

# Quality of Life and Pain Self-Efficacy in Chronic Disease Patients undergoing Occupational Therapy: A descriptive study



Paraskevi Theofilou\* and Foteini Terzaki

Hellenic Open University, School of Social Sciences, Patra, Greece

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\*Corresponding author: Paraskevi Theofilou, Hellenic Open University, School of Social Sciences, Patra, Greece

## Abstract

The aim of the present study is the investigation of the levels of quality of life and pain self-efficacy among chronic disease patients undergoing occupational therapy. The sample consists of 63 people, all chronic disease patients. Of the above patients, according to the research design, half receive Occupational Therapy services at a rate of 50.8% (32 patients) while the remaining 49.2% (31 people) did not receive. For the data collection MVQOLI-15 and PSEQ were used. We found that the average value of the sample regarding self-efficacy amounts to 39.10 (SD: 13.25), from which we can conclude that the sample appears moderately self-efficacious. Beyond this, the minimum value of self-efficacy amounts to 11,000 while the corresponding maximum to 64,00. Also, in general the sample appears to be neutral regarding its overall quality of life with the corresponding average value of the scale amounting to 15.86 (SD: 3.09). The value range is found from 9.60 to 22.50, while the median value is 15.80.

**Keywords:** Occupational Therapy, Quality of Life, Pain Self-Efficacy, Chronic Disease

## Introduction

In the modern era an unprecedented increase is observed in chronic diseases that have taken the form of a pandemic. Various people contributed to these factors such as the aging of the population, changes in lifestyle due to technology development and the changes in eating habits, the development of sanitary conditions and medical science that brought about a spectacular reduction in child mortality and deaths from infectious diseases and climatic and environmental changes [1]. Chronic diseases are a primary cause of death and morbidity in global level and the findings show that complex conditions such as diabetes and depression will be an even greater burden in the future. They appear in the elderly, but also in younger ages from all social layers, something that has serious financial implications for them. They consume part of their income of people who suffer, resources of the workforce, of productivity and may lead to early retirement or disability. No forming not only the individual income parcel, but also its insurance system of every country. Cardiovascular diseases are traditionally considered chronic diseases, as diabetes, asthma or chronic obstructive pulmonary disease, but as well new treatments are emerging and increase the survival rate, chronic diseases they are also some forms of cancer, chronic kidney disease, arthritis and psychiatric conditions such as depression, dementia or schizophrenia [2]. Occupational therapy belongs to

health and welfare sciences. Its main goal is to enable individuals to perform and participate in the projects of their daily life that they need to do, that they wish to do and/or required to do. Through the participation of individuals in projects, Occupational Therapy considers that health, well-being and generality are supported participation of individuals in life [3-5]. More specifically, with the active participation of individuals in the projects here of everyday life, individuals develop, experience their existence and their identity, improve their health and achieve a meaningful life [3-5]. With the term projects, Occupational Therapy refers to all those daily activities that individuals do either as units or with others, which fill their time, give purpose and meaning in their lives and reflect in their identity [3-5]. The primary goal of an occupational therapist is to execution of the project and the participation of individuals in their daily projects of life. The occupational therapy is provided to individuals, groups, communities or populations of any age they present or are at risk of presenting temporary or permanent malfunction of a project, due to any illness, trauma, disorder, incapacity, disability or due to adverse environmental factors [3-5].

In this context, many studies have indicated the important role that occupational therapy has in chronic disease patients. Specifically, the contribution of occupational therapy with people

undergoing hemodialysis treatment aims to mitigate its impacts on functionality and assists in overcoming difficulties through the development of resources such as significant activities and occupations and environmental adaptation, routine organization and assistance to continue social participation [6]. Moreover, Terzaki, Tsironi and Theofilou [7] investigated health - related quality of life in chronic disease patients undergoing occupational therapy and if it is affected by clinical and demographic factors. The results indicated that statistically significant differences were found in wellbeing, where women comparatively seemed to enjoy higher levels than men ( $p < 0.05$ ). A statistically significant ( $p = 0.016 < 0.05$ ) monotonic positive correlation ( $r = 0.421$ ) appeared between age and spirituality. Also, a statistically significant correlation ( $p = 0.004 < 0.05$ ) was found between interpersonal relationships and years since the diagnosis of the disease. The aim of the present study is the investigation of the levels of quality of life and pain self-efficacy among chronic disease patients undergoing occupational therapy.

### Method

It is a quantitative cross-sectional study including the variables of quality of life and pain self - efficacy respectively. The sample consists of 63 people, all chronic disease patients. Of the above patients, according to the research design, half receive Occupational Therapy services at a rate of 50.8% (32 patients) while the remaining 49.2% (31 people) did not receive. The inclusion criteria for the sample's selection were > 18 years old, diagnosed with a chronic disease and speaking the Greek fluently. For the implementation of this research, the questionnaire was used as a tool due to the many comparative advantages that characterize it (many examinees, low costs, ease of processing and analysis of the results, etc.). In particular, the three individual tools were used: Questionnaire to capture demographic data, Questionnaire to capture effectiveness in pain, questionnaire to capture quality of life. In more detail, the research tools are described below:

The demographic data of the sample was coded by a series of closed-ended questions, where gender, age, place of residence, occupation, etc. were specifically examined. To code and measure pain self-efficacy, the Pain-Self-Efficacy Questionnaire [8,9] was used, which codes and examines the self-confidence and confidence of people with chronic pain in performing a series of activities. The questionnaire consists of a series of 10 sentences, which capture situations of everyday and not only life (e.g., "I can do most household chores, despite the pain I feel"), where the sample is asked to capture the feeling of the confidence he feels on a scale from 0 to 6, where 0 corresponds to Not at all Confident and 6 to Absolutely Confident, while the intermediate gradations correspond accordingly. To calculate overall self-confidence and self-efficacy in pain, the individual scores are added to finally form a cumulative scale with a range from 0 to 60. It is obvious that scale values close to 60 correspond to high self-efficacy. pain efficacy, while values close to 0 correspond to low pain self-efficacy.

Furthermore, values close to 30 can be characterized as neutral pain self-efficacy. The PSEQ has been used in patients undergoing hemodialysis [8] in order to examine the psychometric properties of the Greek version (Cronbach's Alpha 0,98) while in another study [9] QoL and pain self-efficacy were explored, also, among hemodialysis patients.

To measure quality of life, the Missoula - VITAS Quality of Life Index (MVQUOLI) tool was used, as originally developed by Byock, Merriman, and Kinzbrunner [10] and revised in 2004. The version of the questionnaire used consists of 15 questions. It should be mentioned here that although the original version of this tool consisted of 25 questions, it was found that it was difficult for some patients to complete, so the questions were reduced to 15 (a version that was also used in the present study) while at the same time measuring statistically that the information lost by reducing the questions to 15 was not significant. In this specific research, the translated and weighted in Greece tool was used by Dr. Theofilou Paraskevi [11,12]. The above tool of 15 statements - questions, measures the quality of life in general, but also includes individual dimensions of the quality of life, as below: • Symptoms: The physical distress associated with the illness; perceived levels of physical distress. • Functionality: The ability to carry out ordinary functions and activities of daily life • Interpersonal Relationships: The degree of association in personal relationships and the quality of life enjoyed from relationships with family and friends • Well-being: Self-evaluation of an internal state; subjective sense of emotional "well-being" or "illness" Satisfaction or lack of satisfaction with self. • Spirituality: The degree of connection to an ongoing situation; degree of experiential meaning and purpose in life. Each of the above five dimensions of quality of life measured by the questionnaire consists of three sentences where the sample is asked to express their degree of agreement or disagreement on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree, while intermediate scales include Agree, Neither Agree but Neither Disagree, nor Disagree. Each of the above sentences is calibrated with integer numbers from -2 to 5, while it should be mentioned that in some sentences there is also a negative calibration. The individual calibration of the questions are detailed in the distributed questionnaire (Appendix). As we have seen before, each of the measured dimensions of the quality of life consists of three questions, which aim to capture the situation.

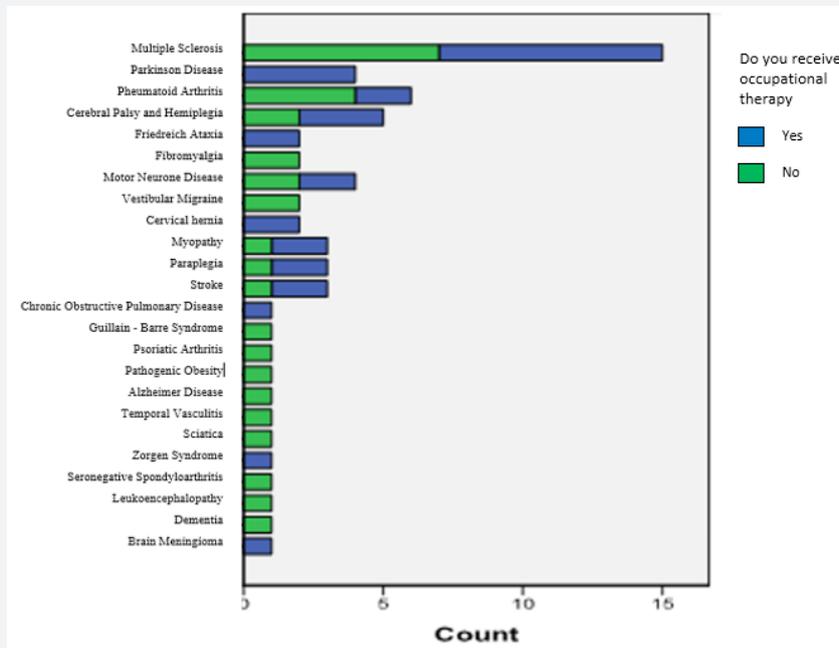
Each of these questions aims at a different approach to each dimension, as below: • Assessment: Subjective measurement of the actual situation or conditions (Essentially examining "what exactly it is"). Example: I feel sick all the time. • Satisfaction: Degree of acceptance of the actual situation (Essentially, the "degree of annoyance obtained" is examined). Example: I am Satisfied with the current control of my symptoms. • Importance: The degree to which a dimension has an effect on the overall quality of life (Essentially examining "how much it matters"). Example: Physical discomfort prevents any opportunity for fun. Finally, each dimension of the quality of life is approached for its quantitative measurement by a statement concerning "Estimation", one

concerning “Satisfaction” and finally, one concerning “Importance”. For the implementation of the research, the questionnaire was distributed electronically, through the google forms platform. The researcher got in touch with Occupational Therapists working in rehabilitation centers as well as doctors who follow chronic patients, in order to forward the questionnaires to a sample of patients. The questionnaires were completed electronically and anonymously by the patients or with the help of their companions. As the aim of the research is the comparative study between patients who receive Occupational Therapy services and those who do not, care was taken to obtain a sample of both chronically ill patients who receive Occupational Therapy services and those who do not. Before completing the questionnaire, the patients had to agree to ethical conditions related to anonymity, confidentiality and the assurance that the results will be used strictly and only in the context of the statistical analysis of the research. The responses, after being coded, were processed with the statistical package spssv19. To capture the descriptive statistics, frequency, relative frequency, mean value and standard deviation were calculated with simultaneous visualization with bar graphs, histograms or histograms as appropriate. To draw inductive conclusions, the t-test of independent samples was used, while where its use was not possible (mainly due to a small sample), corresponding non-parametric tests were used, such as the Mann-Whitney statistical test.

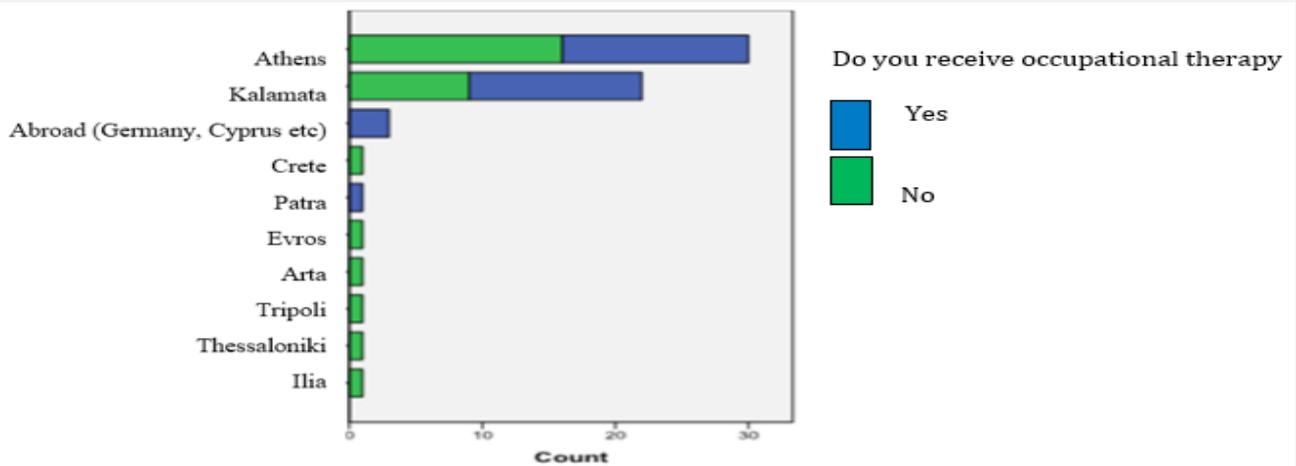
**Results**

The sample consists of 63 people, all chronic disease patients.

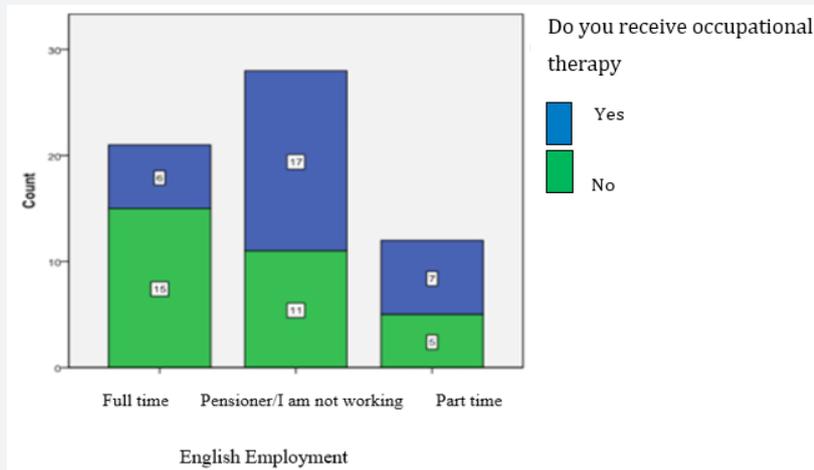
Of the above patients, according to the research design, half receive Occupational Therapy services at a rate of 50.8% (32 patients) while the remaining 49.2% (31 people) did not receive. The chronic diseases that are causes of chronic pain, for the two categories (those who receive Occupational Therapy services and those who do not) are reflected in the following bar chart (Graph 1). We find that the majority of the sample has been diagnosed with Multiple Sclerosis, while other common diseases found in the sample are Parkinson’s disease, Rheumatoid Arthritis, Cerebral Palsy with Hemiplegia, etc. The following diagram shows the place of residence of the sample for the two categories separately (Graph 2). From the bar graph above, we can see that the vast majority of the sample resides in Athens, followed by Kalamata. We should mention here that from the diagram above we can see that Occupational Therapy services seem to be received mainly by those who live in large urban centers (Athens, Kalamata, Patras) or abroad, while on the contrary those who live in smaller urban centers (Arta, Tripoli, Ilia) do not seem to receive corresponding services. Examining a sample regarding their employment, we can find that the greater majority of the sample belongs to the category Retired/I do not work with the corresponding percentage amounting to 45.9% (28 people) followed by those who work in Full-time status where it belongs 34.4% of the sample (21 people). Finally, part-time workers occupy 19.7% of the sample (12 people). In more detail, the distribution of the sample according to their employment status is shown in the following bar chart, where they are also divided according to whether they receive Occupational Therapy services or not (Graph 3).



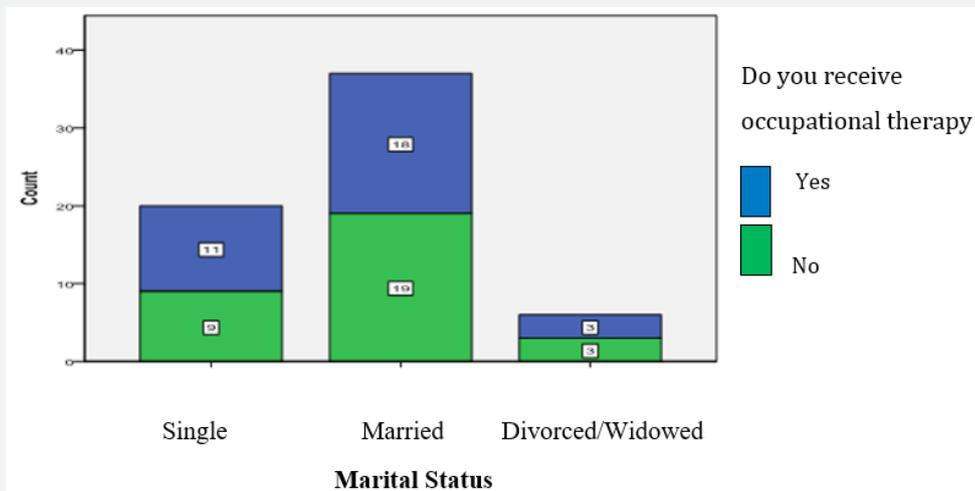
**Graph 1:** Chronic Disease Diagnosis Bar Chart.



Graph 2: Bar graph of place of residence.



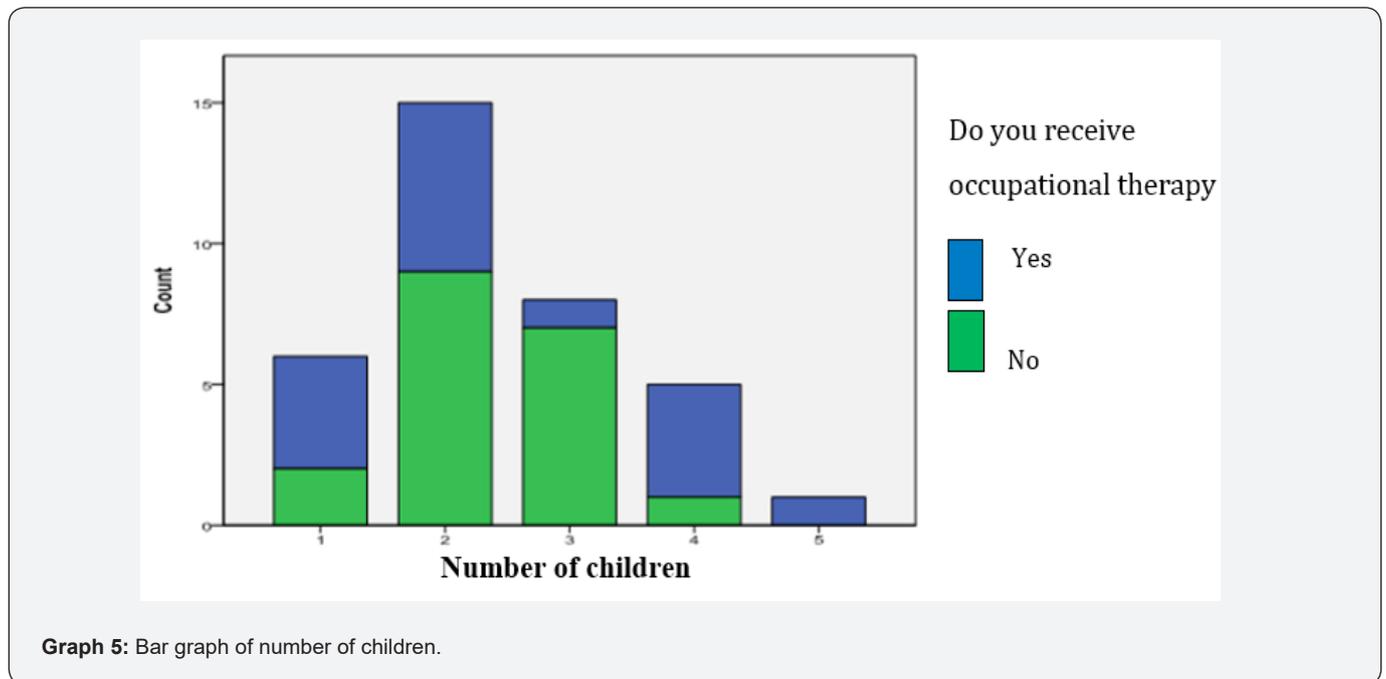
Graph 3: Employment bar graph.



Graph 4: Marital Status Bar Chart.

Regarding the marital status of the sample, the largest majority seems to be Married with the corresponding percentage amounting to 58.7% (37 people), followed by Singles who occupy 31.7% of the sample (20 people). Finally, there are the Divorced/Widowed who occupy 9.5% of the sample (6 people). The individual distribution of the sample regarding their marital status and depending on whether they attended Occupational Therapy

or not, is shown in the following bar chart (Graph 4). Finally, the number of children divided according to whether they attended Occupational Therapy or not, is as in the following bar chart (Graph 5). Next, we will present the individual demographic data (age, gender, etc.) separately for each of the separate Occupational Therapy monitoring categories.



Graph 5: Bar graph of number of children.

### Recipients of Occupational Therapy Services

As previously mentioned, there are 32 receiving Occupational Therapy services (50.8% of the total sample). Of these, 29.0% are men (9 people) and 71.0% are women (22 people), while we also have a missing value, as shown in more detail in the following (Graph 6). The average age of those receiving Occupational Therapy Services is 52.56 years (SD: 16.49), while the median age is 56 years. The ages range from 19 to 94 years, while the age distribution is as in the following histogram (Graph 7). In continuation of the above, those receiving Occupational Therapy services have been diagnosed with the disease for an average of 10.31 years (TA: 10.751), while the median number of years that have passed since the diagnosis of the disease is 8.00 years. In addition, the range of years that have passed since the diagnosis of the disease is 59, as they range from 1 to 60. In addition to the above, we should mention that an extreme value appears in the age distribution (No. 22) the diagnosis of an illness of which has been done in 1962, which we choose to keep in the sample. In more detail, the age distribution is shown in the following chart (Graph 8). Following the above, the sample was asked about taking medication for chronic pain, where it was found that for those receiving Occupational Therapy services, 71.9% (23 people) do not take medication for chronic pain, while the

remaining 23.1 % (9 people) receive, as shown in the bar graph below (Graph 9). Finally, and regarding the frequency of receiving Occupational Therapy services, the sample was asked in an open-ended question about the time they receive Occupational Therapy services and the frequency with which they receive them (“If you receive Occupational Therapy Services, how long do you receive them and how often;”). To capture the results, the frequency of download was divided into times/week and correspondingly the total duration of download into years. It was found that the average weekly frequency of receiving Occupational Therapy services amounts to 2.34 times/week (SD: 1.54). Accordingly, the minimum weekly frequency of receiving Occupational Therapy services is 0.5 times/week (once every two weeks), while the maximum is 7 times/week (every day). The weekly frequency of receiving Occupational Therapy services is shown in the following histogram (Graph 10). Accordingly, the average years of receiving Occupational Therapy services amounts to 2.23 (SD: 2.37). The years of receiving Occupational Therapy services range from 0.25 years (one quarter) to 10 years. The following histogram shows the years of receiving Occupational Therapy services (Graph 11).  
Not Receiving Occupational Therapy Services

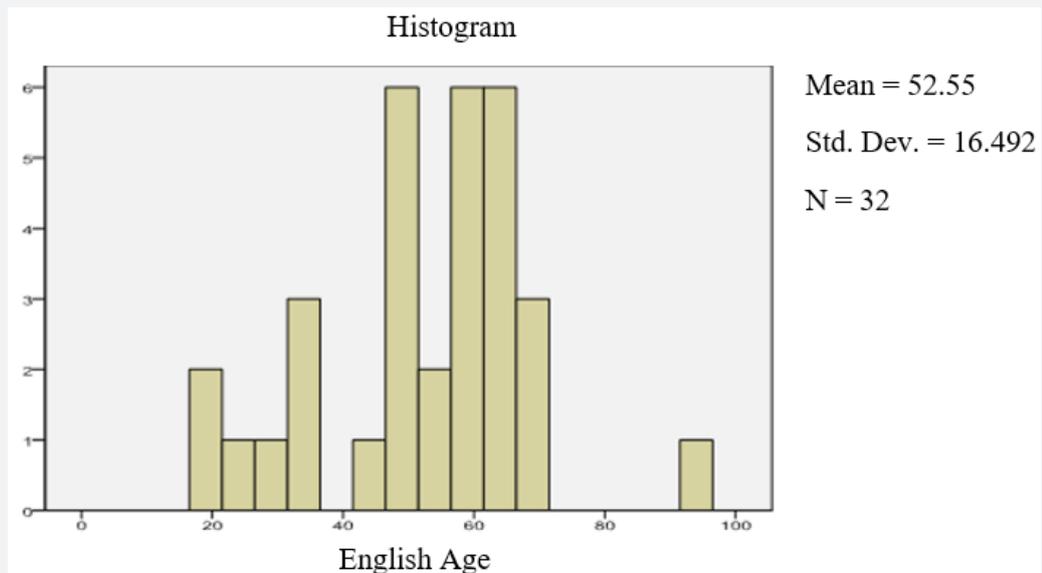
Accordingly, and in continuation with the above, there are a total of 31 people not receiving Occupational Therapy services, of

which 32.3% (10 people) are men while the remaining 67.7% (21 people) are women, while the distribution of those not receiving Occupational Therapy services according to gender, is reflected in the following bar graph (Graph 12). Looking at the age distribution of those not receiving Occupational Therapy services, we can see that the minimum age is 24 years, while the maximum is 78 years. Mean age is 50.65 years (SD: 15.58) while median age is 52 years. The age distribution of those not receiving Occupational Therapy services is shown in the following histogram (Graph 13). Examining the years that have passed since the diagnosis of the disease, for those not receiving Occupational Therapy services, we

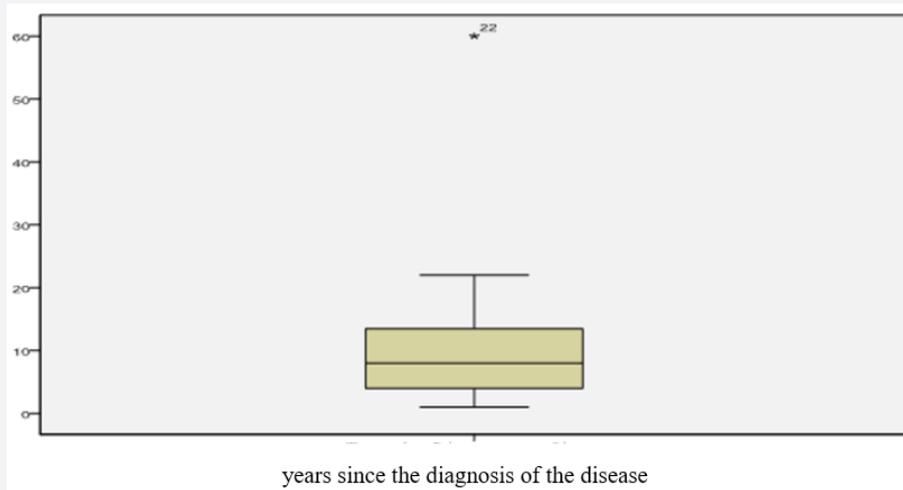
can find that the average value is 9.97 years (SD: 11.71) and in addition the minimum value is 1 year, and the maximum is 62. We should mention here that there is an extreme value (No. 21) where the disease was diagnosed in the year 1960, as shown in more detail in the following histogram (Graph 14). Finally, those not receiving Occupational Therapy services were asked about taking medication to treat chronic pain, where it was found that 71.0% (22 people) seem to be taking medication, while respectively 29.0% (9 people) does not receive medication to treat chronic pain, as detailed in the following bar chart (Graph 15).



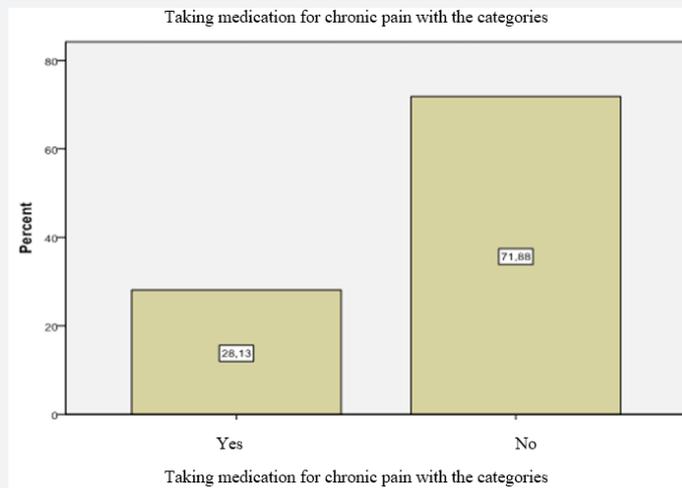
Graph 6: Bar graph of frequencies of gender of recipients of occupational therapy services.



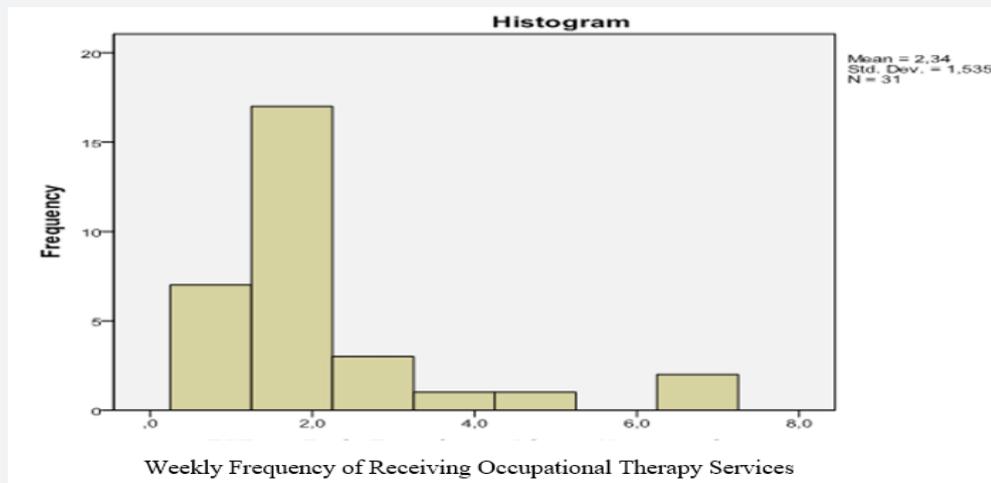
Graph 7: Histogram of Ages of Occupational Therapy Service Recipients.



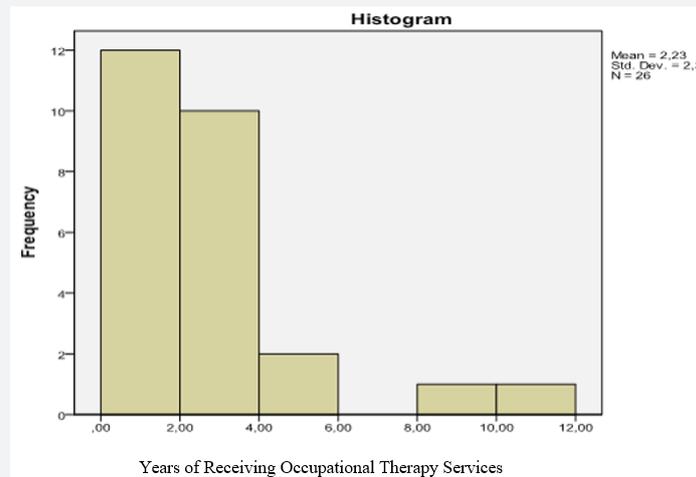
**Graph 8:** Histogram of years since the diagnosis of the disease.



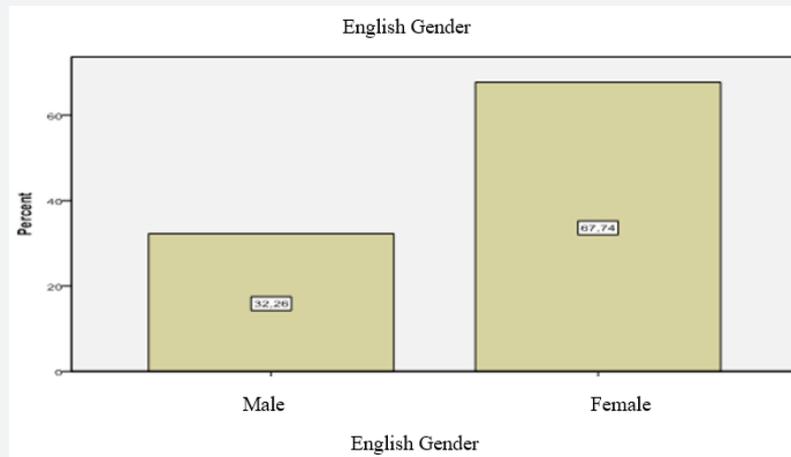
**Graph 9:** Bar Chart of Pharmaceutical Education for Chronic Pain, for Those Receiving Occupational Therapy Services.



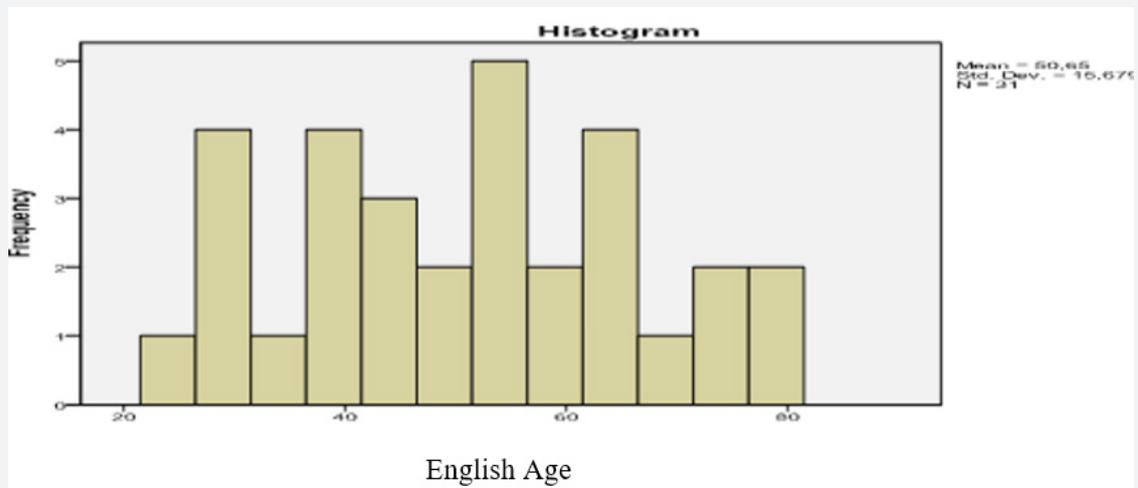
**Graph 10:** Histogram of Weekly Frequency of Receiving Occupational Therapy Services.



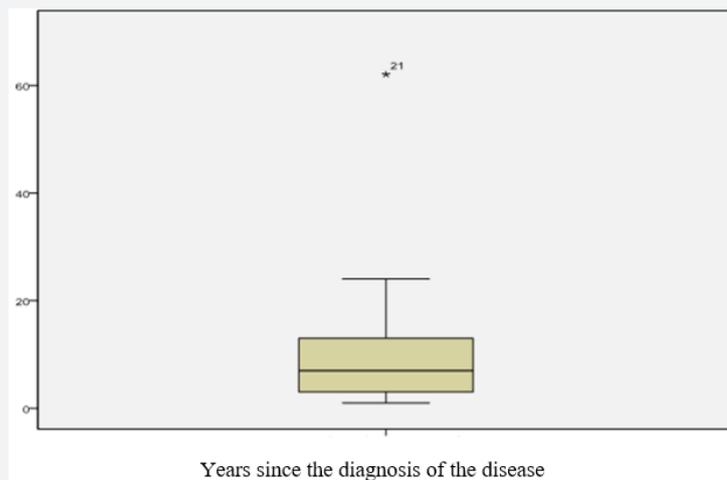
Graph 11: Histogram of Years of Receiving Occupational Therapy Services.



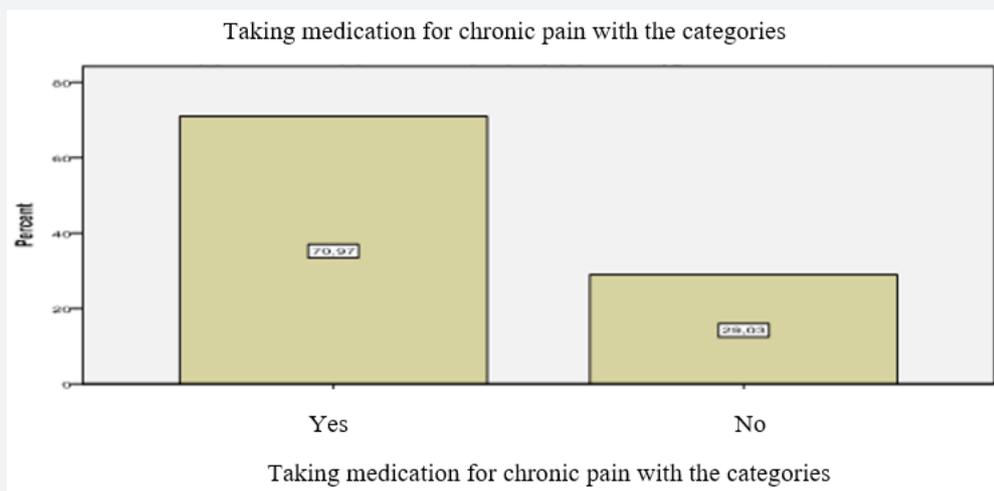
Graph 12: Gender bar graph for those not receiving Occupational Therapy Services.



Graph 13: Age histogram of those not receiving Occupational Therapy Services.



**Graph 14:** Histogram of years since diagnosis for those not receiving Occupational Therapy services.



**Graph 15:** Bar graph of receipt of pharmaceutical Education for chronic pain for those not receiving Occupational Therapy services.

### Pain self - efficacy

We can find that the average value of the sample regarding self-efficacy amounts to 39.10 (TA: 13.25), from which we can conclude that the sample appears moderately self-efficacious. Beyond this, the minimum value of self-efficacy amounts to 11,00 while the corresponding maximum to 64,00. The median price is 41.00, while the prevailing price is 50.00. In more detail, the distribution of the self-efficacy values of the sample is shown in the following histogram (Graph 16). We therefore found that the sample appears moderately self-efficacious overall. For a better approximation of self-efficacy, we will calculate the average value for each of the statements that make up the self-efficacy scale. It is obvious that values close to 0 correspond to a low occurrence of the measured property, while values close to 6 correspond to a high occurrence of it. In more detail, the average value and the standard deviation for each of the 10 statements that make up the scale are shown

in the following table (Table 1). From the table above, we can see that overall, the sample seems to be more confident that he/she can gradually become more active, despite the pain he/she feels, while at the same time he/she seems to feel confident that he/she can be in contact with friends or his family often, as he used to do, despite the pain he feels. Correspondingly, those for which the sample feels less confident to implement are More household chores (wiping, mopping, etc.) while correspondingly he feels less confident that he can deal with his pain without medication.

### Quality of life

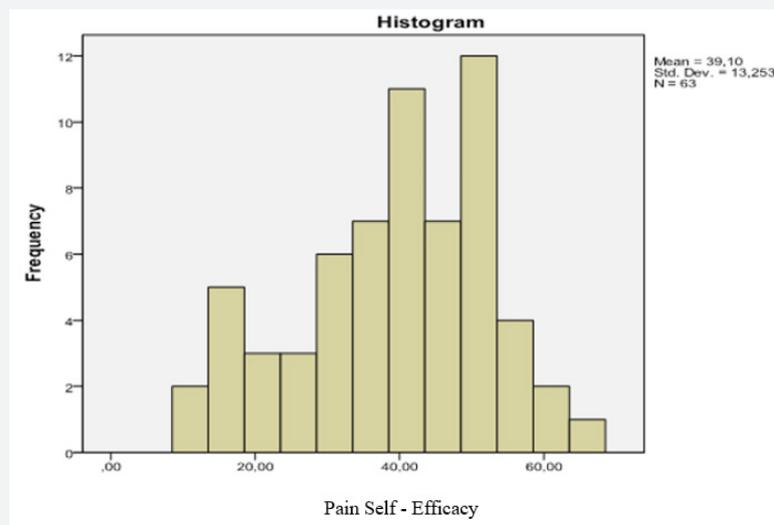
In addition to the questions that make up the subscales of the quality of life and the overall quality of life, there is also a general question in the questionnaire where the sample evaluates its quality of life in general. In particular, the sample was asked about the general rating of their quality of life, where the largest majority seems to choose Good with the corresponding percentage

amounting to 46.0% (29 people). They are followed by those who consider their overall quality of life to be Moderate with their percentage amounting to 27.0% (17 people) while next are those who chose Very Good with their percentage amounting to 12.7% (8 people). Comparatively fewer are those who chose Poverty with regard to their quality of life, with this percentage amounting to 11.1% (7 people) and Very Poor which is chosen by 3.2% (2 people). In more detail, the grading of the overall quality of life, depending on whether or not following Occupational Therapy is

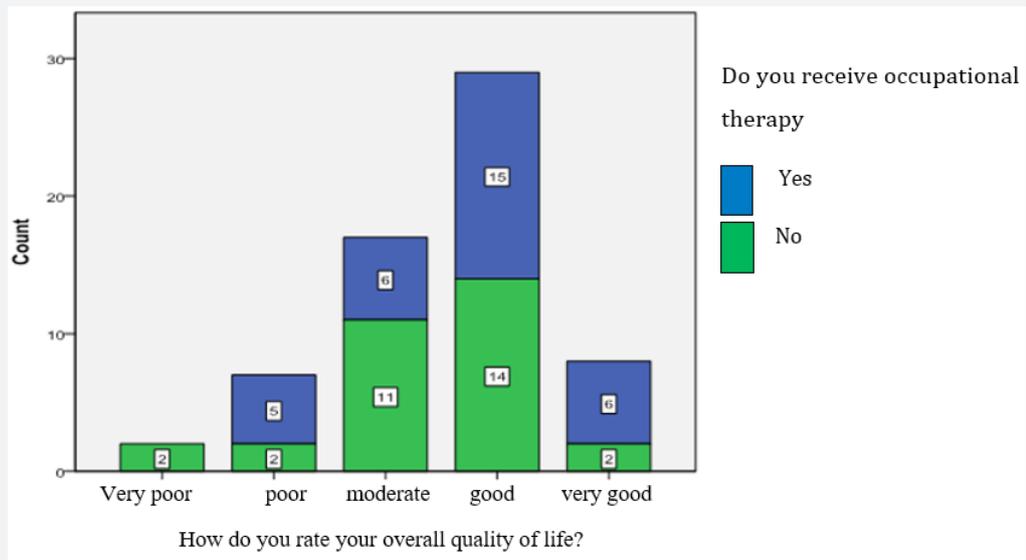
shown in the following bar chart (Graph 17). If we examine the distribution of the values of the overall quality of life scale for the entire sample, we can find that in general the sample appears to be neutral regarding its overall quality of life with the corresponding average value of the scale amounting to 15.86 (TA: 3.09). The price range is found from 9.60 to 22.50, while the median value is 15.80. In detail, the scale values are shown in the following histogram (Graph 18).

**Table 1:** Mean Value and Standard Deviation of Statements Comprising the Pain Self-Efficacy Scale (N=63).

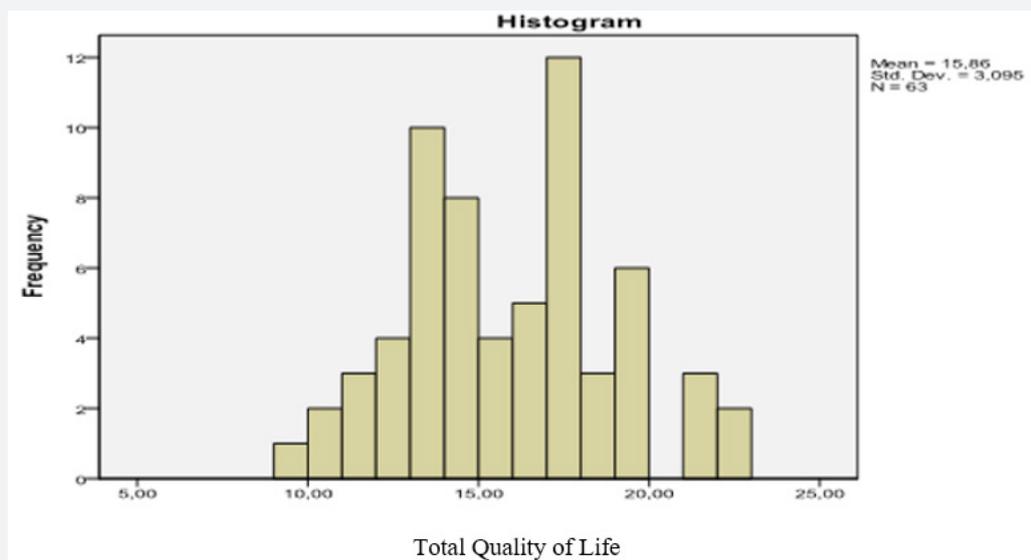
	Mean	Standard Deviation
I can enjoy things, despite the pain	4,08	1,579
I can do most of the household chores (e.g., tidying-up, washing dishes, etc.), despite the pain	3,40	1,801
I can socialize with my friends or family members as often as I used to do despite the pain.	4,37	1,406
I can cope with my pain in most situations	4,08	1,440
I can do some form of work, despite the pain. ('work' includes housework, paid and unpaid work)	3,73	1,780
I can still do many of the things I enjoy doing, such as hobbies or leisure activity, despite pain	3,62	1,641
I can cope with my pain without medication	3,38	1,896
I can still accomplish most of my goals in life, despite the pain	3,73	1,547
I can live a normal lifestyle, despite the pain	3,84	1,505
I can gradually become more active, despite the pain	4,87	2,466



**Graph 16:** Histogram of Pain Self-Efficacy Values.



Graph 17: Overall Quality of Life Score.



Graph 18: Histogram of Total Quality of Life values.

**Discussion**

The aim of the present study is the investigation of the levels of quality of life and pain self-efficacy among chronic disease patients undergoing occupational therapy. The research findings indicate that the sample appears moderately self-efficacious. With regards to quality of life, the sample appears to be neutral concerning its overall quality of life. These findings are in line with the results of other relevant studies conducted in the past [13-17]. Also, the literature gives us some information about the effect of the Occupational Therapy intervention on one or more of its dimensions Health-related Quality of life. The strongest evidence for a positive result concern patients with Rheumatoid

Arthritis. Systematic review conducted by Steultjens et al. [18] and is published in database Cochrane talks about the positive results that the Occupational therapy in the retraining of the affected individuals so that, e.g they roast their joints and thus prevent pain and them further deformations of the joints . Another review of Ekelman et al. [19], comes to strengthen the above conclusions but also to add evidence in favor of the use of splints in the context of Occupational Therapy intervention that reduce pain in patients with Rheumatoid Arthritis. Also, important is the amount of evidence supporting how much Occupational Therapy contributes to improving physical and mental health elderly people but also in their quality of life. As an example, the results

of the study by Johansson & Björklund [20] are reported, where elderly who received Occupational Therapy services showed statistically significant improvement in its scale dimensions SF-36 such as physical and mental health [20]. Last but not least, this study had some limitations due to its small sample. It is noted that the results can be further investigated in larger samples from other groups of chronic disease patients. In future research there may be the possibility of investigating other factors that are related to or affect the levels of quality of life and pain self - efficacy.

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