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The status of hand therapy in Turkey

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ABSTRACT

Objectives: The aims of this study are; firstly, to investigate professional profiles and working conditions of hand therapists who are the member of Hand Therapists Association (HTA) (El Terapistleri Derneği - ETD). Secondly, to put forward their opinions on the field of hand rehabilitation assessment and treatment. Thirdly, to determine whether a standard treatment protocol established in the hand therapists` applications.

Methods: This study was completed through a survey sent to member physiotherapists of ETD via electronic mail. The survey consists of thirty-three questions prepared in the form of multiple-choice and open-ended. Questions are for determining demographical information and searching for evaluation and treatment approaches used during interventions by hand therapists.

Results: Evaluation methods were examined which became their standard in the rehabilitation of tendon injuries; it was determined that 44 (93.6%) of them evaluate the range of motion, 34 (72.3%) of them evaluate the pain. It was determined that Kleinert Protocol (n = 31, %70.5) was the most preferred method in post-operative rehabilitation program of flexor tendon injuries and Controlled Active Movement Protocol (n = 31, %70.5) was the most preferred method in post-operative rehabilitation program of extensor tendon injuries.

Conclusion: Like all over the world, in Turkey, the hand rehabilitation is one of the fields in which physiotherapist and occupational therapists specialize in. The development of hand rehabilitation, more scientific and standardized evaluation and treatment protocols are not yet completed. From this perspective, under nowadays` conditions learning evaluation and treatment methods used by hand therapists is very important for developing the appropriate algorithm in hand rehabilitation field.

Key words: *Hand, upper extremity, rehabilitation, hand injuries*

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Introduction

In 1970s, with the start of hand surgery practice in Turkey, the interest of physiotherapists towards the hand rehabilitation has started to increase. Therapists who are interested in hand rehabilitation, from this date on, contributed to the development of hand rehabilitation by participating in scientific activities such as congress, courses, and symposia and by writing articles at national and international levels [1]. Nowadays, units, universities and education-research hospitals and private hospitals have been established working as a specific field of hand rehabilitation [2,3]. The first master's

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program training in this area in Turkey was opened in 2014, based on Occupational Therapy Department of Institute of Health Sciences of Pamukkale University. With this master's program, hand therapists firstly began to catch up, who can take the task in all applications aimed at raising the level of the community's life quality and social inclusion. Secondly, began to apply evidence-based methods in all kinds of health, disease, disabled and handicap cases. Thirdly, began to contribute to the development of the hand rehabilitation in the field of rehabilitation science by doing scientific research and work in the academic environment.

For the first time in 1997 therapists, who were interested in hand rehabilitation, started their studies as the "Turkey Physiotherapists Association Hand Therapists Group." Also, in 2004, hand therapists established their associations named as "Hand Therapists' Association." El Terapistleri Derneği (ETD) is a full member of the International Society of Hand Therapists (IFSHT) since 1998 and is a full member of the European Society of Hand Therapists (EFSHT) since 1999 [1]. By 2016, 70 physiotherapist members joined the ETD.

Turkish hand therapists` occupational profiles and experiences are the subjects of curiosity was developed and organized with the association since 1990s. Hand therapists working with 'there is no disease, there is a patient` principle, researching their assessment and treatment protocols, which they made these in their working lives as regular, are one of the fundamental questions of this research. The aims of this study are; to investigate professional profiles and working conditions of the physiotherapists who are the members of ETD, to put forward their opinions on the field of hand rehabilitation assessment and treatment and to determine whether a standard treatment protocol established in the hand therapists` applications.

Materials and Methods

Study Population

Thirty-three questions questionnaire which is in the form of thirty-one multiple choice and two open-ended questions were delivered with permission of Executive Committee of El Terapistleri Derneği. The survey delivered to ETD was shared with all association members by ETD Board via the electronic mail group. The questionnaire was applied to some members with face to face technique.

Questionnaire

Thirteen questions of the survey aimed at detecting hand therapists` professional lives, their demographic information, and education status in a professional sense. With the help of the thirteen questions hand therapists` title, the region where they work in Turkey and the type of clinic where they practice were detected. At the same time, within the thirteen questions, the type of patients group whom they work with and the experience in the hand rehabilitation field was found out. Within the thirteen questions, health professionals who were working with them during their profession and compensation policies were also asked to participants.

The eleven questions of survey were prepared to detect the use of assessment methods of hand therapists, and the nine questions to determine the methods of their treatment. These questions were asked to determine the time when a patient, who has undergone an upper extremity surgical operation, is included in the rehabilitation program and the time when a patient reaches the therapist. The evaluation and treatment methods in tendon injuries during the hand rehabilitation were among the questions included in the survey. Participants were also asked about the electrotherapy methods that were used during hand rehabilitation. Especially, assessment and treatment methods in the scarring of tissue and edema problems that may occur after the hand and upper extremity surgery were asked to participants. The assessment of patients' functionality during the rehabilitation process was also included in the survey.

Statistical Analysis

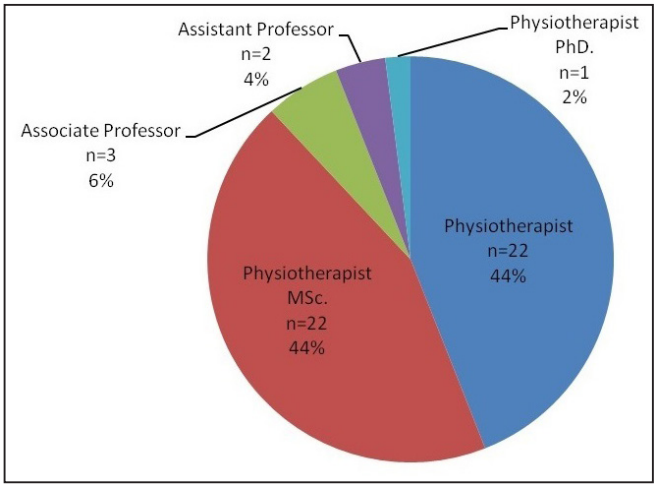
As for the statistical analysis, the Statistical Pack-

age for the Social Sciences (SPSS) version 18 was used under Windows operating system. Descriptive statistical information was given in the form of average, ± standard deviation (x ± SS) and percent (%).

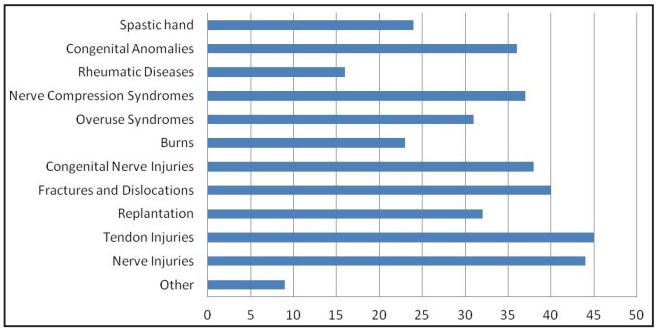
Results

Fifty physiotherapists out of seventy members of ETD participated in the survey via internet and face to face interviews. 22 (44%) of those participating in the study were the specialist physiotherapist, 3 (6%) had an academic degree of Associate Professor (Graphic 1).

Among therapists participated in the study 12 (48%) were from the Marmara region, 12 (24%) from the Aegean Region, 11 (22%) from the Central Anatolia Region, 3 (6%) from the Mediterranean region. No other therapists participated in the study from the other three regions of Turkey and the Turkish Republic of Northern Cyprus (TRNC). Among participants



Graph 1. Distribution of hand therapists according to their titles.



Graph 2. Distribution of hand therapists according to the patient groups they provide rehabilitation services.

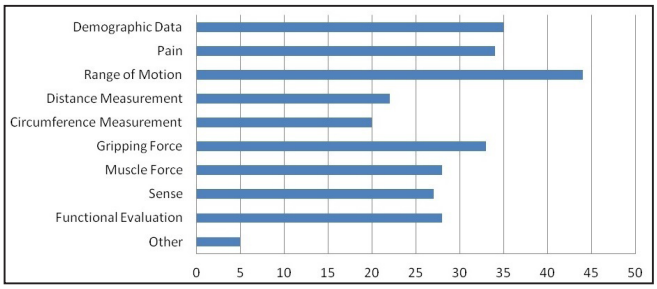
13 (%27.7) were working in hand surgery centers, 12 (%25.5) at University Hospitals, 6 (%12.8) at the State Hospitals, 16 (%34.1) were working at special clinics or physical therapy and rehabilitation branch centers that do not belong to any specified groups mentioned above. Among hand therapist participants 16 (33.3%) had experience in this field more than 16 years, 14 (29.2%) 0-5 years, 18 (37.6%) 6-15 years. Hand therapists made their improvement in this field mainly by courses after graduation (n = 35, 74.5%).

In one of the questions, where more than one answer is allowed to mark, asking the type of patient groups they work with: 90% (n=45) of participants were offering services to patients with tendon injury, 32% (n = 16) were providing treatment to rheumatic hand and upper extremity problematic patients (Graphic 2).

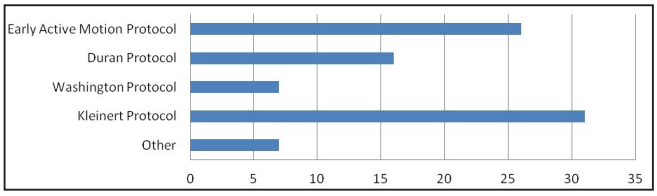
We asked hand therapists the question about how they reach patients with ability to mark more than answer: 30 (66.7%) responded referral by hand surgeons, 27 (60%) referral by physical medicine and rehabilitation specialists, 25 (55.6%) referral by orthopedic surgeon, 23 (51.1%) referral by plastic surgeons. 3 (6.7%) hand therapists responded that patients are consulted referral by physiotherapists who are non-hand therapists.

26 (55.3%) of the hand therapist participated in the study answered that the earliest starting time for treatment of a patient who underwent an upper limb surgery was between 1 and 3 days, 5 (10.6%) answered that this time is between 4 and 6 weeks. To the question where the patients' overall duration of follow up was asked, 13 (27.1%) of hand therapists responded that they follow patients on the average of 6 months.

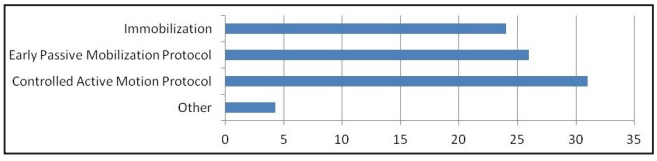
To the question where evaluation methods, standardized in hand and upper extremity rehabilitation, were questioned 44 (93.6%) of hand therapist participated in the study considered the range of motion, 34 (72.3%) considered pain stated (Graphic 3). In 43 (89.6%) of participants, the sense evaluation was observed during the hand rehabilitation. To the question where the evaluation of sense occurs most frequent-



Graph 3. Assessment methods used by hand therapists.



Graph 4. Treatment modalities used by hand therapists in flexor tendon injuries.



Graph 5. Treatment modalities of hand therapists in extensor tendon injuries.

ly, 42 (84%) of participants answered a light touch of sense. The least evaluated sense was vibration (n = 11, 22%). Distance measurement is the most common method in edema evaluation (n = 40, 80%). To the question where the assessment functionality was investigated used by participants, 23 (95.8%) answered Turkish version of The Disabilities of the Arm, Shoulder, and Hand (DASH-T), 12 (50%) answered as the Short Form-36 (SF-36).

The Kleinert protocol was the most frequently preferred treatment among participants in the post-op rehabilitation of the flexor tendon injuries (Graphic 4). The Controlled Active Movement Protocol was the most frequently preferred treatment protocol among participants during the post-op rehabilitation of the extensor tendon injuries (Graphic 5).

Discussion

Hand rehabilitation is one of the specialized fields for physiotherapists and occupational therapists in Turkey. Although hand therapists work with many different patient groups, only in six of them the consensus have been achieved in treatment algorithms such as De Quervain Syndrome, Carpal Tunnel Syndrome within the scope of studies EFSHT in Delphi [4]. In 2008, a group of researchers including a Turkish hand therapist published a paper about the Mallet Finger's assessment, splinting and treatment standardization in EUROHAND Congress in Lausanne [5]. It is seen that the development of hand rehabilitation, more scientific and standardized evaluation and treatment protocols are not yet completed. From this perspective, under nowadays` conditions learning evaluation and treatment methods used by hand therapists is very important for developing the appropriate algorithm in hand rehabilitation field.

Fifty (% 71.4) therapists who are members of ETD participated in the study by filling out the Survey. In total, ETD has seventy members. All members of the association are hand therapists with physiotherapy and rehabilitation origin. 70% of IFSHT hand therapist members consist of occupational therapists, and 30% consists of physiotherapists [8]. In this study, over 30 years of experience of the therapists in the United States and Canada, 29% of invited respondents participated in the study. 87% of hand therapists participated in the study were occupational therapist origin, and 13% were hand therapists with physiotherapist origin [6]. The participants in our study were only physiotherapist originated, and the reason for this is that the occupational therapy departments are recently beginning to open up in Turkey and at present most occupational therapists are not inclined to this field. It is thought-provoking that the number of hand therapists is very little in Turkey. At the same time, due to the absence of hand therapists in Turkey's East, Southeast Anatolia Region and the Black Sea Region, patients needing hand rehabilitation are directed to large centers. This appears to be a situation that contradicts to modern health services [7]. According to the report published by the

IFSHT in 2014, in Turkey, there are 1.632.388 people per hand therapist (8). When developed countries are examined, this number drops to 30 thousand even goes down to 17 thousand. In our country, the reason for few number of physiotherapists working in the hand therapy and rehabilitation field is that in the undergraduate education of physiotherapy and rehabilitation hand rehabilitation course is not included to the curriculum as mandatory [9]. Because physiotherapist candidates choose this field as an elective course or they learn it in the short term in the orthopedic rehabilitation or physical therapy special topics course [9], it can be concluded that this caused not increasing interest towards the hand and upper extremity rehabilitation.

In our country, 74.5% of hand therapists (n = 35) started working in this area after they got the post-graduate education. It is empathized that in the IFSHT member countries there are similar results, there is no doctorate (Ph.D.) program in the hand therapy in any country yet, and master's degree is not offered in 79% member countries [8]. There is a similar situation of doctorate education in Turkey. Currently, in our country, there is only one Master's degree offered program in hand rehabilitation.

77% of hand therapists working with hand surgeons who are the member of IFSHT [8], while in our country it is at the rate of 66.7%. This result shows hand surgeons can directly consult patients to the hand therapist concerning hand and upper extremity rehabilitation issue in Turkey. At the same time, this can help patients reaching hand therapists earlier than expected. However, still in Turkey, due to the physiotherapists` legal regulations, some of the hand surgeons cannot send patients directly to the hand therapists. If some legal regulations concerning the sending patients to the hand therapists who are one of the principal members of the hand rehabilitation team, then it will increase the patients' direct access rate to the hand therapists.

During the hand and upper extremity rehabilitation process, Turkish hand therapists mostly evaluate range of motion. Evaluation of pain and grasp strength is often performed by hand therapists. In the studies of evaluation field, the goniometric measurement and the evaluation of grip force in the upper extremity were mostly observed in clinics. In published articles, it is determined that there is no reached consensus yet [10-12]. It is indicated that hand therapists who perform sensory assessment, most often interpret the slight touching sense. This result indicates that Turkish hand therapist made slight touch sense evaluation as a standard evaluation in their evaluation processes, which is the gold standard in the sense evaluation. The participants most frequently used the environmental measurement method in the edema evaluation. It can be assumed that, not using volumetric methods which have become a gold standard is due to the lack of evaluation material at each clinic and that the environmental measurement is done more easily. DASH-T survey was the most used method by participants in functional evaluation. Although this survey has not become the gold standard yet, it is happened to be commonly used evaluation method [13].

Tendon injuries are the second most common type of hand injuries [14]. It's no surprise that hand therapists often compare with tendon injuries. Kleinert Protocol appears to be preferred method in flexor tendon injuries [15-18]. In the post-op rehabilitation process of the extensor tendon injuries, most common preferred treatment protocol was the Controlled Active Movement method. In the post-operative period, in extensor tendons with a dynamic as well as active methods providing shifting in all kinds of rehabilitation protocol gives better quality results than immobilization [19-21]. Turkish hand therapists` usage of these treatment protocols in tendon injuries shows that they follow update and valid treatment approaches.

Conclusion

This study is very important for learning working status of therapists, determining professional profiles, identifying used assessment and treatment methods

of members of ETD in Turkey. In our country up to 10.000 physiotherapists` and over 100 occupational therapists` interests for hand rehabilitation were determined. Patients' reaching the hand therapist directly and in the early phase is very important in terms of clinical, patient and public interest. Therefore we believe that the hand surgeon and hand therapist should work together in the same clinical environment. However, to improve this situation, the barrier of physician activity of the hand therapist must be resolved by appropriate legal regulations.

The results of this study are expected to contribute to the discussions held for the purposes like development of hand rehabilitation in Turkey, establishment of more scientific and standardized evaluation and treatment protocols.

Conflict of interest statement

The authors have no conflicts of interest to declare.

References

1. Polatkan S. Hand rehabilitation history process, development and current status in Turkey. In: Cerezci O, Ataker Y, Canbulat N, et al., (eds.) Hand Rehabilitation. American Hospital Publications, Istanbul, 2013;13-16.
2. Ege R. Historical development of hand surgeon in Turkey and in the World. 9. Hand and Upper Extremity Surgical Congress Book. Ankara: Turkish Hand and Upper Extremity Surgery Association Publications, 1991;5-12.
3. Oguz H. History of speciality. In: Beyazova M, Gökce Kutsal Y (eds.) Physical Medicine and Rehabilitation. Gunes Medicine Bookstore Publications, Ankara, 2011;3-11.
4. EFSHT, HANDGUIDE Study. Available via: http://www.eurohandtherapy.org/hand-therapy/guidelines (Accessed: December 12, 2016).
5. EFSHT, Results of Delphi round in Mallet finger for EFHST consensus. Available via: http://www.eurohandtherapy.org/files/EFSHT_Final_Delphi_Mallet.pdf (Accessed: November 10, 2016).
6. Keller JL, Caro CM, Dimick MP, Landrieu K, Fullenwider L, Walsh JM. Thirty years of hand therapy: The 2014 practice analysis. J Hand Ther 2016;29:222-34.
7. Pitt M, Monks T, Crowe S, Vasilakis C. Systems modelling and simulation in health service design, delivery and decision making. BMJ Qual Saf 2016;25:38-45.
8. Ewald S, Wendling U, IFSHT. What does the practice of hand therapy look like in IFSHT member countries? Summary of the 2014 IFSHT member survey. 2015. Available via: https://goo.gl/Etj62f (Accessed: December 17, 2016).
9. Gurses HN, Alemdaroglu I, Tanriverdi M. Investigation and curriculum analysis of the physiotherapy and rehabilitation faculty department/schools in Turkey. Turk J Physiother Rehabil 2014;25:16-27.
10. Jaffe R, Farney Mokris S. Edema. In: Casanova JS (ed.) Clinical Assessment Recommendations. American Society of Hand Therapists, Chicago, 1992;1-25.
11. Cano SJ, Browne JP, Lamping DL, Roberts AH, McGrouther DA, Black NA. The Patient Outcomes of Surgery-Hand/Arm (POS-Hand/Arm): a new patient-based outcome measure. J Hand Surg 2004;29:477-85.
12. Hoang-Kim A, Pegreffi F, Moroni A, Ladd A. Measuring wrist and hand function: common scales and checklists. Injury 2011;42:253-8.
13. Schoneveld K, Wittink H, Takken T. Clinimetric Evaluation of Measurement Tools Used in Hand Therapy to Assess Activity and Participation. J Hand Ther 2009;22:221-36.
14. Schöffl V, Heid A, Küpper T. Tendon injuries of the hand. World J Orthod 2012;3:62–9.
15. Voigt C. Tendon injuries of the hand. Chirurg 2002;73:744-64.
16. Werdin F, Schaller HE. Combined flexor tendon and nerve injury of the hand. Orthopade

2008;37:1202-9.
17. Werber KD. Flexor tendon injuries of the hand. Unfallchirurg 2005;108:873-81.
18. Evans RB. Managing the Injured Tendon: Current Concepts. J Hand Ther 2012;25:173-90.
19. Rosenthal EA, Stoddard CW. Questions Hand Therapists Ask about Treatment of Tendon Injuries. J Hand Ther 2005;18:313-8.
20. Griffin M, Hindocha S, Jordan D, Saleh M, Khan W. Management of Extensor Tendon Injuries. Open Orthop J 2012;6:36-42.
21. Newport ML, Tucker RL. New perspectives on extensor tendon repair and implications for rehabilitation. J Hand Therapy 2005;18:175-81.