



ASSESSMENT OF NURSES' KNOWLEDGE ABOUT PHYSIOTHERAPY TECHNIQUES IN BASRA CENTER HOSPITALS

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Abstract

Assess the level of nurses knowledge in physiotherapy techniques and the relationship between the level of assessment with the practice of physical therapy and education level.

includes History of physiotherapy, Benefits of physiotherapy and Physiotherapy techniques.

So Methodology was a descriptive study, data were collected from staffs of physiotherapy units in Basra center hospitals number (30) samples. Instrument of this study was questionnaire composed (40) question about physical therapy techniques to evaluate nurse's knowledge about this subject, each question had (2.5) scores from the total degree which is (100) degrees, where It was used arethematic mean, standard deviation, range, percent, Kolmogorov-Smirnov Test, Pearson Correlation and one way ANOVA- F- test.

1- The percentage of nurse's knowledge about physiotherapy techniques was (43.58 %).

2- Percent passed of nurses was (33.33 %) while not passed of nurses was (66.66 %), but Sample's scores descriptive normally in Assessment of nurse's knowledge about physiotherapy.

- 1- Add physiotherapy in the curricula of health institutes and colleges of nursing in Iraq.
- 2- Give training courses for nurses who working at physiotherapy wards about how to deal with existing devices.

1-1: Introduction:

Physiotherapy (also **Physical Therapy** as referred to by the WCPT) is a health care profession concerned with human function and movement and maximizing potential. It is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation ¹ .

It uses physical approaches to promote, maintain and restore physical, psychological and social well-being, taking account of variations in health status. It is science-based, committed to extending, applying, evaluating and reviewing the evidence that underpins and informs its practice and delivery. The exercise of clinical judgment and informed interpretation is at its core.

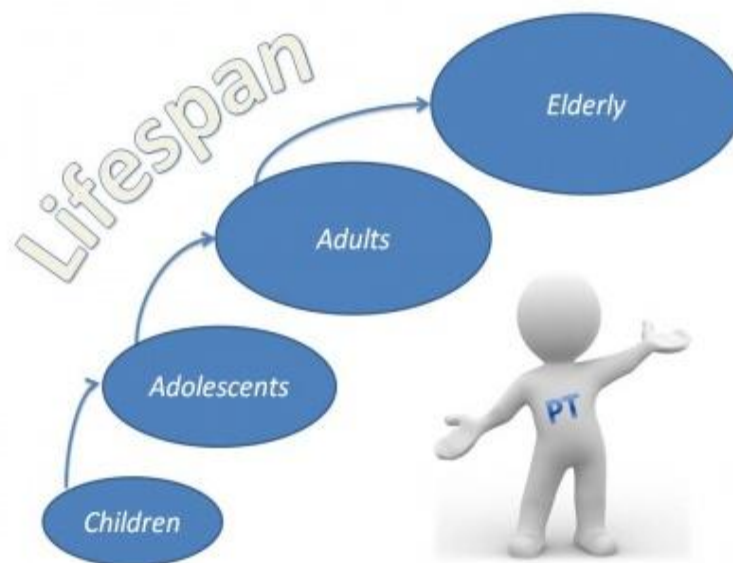


Figure 1,1 Physiotherapy can help you at any stage of your life ² .

Physiotherapist according to WCPT:

Physical therapists provide services that develop, maintain and restore people's maximum movement and functional ability. They can help people at any stage of life, when movement and function are threatened by ageing, injury, diseases, disorders, conditions or environmental factors.

Physiotherapists are experts in movement and function who work in partnership with their patients, a physiotherapist can also help prevent further injury by listening to patients needs and expectations, working together to plan the most appropriate treatment for any individual condition, including setting goals and treatment outcomes ³.

1-2 :Important of the project: Obtain assessments of nurses about

Physiotherapy techniques serving health and education institutions.

1-3: Problem of the project: There is no assessment to nurses about physiotherapy techniques can use to dependent on it evaluation nurses in hospitals.

1-4: Objectives of project:

1-To assess the level of nurses knowledge in physiotherapy techniques.

2-The relationship between the level of assessment and the practice of physical therapy and education level.

1-5 Identify of terms:

1- WCPT: World Confederation for Physical Therapy.

2- APTA: The American Physical Therapy Association.

3- PT: Physiotherapist.

4- US: United Status.

5- IFOMT: International Federation of Orthopedic Manipulative Therapy.

6- MSK: Musculoskeletal.

7- GET: Graded Exercise Therapy.

8- CFS: Chronic Fatigue Syndrome.

9- BRC: Basra Rehabilitative center for disabled.

2-1 History of physiotherapy

Physicians like Hippocrates and later Galenus are believed to have been the first practitioners of physiotherapy, advocating massage, manual therapy techniques and hydrotherapy to treat people in 460 B.C⁴.

After the development of orthopedics in the eighteenth century, machines like the Gymnasticon were developed to treat gout and similar diseases by systematic exercise of the joints, similar to later developments in physiotherapy.



Figure 2 . ,1 Shoulder Massage: Relief at Museum in Cyrene Libya thought to be 2000 years old⁵.

The earliest documented origins of actual physiotherapy as a professional group date back to Per Henrik Ling “Father of Swedish Gymnastics” who founded the Royal Central Institute of Gymnastics (RCIG) in 1813 for massage, manipulation, and exercise. In 1887, PTs were given official registration by Sweden’s National Board of Health and Welfare. Other countries soon followed. In 1894 four nurses in Great Britain formed the Chartered Society of Physiotherapy⁶.

The School of Physiotherapy at the University of Otago in New Zealand in 1913,⁷ and the United States' 1914 Reed College in Portland, Oregon, which graduated "reconstruction aides"⁸.

Research catalyzed the physiotherapy movement. The first physiotherapy research was published in the United States in March 1921 in *The PT Review*. In the same year, Mary McMillan organized the Physical Therapy Association (now called the American Physical Therapy Association (APTA)). Treatment through the 1940s primarily consisted of exercise, massage, and traction. Manipulative procedures to the spine and extremity joints began to be practiced, especially in the British Commonwealth countries, in the early 1950s^{9,10}.

Later that decade, PTs started to move beyond hospital based practice, to outpatient orthopedic clinics, public schools, college/universities, geriatric settings, rehabilitation centers, hospitals, and medical centers. Specialization for physical therapy in the U.S. occurred in 1974, with the Orthopaedic Section of the APTA being formed for those physical therapists specializing in orthopaedics. In the same year, the International Federation of Orthopaedic Manipulative Therapy (IFOMT) was formed¹¹, which has played an important role in advancing manual therapy worldwide since.

2-2 Clinical specialist

Because the body of knowledge of physiotherapy is quite large, PTs tend to specialize in a specific clinical areas. These include:

- MSK / Orthopedic
- Cardiopulmonary
- Neurology
- Pediatrics

- Sports Medicine
- Rheumatology
- Older People / Geriatrics
- Medical Conditions
- Pain
- Women Health
- Oncology
- Extended Scope
- Public Health.

2-3 Benefits of physiotherapy

A physiotherapist can get on track to have pain-free movement, which is essential to be able to do your favorites physical activities, so preventing a lot of chronic diseases ^{12, 13, 14}.

Moreover, even if surgery and drugs can be the best course of treatment for certain diagnoses, there are conditions in which physiotherapy can be equally effective.

Take low back pain as an example. There is evidence this condition is over-treated ¹⁵ with imaging, drugs prescription and surgeries, while early physical therapy can be a really cost-effective treatment ¹⁶.

It is the same if we talk about moderate meniscal tears or knee osteoarthritis, again physiotherapy can be a first choice treatment.

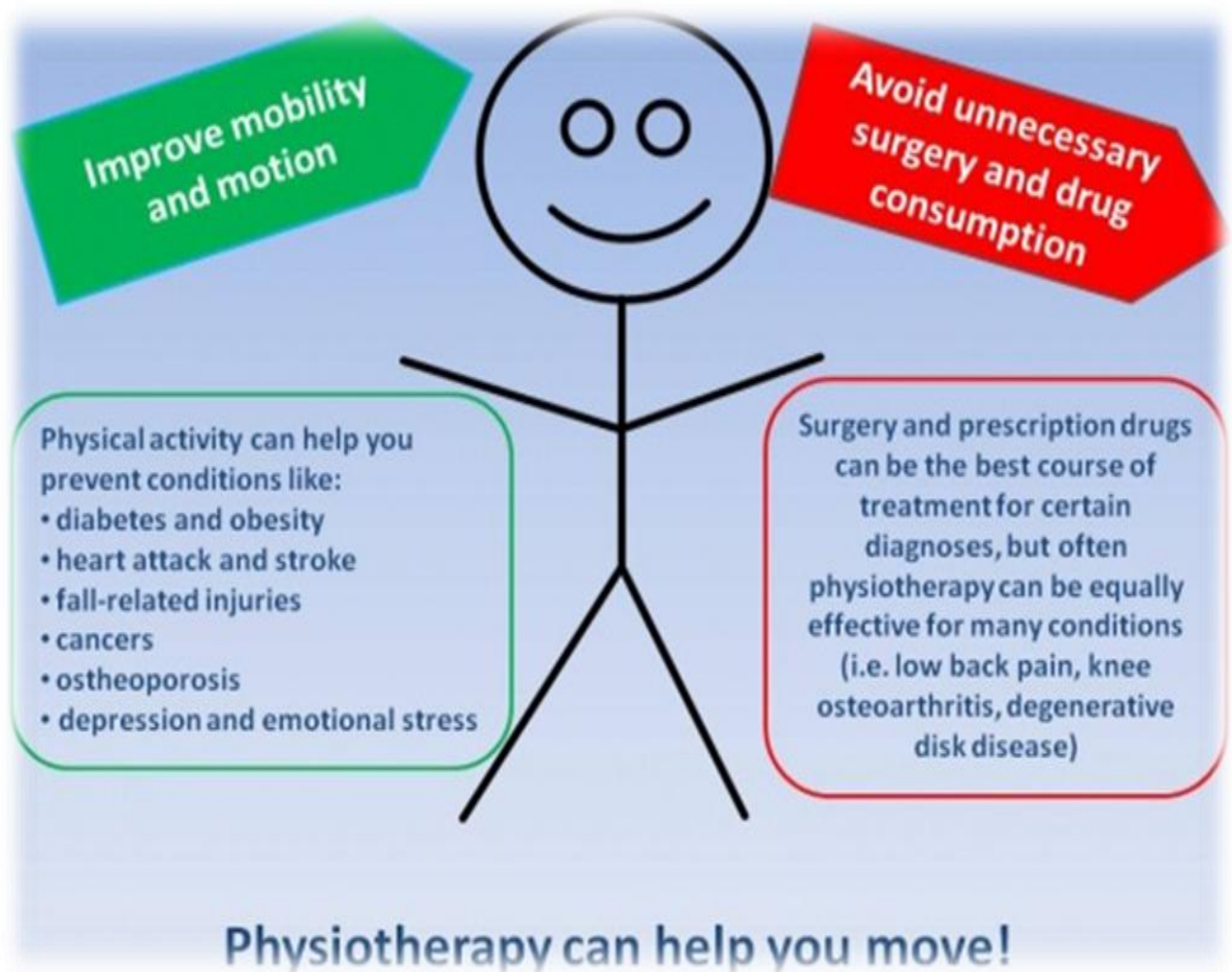


Figure 2 . 2 Benefits of physiotherapy.

Physiotherapy during immobilization:

1. Reduce edema.
2. Assist the maintenance of circulation to the area.
3. Maintains muscle function by active or static contractions,
4. Maintain joint range where possible.
5. Maintain as much function as allowed by the particular injury and the fixation.
6. Teach the patient how to use special appliances ex; sticks or crutches¹⁷ .

2-4 Physiotherapy techniques ¹⁸

1-Massage therapy

2- Hydrotherapy

3-Electrotherapy

4- Heat therapy

5- Cryotherapy

6- Exercise therapy

2-4-1 Massage therapy

Massage is to work and act on the body with pressure. Massage techniques are commonly applied with hands, fingers, elbows, knees, forearm, feet, or a device. The purpose of massage is generally for the treatment of body stress or pain. People who are professionally trained to give massages were traditionally known as **masseurs** or **masseuses**, but the term **massage therapist** has been promoted ¹⁹.

2-4-2 Hydrotherapy

Hydrotherapy or water therapy, is the use of water (hot, cold, steam, or ice) to relieve discomfort and promote physical well-being.

It is a general term for a group of alternative treatments that use water for the relief of various diseases or injuries, or for cleansing the digestive tract.

Hydrotherapy, formerly called **hydropathy** and also called **water cure**, is a part of alternative medicine, in particular of naturopathy, occupational therapy and physiotherapy, that involves the use of water for pain relief and treatment. The term encompasses a broad range of approaches and therapeutic methods that take advantage of the physical properties of water, such as

temperature and pressure, for therapeutic purposes, to stimulate blood circulation and treat the symptoms of certain diseases.

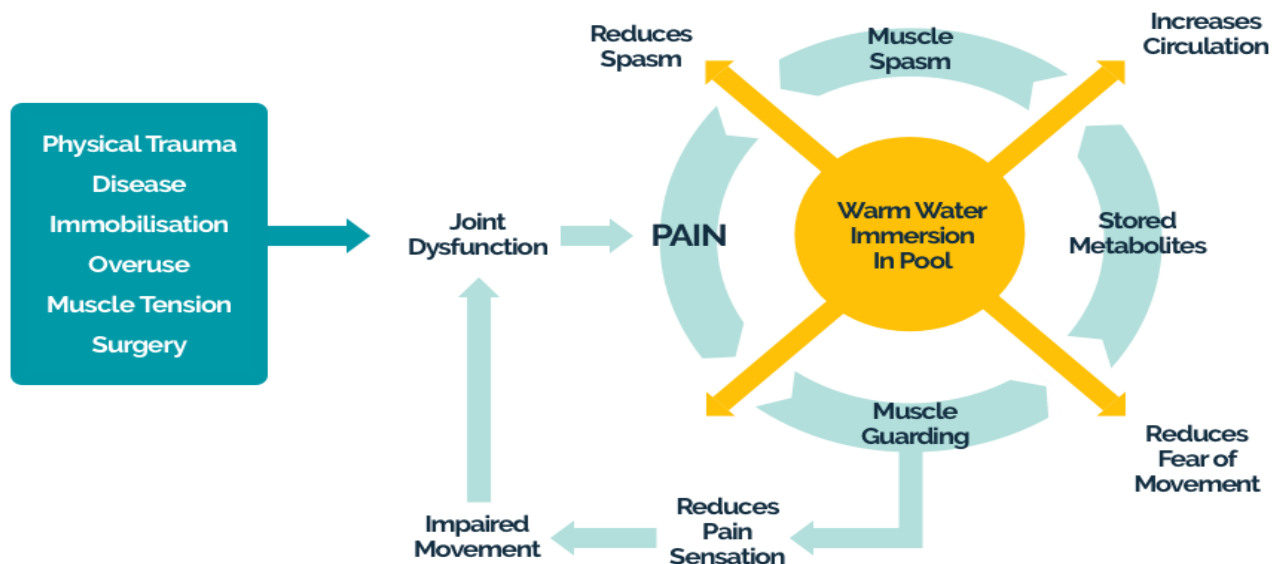


Figure 2 . 3 Benefits of physiotherapy²⁰ .

2-4-3 Electrotherapy

Electrotherapy is the use of electrical energy as a medical treatment. In medicine, the term electrotherapy can apply to a variety of treatments, including the use of electrical devices such as deep brain stimulators for neurological disease. The term has also been applied specifically to the use of electric current to speed wound healing. Additionally, the term "electrotherapy" or "electromagnetic therapy" has also been applied to a range of alternative medical devices and treatments.

Faradic current: is used to improve quadriceps power and reeducation of muscle after tendon transfer.

Galvanic current: is used after nerve palsies to prevent fibrosis. Effectiveness for particular indications

Musculoskeletal conditions

In general, there is little evidence that electrotherapy is effective in the management of musculoskeletal conditions²¹. In particular, there is no evidence that electrotherapy is effective in the relief of pain arising from osteoarthritis²², and little to no evidence available to support electrotherapy for the management of fibromyalgia²³.

Neck and back pain

At 2016 review found that, "in evidence of no effectiveness," clinicians should not offer electrotherapy for the treatment of neck pain or associated disorders. Earlier reviews found that no conclusions could be drawn about the effectiveness of electrotherapy for neck pain,^{24, 25} and that electrotherapy has limited effect on neck pain as measured by clinical results²⁶.

2-4-4 Heat therapy

Heat therapy, also called **thermotherapy**, is the use of heat in therapy, such as for pain relief and health. It can take the form of a hot cloth, hot water bottle, ultrasound, heating pad, hydrocollator packs, whirlpool baths, cordless FIR heat therapy wraps, and others. It can be beneficial to those with arthritis and stiff muscles and injuries to the deep tissue of the skin. Heat may be an effective self-care treatment for conditions like rheumatoid arthritis²⁷.

Mechanism of action and indication

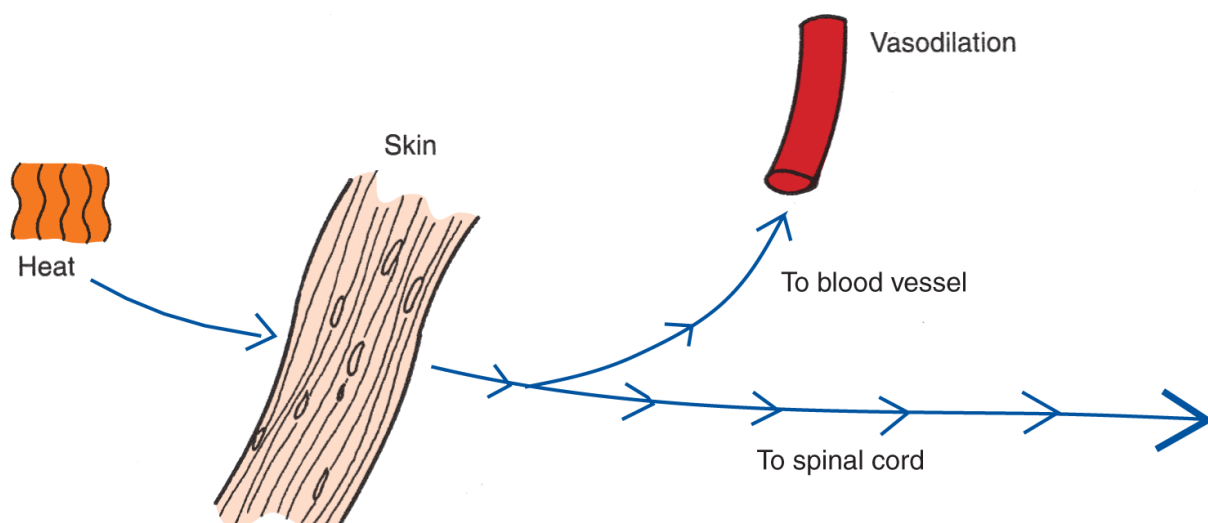
Heat creates higher tissue temperatures, which produces vasodilation that increases the supply of oxygen and nutrients and the elimination of carbon dioxide and metabolic waste.

Heat therapy is useful for muscle spasms, myalgia, fibromyalgia, contracture, bursitis²⁸.

Moist heat can be used on abscesses to help drain the abscess faster. A study from 2005 showed heat therapy to be effective in treating leishmaniasis, a tropical parasitic skin infection^{29, 30}.

Heat therapy is also sometimes used in cancer treatment to augment the effect of chemotherapy or radiotherapy, but it is not enough to kill cancer cells on its own³¹

Heat therapy is contraindicated in case of acute injury and bleeding disorders (because of vasodilation), tissues with a severe lack of sensitivity, scars and in tissues with inadequate vascular supply (because of increased metabolic rate and demand which a tissue with poor blood supply may fail to meet resulting in ischemia).



Source: James W. Bellew, Susan L. Michlovitz, Thomas P. Nolan Jr.: *Modalities for Therapeutic Intervention*, Sixth Edition, www.FADavisPTCollection.com Copyright © McGraw-Hill Education. All rights reserved.

Figure 2 . 4 mechanism of heat therapy ³² .

Diathermy: is a therapeutic treatment commonly prescribed for muscular and joint associated pains. The term ‘diathermy’ means ‘through heating’ or producing deep heating directly in the tissues of the body. ‘ **Dia**’ through (also means two) ‘**thermy**’ heat or temperature.

Diathermy uses an electric current to produce heat deep inside a targeted tissue. It can reach areas as deep as two inches from the skin’s surface.

- The diathermy machine does not apply heat directly to the body. Instead, the current from the machine allows the body to generate heat from within the targeted tissue.
- As the heat increases, it promotes blood flow. It can also help improve flexibility in stiff joints and connective tissue ³³ .

Principle of diathermy ³⁴

- 1- Before injury, the dipole molecules of the body tissue are arranged on the basis of polarity.
- 2- When the tissue is damaged the dipoles distribution become irregular
- 3- Under the influence of an electric field, they get rearranged and tend to acquire its previous stage of polarity.

Benefits of diathermy

- 1- Intense heat delivered provides pain relief and better flexibility.
- 2- Reduces inflammation.
- 3- Improves circulation.
- 4- Accelerate healing ³⁵ .

Types of diathermy:

- 1- Short wave diathermy
- 2- Microwave diathermy
- 3- Ultrasound diathermy
- 4- Long wave diathermy
- 5- Laser diathermy

2-4-5 Cryotherapy

Cryotherapy is the local or general use of low temperatures in medical therapy. Cryotherapy is used to treat a variety of benign and malignant tissue damage, medically called lesions. The term "cryotherapy" comes from the Greek cryo meaning cold, and therapy meaning cure.

The most prominent use of the term refers to the surgical treatment, specifically known as cryosurgery or cryoablation. Cryosurgery is the application of extreme cold to destroy abnormal or diseased tissue and is used most commonly to treat skin conditions ³⁶.

Cryotherapy is widely used to relieve muscle pain, sprains and swelling either via soft tissue damage or postoperative swelling. It can be a range of treatments from the very low technology application of ice packs or immersion in ice baths (generally known as cold therapy) to the use of cold chambers (whole body or partial body cryotherapy) and or face masks or body cuffs with controlled temperature, sometimes called hiloterm.



Figure 2 . 5 benefits of cryotherapy ³⁷.

2-4-6 Exercise therapy

Graded exercise therapy (GET) is physical activity that starts very slowly and gradually increases over time. This approach is used as part of a treatment plan for Chronic Fatigue Syndrome (CFS) and certain other conditions. This method avoids the extremes of the "push-crash" cycle of over-exercising during remittance or not exercising at all due to concern of relapse.

Typically the GET begins with active stretching, followed by range-of-motion contractions and extensions, done for five minutes per day for a completely inactive individual. Avoiding extremes is key, and activity must be balanced with rest. Exercise sessions should be preset by the number of repetitions or amount of time. The duration is determined by the patient using trial and error, with the goal of stopping before becoming tired. Research has shown that gradual, guided physical activity can be helpful (although not a cure) for those with CFS/ME.

Types of Therapeutic Exercise Intervention

- Aerobic conditioning
- Muscle performance exercises:
- Joint mobilization techniques
- Neuromuscular control, inhibition, and facilitation
- posture awareness training
- Postural control, body mechanics, and stabilization
- Balance exercises
- Relaxation exercises
- Breathing exercises
- Task-specific functional training

Figure 2 . 6 types of therapeutic exercises³⁸ .

3-1 Methodology

A descriptive study, data were collected from staffs of physiotherapy units in Basra center hospitals. Staffs were taken from different educational levels (Baccalaureate, Diploma, High school and physiotherapist practitioner) to evaluate the nurse's knowledge about physiotherapy techniques. Experience of staffs at physiotherapy units ranged from (10-30) years. Of these (30) nurses, (11) samples were female, and (19) samples were male.

3-2 Setting of the project

The project was carried out in the Basra center hospitals, Al-Fayhaa General Hospital , Sadr Teaching Hospital , Al-Muanaa General Hospital , Basra Rehabilitative Center for disabled and College of Nursing. The study was started from -20-12-2017 to 10-2-2018.

3-3 The Sample of the project

Thirty (30) samples of nurses to evaluate their knowledge about physiotherapy technique where they descriptive as the following: Sadr Teaching Hospital was

(6) nurses, Al-Muanaa General Hospital was (5) nurses, Al-Fayhaa General Hospital was (5) nurses, Basra Rehabilitative Center for disabled was (7) nurses and College of Nursing was (7) nurses.

3-4 Project instrument

Instrument of this study was questionnaire composed from two sections, the first section involves information about sample such as age, sex, education level and years of work. the second section involve (40) question about physical therapy techniques to evaluate nurse's knowledge about this subject, each question had (2.5) scores from the total degree which is (100) scores and the project contain (30) samples.

3-5 Statistical data analysis

It was used (**arethematic mean, standard deviation, range, percent, Kolmogorov-Smirnov Test, Pearson Correlation** and one way **ANOVA- F-test**). As well this project used statistical program **SPSS V.16** to analysis of data.

4 - Results of the study and its discussion

4-1 Results the statistics of the descriptive

Table (1) Statistics descriptive (mode) for variable study

statistics	gender	Age	level education	Place
N	30	30	30	30
Mode	male	55 year	diploma	BRC

a. Multiple modes exist. The smallest value is shown

Table (1) shows the number of variables and mode, the total number of nurses was thirty (30), the common gender was male, the most frequent age (55) year, the common level of education was diploma and the common place was Basra Rehabilitative Center (BRC) for disabled.

Table (2) Statistics descriptive for gender

statistics	Frequency	Percent	Cumulative Percent
Valid Female	11	36.7	36.7

Male	19	63.3	100.0
Total	30	100.0	

Table (2) shows female, frequency (11), percent (36.7%), valid percent (36.7%), cumulative percent (36.7%), male, frequency (19), percent (63.3%), valid percent (63.3%), and cumulative percent (100%).
 the total of frequency was (30) and percent (100%).

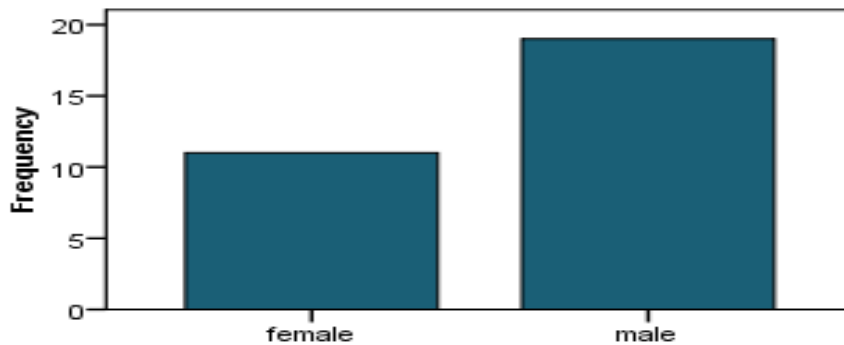


Figure 4 . 1 frequency male & female

Age	Frequency	Percent	Cumulative Percent	Mean
Valid 23	3	10.0	10.0	37.43
24	1	3.3	13.3	
25	3	10.0	23.3	
28	3	10.0	33.3	
30	1	3.3	36.7	
31	2	6.7	43.3	
32	1	3.3	46.7	
33	1	3.3	50.0	
34	1	3.3	53.3	
35	3	10.0	63.3	
45	2	6.7	70.0	
48	1	3.3	73.3	
50	1	3.3	76.7	
51	1	3.3	80.0	

55	4	13.3	93.3	
56	1	3.3	96.7	
60	1	3.3	100.0	
Total	30	100.0		

Table (3) shows, information about age of nurses, where maximum age (60), minimum age (23) years and more frequent age was (55) years old, frequency four (4) from the total of sample (30), percent (13.3), cumulative percent (93.3) and mean to age sample equal (37.43).

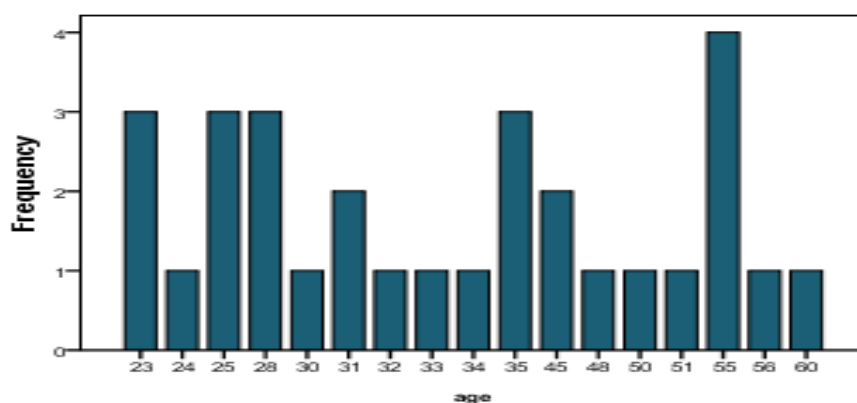


Figure 4 . 2 frequency to sample age

Table (4) Statistics descriptive for level education

Statistics	Frequency	Percent	Valid Percent	Cumulative Percent
Valid high school	5	16.7	16.7	16.7
Diploma	16	53.3	53.3	70.0
Baccalaureate	8	26.7	26.7	96.7
Physiotherapist practitioner	1	3.3	3.3	100.0
Total	30	100.0	100.0	

Table (4) shows the following:

Information about level education of nurses, high school was frequency (5) and its percent (16.7%).

Diploma was frequency (16) and its percent equal (53.3%).

Baccalaureate was frequency (8) and percent (26.7%).

Physiotherapist practitioner was frequency (1) and percent (3.3%).

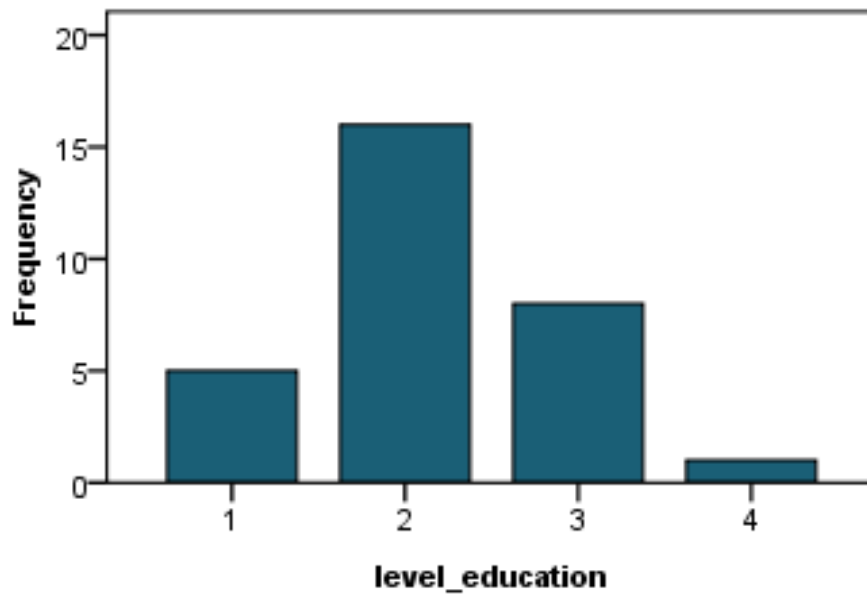


Figure 4 . 3 frequency to level education

Table (5) Statistics descriptive for place				
Hospitals	Frequency	Percent	Valid Percent	Cumulative Percent
Sadr Teaching Hospital	6	20.0	20.0	20.0
Al-Muanaa General Hospital	5	16.7	16.7	36.7
Al-Fayhaa General Hospital	5	16.7	16.7	53.3
Basra Rehabilitative Center	7	23.3	23.3	76.7
College of Nursing	7	23.3	23.3	100.0
Total	30	100.0	100.0	

Table (5) shows the following:

Information about places, Sadr Teaching Hospital was frequency (6) and percent (20%). Al-Muanaa General Hospital was frequency (5) and percent (16.7%). Al-Fayhaa General Hospital was frequency (5) and percent (16.7%). Basra

Rehabilitative Center for disabled was frequency (7) and percent (23.3%).
 College of Nursing was frequency (7) and percent (23.3%).

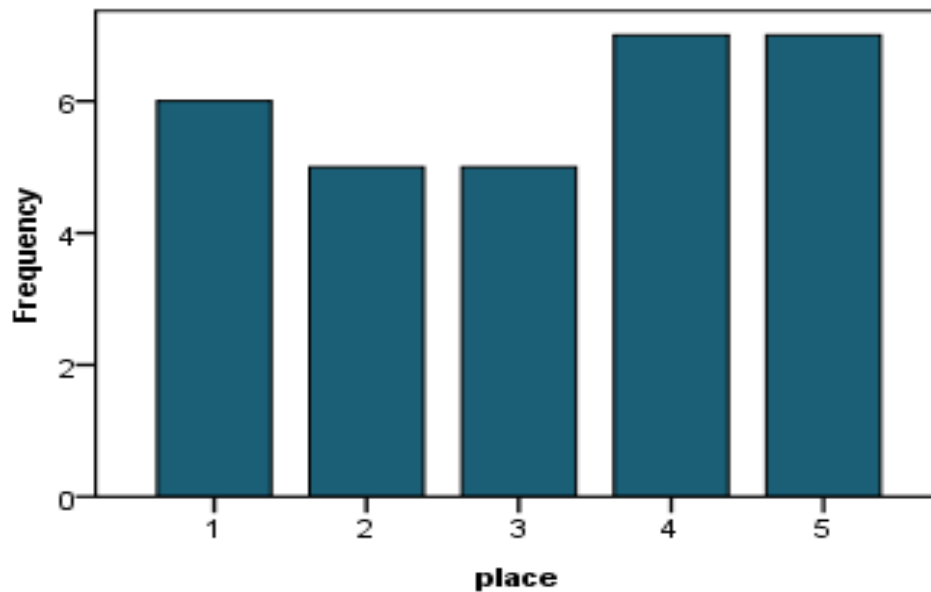


Figure 4 . 4 frequency to place

4-2 Results the statistics of the Assessment of nurse’s knowledge

Table (6) Assessment of nurse’s knowledge

Variable	N	Range	Minimum	Maximum	Mean	Std. Deviation	Total score
Scores	30	47.50	20.00	67.50	43.5833	11.79354	100
Valid N (list wise)	30						

Table (6) shows the degree question of nurses about physiotherapy, This table presented **Assessment of nurse’s knowledge** , where it were as following range (47.50), minimum score (20), maximum score (67.5), the mean of scores (43.58) from total scores (100) and standard deviation (11.793)

Table (7) frequency its percent passed and not passed of nurses

variable	Frequency	Percent	Cumulative Percent
not passed	20	66.7	66.7
passed	10	33.3	100.0

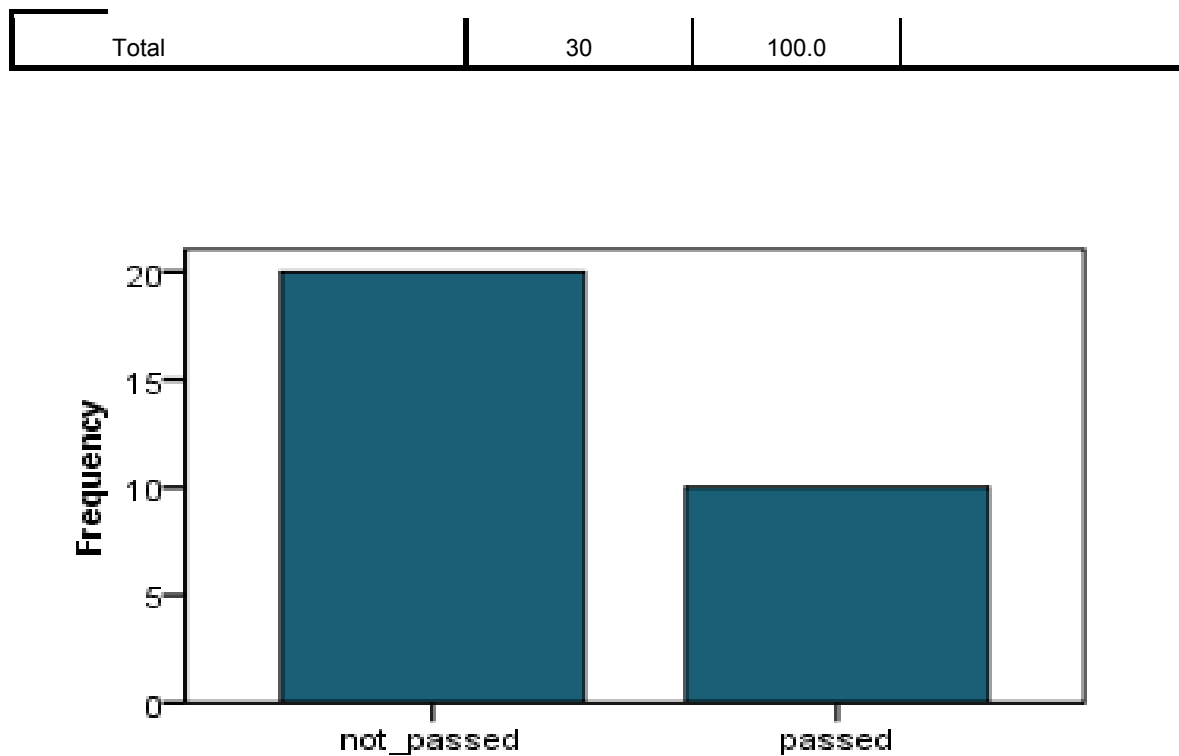


Figure 4 . 5 frequency its percent passed and not passed

Table (8) One-Sample Kolmogorov-Smirnov Test

Statistics		Scores
N		30
Normal Parameters	Mean	43.5833
	Std. Deviation	11.79354
Most Extreme Differences	Absolute	0.075
	Positive	0.053
	Negative	-0.075-
Kolmogorov-Smirnov Z		0.412
p-value Sig. (2-tailed)		0.996
a. Test distribution is Normal		

Table (8) display **Kolmogorov-Smirnov Test** for scores of sample to compare with normal disruption where its value (**0.412**) and **p- value (0.996)**, so scores of sample descriptive normally in Assessment of nurses knowledge about physiotherapy.

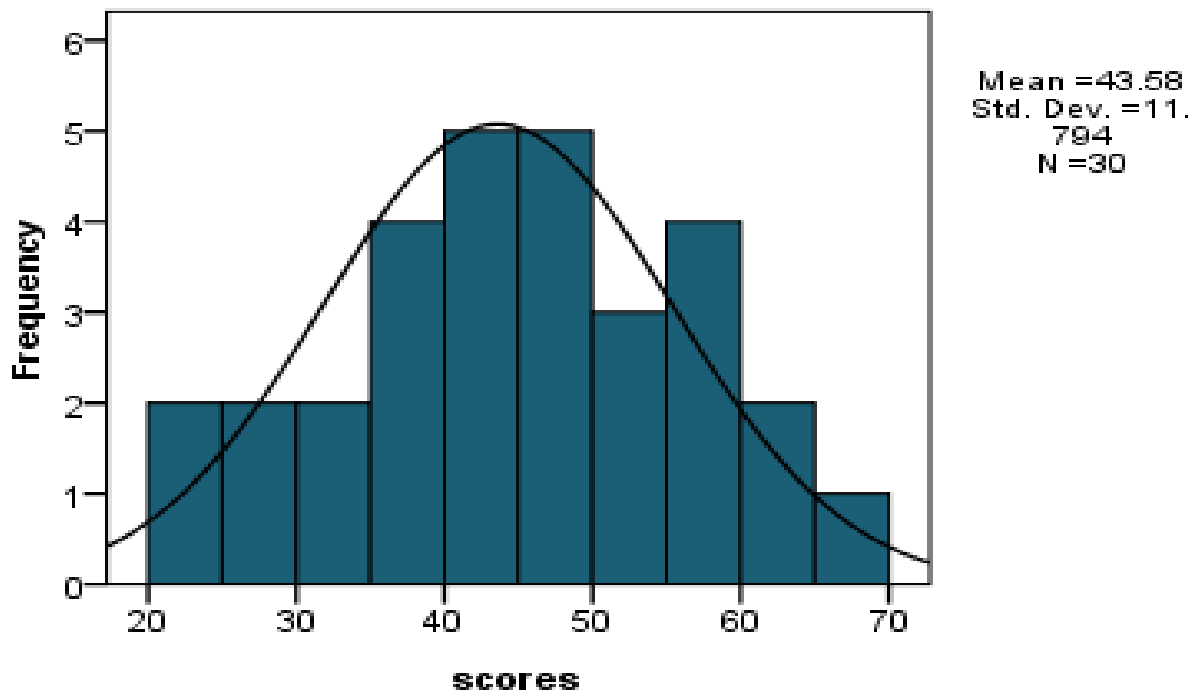


Figure 4 . 6 distribution of nurse’s scores in physiotherapy techniques according Kolmogorov-Smirnov Test

4-3 Results relationship the nurse’s knowledge with the years of work

Table (9) mean & std. deviation to scores and years of work

Statistics	Mean	Std. Deviation	N
Scores	43.58	11.794	30
experience years	10.37	9.953	30

Table (9) display descriptive statistics where mean of scores (43.58), standard deviation (11.794) and mean of experience years (10.37), standard deviation (9.953)

Table (10) Pearson Correlations

Statistics		scores	years of work
scores	Pearson Correlation	1	0.026-
	Sig. (2-tailed), P- value		0.893
N		30	30

Table (10) shows parson correlation statistics to the relationship between nurse's knowledge and the years of working was **Pearson Correlation equal (0.026-)**, P- value equal **(0.893)** and was **more than (0.05)** level then it is insignificant between nurse's knowledge and the years of working.

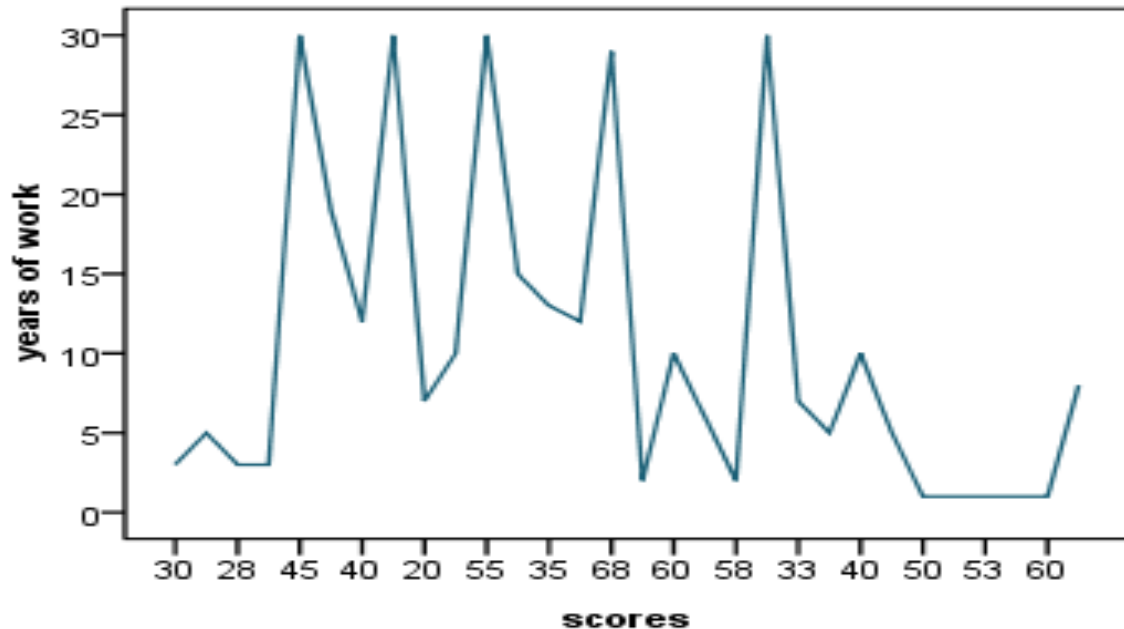


Figure 4 . 7 relationship the nurse's' scores with years of work

4-4 Results of sample according to hospital & place of working

Table (11) Descriptive for sample according to hospital & place of working

Hospital & place	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
1-Sadr Teaching Hospital	6	38.75	10.577	4.318	28	55
2-Al-Muanaa General Hospital	5	51.50	13.062	5.842	35	68
4-Al-Fayhaa General Hospital	5	46.00	10.398	4.650	32	58
5-Basra Rehabilitative Center	7	37.50	12.748	4.818	20	55
5-College of Nursing	7	46.43	9.880	3.734	30	60
Total	30	43.58	11.794	2.153	20	68

Table (11) display **Assessment of nurse's knowledge** according to hospital & place of working where mean of Sadr Teaching Hospital (38.75), mean of Al-Muanaa General Hospital (51.50), mean of Al-Fayhaa General Hospital (46.00), mean of Basra Rehabilitative Center (37.50) and mean to College of Nursing

(46.43). So we can to sort them according to best Al-Muanaa General Hospital, College of Nursing, Al-Fayhaa General Hospital, Sadr Teaching Hospital and Basra Rehabilitative Center.

Table (12) One way ANOVA - F- test

sources	Sum of Squares	df	Mean Square	F	p-value	result
Between Groups	798.452	4	199.613	1.543	0.220	insignificant
Within Groups	3235.089	25	129.404			
Total	4033.542	29				

Table (12) display One way ANOVA - F- test to compare between nurses according their places where the results refer to insignificant between them Though present different in the means between hospitals.

4-5 Discussion of the result

In our study, we found the assessment of nurses knowledge was (43.58) from total scores (100) according to the table (6). This score of samples is normally in assessment of nurses knowledge about physiotherapy techniques according to figure (4.6).

The number of nurses who passed the test was (20) with percentage (66.7) and the number of those didn't pass the test was (10) with percentage (33.3), see above figure (4.5).

In this study there was no relationship between nurses knowledge and years of experience, according to the figure (4.7).

The best places in nurses knowledge about physiotherapy in succession were Al-Muanaa General Hospital, College of Nursing, Al-Fayhaa General Hospital,

Sadr Teaching Hospital and Basra Rehabilitative Center, according to the table (11).

These results may be due to lack of training courses to the staff or lack of information about how to use the therapeutic techniques of physiotherapy.

Studies have explored four themes that may influence patient-therapist interactions: interpersonal and communication skills ,practical skills , individualized patient-centered care ,and organizational and environmental factors ³⁹.

Physical therapists need to be able to effectively communicate with their patients on a variety of levels. Patients have varying levels of health literacy so it is important for physical therapists to take that into account when discussing the patient's ailments as well as planned treatment. Research has shown that using communication tools tailored to the patient's health literacy leads to improved engagement with their practitioner and their clinical care. Based on the particular diagnosis, varied methods are practiced by physiotherapists to treat patients ⁴⁰.

5-1 Conclusion

The following conclusions were obtained from the current study:

- 1- The percentage of nurse's knowledge about physiotherapy techniques was (43.58 %).
- 2- Percent passed of nurses was (33.33 %) while not passed of nurses was (66.66 %), but Sample's scores descriptive normally in Assessment of nurse's knowledge about physiotherapy.
- 3- There is insignificant relationship between years of experience and nurse's knowledge about physiotherapy.
- 4- The best hospital was Muanaa General Hospital then college of nursing.

5-2 Recommendation

- 1- Taking the results of the study and work in Basra hospitals.
- 2- Add physiotherapy in the curricula of health institutes and colleges of nursing in Iraq.
- 3- Give training courses for nurses who working at physiotherapy wards about how to deal with existing devices.
- 4- The community's view of females work at physiotherapy wards must be changed and to take their role in work according to the social nature where the work is limited to female's patients.
- 5- Improve level the education of nurses who working at physiotherapy wards, so they can reach to highest scientific level.
- 6- Increase awareness of community about the importance of physiotherapy in rehabilitation.
- 7- Provide the specialized centers of physiotherapy that contain the advanced physiotherapy techniques and improve the existing places.

References

- 1- WCPT, Description of physical therapy. www.wcpt.org/policy/ps-descriptionPT#appendix_1 . 2017
- 2- Chartered Society of Physiotherapy. What is Physiotherapy? www.csp.org.uk/director/public/whatphysiotherapy.cfm . Retrieved 2010
- 3- WCPT. What is physical therapy? <http://www.wcpt.org/what-is-physical-therapy> 2016
- 4- Wharton MA. Health Care Systems I; Slippery Rock University. 1991
- 5- Sarah Bakewell, "Illustrations from the Wellcome Institute Library: Medical Gymnastics and the Cyriax Collection," *Medical History*. 1997
- 6- Chartered Society of Physiotherapy. History of the Chartered Society of Physiotherapy. www.csp.org.uk/director/about/thecsp/history.cfm. Retrieved 2008
- 7- Knox, Bruce 2007. "History of the School of Physiotherapy" . University of Otago. physio.otago.ac.nz/about/history.asp. Retrieved 2008
- 8- Reed College. Mission and History. www.reed.edu/about_reed/history.html. Retrieved 2008
- 9- Physiopedia. The cervical and thoracic spine: mechanical diagnosis and therapy. 1998
- 10- McKenzie. Patient Heal Thyself. www.physio-pedia.com . 2002
- 11- Lando, Agneta (2003). "History of IFOMT". International Federation Orthopaedic Manipulative Therapists. <http://www.ifomt.org/ifomt/about/history>. Retrieved 2008
- 12- Durstine JL, Gordon B, Wang Z, Luo X. Chronic disease and the link to physical activity. *Journal of Sport and Health Science* . 2013
- 13- Kruk J. Physical activity in the prevention of the most frequent chronic diseases: an analysis of the recent evidence. *Asian Pac J Cancer Prev*. 2007

-
- ¹⁴- Centers for Disease control and prevention. Physical Activity. www.cdc.gov/healthyplaces/healthtopics/physactivity.htm . 2016
- ¹⁵- Mafi JN, McCarthy EP, Davis RB, Landon BE. Worsening trends in the management and treatment of back pain. *JAMA Intern Med.* 2013
- ¹⁶- Fritz JM, Brennan GP, Hunter SJ, Magel JS. Initial management decisions after a new consultation for low back pain. *Arch Phys Med Rehabilitation.* 2013
- ¹⁷- Katz JN, Brophy RH, Chaisson CE, de Chaves L, Cole BJ, Dahm DL, et al. Surgery versus Physical Therapy for a Meniscal Tear and Osteoarthritis. *New England Journal of Medicine.* 2013
- ¹⁸- J.H. Kellogg MD (page 9). 2002: "The History of Massage" By Robert Noah Calvert (page 35). 2003: "Careers in Alternative Medicine" By Alan Steinfeld (page 48).
- ¹⁹- Stevenson, Angus. *Shorter Oxford English Dictionary*,,(6th ed.). Oxford University Press. 2007.
- ²⁰- International SPA Association. What is it and why aren't we doing it?. experienceispa.com . Retrieved 2009.
- ²¹- Hurley MV, Bearne LM (2008) . *Rheumatology Secrets E- Book.* books.google.iq. 2008.
- ²²- Elsevier. Osteoarthritis: an overview of the disease and its treatment strategie. www.semarthritISRheumatism.com . 2005.
- ²³- Sim J, Adams N. "Physical and other non-pharmacological interventions for fibromyalgia". *Bailliere's Best Practice & Research. Clinical Rheumatology.*1999.
- ²⁴- Springer Link. Management of neck pain and associated disorders: A clinical practice guideline from the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration. link.springer.com/article . (2016) .
- ²⁵- Cochrane Library. Electrotherapy for neck pain. cochranelibrary-wiley.com. 2013.

-
- ²⁶- Wikipedia. Current Pain and Headache Reports . Journal Citation Reports. 2014.
- ²⁷- Wikipedia, Thermotherapy for treating rheumatoid arthritis, from Cochrane Library, 2016.
- ²⁸- Raj, P. Pritvi, Practical Management of Pain. Mosby. 2000.
- ²⁹- MedlinePlus Medical Encyclopedia" . Skin abscess. medlineplus.gov. 2016
- ³⁰- Oxford Academic. "Efficacy of Thermotherapy to Treat Cutaneous Leishmaniasis Caused by Leishmania tropica in Kabul, Afghanistan: A Randomized, Controlled Trial". academic.oup.com . 2005
- ³¹- Wikipedia "Hyperthermia to Treat Cancer". www.cancer.org. Retrieved 2016
- ³²- West, Sterling G . Rheumatology Secrets E book . Elsevier Health Sciences. 2014
- ³³- Mark Dutton (2011). Physical Therapist Assistant Exam Review Guide. books.google.iq. Retrieved 2012
- ³⁴- Rhees, David J. "Electricity - "The greatest of all doctors": An introduction to "High Frequency Oscillators for Electro-therapeutic and Other Purposes. ieeexplore.ieee.org. 1999
- ³⁵- D'Arsonval, A. (August 1893). Modern Medicine and Bacteriological World. books.google.iq. Retrieved 2015., translated by J. H. Kellogg
- ³⁶- Wikipedia, Cryotherapy at eMedicine, 2016 .
- ³⁷- "Wikipedia, The Use of Ice Treatment of Acute Soft-Tissue Injury". coldone.com. Retrieved 2017
- ³⁸- Wikipedia, Myalgic Encephalomyelitis/Chronic Fatigue Syndrome. www.cdc.gov . 2017
- ³⁹- O'Keeffe , Mary ; Cullinane ,Paul ; Hurley; John; Leahy, Irene ; Bunzli , Samantha; O'Sullivan, Kieran. "What Influences Patient-Therapist Interactions in Musculoskeletal Physical Therapy? Qualitative Systematic Review and Meta-Synthesis".Physical Therapy.(1 May 2016).

⁴⁰-Kuczynski JJ , Schwieterman B , Columber K , Knupp D , Shaub L , Cook CE. "Effectiveness of physical therapists administered spinal manipulation for the treatment of low back pain: a systematic review of the literature.(December 2012).