oxygen-free environment and provide energy. In this way,

1. **Alactic Anaerobic System (ATP-CP):** for muscle contraction in oxygen-free environment, ATP and CP, which are stored in the muscle, albeit in a small amount, are used Nov. These molecules have the power to release very high energy in a short time. High intensity (8-10 SEC. short-term exertions constitute the main energy source of the organism.

2. **Lactic Anaerobic System:** 8-10 SEC in organism due to rapid depletion of energy obtained from Alactic system. with a few minutes of effort (200-400, 800 m runs, 100 m swimming etc.) a large part of the energy needed is provided by the burning of glycogen in an oxygen-free envi-

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ronment (glycolysis). One of the major disadvantages of this system is that lactic acid produced as a result of glycolysis accumulates in novices and blood, causing fatigue.

During exercise, all three systems contribute to ATP production. But which system will play a more important role depends on the type of exercise (Ersoy, 2011).

Essential Nutrients

There are essential nutrients that the human body needs, consisting of organic and inorganic elements. Carbohydrates, fats, proteins, vitamins, minerals and water are the elements that make up the body's chemical composition. The average ratio in an adult is 59% water, 18% protein, 18% fat, 4.3% minerals and 0.7% carbohydrates. The first three of these are used as fuel sources and are taken in exchange for our daily energy needs. Vitamins, minerals and water have no energy value. But it is necessary to maintain adequate body functions and health (Baysal, 2005; Sun, 2005).

Carbohydrates

Carbohydrates are organic compounds composed of carbon, hydrogen and oxygen molecules in human and animal tissues (Pehlivan, 2005).Carbohydrates consisting of carbon and hydrogen are the main energy source in training and account for 60% of daily calorie needs (Yildirim et al., 2005).

Carbohydrates (Cho) are studied in two groups, simple and complex. In terms of athletic performance, healthy nutrition and daily consumption of carbohydrates to 85% of a compound carbohydrate-containing foods (whole grains, vegetables, and dry beans fall into this category), however, 15% of foods that contain simple carbohydrates (sugars and sugar derivatives, sugar-containing beverages, honey, jam, etc.) should occur. Because the digestion of compound carbohydrates takes longer than simple sugars (3-4 hours), their effects on blood sugar are slower and last longer. Simple carbohydrates for 15 minutes without much change in the small intestine. they pass directly into the blood in a short period of time (Güneş, 2009; Paker, 1996; Pehlivan, 2005).

Proteins

Proteins with carbon, hydrogen, oxygen and nitrogen in their structures are essential organic compounds for Life (Sun, 2009). The tasks of proteins for body work include; 1. Novelties are the building blocks of other tissues and enzymes. 2nd ed. It provides growth and development. 3. It is responsible for tissue construction and repair. 4. The blood protein is responsible for the production of

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hemoglobin and hormones. (Ersoy, 2004; Yilmaz, 2002).

Proteins, enzymes and hormones are also required for the construction of connective tissue and for the repair of micro-damage to muscles during exercise. The protein requirement for athletes is 1,2–2.0 g/kg. Protein needs can be met with an adequate diet (Cotugna et all, 2005). Regular and intensive exercises increase protein requirements and naturally increase nutrient intake (Ersoy, 2007).

Fats

Short-term (up to 45 seconds up to two minutes) and medium term (from two minutes up to eight minutes) endurance in sports activities that require mixed carbohydrates and fats, long-term (over one hour) oil is used as the main energy source in sporting activities (Yılmaz, 2002).

Vitamins

Vitamins serve as a kind of engine for most enzymes that are the controllers of intracellular chemical events. The human body does not have the ability to synthesize vitamins. Therefore, vitamins must be taken through foods (Yilmaz, 2002).

Minerals

Minerals do not contain calories from foodstuffs, such as water and vitamins. But they are of great importance for most normal cellular functions in the contraction of muscles, in the heartbeat, in the protection of the health of teeth and bones (Muratlı, 2007; Gürsoy and Dane, 2002).

Liquid Consumption

Water is an essential and unique nutrient. Water controls and protects the physiological distribution in the cells and the various water compartments in our body (cell, intravenous and non-vascular). In addition, Water maintains the physiological functions of cells and organs (heart, muscles, blood vessels, kidneys, gastrointestinal system) (Ustdal ve Koker, 1998).

Training or competition diet

The difference between the athlete's diet and other diets is that athletes consume the fluid they lose through sweat and energy due to increased physical activity in addition to the diet. Additional energy needs must be provided from carbohydrates. In some cases, the need for protein, B complex vitamins is increasing. However, consuming a diet that meets the energy requirement can also meet the increasing need for these nutrients. As the energy requirement increases, 2 food groups rich in carbohydrates (grain, vegetable-fruit group) should be increased portion amounts of foods. With this increase, most athletes are unable to meet their energy requirements. In

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order to increase dietary diversity, portions of milk and protein-rich food should also be increased, thus increasing energy requirements should be provided from various food groups. Another important issue for athletes is the time of consumption of meals and Dec meals. Consumption of food and fluids is associated with the intensity of exercise as well as the athlete's personal characteristics. For example, an athlete may tolerate milk and one sandwich 1 hour before a light workout, while consuming the same foods and drinks before an exercise. Judoists should determine their daily calorie consumption by considering their body weight, training needs and weight status (USA Weightlifting may be uncomfortable. Athletes should consume 3 main 3 Dec meals as little as often as they can (Ersoy 2011)). Forty to sixty percent of a judo's total calories must come from carbohydrates, based on the type and intensity of training. Carbohydrate intake recommendations range from five to twelve grams for each kilogram of body weight. This December represents the type, duration and intensity of an activity requiring carbohydrate energy that an individual participates in. For athletes who need excessive carbohydrate energy and glycogen storage, a large intake of carbohydrates is crucial for optimal sports performance (USA Weightlifting Federation 2013).

Considering that Judon represents high intensity interval activity, it is clear that proper Cho consumption is important for high quality training (Saunders et al 2004).

Eating habits affect the athlete's performance. A variety of factors, including the proper energy diet, macronutrient distribution and adequate vitamin mineral supplements, should be considered for the nutrition plan. The diet of athletes should also be determined according to their individual needs, frequency, intensity and duration of exercise (American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine 2009).

Judo is one of the main sports where nutritional deficiencies are reflected in performance. Low calorie intake from food leads to loss of novelties, menstrual disorder, increased sense of fatigue and ultimately reduced athlete performance (Ainsworth et al 2000).

Many athletes spend most of their time in intensive training and competitions without taking due care to minimize the negative impact of food restriction on their performance (Hall and Lane 2001).

Low calorie intake will restrict athletes from achieving performance goals. It is known that there is a significant relationship between the level of knowledge on nutrition and malnutrition habits (Burke 1995).

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MATERIAL and METHOD

Research Group

A total of 66 athletes, 41 men and 25 women ,from the Judo National Team participated in the study in 2017 and from the judo participants in the preparation camp in the provinces of Sivas,Edirne and Konya, participated as volunteers. The athletes involved in the research are athletes who are active in the sport of Judo.

Data Collection Tools

In order to collect data in the study, the 'athlete nutrition information level questionnaire 'developed at' Qstionnaire psychometrical valid and reliable and suitable for use in sporting groups ' (Zinn,Scofield&Wall, 2005) was applied. 2 likert scale, 3 likert scale , 4 likert scale, 5 likert scale were applied in the research scan model. The scale is arranged as 1=High, 2=low, 3 = not sure, multiple choice.

Data Collection

All data contained in the study were collected from athletes who actively engaged in Judo during the 2017 season. Questionnaires were hand-delivered to athletes and hand-delivered upon completion.filling the scales took about 25 minutes for an athlete.

Analysis Of The Data

After descriptive statistical operations (mean, standard deviation, frequency and (%)) were applied to the obtained data, Independent t-test and ANOVA test were used to determine the nutritional information levels of the athletes.

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FINDINGS

Findings on differences between athletes ' nutritional scores and gender variable;

Table 1. Comparison of Nutrition Scores of Individuals by Gender

QUANTITY	GENDER		N	Mean	Std. Deviation	Result
TOTAL NUTRITION	dimension1	WOMAN	26	35,3077	6,76325	t=0,78
		MAN	40	36,4750	5,30596	P=0,437
TOTAL FLUID	dimension1	WOMAN	26	6,9231	1,74179	t=0,25
		MAN	40	7,0250	1,44093	P=0,797
TOTAL REGENARATION	dimension1	WOMAN	26	8,8462	2,66372	t=0,41
		MAN	40	8,5500	2,95218	P=0,681
TOTAL WEIGHT CONTROL	dimension1	WOMAN	26	12,0769	3,14863	t=0,28
		MAN	40	12,3000	3,02299	P=0,774
TOTAL FOOD SUPLEMENT	dimension1	WOMAN	26	7,5000	3,10161	t=0,55
		MAN	40	7,9250	2,99048	P=0,580
SUM	dimension1	WOMAN	26	70,5769	15,43029	t=0,47
		MAN	40	72,2750	13,61370	P=0,640

There was no statistically significant difference between the total nutrients, total fluids, Total Refreshment, total weight control, total food supplements and all total scores of the boys and girls who played Judo (P>0.05).

Findings on differences between athletes ' nutrition scores and learning status variable;

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Table 2. Comparison of Nutrition Scores of Individuals According to Educational Status

QUANTITY	EDUCATION		N	Mean	Std. Deviation
TOTAL NUTRITION	dimension1	UNDERGRADUATE	64	36,1406	5,77589
		GRADUATE	2	32,0000	11,31371
TOTAL FLUID	dimension1	UNDERGRADUATE	64	7,0625	1,37869
		GRADUATE	2	4,5000	4,94975
TOTAL REGENARATION	dimension1	UNDERGRADUATE	64	8,7344	2,84098
		GRADUATE	2	6,5000	,70711
TOTAL WEIGHT CONTROL	dimension1	UNDERGRADUATE	64	12,3125	3,02306
		GRADUATE	2	9,0000	2,82843
TOTAL FOOD SUPLEMENT	dimension1	UNDERGRADUATE	64	7,8281	2,93071
		GRADUATE	2	5,5000	6,36396
SUM	dimension1	UNDERGRADUATE	64	72,0469	13,91748
		GRADUATE	2	57,5000	24,74874

In order to make a statistical assessment, the number of subjects in the groups must be more than 3 and 3. In this study, a statistical encounter cannot be done because there are 2 individuals above the language.

Differences between athletes ‘ nutritional scores and income level variable;

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Table 3. Comparison of Nutrition Scores of Individuals by Income Level

INCOME		N	Mean	Std. Deviation	Result
TOTAL NUTRITION	2001-3000	9	33,6667	9,06918	F=1,31
	3001-4000	42	36,0238	5,38511	P=0,329
	4001-5000	15	37,4000	4,91063	
	Total	66	36,0152	5,90044	
TOTAL FLUID	2001-3000	9	6,4444	1,66667	F=1,31
	3001-4000	42	6,9524	1,51339	P=0,329
	4001-5000	15	7,4000	1,59463	
TOTAL REGENARATION	2001-3000	9	6,8889	2,66667	F=1,31
	3001-4000	42	8,4286	2,95613	P=0,329
	4001-5000	15	10,4000	1,40408	
TOTAL WEIGHT CONTROL	2001-3000	9	10,6667	3,35410	F=1,31
	3001-4000	42	12,0952	2,98622	P=0,329
	4001-5000	15	13,4667	2,72204	
TOTAL FOOD SUPLEMENT	2001-3000	9	6,5556	3,32081	F=1,31
	3001-4000	42	7,6429	3,03493	P=0,329
	4001-5000	15	8,8000	2,62406	
SUM	2000VEALTI	9	64,2222	16,58899	F=1,31
	3001-4000	42	71,0952	13,84374	P=0,329
	4001-5000	15	77,4667	12,39163	

The difference between total nutrients, total liquid ingredients, total weight control, total food supplements and all total scores by income level was found to be insignificant when compared. The difference in terms of total regeneration was found to be significant.

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(P<0.05) compared to income level, scores were significant between 2001 - 3000 and 4001-5000. Accordingly, those with high income have a high renewal score.

Note: in this evaluation, 2 people with income below 1000 were included in the 2001-3000 group, and 2 people with income above 5000 were included in the 4500 group. Because there are 2 individuals, statistical analysis cannot be done.

Findings on differences between athletes ' nutritional scores and the league variable they participated in;

Table 4. Comparison of Nutrition Scores of Individuals According to the League They Participated in

Group Statistics

	LEAGUE		N	Mean	Std. Deviation	Result
TOTAL NUTRITION	dimension1	1,00	56	37,6786	4,00503	t=5,29
		2,00	9	26,0000	6,26498	P=0,001*
TOTAL FLUID	dimension1	1,00	56	7,3036	1,21983	t=4,44
		2,00	9	5,1111	2,14735	P=0,001*
TOTAL REGENARATION	dimension1	1,00	56	9,0357	2,77629	t=2,21
		2,00	9	6,8889	2,14735	P=0,003*
TOTAL WEIGHT CONTROL	dimension1	1,00	56	12,8393	2,70875	t=4,30
		2,00	9	8,6667	2,64575	P=0,001*
TOTAL FOOD SUPLEMENT	dimension1	1,00	56	8,4643	2,52957	t=5,01
		2,00	9	3,8889	2,61937	P=0,001*
SUM	dimension1	1,00	56	75,3036	11,04523	t=6,05
		2,00	9	50,5556	13,47322	P=0,001*

*p<0,05

Since all individuals in the study were national athletes, no comparison was made.

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Table 5. Comparison of correlation coefficients between total nutrients and total liquids, total renewal, total weight control, total food supplements

BMI	R	,144	-,008	,181	,148	,125	,152
	P	,253	,950	,149	,240	,321	,228

There was no statistically significant difference between total nutrients and total fluids, Total Refreshment, total weight control, total food supplements and the total total correlation coefficients (p>0.05).

Findings on differences between athletes ' nutritional scores and their year of sport;

Table 6. Comparison of Nutrition Scores of Individuals by Year of Sport

		TOTAL NUTRITION	TOTAL FLUID	TOTAL REGENARATION	TOTAL WEIGHT CONTROL	TOTAL FOOD SUPLEMENT	SUM
EXPRIENCE	R	,398	,352	,345*	,350	,421	,435
	P	,001*	,004*	,005*	,004*	,001*	,001*

*p<0,05

The number of Lecithin cholesterol acyltransferase (LCAT) was found between the duration of sports and total nutrients (r:0.398) (same way) and total fluids (R:0.352) (same way) during sports and total weight control in the same way (R:0.350) and the duration of sports and total total in the same way (R:0.435). This association found LCAT numbers are statistically significant. As the duration of playing sports increases, the scores all increase.

In this study, süper lig 56% 86.2, seniors 7% 10.8, 1-Europe,1-Turkey, 1.5%. For this reason, when comparing the Super League and others he is comparing has been done.

The difference between total nutrients, total liquid ingredients, total weight control, total food supplements and all totals was found to be significant according to the league situations they participated in. The scores of those who participated in the Super League are higher.

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Findings on differences between athletes ' nutrition scores and the number of weekly workouts;

Table 7. Comparison of Nutrition Scores of Individuals by Number of Weekly Workouts

		TOTAL NUTRITION	TOTAL FLUID	TOTAL REGENARATION	T. WEIGHT CONTROL	T. FOOD SUPLEMENT	SUM
HAFTALIK ANTREMAN SAYISI	R	0,182	0,244	0,088	0,132	0,185	0,188
	P	0,147	0,052	0,488	0,294	0,139	0,133

There was no statistically significant difference in the correlation coefficients between the number of training and total nutrients, total fluids, Total Refreshment, total weight control, total food supplements and the total total ($p>0.05$).

Table 8.Correlation Coefficients Between age and Nutritional Scores of Individuals

		TOTAL NUTRITION	TOTAL FLUID	TOTAL REGENARATION	T. WEIGHT CONTROL	T. FOOD SUPLEMENT	SUM
AGE	R	,430	,358	,490	,508	,446*	,510
	P	,001*	,003*	,001*	,001*	,001*	,001*

*p<0,05

Same way between age and nutrients (r: 0,430)

Same directional between age and liquid materials (r: 0.358)

Same-way (r:0,490) between age and total renewal)

Same way between age and total weight control (r: 0,505)

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Same way between age and total food supplements (r: 0,446)

Same directional (r:0,510) between age and all total). Correlation coefficients were found. These floor numbers are statistically significant. All scores increase as age increases. The data obtained from our statistical method study was based on SPSS (22,0) and when parametric test assumptions were fulfilled (Komogorot-Simirnov), the difference between the two averages in independent groups was taken as materiality test, fulay test and konalisation analysis renewal level was 0.05.

DISCUSSION

There is no doubt that nutrition has an important role in the ability of an athlete to perform well. Athlete nutrition means taking the athlete forward, ensuring that he is successful and giving him the opportunity to play sports in a healthy way. However, the athlete is fed enough and balanced only when he / she receives the nutrients required by his / her sport. According to sports experts; sports protect and improve health. In another study conducted by Abood et al, randomly selected athletes from a women's soccer team and a women's judo team in Florida and their nutritional information levels were measured, and the nutritional information of the athletes was found to be inadequate. It was revealed that the nutritional information of the athletes was for training purposes only.

In a study conducted by Cupisti et al, 60 athlete ladies and 59 sedentary ladies, whose ages ranged from 14-18, were selected and their nutritional information levels measured. In both groups, the daily energy requirement is similar, but generally less than the recommended amount. The results of the study showed that the nutritional information level of the athletes was higher than the other group.

In a study by Douglas, the nutritional information levels of high school athletes were measured and analyzed. A total of 943 athletes participated in the survey. Female athletes were found to be more successful than male athletes.

As a result of this research, it was determined that judoists had sufficient knowledge about nutrition. However, the level of nutrition knowledge can be further increased by directing athletes to nutrition training.

CONCLUSION

The athletes covered of, 37.87% were female and 62.12% were male. The study found no significant difference between the nutritional information levels of male athletes and female athletes.

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It is only through balanced, regular and purposeful nutrition that the athlete can achieve a high sporting efficiency. The basic and first condition for proper and beneficial nutrition is the balance between the energy requirement and its requirement.

While the results of the research indicate that judoists take an energy-enhancing nutrient, they do not take energy-enhancing food supplements. Most of the daily energy needs are met by carbohydrates. It is known that taking carbohydrate foods just before training or matches will be beneficial. We can say that more than half of the judoists are in the right practice. They noted that judoists who take energy-boosting nutrients before training or a match take athlete's drinks, vitamin supplements, chocolate and sugary foods.

As a result, wrestlers are in the correct practice in the intake of certain nutrients in the sportsman's nutrition, but they are in the wrong practice in the intake of certain nutrients. This shows that the coaches, who are cited by the athletes as the source of information and the person responsible for nutrition, have sufficient knowledge of athlete nutrition but need to improve it further. For this reason, extensive seminars and courses should be given by the experts in the training of athletes at the national team camp and within the clubs. The publications on athlete nutrition should be delivered to athletes and coaches and they should be informed correctly (Corley-1990).

RECOMMENDATIONS

1. The daily nutrition levels of men and women judoists should be observed in more detail and associated with judo performance.

2. Weight adjustment practices related to male and female judoists can be associated with performance by taking more detailed measurements.

3. The performance of both male and female judoists in competition after feeding regimes should be related.

4. Nutrition awareness training of athletes should be planned and implemented without being considered separate from the whole society.

5. More research should be done on this subject in different age groups.

6. Supplements of ergogenic substances and vitamins and minerals should not exceed the recommended daily Allowance (RDA) and should be certified by the National Sanitation Foundation (NSF).

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EXAMINATION OF THE IMPACT OF SPORTS-ORIENTED ATTITUDES OF CHILDREN UNDER PROTECTION AND CARE ON SELF-CONFIDENCE AND SOCIAL COHESION LEVELS (1)

KORUMA VE BAKIM ALTINDA BULUNAN ÇOCUKLARIN SPORA YÖNELİK TUTUMLARININ ÖZGÜVEN VE SOSYAL UYUM DÜZEYLERİNE ETKİSİNİN İNCELENMESİ

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Öz: Amaç: Bu araştırmanın amacı, koruma ve bakım altında bulunan çocukların spora yönelik tutumlarının özgüven ve sosyal uyum düzeylerine etkisinin incelenmesidir. **Yöntem**: Çalışma grubuna Ankara, Yozgat, Kayseri, Kırşehir ve Çorum illerinde, Çocuk Evleri Sitesi Müdürlüklerinde koruma ve bakım altında bulunan yaş ortalamaları 16,27 olan 15-18 yaş arası kız ve erkek toplam 270 çocuk katılmıştır. Veri toplama araçları olarak sosyo-demografik bilgi formu, spora yönelik tutum ölçeği, özgüven ölçeği ve sosyal uyum ölçeği kullanılmıştır. Ölçeklerden elde edilen verilere ilişkisel analizlerin yapılması için; Pearson Momentler Çarpımı Korelasyon katsayısı, bağımsız gruplar t-testi, tek yönlü varyans analizi (ANOVA ve Tukey HSD testi uygulanmıştır. **Bulgular**: Spora yönelik tutum genel toplam boyutu ile iç özgüven (r=.870 p=.000), dış özgüven r=.851 p=.000) ve özgüven toplam (r=.872 p=.000) boyutları arasında anlamlı ve pozitif yönde bir ilişki bulunmuştur. Sosyal uyum envanteri skorları incelendiğinde ise sosyal uyum toplam skorunun 76,96±15,61 olduğu tespit edilmiştir. **Sonuç**: Sonuç olarak, koruma ve bakım altında bulunan çocukların, spora yönelik tutumlarının, özgüven, spor yapma durumu, cinsiyet değişkenlerini olumlu yönde etkilediği sonucuna varılmıştır.

Anahtar Kelimeler: Koruma, Bakım, Öğrenci, Spora Yönelik Tutum, Özgüven, Sosyal Uyum

Abstract: Aim: The aim of this study is to examine the impact of sports-oriented attitudes of children under protection and care on their level of self-confidence and social cohesion. **Method**: a total of 270 boys and girls between the ages of 15-18, with an average age of 16.27, were included in the Study Group in Ankara, Yozgat, Kayseri, Kırşehir and Çorum. The socio-demographic data form, the sports-oriented attitude scale, the self-confidence scale and the social cohesion scale were used as data collection tools. Pearson moments product correlation coefficient, independent groups t-test, one-way variance analysis (Anova and Tukey HSD test were applied to perform relational analyses on the data obtained from the scales. **Results**: attitudes towards sport overall size and internal self-confidence (r=.870 p=.000), external self-confidence r=.851 p=.000) and self-confidence total (r=.872 p=.000) a significant and positive relationship was found between its dimensions. When the social harmony inventory scores were analyzed, the total social harmony score was 76.96±15.61. **Conclusion**: as a result, it was concluded that the attitudes of children under protection and care towards sports positively affect their self-confidence, their state of playing sports, and gender variables.

Key Words: Protection, Care, Student, Attitude Towards Sport, Self-confidence, Social Cohesion

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INTRODUCTION

Nowadays, sport has become an important part of human life. It is not possible in today's reputation to say that sport only contributes physically to individuals. It is necessary to evaluate the benefits of sports to individuals from a spiritual, physical, social and economic point of view. (Yarımkaya, 2014). When one looks at the most obvious features affected by Sport, the concepts of self-confidence and adaptation to the social environment come to the fore. Self-confidence is a sense of self-satisfaction. When there's no self-confidence, the individual can't be sure of what he's doing. If the individual has the self-confidence that he or she needs to be, he or she will produce acceptable results and be confident. (Shaş and Güngör, 2011: 7). Harmony should not be explained only by the individual's effective relationships with his or her environment. The ability of the individual to relate well to himself is also very important at the point of harmony. Continuity of established relationships and lifelong development gives information about the level of harmony (Koca, 2010).

The most effective period for achieving social harmony is adolescence. This is because during this period, childhood is removed and adult roles gradually begin to be installed on the adolescent. Social cohesion is largely realized if these needs are met (Yavuzer, 1995). Children under protection and care are children who have experienced major problems and have faced trauma. Children who encounter these kinds of problems during childhood and adolescence are capable of experiencing self problems. Sport is seen as an important factor in rehabilitating the traumas experienced by children and bringing them into society and social life.

The aim of this study is to examine the impact of children's attitudes towards sport on their levels of self-confidence and social cohesion while staying at Children's homes sites maintained and maintained by the state and owned by the Ministry of family, labour and Social Services.

The sub-problems of the study were determined as follows.

1. Is there a relationship between the sports-oriented attitudes of children under protection and care and their level of self-confidence?
2. What is the relationship between the attitudes of children in protection and care towards sport and their levels of social cohesion?
3. Do the attitudes of children under protection and care differ significantly according to their gender?

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4. Is there a significant difference between the sports-oriented attitudes of children under protection and care?
5. Is there a significant difference between the attitudes of children under protection and care towards sport and the length of time they are under protection and care?

MATERIAL and METHOD

In this study, the screening method was used to examine the effect of sports-oriented attitudes of 15-18-year-olds under protection and care on their level of self-confidence and social cohesion. Thus, the current situation is described by the analysis of the data obtained from the applied scales. Due to the fact that due diligence will be carried out in the research, it is descriptive.

The working group of the study consists of 270 children of 15-18 years of age at the children's Homes site serving under the Ministry of family, labour and Social Services in Ankara, Yozgat, Corum, Kayseri and Kırşehir provinces.

Within the framework of the aim of the research, the data collected for the sub-problems for which answers are sought were first processed into the data coding form. All 270 data were included in the study. Statistical analyses were then applied on the data transferred to the SPSS 24.0 package program.

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Subjects

Table 1. Demographic Characteristics of the Subjects

		f	%
Gender	Man	138	51,1
	Woman	132	48,9
	Total	270	100
Age	15 y.o.	72	26,7
	16 y.o.	92	34,1
	17 y.o.	65	24,1
	18 y.o.	41	15,2
	Total	270	100
Protection period	0-1 years	33	12,2
	2-3 years	126	46,7
	4-5 years	89	33
	5 years +	22	8,1
	Total	270	100
Education	Yes	246	91,1
	No	24	8,9
	Total	270	100
Sports	Yes	139	51,5
	No	131	48,5
	Total	270	100
Drug Abuse	Yes	59	21,9
	No	211	78,1
	Total	270	100

In the table above, the distribution of personal information of the athletes participating in the research is given. 48.9% (n=132) of the children included in the study were girls and 51.1% (n=138) were boys. 26.7% (n=72) of the children were 15 years of age, 34.1% (N=92) were 16 years of age, 24.1% (N=65) were 17 years of age, and 15.2% (n=41) were 18 years of age. 12.2% of children (n=33) have been under protection and

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care for 0-1 years, 46.7% (n=126) 2-3 years, 33% ü (n=89) 3-4 years, 8.1% i (n=22) 5 years or more. 91.1% of children (n=246) attend school, while 8.1% (N=24) do not attend school. 51.5% of children (n=139) do not play sports, while 48.5% (n=131) do not play sports. While 21.9% (n=59) of the children had previously experienced substance abuse, 78.1% (n=211) had not experienced substance abuse.

Data Collection Tool

The attitudes towards sports scale is a scale consisting of 25 items created by Halil Evren Şentürk (2012) to determine attitudes towards sports.

The self-confidence scale was developed by Akın (2007) and the items of the scale were written as a 5-option Likert grading scale and validity and reliability analyses were performed on these items.

The social cohesion scale was developed by Bosc, Dubini and Polin (1997). There are 21 items in total on the scale.

FINDINGS

Table 2. Descriptive Statistics of Respondents ' Scores of the Participants

	n	Min	Max	X±Ss
Interest in Sports	270	10	45	29,92±8,46
Living with Sports	270	6	30	19,73±5,69
Active sports	270	7	29	18,84±5,57
Attitude to Sport Total	270	32	118	81,92±22,63
In. Self-Confidence	270	25	82	58,07±14,72
Ex. Self-Confidence	270	22	78	54,03±13,94
Total Self-Confidence	270	48	160	112,11±28,29
Social Cohesion Scale	270	37	121	76,96±15,61

In this study, the participants ' attitude inventory scores for sports were examined, the size of interest in sports was 29.92±8.46, the size of living with sports was 19.73±5.69, the size of active sports was 18.84±5.57, and the total scores for sports attitudes were 81.92±22.63. When the self-confidence inventory scores were analyzed, the internal self-confidence dimension was 58.07±14.72, the external self-confidence dimension was 54.03±13.94 and the total self-confidence score was 112.11±28.29. When the social harmony inventory scores were analyzed, the total social harmony score was 76.96±15.61.

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Table 3. Analysis of the Relationship Between Cchildren's Attitudes Towards Sports and Their Level of Self-Confidence

		1	2	3	4	5	6	7
Interest in Sport	r	1						
	p							
Living with Sport	r	,890**	1					
	p	,000						
Being Active Sport	r	,886**	,874**	1				
	p	,000	,000					
Attitude to Sport	r	,971**	,951**	,950**	1			
	p	,000	,000	,000				
In. Self-Confidence	r	,847**	,840**	,820**	,870**	1		
	p	,000	,000	,000	,000			
Ex.. Self-Confidence	r	,835**	,816**	,797**	,851**	,948**	1	
	p	,000	,000	,000	,000	,000		
Self-Confidence	r	,852**	,839**	,820**	,872**	,988**	,986**	1
	p	,000	,000	,000	,000	,000	,000	

Table 3 shows that, the dimension of interest in sports and internal self-confidence (r=.847 p=.000), external self-confidence (r=.835 p=.000), the total of self-confidence (r=.852 p=.000) a significant and positive relationship was found between its dimensions. Internal self-confidence with the dimension of living with Sports (r=.840 p=.000), external self-confidence (r=.816 p=.000), the total of self-confidence (r=.839 p=.000) a significant and positive relationship was found between its dimensions. Internal self-confidence with active sports playing dimension (r=.820 p=.000), external self-confidence (r=.797 p=.000), the total of self-confidence (r=.820 p=.000) a significant and positive relationship was found between its dimensions. Attitude towards sport is internal self-confidence with overall total size (r=.870 p=.000), external self-confidence r=.851 p=.000) and self-confidence total (r=.872 p=.000) a significant and positive relationship was found between its dimensions.

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Table 4. Analysis of Children's Attitudes Towards Sports and Their Levels of Social Cohesion

		1	2	3	4	5
Interest in Sport	r	1				
	p					
Living with Sport	r	,890**	1			
	p	,000				
Being Active Sport	r	,886**	,874**	1		
	p	,000	,000			
Attitude to Sport Total	r	,971**	,951**	,950**	1	
	p	,000	,000	,000		
Social Cohesion	r	-,106	-,056	-,046	-,073	1
	p	,082	,356	,451	,229	

Table 4 shows that, interest in sports by social harmony dimension r= -.106 p=.082), living with Sport (r=-.056 p=.356), active sport-making (r= -.046 p=.451), a total of attitudes towards sport (r=-.073 p=.229) found no significant relationship between its dimensions.

Table 5. Gender Analysis of Children's Attitudes Towards Sport

	Gender	n	X± Ss	t	p
Interest in Sport	Man	138	31,69±7,59	4,161	,000*
	Woman	132	27,7±8,81		
Living with Sport	Man	138	21,25±4,83	4,663	,000*
	Woman	132	18,12±6,07		
Being Active Sport	Man	138	20,29±5,15	4,561	,000*
	Woman	132	17,31±5,59		
Attitude to Sport Total	Man	138	87,81±19,88	4,519	,000*
	Woman	132	75,75±23,73		

Table 5 shows that, it is observed that boys 'interest in sports score is 31.69±7.59 and girls' score is 27.7±8.81. The score of the boys was 21.25±4.83 and the girls was 18.12±6.07. The size score for active sports was 20.29±5.15 for boys and 17.31±5.59 for girls, while the

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total score for attitudes towards sports was 87.81±19.88 for boys and 75.75±23.73 for girls. Statistical analysis showed significant differences.

Table 6. Analysis of the Impact of Children's Sports on Their Attitudes Towards Sports

	Doing Sport	n	X± Ss	t	p
Interest in Sport	Yes	139	36,25±4,49	19,687	,000*
	No	131	23,20±6,20		
Living with Sport	Yes	139	23,92±2,97	19,020	,000*
	No	131	15,27±4,32		
Being Active Sport	Yes	139	22,64±3,29	16,153	,000*
	No	131	14,79±4,55		
Attitude to Sport Total	Yes	139	99,10±10,72	20,376	,000*
	No	131	63,68±16,95		

Table 6 shows that, it was observed that the size score of sports participants was 36,25±4.49 and those who did not play sports were 23,20±6.20. It was observed that 23.92±2.97 of those who did sports and 15.27±4.32 of those who did not play sports. It is observed that the size score for active sports was 22.64±3.29 and 14.79±4.55 for non-sports. In the total size of attitudes towards sports, the score of those who did sports was 99.10±10.72 and the score of those who did not play sports was 63.68±16.95. Statistical analysis showed significant differences.

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Table 7. Analysis of Children's Attitudes Towards Sports While They are Under Protection

	Protection Period	n	X± Ss	F	p	Tukey HSD
Interest in Sport	0-1 Years	33	30,48± 8,70	,721	,540	
	2-3 Years	126	29,79±8,00			
	4-5 Years	89	29,33±8,76			
	5 Years +	22	32,18±9,59			
Living with Sport	0-1 Years	33	19,66±6,31			
	2-3 Years	126	19,85±5,02	,838	,474	
	4-5 Years	89	19,17± 6,10			
	5 Years +	22	21,27± 6,52			
Being Active Sport	0-1 Years	33	19,27±5,80			
	2-3 Years	126	19,04±5,53	,547	,651	
	4-5 Years	89	18,23±5,38			
	5 Years +	22	19,40±6,32			
Attitude to Sport Total	0-1 Years	33	82,66±23,99	,721	,540	
	2-3 Years	126	82,08±21,37			
	4-5 Years	89	80,15±23,00			
	5 Years +	22	86,95±26,58			

Table 7 shows that, the size of the score attracted to the sport individuals under the protection and care 0-1 year 30,48± 8,7 2-3 years under the care and protection of individuals 29,79±8.00, 4-5 years, under the care and protection of individuals 29,33±8,76, under the care and protection of individuals 5 years and over 32,18±9,59 is met.

Individuals under the protection and care of life-size 0-1 year-score sports 19,66±6,31 2-3 years under the care and protection of individuals 19,85±5,02, 4-5 years, under the care and protection of individuals 19,17± 6,10, under the care and protection of individuals 5 years and over 21,27± 6,52 is met.

The size of the score 0-1 year doing active sports individuals under the protection and care 19,27±5,80 2-3 years under the care and protection of individuals 19,04±5,53, 4-5 years, under the care and protection of indi-

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viduals 18,23±5,38 5 years and over under the care and protection of individuals

DISCUSSION and RESULT

It was determined that there was a significant and positive relationship between the attitudes of children to sports and their self-confidence. The fact that children with high attitudes towards sports have high levels of self-confidence shows that attitudes towards sports positively affect self-confidence. The loss of self-confidence experienced by children under protection and care can be regained by positive development of attitudes towards sports. In their study of 987 subjects, Slutzky and Simpkins stated that the subjects who played sports had higher self-esteem and self-confidence compared to the subjects who did not play sports. Slutzky and Simpkins ' research supports this study.

Zorba (2012) emphasized that playing sports on a regular basis would have positive consequences, such as increased self-esteem and self-confidence in individuals. Again Akgül et al. (2012) stated that sports activities affect the individual's personality image and harmony, as there are practices that require regular work, superior technique, aesthetics, and competition in individuals. When we look at the results obtained in the field summer studies, it is seen that the results obtained from this study are supported by the studies used. The lack of any association between the attitudes of children to sports and their social cohesion levels in the research shows that children are experiencing social cohesion problems. Field type examined;

Eid (2013), in its study of 90 children in detention in correctional facilities, concluded that sport positively affects children's social cohesion and communication skills. Turkel (2010) conducted a survey of 590 students studying at primary school level and concluded that there was a significant difference between the level of participation in sports activities and the level of social cohesion. Throughout the field summer studies, it has been seen that sports have a positive effect on social cohesion. However, in contrast to the field paper, the study concluded that sports do not have a positive effect on social cohesion.

The study found that the attitudes of children under protection and care to sports differ significantly according to gender variable, and that boys 'attitudes towards sports were higher than girls'. The study conducted by Koçak (2014); Turkmen et al, (2016) on the students of the University, Balyan et al., (2012) by elementary 2. In studies conducted on tier students, they found significant differences between male and female students.

In the study, it was determined that there was a significant difference between the attitudes

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of children under protection and care towards sports and their status of playing sports, and that the average of children playing sports was higher than the average of those not playing sports. The attitudes of athletes towards sports are higher than those of non-sports students. The study by Singh and Devi (2013) also found that students who play sports have higher attitudes towards sports than students who do not play sports. Kangalgil et al. The study by (2006) also found that the attitudes of university students with an athlete's license towards sports were higher than those without an athlete's license. In the study conducted by Özdinç (2005) on university students, the obvious rationale for men who do not play sports is that they do not play sports in groups of friends.

The study found that there was no significant difference between the attitudes of children under protection and care towards sports and the length of time they were under protection and care. The reason for the lack of a significant difference between the time spent under protection and the attitude towards sports is due to the lack of adequate mental orientation of children to sports and the low levels of mental readiness of children to sports, although the Ministry of Family, Labour and Social Services regularly organizes sports activities for children under protection and care. When the field is examined, it is seen that this is the first time that work has been done on the sub-problem addressed, and that the sub-problem addressed may contribute to the field writing.

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AN OVERVIEW OF THE TURKISH HEALTH SECTOR (1)

TÜRKİYE SAĞLIK SEKTÖRÜNE GENEL BAKIŞ

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Öz: Türkiye Sağlık harcamaları 2009 yılından beri istikrarlı bir şekilde büyümektedir. Yıllık ortalama büyüme oranı %10'un üzerindedir. Sektör büyüklüğü 2017 yılında 412 milyar TL'ye ulaşmıştır. Bu çalışmanın amacı finansman kaynağı, finansman hedefi ve sağlık hizmetleri talebine göre sağlık harcamalarının incelenmesidir. Çalışmada kullanılan veriler TUİK web sitesinden ilgili dönem için elde edilen verilerdir. Bu çalışma TUİK tarafından düzenli olarak yayınlanan 2009 ve 2017 yıllarına ait sağlık harcamaları verilerinin istatistiksel olarak düzenlenerek analiz edilmesi sonrasında hazırlanmıştır. Analiz kapsamında Regresyon, ANOVA ve CAGR ve temel istatistiksel yöntemler kullanılmıştır. Analizler SPSS ve Eviews programı kullanılarak gerçekleştirilmiştir. Çalışmada elde edilen bulgulara göre 2018 yılı sonunda kamu ve özel hizmet sağlayıcılarının sağlık harcamalarının toplamı 467.310 Milyon TL olması beklenmektedir. Özel hizmet sunucularına yapılan harcamaların 2009 yılından beri genel hizmet sunucu sektörüyle paralel bir büyüme sergilediği, 2017 yılında özel hizmet sunucularının toplam sağlık harcamalarındaki payının %22 oranında olduğu görülmektedir. Ayrıca 2018 yılı sonunda özel hizmet sağlayıcılarının sağlık harcamaları toplamının 102.098 Milyon TL olması beklenmektedir. Çalışma sonunda sağlık harcamalarının GSYİH içindeki payının diğer OECD ülkelerinden daha düşük olduğu ve bu durumun yüksek büyüme potansiyeline işaret ettiği belirlenmiştir. Türkiye'deki yaşlı ve yüksek risk taşıyan yaş gruplarının, sağlık harcamalarında artışı gösterecek şekilde yaş segmentlerinden daha hızlı büyümekte olduğu ve yıllara göre bakıldığında yaş gruplarının büyüklüğünün istatistiksel olarak farklılaşmakta olduğu sonucuna ulaşılmıştır.

Anahtar Kelimeler: Sağlık, Yönetim, Sektör, Piyasa, Ekonomi

Abstract: Turkey's health spending has been growing steadily since 2009. Annual average growth rate is over 10%. The sector size reached 412 billion TL in 2017. The aim of this study is to examine health expenditures according to the source of financing, financing target and demand for health services. The data used in the study are obtained from the TurkStat website for the relevant period. This study was prepared after statistical editing and analysis of health expenditures data for 2009 and 2017 published by TurkStat. Regression, ANOVA and CAGR and basic statistical methods were used in the analysis. The analyzes were performed by using SPSS and Eviews program. According to the findings of the study, the total health expenditures of public and private service providers are expected to be 467.310 Million TL by the end of 2018. It has been observed that expenditures on private service providers have been growing parallel to the general service provider sector since 2009, and the share of private service providers in total health expenditures is 22% in 2017. In addition, the total health expenditures of private service providers are expected to be 102,098 Million TL by the end of 2018. At the end of the study, it was determined that the share of health expenditures in GDP was lower than other OECD countries and this indicates high growth potential. It has been concluded that the age groups of the elderly and high risk in Turkey are growing faster than the age segments to show growth in health care spending and the size of the age groups have statistically differed over the years.

Key Words: Health, Management, Sector, Market, Economy

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INTRODUCTION

Undoubtedly, the survival and development of human beings depends on the growth of healthy generations and their economic well-being. Health expenditures which cover all expenditures made to protect, improve and maintain the health of people increase the level of health of the individual and society, and affect economic growth with the contributions made to human capital (Tıraş and Ağır, 2018: 26).

Health is a public service and an obligation. Therefore, practices and sanctions for the health sector within the public service concept bring new differences to our lives day by day. This situation which arises due to the developing technology also gives rise to differences in the development, renewal of inter-institutional and international strategies, and the differences between competitive and preferable reasons. When we look at personal health expenditures, we see that there are multi-faceted expenditure items in terms of care and change besides compulsory health expenditures. This situation varies from person to person, but also varies in the institutional sense.

Especially in recent years, developments in personal care and health tourism are closely monitored and observed. When we look at the results, we can say that it has become a sector. Many world countries want to benefit from this sector on their behalf and do what is necessary in terms of competitiveness and preferability. There are different studies on this subject. These are made up of different scientific and public studies. When we want to look at health sector and economy in terms of literature, we see that it is examined in terms of many different variables.

Health services are important for economic growth and development, for increasing the productivity of the labor force, for the peace and welfare of the society (Tıraş and Ağır, 2017: 196), and health is the indispensable part and source of human life. This is a fundamental need, and it can never be postponed and put into a second plan. The services and products to be provided for a healthy life must be accepted by the buyer and create benefit (Demir, 2011: 1-115).

Health expenditures, which is one of the basic indicators of development, are extremely important for the national economies. Regardless of the level of development of the country, various health problems are faced and more expenditure is spent on health expenditures. Health expenditures are defined as the sum of both public and private expenditures for all health related goods and services. The increase in health expenditures positively affects the life expectancy and quality of individuals. Basically, it can be said that eco-

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nomic, technological, social and cultural factors increase health expenditures (Şahin and Temelli, 2019).

Expenditures for all protection, promotion, care, nutrition and emergency programs that adopt the purpose of health promotion or protection are considered as "Health Expenditure" (Yalçın and Çakmak, 2016: 716). Health expenditures are provided from public and private sector sources. Public sector health expenditures include central government and local government and social security fund expenditures while private sector expenditures are mostly from household pockets, payments made by firms for personnel, private health insurances and non-profit organizations serving households (Yurdadoğ, 2007). While health expenditures vary according to countries' level of development, the majority of Turkey's total health expenditure has been realized by the public (Öztürk and Uçan, 2017: 139-147).

Health economics is an important issue for many countries in the world, including Turkey. Health expenditures and health investments are an important factor for individual and public expenditure and saving outside the national economy. Public health expenditures cover a significant point in the general country budget and constitute a significant expenditure item. Comparing the health expenditures of Turkey to different world countries, we can say that this is difficult and troublesome.

Comparing, analyzing and examining data on health expenditure and health management of developed and developing world countries is important for the relevant country. Data analysis is very important for the evaluation and analysis of health expenditures in the sense of carrying out future plans and projects and especially for new investments to be made (Çelik, 2011: 62-81).

With the positive effect of health expenditures on the improvement of health services, the growth experienced in the economy will facilitate the shifting of the increased resources towards human capital investments and a higher growth will be achieved. Achieving economic growth increases the share of health expenditures and makes it possible to make more health expenditures (Akıncı and Tuncer, 2016: 58-59). Many research results show that economic growth improves health and improvements in health have a significant impact on economic efficiency and growth (Atun and Fitzpatrick, 2005: 6).

Three different methods of analysis and financing are used for health expenditures in Turkey. These are;
1. Public Financing Model,
2. Special Financing Model,
3. Mixed Financing Model.

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In all three models and methods, the examination of health services and health expenditures with all items, financial analysis, evaluation and comparisons contribute to revealing of risks and advantages (Sasam, 2017: 1-28). In recent years, health expenditures have been on the agenda of many countries. Health expenditures, which became more important due to the pressure created by the financial crisis on the public budget, have become the focus of saving measures. In such an environment and in this period when health system is transforming in Turkey, regular monitoring and analysis of health spending and policy is important in terms of sustainability debate (Memiş, Arslanhan, 2012).

Although health expenditures vary according to the development level of countries, it is observed that the vast majority of Turkey's total health expenditure has been realized by the public (Öztürk and Uçan, 2017: 139-147). The total health expenditures in a country are influenced by many factors such as the role of the public and private sector in the provision and financing of health services, the socio-economic characteristics of the population, the relative price of health services and the capacity of the health system (Sülkü, 2011).

Health expenditures have an important place in the national economies. It is also one of the main indicators of development (Öztürk and Uçan, 2017: 139). Countries achieving a certain progress in terms of economic development have a higher share of expenditure on health (Mazgit, 2002: 405). Especially since 2003 when the implementation of the Health Transformation Program was applied, Turkey is above the OECD average regarding the increase in health spending. Improvements in access and the increase in population under the social security framework played an important role in the increase of expenditures (Yereli, Kobal and Köktaş, 2011).

Total health expenditures in Turkey in 2000 was realized as 8.248 million TL. Although this amount was low due to the global crisis experienced in 2008-2009, it increased steadily until 2016 (Giray and Çimen, 2018).

HEALTH EXPENDITURES BY TYPE OF SERVICE AREA

Healthcare services have a stable outlook since 2009 when consistent growth rates and client profile are examined.

The funding profile in the field of health expenditures has been stable since 2009, indicating a stable economic environment in terms of funding.

The share of the public sector in total expenditures was 78% in 2017 and there has been no significant change since 2010.

Compound annual growth rates (CAGR) are 9.8% for General Government investments,

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12% for Private Sector investments and 10.2% for all investments between 2009 and 2017.

Private sector investments are the main growth factors.

Table 1. General Source of Financing

Million TL								
		General Public				Private Sector		
Year	Total General Total	Total General Public	Total Central Public	Total Local Public	Total Social Security	Total Private Sector	Total Households	Total Other
2009	171.116 ₺	138.291 ₺	52.551 ₺	1.812 ₺	83.928 ₺	32.825 ₺	24.306 ₺	8.519 ₺
2010	181.978 ₺	142.689 ₺	49.725 ₺	1.632 ₺	91.332 ₺	39.289 ₺	30.015 ₺	9.274 ₺
2011	202.586 ₺	160.887 ₺	55.402 ₺	1.559 ₺	103.926 ₺	41.699 ₺	31.570 ₺	10.129 ₺
2012	218.665 ₺	173.217 ₺	47.451 ₺	1.856 ₺	123.911 ₺	45.448 ₺	34.698 ₺	10.749 ₺
2013	248.482 ₺	194.903 ₺	52.532 ₺	2.258 ₺	140.113 ₺	53.579 ₺	41.802 ₺	11.777 ₺
2014	278.377 ₺	215.737 ₺	60.776 ₺	2.192 ₺	152.769 ₺	62.640 ₺	49.392 ₺	13.248 ₺
2015	305.921 ₺	239.865 ₺	70.837 ₺	2.746 ₺	166.281 ₺	66.056 ₺	51.034 ₺	15.022 ₺
2016	352.052 ₺	276.302 ₺	81.752 ₺	3.300 ₺	191.250 ₺	75.750 ₺	57.655 ₺	18.094 ₺
2017	412.276 ₺	321.273 ₺	98.327 ₺	3.821 ₺	219.125 ₺	91.002 ₺	70.778 ₺	20.224 ₺

Table 2. Compound Annual Growth Rate (CAGR) – 2009 – 2017

	General Public	Private Sector	Total
CAGR	9,82%	12,00%	10,26%

HEALTH EXPENDITURES TREND ANALYSIS

Between 2009 and 2017, health expenditures of public and private service providers increased by 55.034 million TL each year. Accordingly, total health expenditures of public and private service providers are expected to be 467.310 Million TL by the end of 2018.

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Table 3. General Expenditures

DependentVariable: HARCAMA				
Method: LeastSquares				
Sample: 2009 2017				
Includedobservations: 9				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
@TREND	55034.59	6069.076	9.068034	0.0000
R-squared	-0.131563	Meandependent var		263494.8
Adjusted R-squared	-0.131563	S.D. dependent var		81488.87
S.E. of regression	86683.74	Akaikeinfocriterion		25.68236
Sumsquaredresid	6.01E+10	Schwarzcriterion		25.70427
Loglikelihood	-114.5706	Hannan-Quinncriter.		25.63507
Durbin-Watson stat	0.112852			

HEALTH EXPENDITURES BY TYPE OF SERVICE AREA

Since 2009, expenditures on private service providers have been growing head-to-head with the general service provider sector, indicating economic stability in the sector. In 2017, the share of private service providers in total health expenditures was 22%.

The share of private sector service providers has increased significantly in the last five years due to the increase in private sector and household expenditures. In 2017, the share of private service providers in total private sector expenditures was 50% and the share of household expenditures was 39%.

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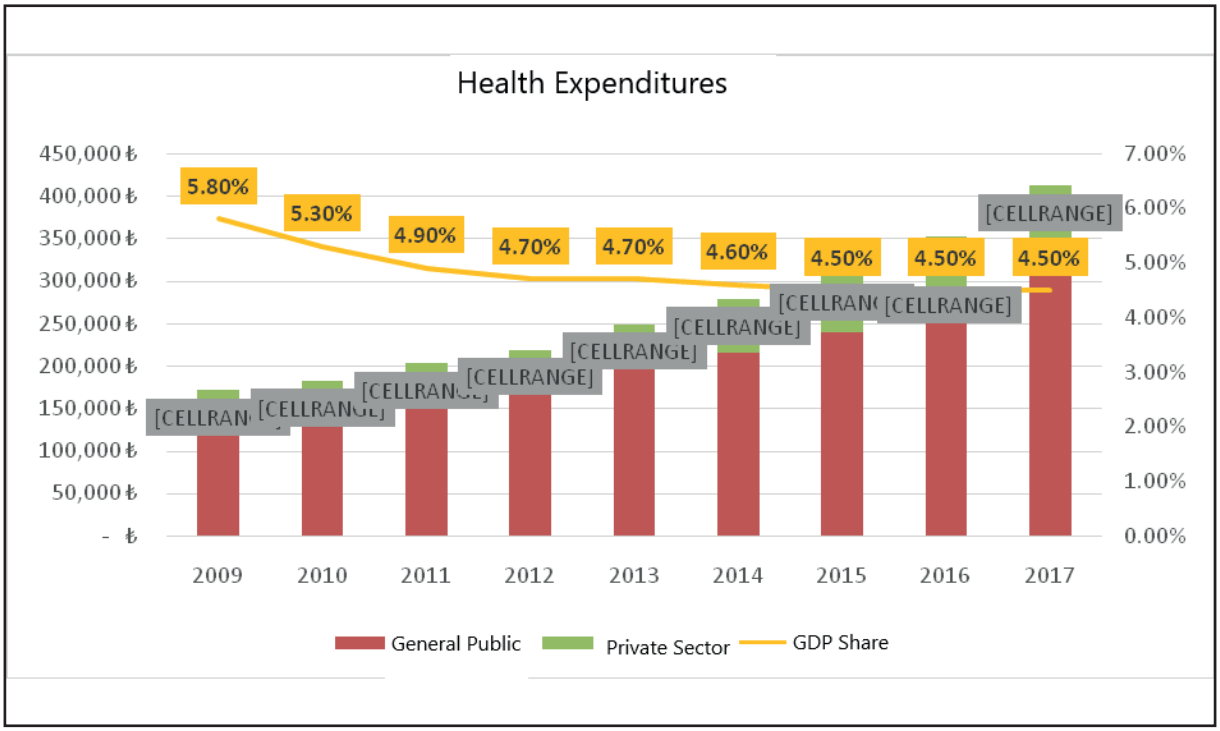

Figure 1. Health Expenditures by Years

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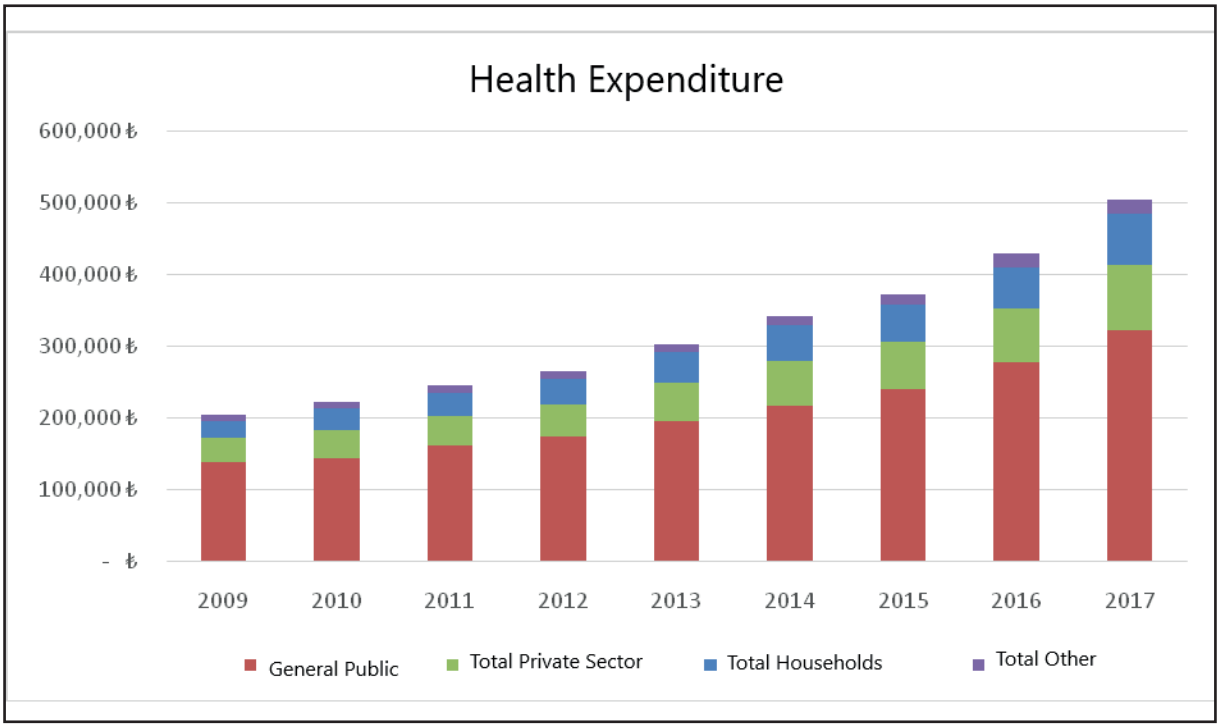

Figure 2. Health Expenditures by Years

PRIVATE HEALTH EXPENDITYRES TREND ANALYSIS

Between 2009 and 2017, health expenditures of private service providers increased by 11.096 million TL each year. According to this, total health expenditures of private service providers are expected to be 102.098 Million TL by the end of 2018.

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Table 4. General Expenditures

DependentVariable: HARCAMA				
Method: LeastSquares				
Sample: 2009 2017				
Includedobservations: 9				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
@TREND	11966.42	1210.384	9.886463	0.0000
R-squared	0.174527	Meandependent var		56476.44
Adjusted R-squared	0.174527	S.D. dependent var		19027.73
S.E. of regression	17287.74	Akaikeinfocriterion		22.45782
Sumsquaredresid	2.39E+09	Schwarzcriterion		22.47974
Loglikelihood	-100.0602	Hannan-Quinncriter.		22.41053
Durbin-Watson stat	0.126038			

INTERNATIONAL COMPARISON OF THE SHARE OF CURRENT HEALTH EXPENDITURES WITHIN GDP, (%), 2016

The share of health expenditures in GDP is lower than in other OECD countries. This indicates high growth potential.

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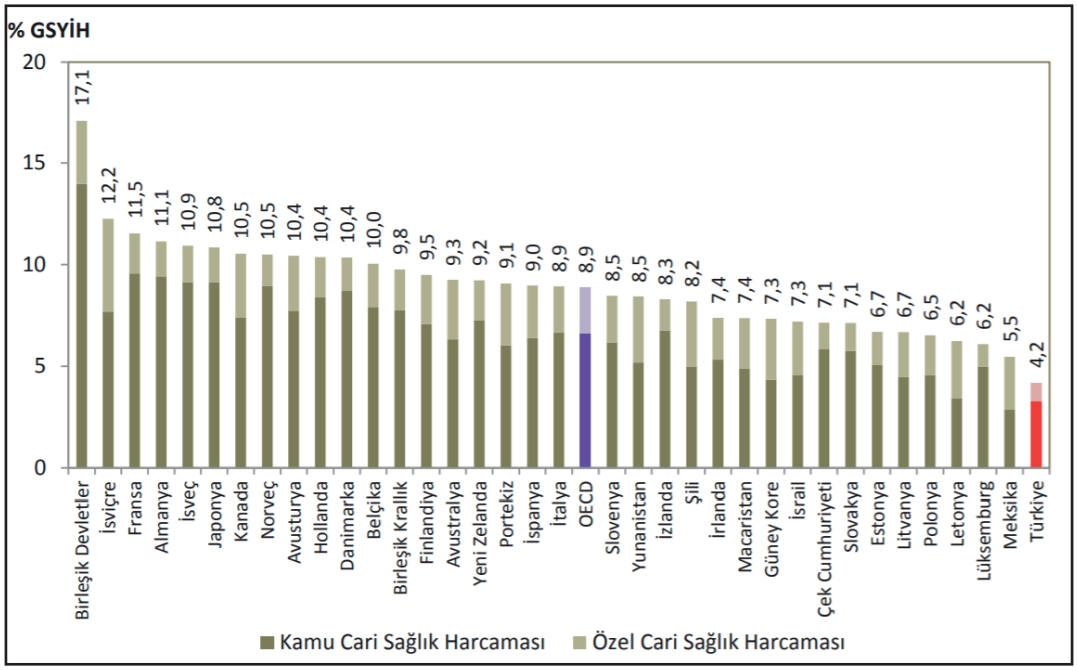

Figure 3. Public and Private Sector Current Health Expenditures

DISTRIBUTION OF POPULATION BY AGE GROUPS

The elderly and high-risk age groups in Turkey are growing faster than age segments in a way to indicate increase in health expenditures. The average annual growth rate of 35-39, 40-44 and 45+ age groups was calculated to be 1.97%, 2.31% and 2.86% between 2009 and 2017, respectively. The share of the over 35 age group within the total population is increasing. Chronic discomfort is increasing in the aging population, indicating a potential increase in demand for health care.

The implementation of preventive measures to reduce risk factors and strengthen primary health care services, complex, integrated and long-term disability management demand and talent allocation, focus on medical education, and revision of health system components such as performance mechanisms are important for meeting the demand for health services.

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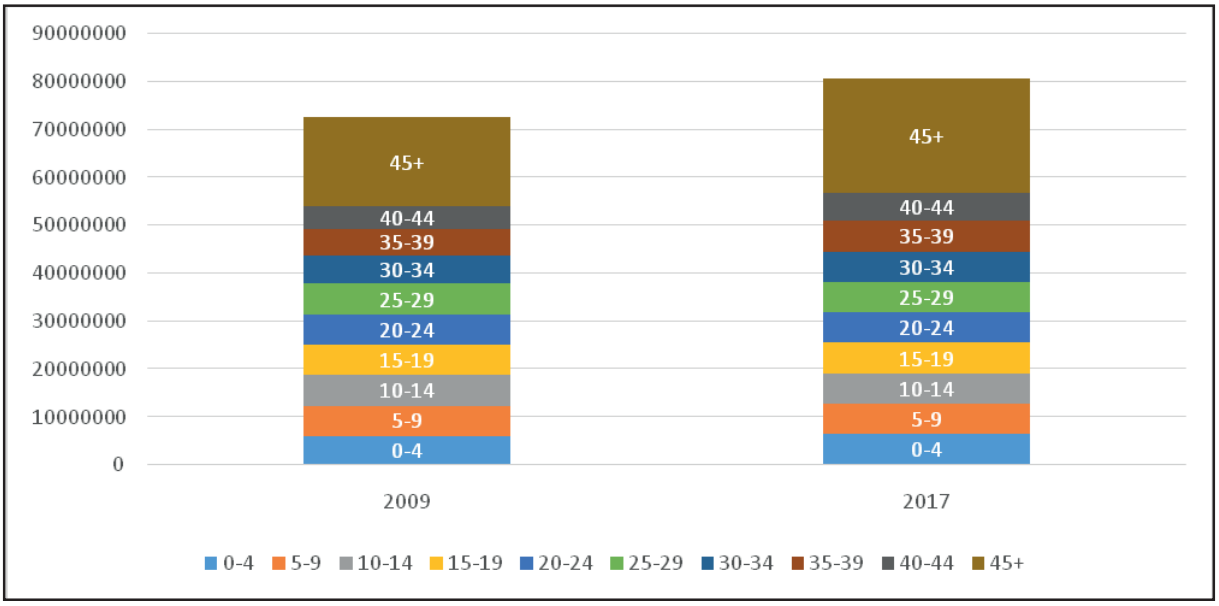

Figure 4. Indicators by Age Distribution

Table 5. Age Distribution and Percentage Rates (%) in Health Expenditures

Age	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+
CAGR	0,58%	0,25%	-0,51%	0,51%	0,31%	-0,48%	0,71%	1,97%	2,31%	2,86%

DISTRIBUTION OF POPULATION BY AGE GROUPS DIFFERENCES BETWEEN YEARS

The distribution of the population by age groups between 2009 and 2017 was examined. ANOVA analysis was performed to determine whether the ratio of age groups among all age groups could be noticed between years. As a result of the analysis, the assumption that there is no difference between age groups being the main hypothesis will be rejected since the probability value is less than 0.05. When analyzed by years, the size of the age groups differ statistically.

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Table 6. Anova Analysis

	Sum of Squares	df	MeanSquare	F	Sig.
BetweenGroups	4,137E14	9	4,596E13	28,978	,000
WithinGroups	1,586E13	10	1,586E12		
Total	4,295E14	19			

CONCLUSION

Turkey's health expenditures have been growing steadily since 2009. Annual average growth rate is over 10%. The sector size reached 412 billion TL in 2017.

By the end of 2018, total health expenditures of public and private service providers are expected to be 467.310 million TL.

Since 2009, expenditures on private service providers have been growing head-to-head with the general service provider sector, indicating economic stability in the sector. In 2017, the share of private service providers in total health expenditures was 22%.

By the end of 2018, total health expenditures of private service providers are expected to be 102,098 million TL.

The share of health expenditures in GDP is lower than other OECD countries. This indicates a high growth potential.

The elderly and high-risk age groups in Turkey are growing faster than age segments in a way to indicate increase in health expenditures When analyzed by years, the size of the age groups differ statistically.

Looking at general terms, although we have incorporated limited information in our paper, we can say that public health expenditures for Turkey and developing countries of the world increase each passing day by population growth and other variables. The scientific studies and researches also confirm this situation. Therefore, we can state that public health expenditures and personal health expenditures occupy and constitute an important place for the national economy.

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ACADEMICIANS' VIEWS ON MEDICAL TOURISM NURSING AND ITS EDUCATIONAL STRUCTURE: A MIXED-METHOD STUDY (1)

MEDİKAL TURİZM HEMŞİRELİĞİNİN EĞİTİM YAPISI VE AKADEMİSYENLERİN GÖRÜŞLERİ: BİR KARMA YÖNTEM ÇALIŞMASI

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Öz: Amaç: Bu çalışmanın amacı, akademisyenlerin tıbbi turizm hemşireliği ve eğitim yapısı hakkındaki görüşlerini belirlemektir. **Yöntem**: Veriler, hem niceliksel hem de niteliksel yaklaşımları birleştiren karma bir yöntem kullanılarak toplanmıştır. Nicel ve nitel veriler sırasıyla 46 ve 9 akademisyenden toplanmıştır. 15 maddeden oluşan yapılandırılmış bir anket kullanılmış ve veri toplamak için geniş kapsamlı görüşmeler yapılmıştır. Görüşmeler sırasında kapsamlı notlar alındı ve kaydedildi. **Bulgular**: Akademisyenlerin medikal turizm hemşireliği ile ilgili yeterlilikler ve eğitsel duruma dair 6 tema 33 alt tema belirlendi. Araştırmada en sık kullanılan alt tema medikal turizm hemşireliğinin eğitim yapılanmasında düzenlemelere ihtiyaç olduğudur. **Sonuç**: Medikal turizm hemşireliği ile ilgili ülkemizde yapılan çalışmaların yetersizliği, medikal turizm ile ilgili eğitsel, akademik etkinlikler ve yasal düzenlemelere ihtiyaç olduğu, yabancı hemşire istihdamına gerek olmadığı şeklindedir.

Anahtar Kelimeler: Akademisyen görüşleri, eğitim yapısı, medikal turizm, karma yöntem, hemşirelik

Abstract: Aim: The aim of this study is to determine academics' views on medical tourism nursing and its educational structure. **Method**: Data were collected using a mixed method combining both quantitative and qualitative approaches. Quantitative and qualitative data were collected from 46 and 9 academics, respectively. A structured questionnaire consisting of 15 items was used, and in-depth interviews were carried out to collect data. In-depth interviews were recorded and extensive notes were taken during interviews. **Findings**: 6 themes and 32 sub-themes regarding academics' views on qualifications and educational levels related to medical tourism nursing emerged. Some of the sub-themes are as follows: The education system of medical tourism nursing needs regulations. **Conclusion**: The number of studies on medical tourism nursing in Turkey is limited. There is a need for educational/ academic activities and legal arrangements related to medical tourism. There is no need for the employment of foreign nurses.

Key Words: Academics' views, educational structure, medical tourism, mixed method, nursing

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INTRODUCTION

Medical tourism, also referred to as medical travel, health tourism, medical outsourcing or global healthcare, is defined as seeking medical care outside one's country of residence. This care may include medical treatments, diagnostic or surgical procedures or dental care.

Countries and centers with both high success rates and price advantages appeal to medical tourists (BookmanandBookman,2007:1-29; Çevirme et al.,2014:44-58). Evans (2008:1089-1095) reports that medical tourism was a $ 60 billion industry worldwide in 2006. Turkey is also one of the attractive destinations for medical tourism. The number of international patients coming to Turkey has been increasing every year, especially since 2010 (Evans,2008:1089-1095; Kayaand-Büyükkasap,2005:367-380).

Medical tourism has also brought about some issues such as medical care trends, and treatment quality and safety. Medical tourists do not only benefit from high-tech medical facilities and treatment but also attach importance to the quality and reliability of care that directly affects recovery and increases the quality of life (Ben-Natan et al.,2009; Aydın et al.,2011). Care is, undoubtedly, one of the most important services provided by nurses. Healthcare is a whole system which fundamentally relies on both dimensions of treatment and care.

Standard training and practices in the core curriculum may not be sufficient in terms of nursing care and other professional services offered to medical tourists for medical purposes.

Curricula and instructional programs should be restructured as soon as possible and nursing students should be provided with opportunities to develop graduate profiles that can be integrated into changing health movements so that they feel qualified and confident enough to assume their role in the field of medical tourism. It is, therefore, crucial to factor in the views and attitudes of academics and instructors involved in decision making processes in order to undertake regulations in nursing education curriculum and to restructure the teaching/learning approach aimed at enabling nursing students to acquire professional qualifications. The construction of the educational process in this manner can only be evaluated by educators themselves.

AIM

The aim of this study is to investigate academics' views on the importance placed on medical tourism nursing in the curriculum in terms of vocational qualifications and to contribute to the scientific solution of the problem according to these views. To this end, the

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qualitative dimension of this study sought answers to sub-problems determined based on quantitative data.

MATERİAL AND METHOD

Data were collected using a mixed method including both qualitative and quantitative dimensions, and the study was carried out in two stages.

Data Collection

Survey method was used as the main research method, and a structured questionnaire was used to collect data to construct the sub-problems. The questionnaire was developed based on an extensive review of the literature with particular attention to previous survey instruments and theoretical frameworks that addressed the subject matter in question.

1. Sample Population

Quantitative Dimension**:** The study population consisted of academics of vocational schools of health providing nursing education at the undergraduate level of universities affiliated to the Higher Education Council (HEC)[1]. The faculty of nursing, faculty of health sciences, vocational health high school and college of health sciences (vocational schools of health in Turkey) were taken as strata and stratified sampling method was used to select a random sample from each stratum. The study was carried out with 4 academics institutions who voluntarily answered the questionnaire and provided feedback[1].

Qualitative Dimension: Purposive sampling, which is one of the nonprobability sampling techniques, was used to select 10 academics from a vocational school of health, and phenomenological interviews were conducted with them. However, one of the participants withdrew from the study due to health problems, and therefore, the study was completed with 9 academics.

Quantitative data on medical tourism and nursing (Table 1) obtained through the questionnaire were used to identify the sub-problems of the qualitative part of the study. The questions that constituted the sub-problems and to which answers were sought were used as the data collection tool in the in-depth interviews performed in the qualitative part of the study.

Participants' responses to the interview questions were analyzed into themes and sub-themes, and gathered together in Table 2 in the findings section in order to obtain consistent and conclusive results.

Data collection process was extended over a long-term period (from 09 July 2014 to 15 August 2017) and data collection sessions were scheduled at participants' convenience. Though the data collection started in 2014, three academics were able to participate in

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the study as late as 2017 due to their career plans. Therefore, reporting ended in January of 2017.

2. Validity and Reliability of the Study

Using both survey and interview methods provides us with the opportunity to determine themes underlying participants' responses during interviews based on survey data (ÖzdenandDurdu,1-187).

Using these two different methods is effective in terms of ensuring the reliability of the study. Participants' names were coded as A1,A2...A9 for confidentiality.

2.1. Ethical consideration

In the quantitative part of the study, participants were provided with a link to access the survey. The necessary permission was granted by the relevant institution for qualitative data collection. Two co-authors (Ö.K. and N.Y.Z.) obtained informed consent from participants and arranged interviews.

3. Criteria for Inclusion in the Study

Academics who are involved in curriculum development and decision making processes, and have the authority and capacity to give lectures were included in the study.

4. Analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS), version 16.0. Numbers (n) and percentages (%) were used to summarize the data. The difference in rates between participants' responses to 7 out of 15 items in the questionnaire was significant, therefore, the results obtained from those 7 items were converted into Table 1.

Analysis of Qualitative Data: In-depth interview data were analyzed using content analysis. An in-depth analysis was performed through interpretation and inference in order to investigate participants' views on nurses' qualifications/level of knowledge regarding medical tourism. The following steps were taken to collect data. Participants were interviewed. All interviews were recorded using an audiotape, and contemporaneous written notes were kept of each session. Prior to the analysis of the interviews, participants were ranked on an ordinal scale based on the time of their participation and their names were replaced with codes (A1, A2 etc.) to maintain confidentiality. Each interview lasted about 45-60 minutes. Transcripts were compared with the notes taken from each interview. All participants read and gave informed consent for the reevaluation of the data. Content analysis refers to a systematic, objective and numerical analysis to measure variables in a text (Vaismoradi et al.,2013:398-405). Data obtained from participants' responses to the survey were analyzed using content analysis methods (*categorical and frequency analysis*). In the categorical (key theme) analysis,

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(1) in-depth interview data were coded and (2) the dimensions of the categories (sub-themes) were determined. 6 key themes and 32 sub-themes emerged from the data (Table 2).

5. Limitations of the Study

The findings are limited to the participants of this study, and therefore, are not generalizable to the academics of all schools of nursing. It is recommended that similar research be conducted in many faculties and colleges in the future.

RESULTS

Quantitative Dimension

95.7% of participants are women, 61% are faculty members and 58.7% work in the faculties of health sciences. 34.78% of participants read articles, reviews etc. on medical tourism while 6.52% attend congresses, symposiums etc.66% of academics think that the curriculum is insufficient while 89% think that new qualifications are needed in the field of nursing for medical tourism (Table 1).

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Table 1. Rates of Agreement of Academics With Qualifications And Educational Levels Related To Medical Tourism Nursing

	I AGREE		I DISAGREE		TOTAL	
Views	Number (n)	Percentage (%)	Number (n)	Percentage (%)	N	%
The medical tourism curriculum is sufficient for the role and duties of nurses.	11	24	35	66	46	100
New qualifications (e.g. vocational English or a second language) are required in the field of nursing for medical tourism.	41	89	5	11	46	100
Nursing students are willing to work in the field of medical tourism.	40	87	6	13	46	100
Nurses with a bachelor's degree are qualified enough to treat patients coming from other countries for medical purposes.	14	30	32	70	46	100
Legislative regulations should be established to determine roles and duties of nurses in the field of medical tourism.	45	98	1	2	46	100
The medical tourism and nursing curriculum should be included only in the education programs of universities located in regions where only foreign patients are provided with medical care.	19	41	27	59	46	100
Standardization and accreditation studies in patient care are issues that should be addressed by nurses in institutions where medical services are provided.	45	98	1	2	46	100

Qualitative Dimension

All participants are women between the ages of 28 and 60 years (median age: 38.5). Table 2 shows the themes and sub-themes that emerged from the interviews. **6 themes and 32 sub-themes regarding academics' views on qualifications and educational levels related to medical tourism nursing were identified.** The qualitative findings were interpreted with reference to quotes from participants, following the order of the themes.

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Table 2. Themes And Sub-Themes Regarding Academics' Views On Qualifications And Educational Levels Related To Medical Tourism Nursing

Themes	Sub-themes
1.The position of the course and the adequacy of its content	1. In the curriculum
	2. Not in the curriculum
	3. 2 hours of class
	4. An elective course
	5 . Language and culture contents supporting the course
	6. It should also be included in graduate curricula
	7. It should be a required course
2.Students' attitudes towards the course	8. Students are willing to take the course
	9. Students should have preliminary information about the course.
	10. It is important to want to work in different fields.
3.Academics' course-related qualifications	11. Theoretical competence of academics is important.
	12. It is important for academics to have experience in the fields of medical tourism and nursing.
	13. Relationship between academics and students' competence
	14. It is important for academics to have experience in the field of pedagogy.
4.Studies on medical tourism nursing by Schools and Ministry of Health	15. Including the course in the curriculum of private schools
	16. Not only the medical tourism nursing course
	17. School administrators finding the integration of the course insufficient
	18. School administrators finding the integration of the course into the transcultural nursing course insufficient
	19. Finding studies carried out by Schools and the Ministry of Health insufficient
	20. I do not know about the studies conducted by the Ministry of Health.
	21. Scientific and academic approach of the Ministry of Health to the issue
	22. Existence of a database
	23. The concept of medical tourism is new to schools and they have just recently begun to address it.

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5.Views and expectations of employment of foreign nurses in Turkey and of their qualifications and competences	24. There is no need for foreign nurses.
	25. All we need to do is train nurses in our country and get them to work in this field after they have developed the necessary skills
	26. Foreign nurses' country of origin and education level matter. If they are suitable, they can work here.
	27. Those with universal values and common nursing language can come and work here.
	28. Foreign nurses can work here if they have postgraduate qualification.
	29. It will be sufficient if foreign nurses with a high level of foreign language proficiency, clinical experience and high communication skills work in our country.
6.Views on legal, educational and scientific infrastructure of medical tourism and nursing	30. Medical tourism and nursing are very new. Legal, educational and scientific infrastructure is not enough.
	31. Educational infrastructure has recently begun to be developed, therefore, it is insufficient for now.
	32. Academic studies have recently begun to be carried out, therefore, they are limited for now.

1. Views on the position and adequacy of the course

All academics emphasized that medical tourism nursing should be included in the curriculum. Below is a quote from A1:

I think that medical tourism nursing is a course that should be included in the curriculum of nursing schools, health schools and even midwifery schools.

2. Academics' views on students' attitudes towards the course

All academics, in general, stated that students would be willing to take that kind of course. Below is a quote from A9 regarding this:

If students are informed about course content, learning outcomes, and the importance of medical tourism/transcultural nursing as a condition of being a professional nurse, then they will be more willing to take the course.

3. Academics' views on their own qualifications on the course

All academics stated that the theoretical knowledge level of academics teaching students medical tourism should be sufficient. A quote about the sub-themes from the interview is as follows:

It is important that this education is provided by people who have received training and worked in the field of medical tourism. May-

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be they should do the same thing abroad as well. Academics in the field of medical tourism should also have pedagogical qualification and background knowledge… (*A4*)

4. Academics' views on studies on medical tourism nursing carried out by School Management and Ministry of Health

5 academics stated that it was mostly private schools that have developed more positive attitudes towards medical tourism and nursing course while 3 academics stated that school administrators have integrated the course as a subject matter into other courses but that they found this strategy insufficient. All academics found the studies on medical tourism and nursing conducted by the Ministry of Health inadequate.

5. Academics' views and expectations of employment of foreign nurses in Turkey and of their qualifications and competences

5 academics stated that they did not object to the employment of foreign nurses in the field of medical tourism if they meet certain conditions while 3 academics emphasized the importance of country of origin and education level, and specified universal values and a common nursing language as prerequisites for employment. A quote about the sub-themes from the interview is as follows:

I am of the opinion that this service should be provided by nurses who have been trained in this field and have the necessary qualifications. (*A1*)

Those who were in favor of the employment of foreign nurses in Turkey made specific recommendations, such as having a master's degree and introduction of legal regulations.

Foreign nurses, especially those from agreement countries, who can speak foreign languages and are in tune with our culture can be employed in the field of medical tourism. But this should definitely be limited by legal regulations. (A7)

6. Academics' views on legal, educational and scientific infrastructure in the field of medical tourism and nursing

All academics stated that such work develops parallel to legal arrangements and policies, that medical tourism and nursing are very new concepts, and that the legal, educational and scientific infrastructure has not yet been established. A quote about the sub-themes from the interviews is given below:

DISCUSSION

The analysis shows that this study achieved optimal diversity. Academics expressed their views objectively about medical tourism and nursing education, and their role and significance. The findings are limited to the educa-

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tional institution, which is actually a health faculty, involved in this study, therefore, it is recommended that similar studies be conducted in a number of faculties and universities in order to make generalizations about the current state of medical tourism and nursing education in Turkey.

This is the first study to address the issue of medical tourism and nursing education in Turkey. Therefore, there is no possibility of comparing and contrasting the results of this study with those of others. We believe that our results will provide guidance for further research.

The first theme drew attention to the need for educational structuring of medical tourism nursing. The fact that participants clearly specified the content of the course and the number of hours to be allocated to it indicates that these two factors play an important role in medical tourism nursing education and curriculum development.

The second theme addressed academics' views on students' attitudes towards the course and factors influencing their attitudes. Academics stated that students were willing to take courses on medical tourism nursing in any case and that providing students with preliminary information and course guidance would have a positive effect on their willingness. Research shows that possessing the power to guide students is critical and that motivation is one of the most important factors driving learning and enhancing students' engagement and achievement (KayaandBüyükkasap,2005:367-380; Vaismoradi et al., 2013:398-405; Sezgin et al., 2011:161-169; Erdem, 2007:77-81; Akbaba, 2006:343-361). This study also shows that students' attitudes towards the course depend on academics' guiding and motivating behavior. Herdman (2011:3-7) states that nursing education will evolve universally with technological and global health movements and qualified instructors. Seren et al. (2013:42-48) also express the importance of having a sufficient number of instructors to train nurses, which is also worthy of consideration.

Another theme dealt with the studies on medical tourism nursing conducted by schools and the Ministry of Health. There is a consensus among academics that studies on medical tourism nursing are inadequate and that educational and academic activities, and legal regulations fail to specify the job description and role of nurses in the field of medical tourism. Çevirme, Kaynak and Uğurlu (2014:44-58) reported that only 8 health schools training nurses made arrangements about the course and that nurses could not make themselves heard in congresses and symposiums on medical tourism organized by the Ministry of Health. Both studies provide similar results and important clues about the shortcomings,

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suggesting that all stakeholders of medical tourism nursing should increase the pace of their efforts.

Seren et al. (2013:42-48) report that 93.8% of academics are against the employment of foreign nurses. The fifth theme shows that academics in general object to the employment of foreign nurses in Turkey. However, some academics lean towards favoring the employment of foreign expert nurses who have adopted universal values. A few academics emphasize the importance of having a master's degree as a criterion for foreign nurses to be employed in Turkey. Differences in the way academics think about foreign nurse employment suggest that nationality or qualifications alone cannot be a critical factor.

The sixth theme addressed the issues that medical tourism and nursing is a nascent field and that the legal, educational and scientific infrastructure is far from adequate. In parallel with the literature, academics stated that health tourism in general and medical tourism in particular emerged in the 1990s and have so far made little progress in terms of nursing (Çevirme et al.,2014:44-58; İçöz, 2009:2257-2279).

CONCLUSION

This study, aiming to encourage further education and scientific research on medical tourism nursing course, shows that academics' knowledge, views and attitudes are of great significance for students to gain vocational qualifications.

Permanent and innovative agreements and arrangements should be made between the nursing schools and the Ministry of Health in order to solve the problems that arise from integrating the course into educational curricula. Services and resources should be made available to assist nurses in acquiring foreign languages, gaining clinical experience and developing effective communication skills in order to improve the field of medical tourism in Turkey. Long-term plans should be made to standardize and improve the education system in order to provide nurses with employment opportunities.

Determining qualifications alone is not enough to adapt education to the information age. Since it is imperative for educational institutions to evaluate their education systems and vocational competence of their graduates, and to implement necessary innovations and regulation (Sezgin et al., 2011:161-169), it is recommended that nurses who want to work in the field of medical tourism be evaluated in advance.

It is recommended that academics collectively explain the content and learning outcomes of courses before students make any course-related decisions.

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CONFLİCTS OF İNTEREST

There are no conflicts of interest.

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DERGİ HAKKINDA

Dergimiz 2011 yılında yayın hayatına başlamıştır. Başta spor bilimleri olmak koşulu ile sağlık bilimleri ve spor bilimlerinin ortak kabul ettiği alandan yayınlar kabul edilmektedir. Günümüz koşullarında teknolojinin getirdiği kolaylık ve bilimsel çalışmalara duyulan ihtiyaç nedeni ile dergimiz bu anlamda duyulan eksikliği bir nebze olmak koşulu ile gidermeye çalışmak amacıyla yayın hayatına girmiştir. Dergimiz başta spor bilimleri, spor eğitimi, sporcu sağlığı, sağlık yönetimi, spor hekimliği, tıp tarihi ve etik, sporcu beslenmesi, spor psikolojisi, spora yönelik tıbbı ve biyolojik bilimler "doping" gibi bilim dallarından yayın kabul etmektedir. Ayrıca bu ana bilim anabilim dallarının alt bilim dallarında yapılan çalışmaları kendi alanında uzman hakemlerin değerlendirmesi ve olumlu sonuç alan çalışmaların yayınını kabul etmektedir. Farmakoloji bilimi içerisinde yer alan fakat sporcu ve sporcu sağılığına yönelik çalışmalar da yine dergimizde kabul edilip değerlendirmeye alınmaktadır. Spor ve sporculara yönelik adli bilimler alanında yapılan çalışmalar da yine dergimiz bünyesinde kabul edilerek değerlendirmeye alınmaktadır. Gerçek anlamda bilimsel nitelik taşıyan, bilim dünyasına bilimsel anlamda hizmet edecek ve katkı sağlayacak çalışmalar ve bu çalışmalara ilişkin araştırma, derleme ve çeviri içerikli yayınları dergimiz kabul etmekte olup bünyesinde yayınlamaktadır.

Dergimiz yılda dört sayı çıkarmakta olup her bir sayı yılın üç ayında bir basılı olarak yayınlanmaktadır. Dergimiz çalışma prensibi doğrultusunda her alana ait çalışmaya eşit ve adil şekilde yer vermektedir. Dergimize gelen çalışmalar iki ayrı alan uzmanı hakem tarafından değerlendirilmekte olup bu değerlendirme süresi hakemlerin iş yoğunluğu kapsamında iki aylık süreci kapsamaktadır. İki ayrı hakemden onay alan çalışmalar dergimizin yayın kurulu onayı ile sıraya alınarak basılı şekilde yayınlanmaktadır. Dergimizde yazım kuralları apa sistemine göre düzenlenmekte olup, örnek bir makale formatı sistemden indirilmek koşulu ile yazarlar tarafından kullanılabilmektedir. Editör makamı derginin her türlü sisteminden sorumlu olup, hiçbir hakem ve yazar yükümlülüğünü taşımamaktadır. Yazarlar kendi hür irade ve bilgileri doğrultusunda yayın yapma hakkına sahip olup yayına kabul edilip yayınlanan çalışmalar konusunda bütün yükümlülüğü kabul etmiş bulunmaktadır. Dergimiz yayıncı ve okuyucu arasında bir köprü vazifesi yüklenmiştir. Dergimiz ve yayınlar hakkında değerlendirme yapan hakemler yayınlanan yayın hakkında hukuki bir yükümlülüğe sahip değildir. Her türlü yükümlülük yazarlara aittir. Dergimiz hiçbir yayın hakkında hakemler üzerinde etki ve zorlayıcı bir yaptırıma sahip değildir. Hiçbir çalışma bir başka çalışmaya karşı öncelik hakkına sahip değildir. Her bir çalışma kendi açısından aynı koşul ve şartlara tabidir. Bir öncelik ve ayrıcalığı bulunmamaktadır. Hiçbir yazar değerlendirme yapan hakem hakkında bilgi sahibi olamaz ve hakemler üzerinde yüküm-

lülük oluşturamaz. Dergi yönetimi ve editör hiçbir çalışmanın öncelikli olduğunu belirleyemez ve hiçbir yazara öncelik veremez. Sistem her çalışma ve her yazar için aynı koşul ve şartlarda işletilir. Dergimizin yazım dili İngilizce'dir.

Dergimiz uluslararası nitelikte olup bu niteliklere sahip çalışmaları kabul eder. Bir başka dergiye herhangi bir nedenle gönderilmiş çalışmalar dergimizde yayınlanmak amacıyla kabul edilse bile tekzip yayınlanmak koşulu ile red edilir. Dergimize gönderilen her bir çalışmanın hakkı yazar tarafından dergimize verilmiştir. Yazar bunu peşinen kabul etmiştir. Bu durum ve koşullar; yayın dergimizin sistemine yüklendiğinde işletilmeye başlanır. Bunun için yazarlardan özel bir beyan ve imza alınmaz. Oluşan veya oluşabilecek hukuki sorunlarda dergimizin hukuk danışmanları dergimiz ve dergimiz hakemlerini korumak adına her türlü işlemi tek taraflı olarak yapma hakkına sahiptir.

T.C. Üniversitelerarası Kurul Başkanlığı, Sağlık Bilimleri Temel Alanı Doçentlik Sınavı Başvuru koşulu olarak 101 nolu madde getirilmiştir. Bu maddenin, 1-Uluslararası makale bölümünün (b) şıkkında "Uluslararası alan indeksleri tarafından taranan (1a da belirtilen indeksler dışındaki indekslerde yer alan) dergilerde yayımlanmış özgün araştırma makalesi (10 puan) istenmektedir. Uluslararası Spor Sağlık ve Tıp Bilimleri Dergisi (SSTB) alan endeksli dergi kriterlerinde yer almakta ve değerlendirilmektedir.

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The Article No. 101 has been brought as the condition to Apply for the Exam of Associate Professorship in the Main Area of Health Sciences by T.R. Head of Interuniversity Council. In this article, 1- (b) section of the international article part states that Original research articles (10 points) published in the journals indexed by international field indices (the journals in the indices apart from those specified in 1a) are required. International Refereed Academic Journal of Sports, Health and Medical Sciences (SSTB) is included in the criteria for the journals indexed in its field and evaluated accordingly.

SSTB - Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi

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