



Universidad
de La Laguna

Escuela Universitaria de
Enfermería y Fisioterapia



Trabajo Fin de Grado

Grado en Fisioterapia

**Present status of the citizen's
knowledge about Physiotherapy in
United Kingdom, Ireland and Spain:
A comparative analysis**

**Estado actual del conocimiento que
sobre la Fisioterapia tiene el
ciudadano en Reino Unido, Irlanda y
España: Un análisis comparativo**

Daniel Afonso Rocío

Curso 2013/2014 - Julio



Universidad
de La Laguna

Escuela Universitaria de
Enfermería y Fisioterapia



Trabajo Fin de Grado

Grado en Fisioterapia

**Present status of the citizen's
knowledge about Physiotherapy in
United Kingdom, Ireland and Spain:
A comparative analysis**

**Estado actual del conocimiento que
sobre la Fisioterapia tiene el
ciudadano en Reino Unido, Irlanda y
España: Un análisis comparativo**

Daniel Afonso Rocío

Curso 2013/2014 - Julio

**AUTORIZACIÓN DEL TUTOR PARA LA PRESENTACIÓN DEL TRABAJO
FIN DE GRADO****Centro:**FACULTAD DE CIENCIAS DE LA SALUD
SECCIÓN ENFERMERÍA Y FISIOTERAPIA**Titulación:**

GRADO EN FISIOTERAPIA

DATOS ALUMNO:Apellidos: Afonso Rocío
DNI / Pasaporte 54113799-C
C.Postal: 38202
Provincia: S/C Tenerife
E-mail dann.1992@hotmail.comNombre: Daniel
Dirección: C/ Maya nº17
Localidad: La Laguna
Teléfono: 627841194**TÍTULO DE TRABAJO DE FIN DE GRADO:****PRESENT STATUS OF THE CITIZEN'S KNOWLEDGE ABOUT PHYSIOTHERAPY IN
UNITED KINGDOM, IRELAND AND SPAIN: A COMPARATIVE ANALYSIS****ESTADO ACTUAL DEL CONOCIMIENTO QUE SOBRE LA FISIOTERAPIA TIENE EL
CIUDADANO EN REINO UNIDO, IRLANDA Y ESPAÑA: UN ANÁLISIS COMPARATIVO****EL TUTOR****Apellidos: Martín Hernández****Nombre: José Jaime****AUTORIZACIÓN DEL TUTOR**

D José Jaime Martín Hernández, profesor del Departamento de Filología Inglesa y Alemana, **AUTORIZA** a D Daniel Afonso Rocío a presentar la propuesta de **TRABAJO FIN DE GRADO**, que será defendida en julio de 2014

En La Laguna, a 1 de julio de 2014

EL TUTOR

Fdo.: José Jaime Martín Hernández

SR. PRESIDENTE DEL TRIBUNAL DE EVALUACIÓN

Abstract

This project makes a comparison between Spain and two English-Spoken countries, Ireland and United Kingdom, in the context of the general public's knowledge about physiotherapy. The introduction of this paper deals with their population, demography, and the features of each Health Care System and its influence on physiotherapy, especially in the primary care services. The aim of this research has to do with which country gives a better development to physiotherapy. The contributions that each country has given to physiotherapy are also considered, setting the importance of leading figures such as Berta and Karel Bobath and James Cyriax.

Later, a brief comparison of the current situation about professional encroachment is exposed. Finally, a survey has been carefully prepared and afterwards answered by 100 British, 100 Irish and 100 Spanish participants. It attempts to explore these three countries' widespread knowledge about physiotherapy, in order to determine if it is being promoted correctly and also determine in which country physiotherapy is better known.

Key words: Comparison, physiotherapy, encroachment, survey, United Kingdom, Ireland, Spain.

Resumen

Este proyecto compara el conocimiento que tienen de la fisioterapia una muestra de encuestados en España y dos países de habla inglesa: Irlanda y Reino Unido. La introducción de este trabajo considera la población, la demografía, las características de cada Sistema de Salud y su influencia en la fisioterapia, especialmente en los servicios de atención primaria. El objetivo de este trabajo trata de conocer qué país tiene un mayor desarrollo de la fisioterapia. Las aportaciones que cada país ha dado a la fisioterapia serán también consideradas, destacando la importancia de figuras como Berta y Karel Bobath y James Cyriax.

También será expuesta una breve comparación sobre la actual situación del intrusismo laboral. Cierra este trabajo una encuesta que ha sido cuidadosamente preparada y respondida por 100 participantes británicos, 100 irlandeses y 100 españoles, con la intención de explorar su conocimiento sobre la fisioterapia para determinar si ésta se está promocionando correctamente y conocer así en qué país la fisioterapia es más conocida.

Palabras clave: Comparación, fisioterapia, intrusismo, encuesta, Reino Unido, Irlanda, España.

INDEX

1. Introduction	
1.1. Contextualizing UK, Ireland and Spain	8
1.2. British, Irish and Spanish Health Care Systems	10
1.3. Individual contributions per country	18
1.4. Professional encroachment	22
2. Materials and Methods	
2.1. Key trend measures	25
2.2. Dispersion measures	26
3. Results & discussion	
3.1. Question 1	25
3.2. Question 2	26
3.3. Question 3	26
3.4. Question 4	27
3.5. Question 5	28
3.6. Question 6	28
3.7. Question 7	29
3.8. Question 8	30
3.9. Question 9	31
3.10. Question 10	32
3.11. Question 11	33
3.12. Question 12	34
3.13. Question 13	35
3.14. Question 14	36
3.15. Question 15	36
3.16. Question 16	37
4. Conclusions	38
5. References	40
6. Appendix 1: Survey	44
7. Appendix 2: Key trend and dispersion measures	46

1. INTRODUCTION

1.1. Contextualizing UK, Ireland and Spain

United Kingdom

The United Kingdom has a population of 63.2275 million people (2012)⁵. Its life expectancy rate is 80'75 years (2012)⁶ and its fertility rate: 1'98 children (2011)⁷. There are 2'74 doctors per 1000 inhabitants (2010)⁸.

Ireland

Ireland has a population of 4.5888 million people (2012)¹. Its life expectancy rate is 80'5 years (2012)² and its fertility rate: 2'05 children (2011)³. There are 3'17 doctors per 1000 inhabitants (2010)⁴.

Spain

Spain has a population of 46.218 million people (2012)⁹. Its life expectancy rate is 82.33 a years (2012)¹⁰ and its fertility rate: 1'36 children (2011)¹¹. There are 3'96 doctors per 1000 inhabitants (2010)¹².

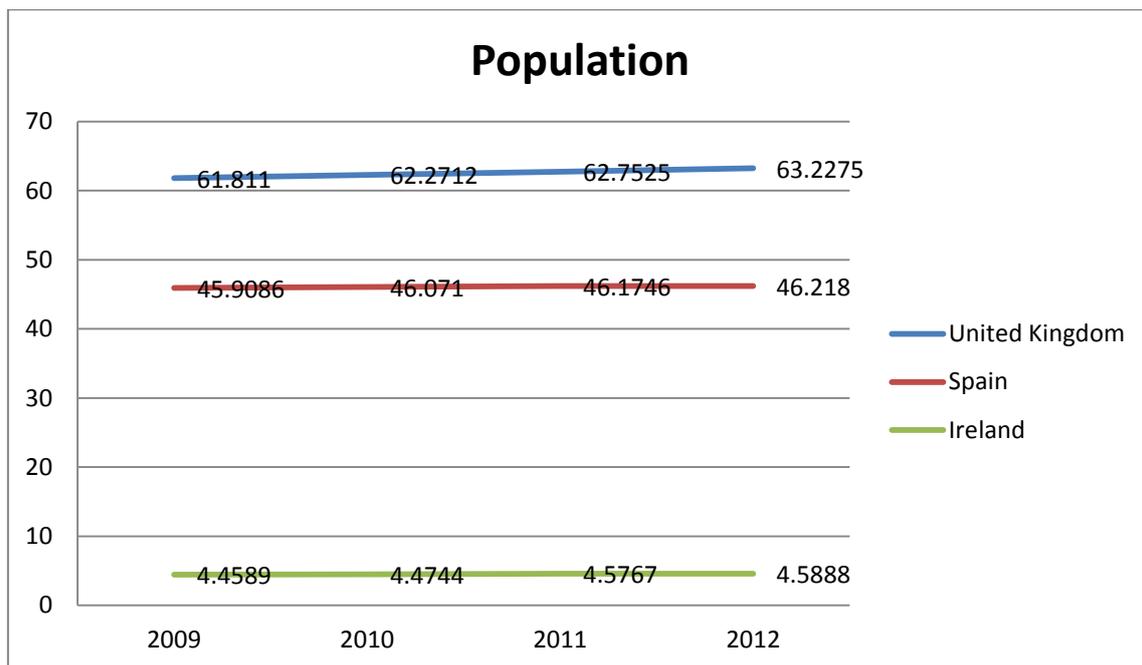


Figure 1.1. Population in UK, Ireland and Spain (2009-2013)

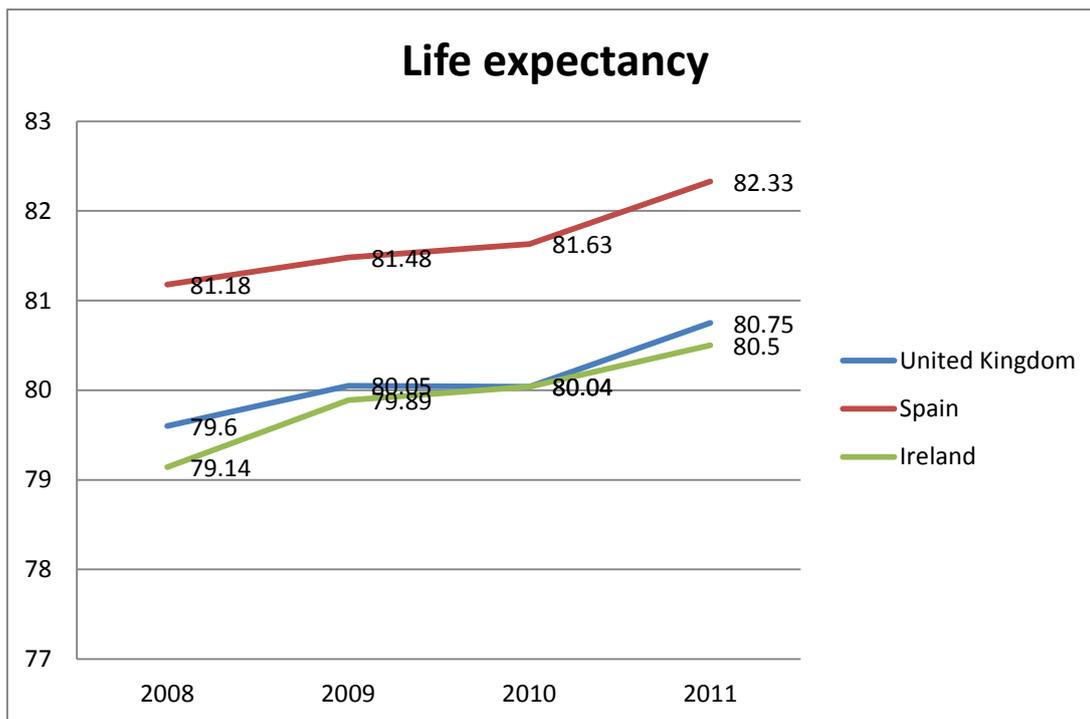


Figure 1.2. Life expectancy in UK, Ireland and Spain (2008-2009)

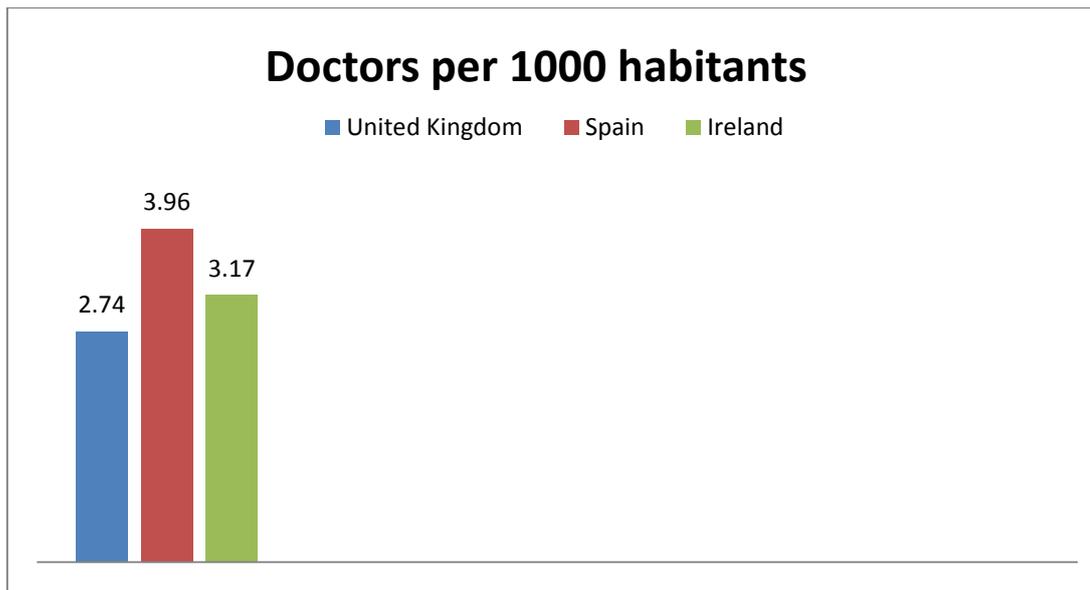


Figure 1.3. Doctors per 1000 habitants in UK, Ireland and Spain

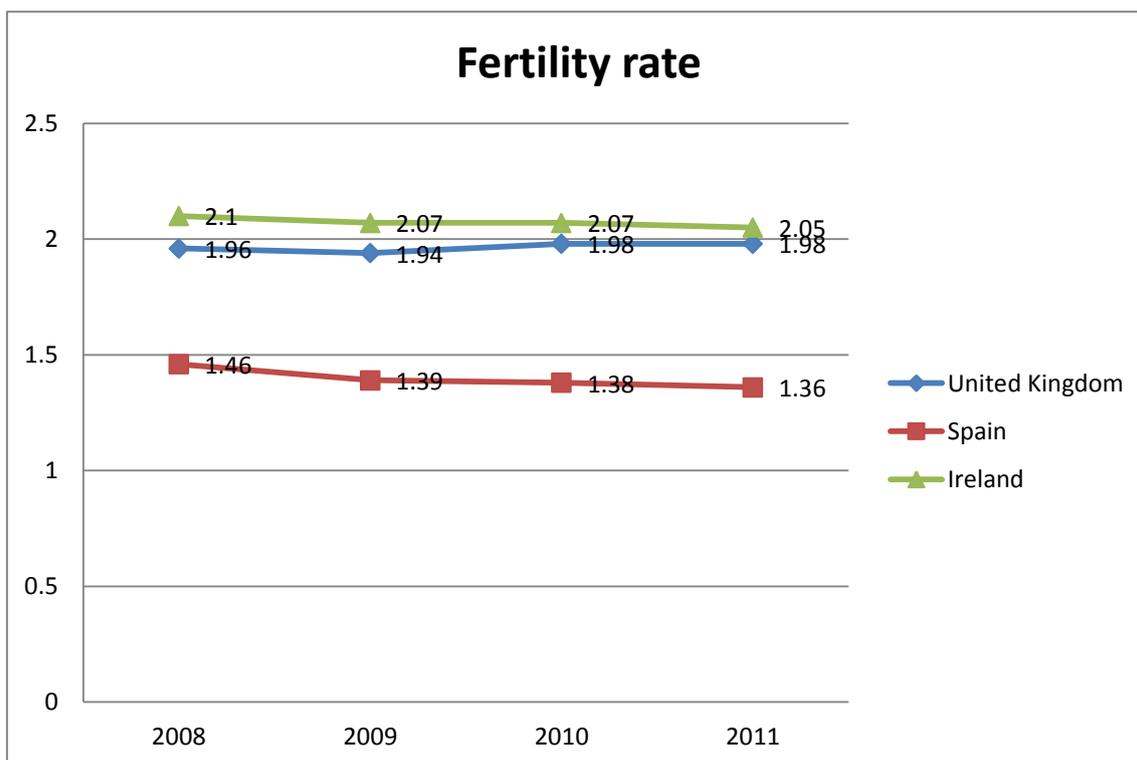


Figure 1.4. Fertility rate in UK, Ireland and Spain

Spain has one of the highest life expectancies in the world, however fertility rate is one of the lowest in the EU compared to the one in the early 2000s. This has caused an impact in population that has become older in a few years. On the other hand, Ireland has the highest proportion of people under 15 years old and the second lowest proportion under 65 years old in the EU, meanwhile the UK keeps a more balanced proportion.

Taking into account these results it is essential for the proper evolution of any Health Care Service to change itself depending on the health status, health expenditure and practicing physicians per 1000 inhabitants.

This is the first difference that we find out that will affect physiotherapy. According to the amount of elderly people in Spain, there should be a physiotherapy development based on the pathologies that mainly affect aged people translated into more amount of Chronic health care centers, however if we study the Spanish Health Care System we will find out that this is a system mainly based on acute diseases¹³

1.2. Health Care Systems features. Irish, English and Spanish Health Care Systems

Physiotherapy belongs to an entangled arrangement of professionals who have the same purpose: improving population's health. These professionals such as, doctors, nurses, pharmacists, physiologists, orthopaedists, physiotherapists...all of them are qualified people that will look after people's health in a preventive, active and rehabilitative way. They are linked in the organization that we called Health Care System. So according to the physiotherapists' pertaining to the Health Care System it is relevant to

contextualize the systems of the countries chosen for this task, in order to find the differences that as a consequence, will influence in the way physiotherapy is performed.

We can consider Health Systems as straight versions from the Social Systems, which may be defined as the relationship that society keeps between the stratification and its own organization. The most important and distinguished items which belong to Social Systems are the 'Social Roles', they are the set of facts which are focused on clearing society's needs. In relation with the Social Systems, the most entangled facts are the ones which are straightly linked to Health Care.

Therefore, Health Systems are, recently defined by World Health Organization (WHO), as the set of connected constituents which contribute to enhance health at homes, workplaces, public places communities and physical & psychosocial environment¹⁴. This definition is similar to the one which is referred to the Health Concept set in 1946 by WHO: 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. Then, the Health Systems become an essential and vital sign in order to analyze the Welfare State from one society and its kind of development¹⁵

Health Systems are hardly linked with other kind of systems such as the Political System, the Tax System, and the Education System. Therefore, in order to be considered as a system, its features must be: a universal system which coverage reaches the entire population with integral attention, as hygiene and mental health, preventive medicine, primary care, tertiary care from all chronic and acute illnesses. It must achieve equity in the distribution of resources; it must be a flexible and efficient system meaning that the system must provide the best benefits and give the highest health level at its most inexpensive way, having also to be able to adapt itself to new population's needs.

Talking deeply about Health Systems features, we can summarize them regardless the country referred. Each country has its own way of performing Health Care, however the common aims that they pursuit are:

(1)Adequacy and equity in access: all citizens, regardless their race, sexuality, condition, religion or culture should have access to at least a basic minimum of health care. The availability of services, and barriers to access have to be considered in the context of the differing perspectives, health needs and material and cultural settings of diverse groups in society.

(2)Income protection: Also known as permanent health care insurance (PHI) or long-term income protection, is an insurance policy that pays out if you are not able to work due to injury or illness. Although income protection tasks are based on a percentage of people earnings, this sort of insurances should be considered in order to give proper attention for patients who don't have resources for this kind of payments.

(3)Economic efficiency: *"It cannot make any one person better off without making another person worse off"*¹⁶ (Pareto efficiency) this means that resources are located efficiently when it is not able to produce more of a good or service without giving up some other goods or services that are valued in a higher way. In economics, this concept means the maximization of goods starting from a certain amount of resources. In relation to Health Care, this idea chases the best quality of treatments available from the economic support given to the Health System.

(4)Freedom of choice for consumers: patients should not find any trouble by choosing the professionals who take care of them. This self-determination with the naked eye may only seem to affect the particular patients who choose, but actually, when consumers are active participants in their own care and when they understand and ask for high better clinical care, they can be strong agents for change, becoming one of the principal encouragements for Health Care improvements.

(5)Appropriate autonomy for providers: Doctors should be given the maximum freedom compatible with the attainment of the above objectives, especially in matters of medical and organization innovation.

These features mean that, despite all the differences that each system would have, there should be some prerogatives that they will have in common. Being one of the main ones, the *"Adequacy and equity in access"*¹⁷ In relation with that, the European Union countries signed in 1996 The Ljubljana Charter on Reforming Health Care which sets the Health Care reforms that should be tackled in order to give an equitable access. The term 'equity' is deeply rooted with democracy, and it becomes a requirement in for giving proper and equal Health Care.¹⁸

In general terms, thanks to the reforms introduced in the Health Care Systems like the one aforementioned and also to the medical development, people enjoy better health. Considering infant mortality in 1978, in 2006 there would have been 16.2million child deaths all over the world. And actually there were "just" 9.5 million child deaths.¹⁹

However, despite all the progress that a country or an organization of them could do, there have been appearing new issues that the Health Care Systems must face. Needless to say, this improvement in Medicine is making people live longer, so paradoxically new diseases are appearing in relation with ageing. Also the over population and the bad management of the urbanization is stimulating the emergence of new Medicine issues.

Physiotherapy is one of the best weapons that The Health Care Systems has, so it improves dramatically the well-being and the general health status in elderly people.^{19 /20} As we have said, Health Care systems of the countries studied in this task chase the objectives explained above. But not all of them attach the same importance to each goal. This difference of priorities becomes the first reason why physiotherapy performance varies itself depending on the country we consider.

1.2.1. Financing

a. United Kingdom

Since its establishment in 1948, the English Health Care Service is characterized by its universality, its benefits as a whole and its free-of-charge condition. This System is one of the most mentioned due to the great satisfaction, figure results and its low expenditure.

The National Health Care System of the United Kingdom provides coverage to all legal residents and other countries which have mutual agreements. Private Care is developed through a complementary medical insurance. However it is very scarce, just 11'5% ²³of the population asks for private care. It is chiefly financed from public sources, primary general taxation and national insurance contributions. Otherwise, some care is funded in the private way: through Private Medical Insurance, by user charges for National Health System services although most are given for free, by direct payments by individuals for items like drugs and medical appliances, or by direct payments by individuals for health care delivered by NHS, private-sector providers.

Taxes for the Health Care are distributed by central government to the Department of health which is afterwards the responsible for their allocation. Every year NHS allocated about 80%²⁴ of the total NHS budget to Primary Care Trust. PCTs are responsible for purchasing primary, community, intermediate and hospital-based services from a range of providers, mainly in the public sector but adding private and voluntary sector providers.

b. Ireland

Irish health care system is considered a mixture of public and private financing and provision. It is mainly tax funded however around half of the Irish population has voluntary health care insurance. A total of 78'3% of all health expenditure (public and private) was raised from taxation, including pay-related comes from private sources, especially out-of-pocket household expenditure on GP visits, pharmaceuticals and public/private hospital stays, as well as payments to private health insurance providers. Gross Health expenditure in 2007 by both the HSE and the DoHC was just under €14.4 billion equal to 25'3% of all government expenditure.²¹

Patients from Ireland may belong to two kinds of categories. Category I matches with the 29% of the population,²² they have Health Insurance cards which provide them free access to any service, especially in Primary Care. The remainder of the population (category II) must make out-of-pocket payments for Health Care services. Therefore, more than 50% of the population has private health insurance as well. It helps patients to cover some of these added payments.

c. Spain

The Spanish National Health System has two main features: universal access to health care for all Spanish citizens and total devolution of health care to the Spanish regions. The population, even illegal immigrants, has the right of free access to services and benefits, quite a comprehensive package, although rather limited for long-term care and optical and dental services.

1.2.2. Health expenditure

Comparing these countries to the Health expenditure, Spain and United Kingdom invest a percentage of GDP 8.4% each. Ireland invests a percentage of GDP 7.5%²⁵

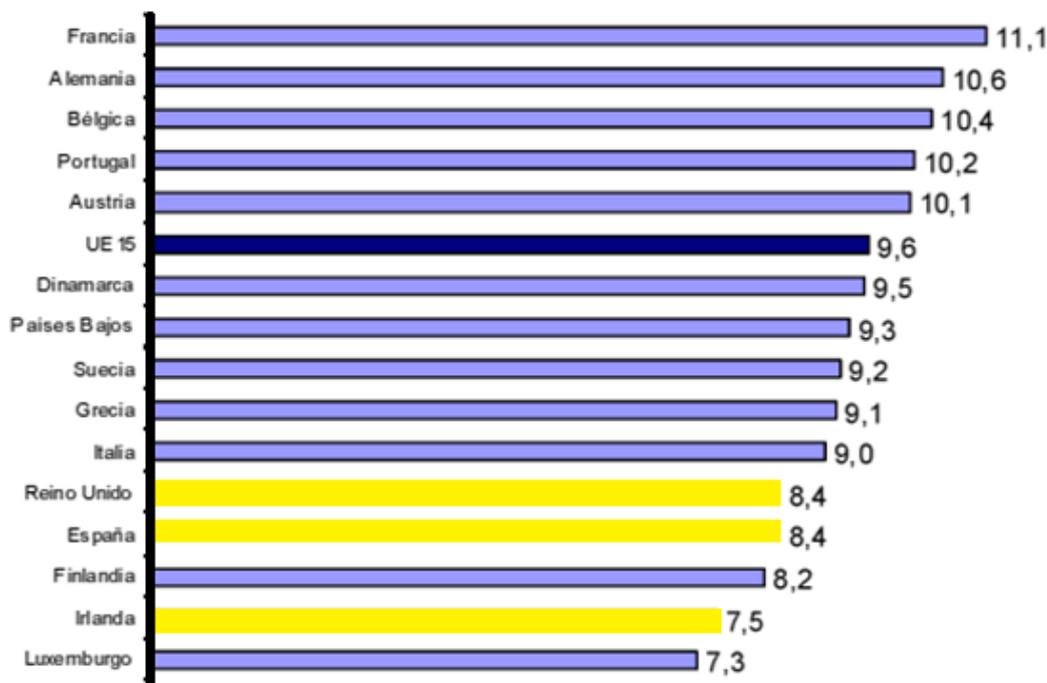


Figure 1.5. Health expenditure in % of the GDP

1.2.3. Primary Care

Primary Care is the first level which provides a Health Care service. It guarantees entire and followed care during all patients' life. Services which belong to Primary care come from: health promotion, health education, prevention, general assistance, health recovery as well as physical therapy and social work.²⁶

Focusing in the primary care, it is accurate to say that there is not any huge difference comparing these countries. For all of them, Primary Care performs the main role in the provision of health care services. It concentrates most of the system activity in health care, health maintenance, health recovery, rehabilitation and social work. It involves not only General Practitioners, but also

a broad range of professionals and services, including: nurses, social workers, chiropodists, midwives, physiotherapists, occupational therapists, speech and language therapists, child health care, dental care, and ophthalmic care services.

Needless to say that despite Primary Health Care is made up of the professionals listed above, is the General Practitioner the one who performs the gatekeeper role. GPs in Spain are well trained and equipped to deal with a wide range of conditions. Therefore, most of the patients will find their problem solved at this level.

Nurses also perform an important role in the primary health care team, focusing on care of chronic patients, education and prevention for all types of patients. Nurses are so important that in Primary Care not all visits go to the General Practitioner and approximately half of the medical consultations are represented by them: ²⁷

	2007	2008
General attendance	8.6	8.9
Medicine		
<i>Total</i>	5.9	6.0
<i>Family doctors</i>	5.9	6.1
<i>Paediatrics</i>	5.4	5.5
Nursing	2.7	2.9

Figure 1.6. Number of recorded consultations per inhabitant in Spain

That is a good share of acute activities related to medical consultations. However this competence distribution only happens in Spain. The GP's role in United Kingdom and in Ireland is dramatically more distinguished. Besides the diagnostic services and pharmaceutical prescription, they provide also some minor surgery, care for acute and chronically ill patients, and people who are terminally ill, obstetric care, prenatal care and perinatal care. GPs in UK and Ireland also provide preventive services such as vaccination, immunization, health promotion such as general advice on healthy living, etc. All these competences are commonly performed by nurses in Spain.

Another particular feature about Primary Health in Spain is that Spanish population is among the highest ones that have medicine contact in the European context. Average visits per year:

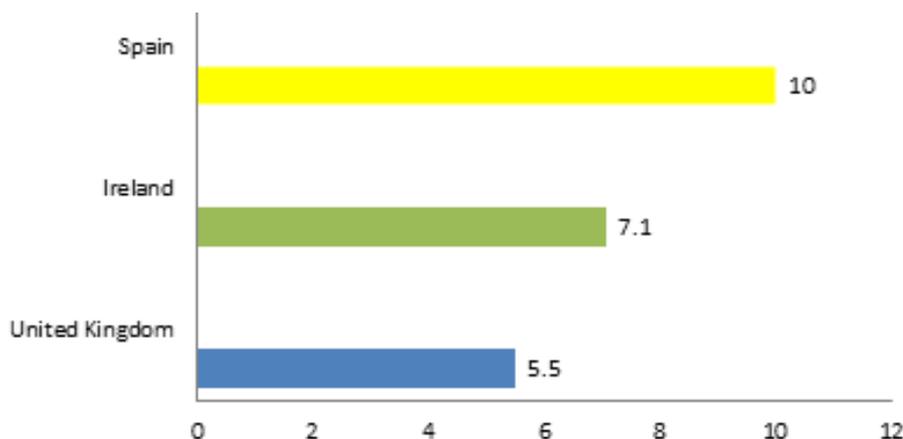


Figure 1.7. Average visits to the Primary Care Health Service in a year

As explained above, the Primary Health Care is organized following a similar structure, focusing the main role on the General Practitioner and also, with almost the same importance, the nurses, especially in Spain. In any of the countries chosen for this task the physiotherapists perform the first step for medical consultations. Neither in appointments non in A&E. (*Urgencias*)

We consider that physiotherapy presence in Primary Care should be increased, considering the evidences listed below:

Why should there be more physiotherapists in Primary Care services?

1. Pellegrino defined professionals as “those whose functions bring them into direct personal contact with the vulnerable patient and call for direct participation in the healing relationship²⁸. A physiotherapist might be the one who best fit in this definition.
2. Physiotherapists nowadays have a four-year formation focused on anatomy and musculoskeletal conditions. Much more than a general practitioner who has a general view. According to this, it is logical that those patients who suffer from physical conditions visit the physiotherapist firstly, however this does not happen.
3. Physiotherapists can make diagnostic and give treatment in a cost-effective way.
4. The physical contact has a clear relation with relaxation, sense of well-being and positive mood change. ²⁹
5. Physiotherapists not only provide evaluation and treatment, their competences are also aimed at prevention. They provide, then, savings in the Health Care Service financing.
6. Changes in lifestyle are increasing the amount of diseases related to sedentary lifestyle, stress and contamination. For example in Spain 13'9% of the population from 2 to 24 years old are obese. It is the physiotherapist the professional who can promote the performance of physical activity as a way of prevention. ³⁰

1.2.4. Accidents & emergencies service

A&E service is an essential part of any Health Care. Its main function is giving medical attention to any emergency including disasters.

Medical accidents and emergencies have two main assistance fields: hospitals, through emergencies assistance in hospital for acute patients and non-hospital, which depends on the Health Care System of the country.

In relation to the countries chosen for this task, If you go to A&E in United Kingdom, Ireland or Spain it will be completely free when the patient meets these following requirements:

- Receiving a retirement pension from any of these three countries.
- Having a nationality from one of the countries that belongs to the EU
- Or in the case of UK if you belong to one of the following countries which have a special agreement: Bulgaria, Czech and Slovak Republics, New Zealand, Russia, former Soviet Union states - Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, former Yugoslavia - Croatia, Bosnia, Macedonia, Montenegro, Serbia,, and residents of Anguilla, Australia, Barbados, Channel Islands, Falkland Islands, Isle of Man, Montserrat, St Helena, Turks and Caicos Islands.

It is relevant to indicate also another difference that only occurs in Ireland in relation to A&E. If a patient goes to the A&E department for a non-emergency reason, a standard fee of €60 must be paid. This requirement does not exist in the remaining countries.³¹

1.2.5. Patient's pathway: how do they get to the physiotherapist?

All the countries chosen for this task follow almost the same way but Spain has a longer pathway. We will give the case of a traumatology condition as an example.

A patient may go straight to the physiotherapist who works privately. However, everything changes if he goes to the Public Health Care System. As explained in this section it is not likely to find a physiotherapist who receives the patient for the first time, he will meet a general practitioner. The GP then will send the patient to a traumatologist if the injury is in need of a special assessment. From this point, this works like this in all three countries. Later, the traumatologist will send the patient to the physiotherapist who works in the Primary Care Service, and is the physiotherapist the one who sets the treatment based on the diagnostic made by the traumatologist. This is what happens in UK and Ireland.

However in Spain, there is another professional after the traumatologist and before the physiotherapist. Rehab doctor (*Médico Rehabilitador*) is a doctor

who sets the treatment that a physiotherapist must do and he makes several revisions in order to see if the patient is improving.

We would like to establish the beginning of a future research in order to confirm if the Rehab Doctor's presence is necessary, taking as a reference that this professional does not exist in the remaining countries.

1.3. Individual physiotherapy contributions by country

During the development of any science, there have always been some characters that have influenced on the way that science is and will be performed forever. In old times, there was not any difference between any knowledge, therefore great philosophers wrote about general thoughts. Aristotle wrote about biology and physics, Pythagoras about mathematics, Hypocrites about medicine. When Modern Age came, a new way of thinking appeared, and step by step science separated from philosophy.

In the case of physiotherapy and medicine, this is a thought that has always been there since the emergence of the first humans. In Prehistory, humans used to employ any source that nature gave to them in order to heal themselves. This means the basic utilization of physical agents as a way of healing.³² Ages later, it is relevant to announce the development of the first kinesiotherapy and yoga techniques that were born in Ancient Egypt. Meanwhile, needless to say the great development produced in China: acupuncture. With Romans, the arrival of different physiotherapy techniques is relevant for their development in the following centuries. Massage gained such importance that it became almost like a ritual, and also the application of hydrotherapy was very popular by using the famous Roman Baths and saunas.

Without further ado, it is necessary to stand out the 18th century: the birth of Electrotherapy. Thanks to the development of physics, studies related to electricity increased. Researchers like Christian Gootlieb Kratzenstein (1744) showed that it is possible to recover little finger mobility by using electricity, and Pivati (1749) published *Riflessione Fische sopra la Medicina Elettrica*, which gathers the application of electro stimulation for muscular paralysis. One century later, Gustav Zander (1835-1920) is considered the creator and diffuser of Mecanotherapy.³³

There have been many researchers who have aimed to the development of physiotherapy in its different skills. Due to protocol reasons, it is not appropriate mentioning all of them since our task in this work is comparing three countries. So, for the 20th and 21st centuries we will set how United Kingdom, Spain and Ireland have participated in the physiotherapy progress. However we have not found any leading figures in Ireland therefore, we have just compared Spain and UK.

1.3.1. United Kingdom

20th century marked for physiotherapy a before and an after. Two important collections: *Bibliothèque de thérapeutique Gilbert et Carnot (France)* and *Biblioteca de la Terapéutica y la terapéutica física de Wasser (Los Ángeles)* recognized the bases for this profession. Also, the appearance of different researchers established different ways of treatment which are still used nowadays. England in this case, is a step ahead in influencing on physiotherapy.³⁴

Karel and Berta Bobath

Despite Karel and Berta Bobath were born in Germany, due to some incidents they had to flee from the Nazi regime and shelter in London. There, they got married and Karel studied neurosurgery while Berta became a physiotherapist. In 1943 they developed a treatment skill for children who suffered from cerebral palsy. Afterwards this kind of treatment would be extended to stroke adults as well. In 1946 they published: *Spastra International Medical Publication*, an article which evidences their treatment for cerebral palsy. Bobath's skills spread out among English physiotherapists very fast and after that, through *International Bobath Instructors Training Association*, and their way of treatment reached Europe.

Nowadays, Bobath skills are used for central nervous system injuries by following the "Bobath concept". Bobath concept is based on brain ability to readapt itself. Meaning that healthy brain areas might make up for injured areas.

The requirement for this is giving stimulus to the patient. We can set as example the case of a stroke patient: usually they neglect their stroked half, therefore, the brain does not have the chance to reorganize itself and so, the physiotherapist must give that lack of brain excitement. A central brain injury always leads to compensation strategies, some of them restrict the potential of surrounding brain areas. Inside Bobath Concept, the aim is to identify these strategies and modify the development of tasks by giving accurate signals which will provoke a more efficient fulfilment of the mentioned tasks.

James Cyriax

James Cyriax together with Katelborn and McKenzie made an impact on manual therapy.

He was born in London and he was a traumatologist. He is well known as "father of orthopaedic medicine". He studied in Ganville and Cambridge and at St. Thomas Hospital in London. He devoted his life to the diagnosis and non-surgical treatment of orthopaedic injuries in soft tissue. He promoted physiotherapists' performance setting in his masterpiece: *Orthopaedic Medicine: Treatment by Manipulation, Massage and Injection* the following statement:

"It was in 1938, when I started to teach manual techniques to physiotherapists, that I found them to be the most suitable (candidates) to practice manipulation. They know anatomy well; they study movement in all

aspects, learn the functions and disposition of joints and muscles, have strong, keen and skilled hands..." and he adds. "Physiotherapists have another advantage: the existence of five variations on the subject of spinal manipulation -osteopathy, chiropractic, bone adjustments, oscillation techniques and those methods supported at St. Thomas' Hospital- is unfavorable. Only when all these methods were practiced by a single person, it could be determined whether one is better than another; and what kind of alteration has a better response to a certain series of techniques. The only people who are able to use the most effective parts of every method are the physiotherapists, and that is why I have supported their training"³⁵

In turn James Cyriax is the creator of deep transverse massage technique, commonly named as "cyriax". It is based on three principles:

1. Any pain comes from an injury.
2. Any treatment must reach the injury.
3. Any treatment must give a benefit to the injury.

DT massage is different from other massage techniques because it is given across and on the injury and in a short range. Lengthwise adhesions and scars of soft tissue restrict normal movement and may cause chronic pain. It has been observed in the microscope that the direction of the scar tissue depends mainly on mechanic factors. Therefore, giving a physiological movement on the injury while the scar tissue is growing, is going to inhibit the progress of unwanted adhesions ³⁶

In conclusion we can set that deep transverse massage must be a technique used by doctors and physiotherapists when soft tissue injures affect muscles, ligaments, tendons and/or aponeurosis. Its application comes from the importance of avoiding the immobilization and the arbitrary organization of new fibers. Cyriax stated: "It is a treatment based on logic"³⁷

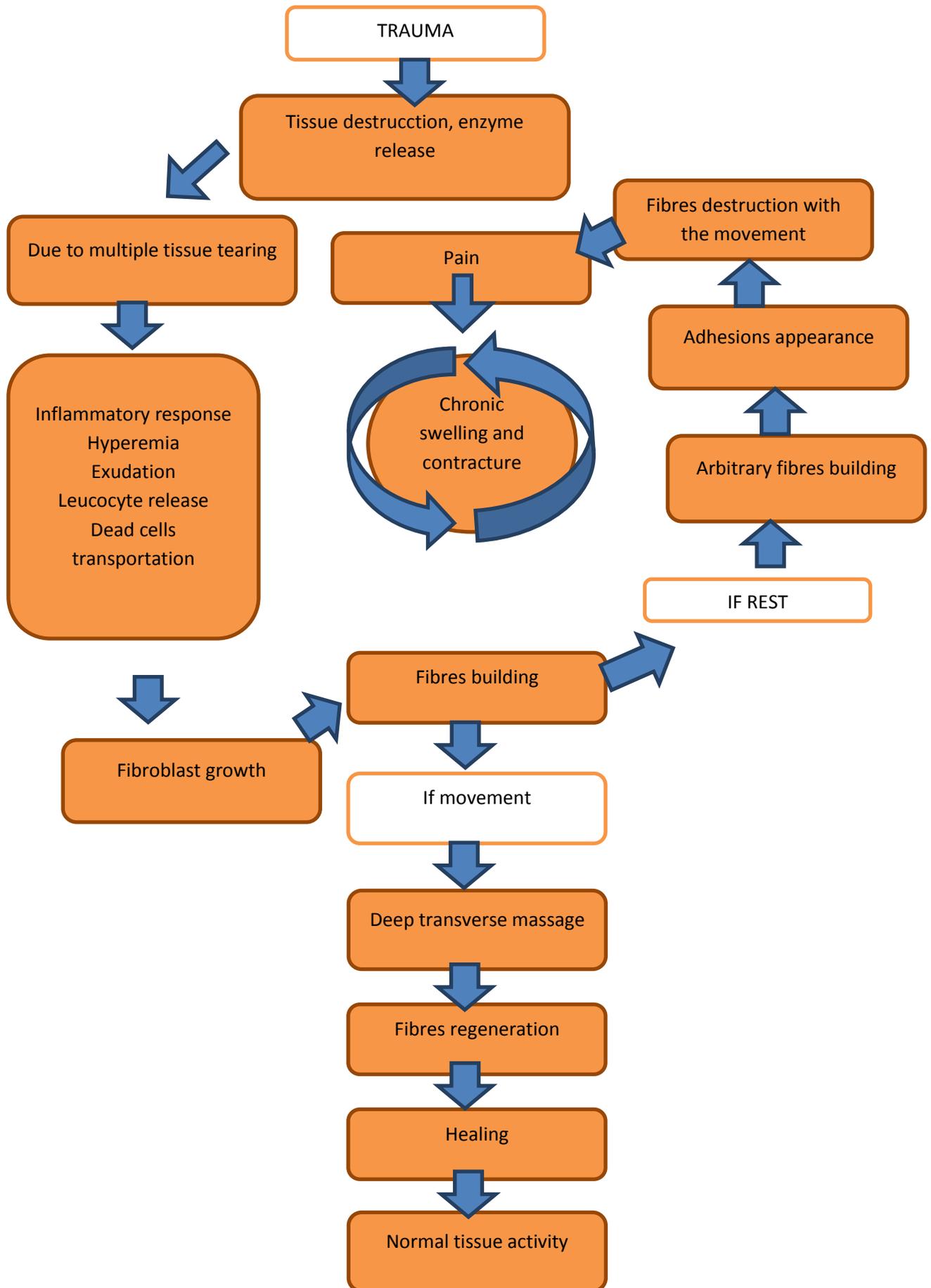


Figure 1.8. James Cyriax's massage effects on an injury

1.3.2. Spain

Currently there are some physiotherapists in Spain with a high standing such as Toni Bové who has participated in many international sport events or Rafael Maymó (Rafael Nadal's physiotherapist) however, none of them have introduced new techniques or novel ways of treatment. But, there is one technique created in Spain which effectiveness is dramatically high. We are talking about the EPI®

EPI®^{38/39}

EPI (Electrolísis percutánea intratisular) was created by José Manuel Sánchez Ibáñez. He started to use it around the year 2000 in order to heal chronic injuries in the soft tissue. Positive results appeared quickly.

This technique is a minimally invasive way of treatment which consists of the application of a galvanic current through an acupuncture needle. By applying this technique, we are looking for the same tissue answer that cyriax massage or other "aggressive" technique triggers: guarantee inflammatory response. EPI makes the mangled tissue to be destroyed without affecting surrounding normal cells since they have more resistance against the current. This destroyed damaged tissue is re-metabolized by through phagocytosis. Meanwhile, thanks to the inflammatory response, angiogenesis occurs and new capillaries reach the injury spot.

1.4. Handicaps in the physiotherapy development: Professional encroachment

One of the hardest issues that physiotherapy has to face is the professional encroachment, especially in Spain. Professional encroachment in physiotherapy is defined as an impersonation of a physiotherapist without the proper qualification. Therefore, is in need considering the own performances of the physiotherapist⁴⁰. Their interventions look for prevention and/or treatment. Performing such interventions without being a physiotherapist leads to be professional encroachment. Masseurs, chiropractors, kinesiologists... all of them are inventions created by private companies that trigger confusion

However, there is another professional who has a different status depending on the country we are: the osteopath

Osteopathy

The osteopathy is way of diagnosis and treatment. It is focused on the human body as a whole. They aim to re-balance the body in order to activate natural mechanism and set the homestasis.

Osteopathy is just a manual therapy. Its way of diagnosis is basically based on palpation and its treatment on manipulations and swaying techniques. here appears the confrontation with the physiotherapy which also has the manual therapy as one of the ways to treat a patient.

This issue only happens in those countries where the Osteopathy is not recognized officially, being these ones: Spain and Ireland. If we make a review of the physiotherapy competences, they are clearly announced in the WHO definition: *"Physiotherapists assess, plan and implement rehabilitative programs that improve or restore human motor functions, maximize movement ability, relieve pain syndromes, and treat or prevent physical challenges associated with injuries, diseases and other impairments. They apply a broad range of physical therapies and techniques such as movement, ultrasound, heating, laser and other techniques. They may develop and implement programs for screening and prevention of common physical ailments and disorders"*

Also, these competences are listed in the Real Decreto 1001/2002, de 27 de septiembre in Spain as well.

As seen above, physical therapies include as a physical resource the mechanic one, usually applied with the hands so, according that there is no recognized any other profession which used manual therapy (apart from doctors for certain diagnosis and basic handy skill) no one is allowed to give competences that only belongs to the physiotherapist. Even that, there are plenty of fake Osteopathy schools in Spain and "osteopaths actually treat patients. The thing about this is that this issue is not completely illegal so there's no any law which forbids its performance besides the lack of laws that recognize them. So we can consider it as "illegal"

This conformation and this lack of laws which protects the physiotherapy as said before, only happen in Spain and Ireland. The case of United Kingdom is quite different. There, the osteopathy is recognized officially besides United States, Australia, Switzerland and Belgium.

Osteopathy in Ireland is self-regulated by the Osteopathic Council of Ireland (OCI). There is currently no state regulation or protection of the title "Osteopath" in Ireland.⁴¹ The OCI is in the process of applying for full Irish State regulation under the Health and Social Care Professionals Act (2005), and they are working towards achieving full state regulation by 2014.

Going back to the United Kingdom, there are more than 4,600 osteopaths registered with the General Osteopathic Council, which includes some who practise abroad. Those practising in the UK carry out more than seven million consultations every year. Of those consultations, 54% of new patients are seen within one working day of contacting the osteopath and 95% are seen within one week.⁴² The profession attracts almost equal numbers of male and female practitioners, and some have already qualified in another healthcare practice such as medicine, nursing or physiotherapy. The majority of UK osteopaths (86%) practise in England, with 3.2% in Scotland, 2.4% in Wales, 0.4% in Northern Ireland and 8.4% working overseas. Most osteopaths are self-employed and work in the private sector, although some are working in multi-disciplinary environments within the NHS and in occupational healthcare in public bodies and private companies. All osteopaths, wherever they work, must be registered with the General Osteopathic Council.⁴³

2. MATERIALS AND METHODS

Physiotherapy has gathered the historical use of the physical agents as a way of treatment. The 20th Century has brought the first professionals and that, the profession. A profession is born due to a social demand, a need that must be covered, therefore, it is necessary for people to know which the skills and capacities that physiotherapy can bring to society are.

For that reason, we have made a survey comparing Ireland, United Kingdom and Spain in order to declare which countries are aware of the physiotherapist's range. The survey was given to one hundred people of each country who do not belong to medical staff regardless of their age or sex.

We travelled to Ireland in the summer of 2013 and we allocated the survey (appendix I). It was given to Irish people who were currently living in Dublin but came from any part of Ireland. Most of the Irish people who answered were teachers in the Centre: *Linguaviva School of English* in Dublin. Afterwards they helped us by allocating the survey to their friends. Taking advantage of the fact that *Linguaviva School of English* receives students from all over Europe, we gave the survey to the Spanish adult students in order to have results from all over Spain, not only from the Canary Islands. 49 copies come from people in the mainland and the remaining ones, from the Canary Islands. Finally in the remaining country, United Kingdom, the survey was allocated there through an employee of *Grass Root Company* who allocated the survey among 81 British participants, also 19 British people who were living in Dublin in that moment answered the survey.

In order to make this study easier to understand, we have ascribed value 1 for "yes" and value 0 for "no". We have made a statistics study of every question considering each country in isolation and for every question gathering the three countries together. In order to do the study, we have chosen: percentages, key trend measures and dispersion measures (appendix 2). These methods will be explained in this section:

2. 1. Key trend measures:

- **Arithmetical average:** The one which is the sum of items of numbers divided by the total number of items. We have given 100 copies of the survey for every country in order to make this kind of measures easier.
- **Median:** Belong to percentile 50%. This means that the median divides the number of items into two. In this study, since there are only two

possible answers, the result will be 1 for affirmative answers or 0 for the negatives ones.

- **Mode:** It gives the value which appears more often. As in the median since there are only two possible answers, the result will be either 1 or 0.

2. 2. Dispersion measures:

- **Variance:** It is equal to the standard deviation squared. Its value is required for any statistic procedure. It has been calculated using the following formula:

$$s_n^2 = \frac{1}{n} \sum_{i=1}^n (X_i - \bar{X})^2 = \left(\frac{1}{n} \sum_{i=1}^n X_i^2 \right) - \bar{X}^2$$

Standard deviation: It is a measure that informs about the distance that the data has in relation with its average. In our study we will be able to see the deviation from the affirmative answers. It has been calculated by using the square root of the variance.

3. RESULTS & DISCUSSION

3.1. Question 1. Did you know physiotherapists work in places such as spas and beauty clinics?

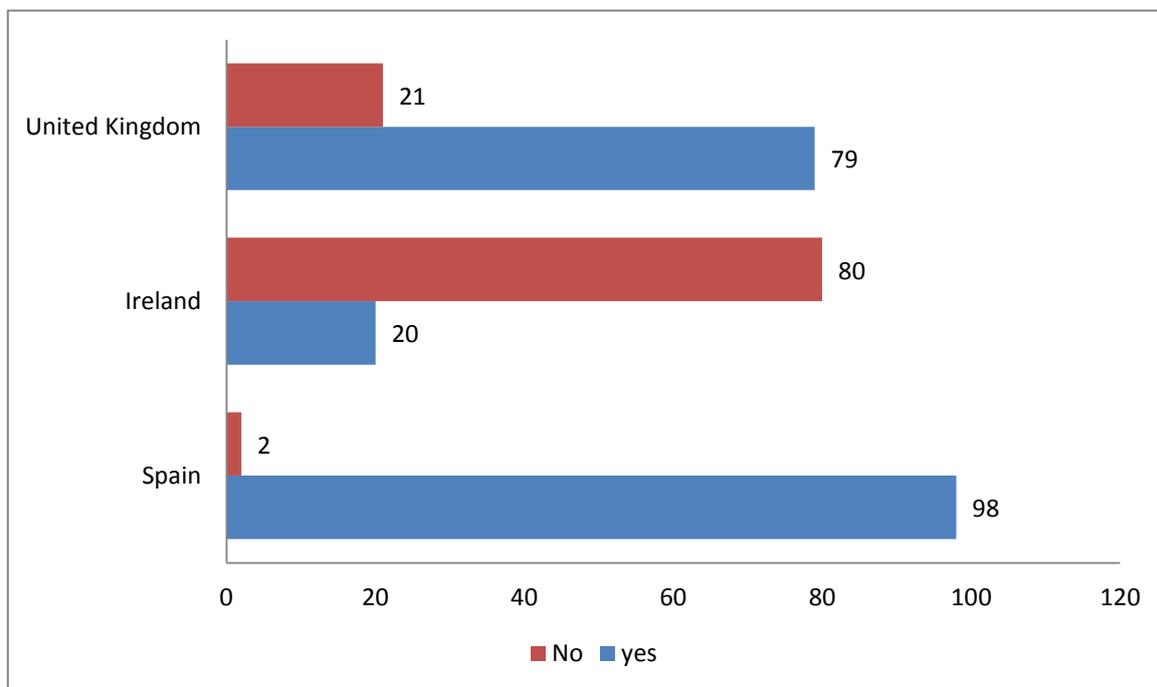


Figure 3.1. Knowledge of physiotherapists working in spas and beauty clinics

Just by searching in any internet browser and typing physiotherapists in spas or cruises, we will find out that many of these professionals are working in these kinds of places giving relaxing massages. We had a preview that this first question would have a high amount of affirmative answers. Needless to say, physiotherapy is really linked to massages in most of the population, therefore, if none of them have received physiotherapy treatment, they will really think that they only work there. However, just Spain and United Kingdom keep the preview we had. In Ireland, by counting the affirmative answers, most of the people did not know that physiotherapists work in these places, reaching a total of 80% negative answers.

We confirm then, by looking at the measures of key trends listed in appendix 2, that a great deal of the participants from Spain (98%) do know that we are able to find physiotherapists working in spas or beauty clinics. Meanwhile Ireland, as said before, is in the last position with an average of 0'20 affirmative answers (only 20 out of 100).

3.2. Question 2. Did you know physiotherapists work in the Health Service?

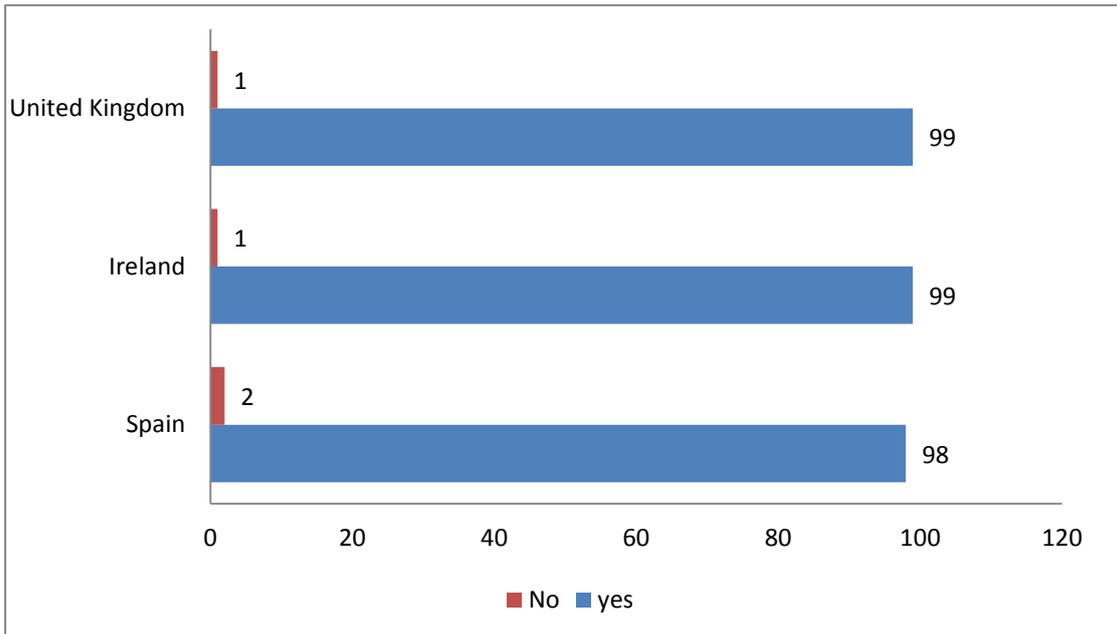


Figure 3.2. Knowledge of physiotherapists working in the Health Service

By looking at the results, we confirm that almost 100% of the population interviewed already knew that physiotherapy is linked to the Health Care Services. We guess that the negative answers come from people who have never suffered from an injury which needs physiotherapy treatment.

3.3. Question 3. Did you know physiotherapists work in sport centers?

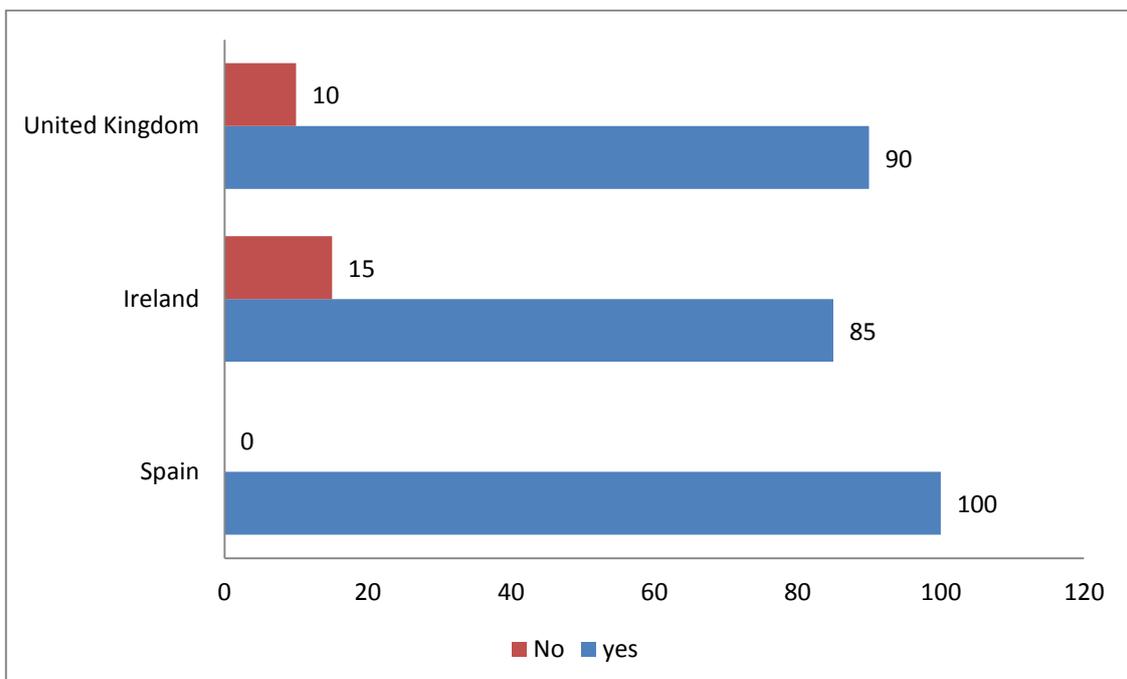


Figure 3.3. Knowledge of physiotherapists working in sport centres

It is almost essential a physiotherapist's presence besides any professional athlete, whatever there is the sport they play or practise. We had no doubt in this question by guessing that around 100% of the people interviewed were going to know that physiotherapy is related to sports. As seen in the results, we were true, and people understand the role that physiotherapists perform in sport players, becoming as important as the training or trainer.

3.4. Question 4. Did you know physiotherapists perform more than massages?

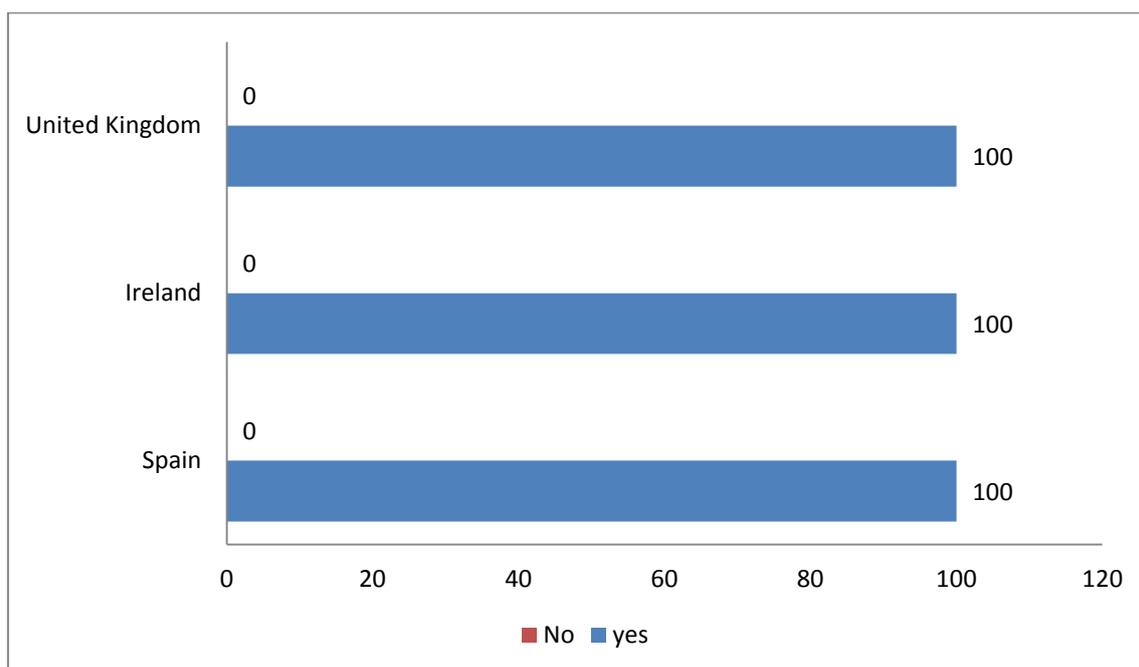


Figure 3.4. Knowledge of physiotherapists performing more than massages

The purpose of asking this question if people know that physiotherapists do more than massages has a big importance in this survey. We really wanted to know if the old view of a physiotherapist just as a masseur was gone. We can confirm then, that people actually know that physiotherapy competences go further than giving massages. 100% of the people interviewed of each country already know this fact. Even though, there is still a great amount of people who still call physiotherapists masseurs.

3.5. Question 5. Did you know physiotherapy is a University degree?

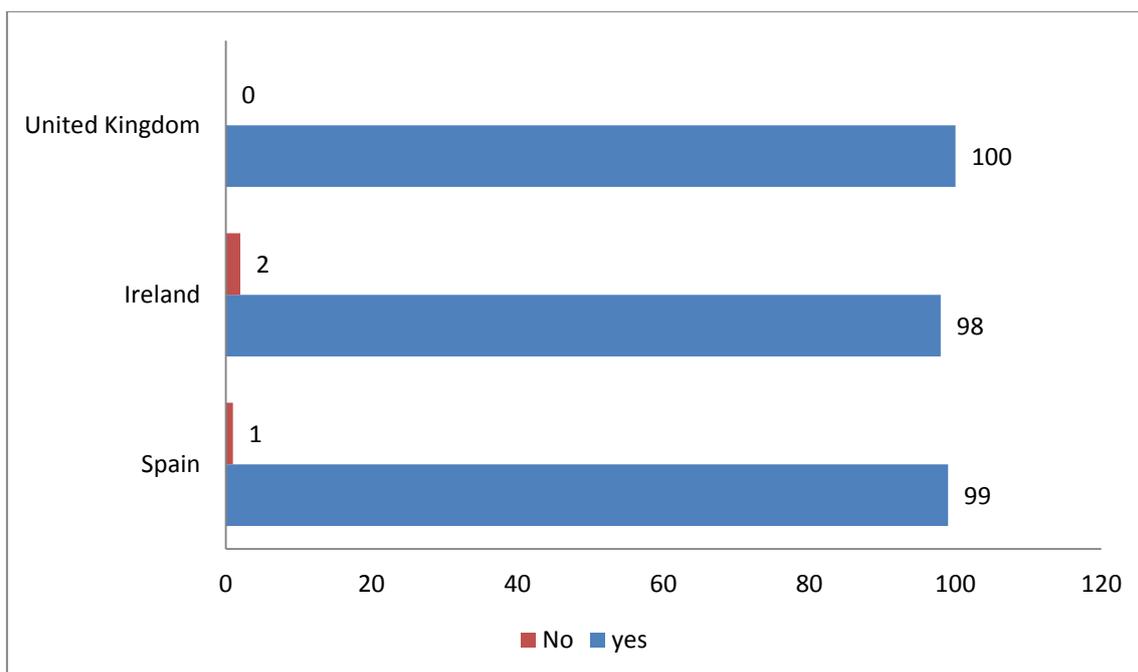


Figure 3.5. Knowledge of physiotherapy as a University degree

As in question number four, this one was dramatically required to be asked. By knowing that physiotherapy is a university degree, people will be able to ask for the qualification to the therapists that give the treatment, so professional encroachment will be found easily. As seen in the results, the vast majority of the people interviewed knew this.

3.6. Question 6. Did you know physiotherapy is related to traumatology?

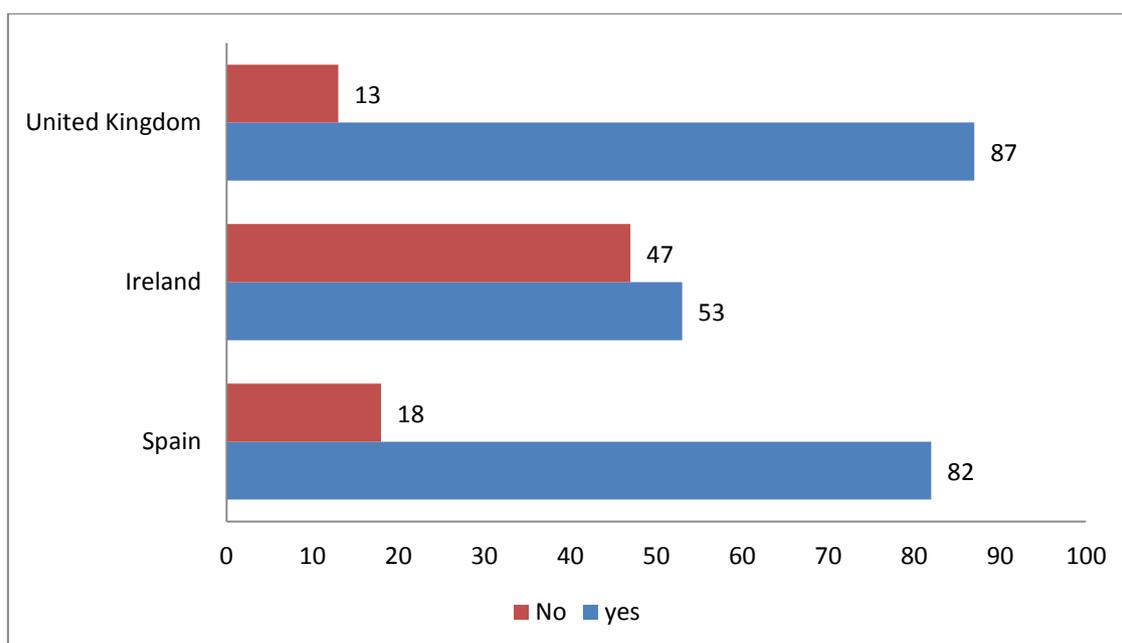


Figure 3.6. Knowledge of physiotherapy related to traumatology

From this question to the ones listed below, we wanted to know the extent of knowledge that citizens have about specific pathologies that might be treated with physiotherapy.

As in the sport question (nº3), we thought that it would have a high amount of affirmative answers. And so it was, United Kingdom and Spain knew this with an accuracy of 85% considering both countries, however Irish people interviewed did not know this. And almost half of the population would not go to the physiotherapist if they had a sprained ankle, this huge difference is clearly set in the arithmetical average showed in appendix 2: 0.53.

3.7. Question 7. Did you know physiotherapy is related to rheumatology?

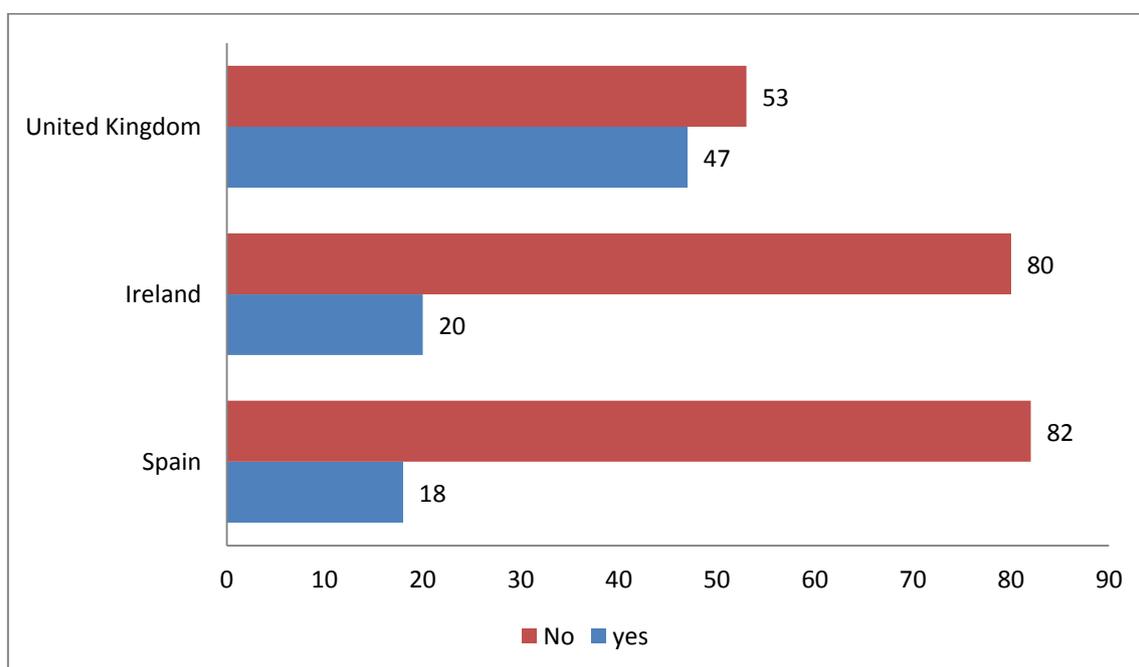


Figure 3.7. Knowledge of physiotherapy related to rheumatology

Unlike question above, most people were not aware of physiotherapy benefits for pathologies like arthritis. As seen in the graphics, red colour is prevailing for the first time in the three countries chosen. Spain did not reach the 20% of affirmative answers, Ireland did. On the other hand, United Kingdom is once more, keeping a balanced proportion in relation to the other countries, and it reached almost the 50% of people interviewed. Also for the first time, in the three countries, as expected by looking at the graphic, the mode is 0 (no).

3.8. Question 8. Did you know physiotherapy is related to neurology?

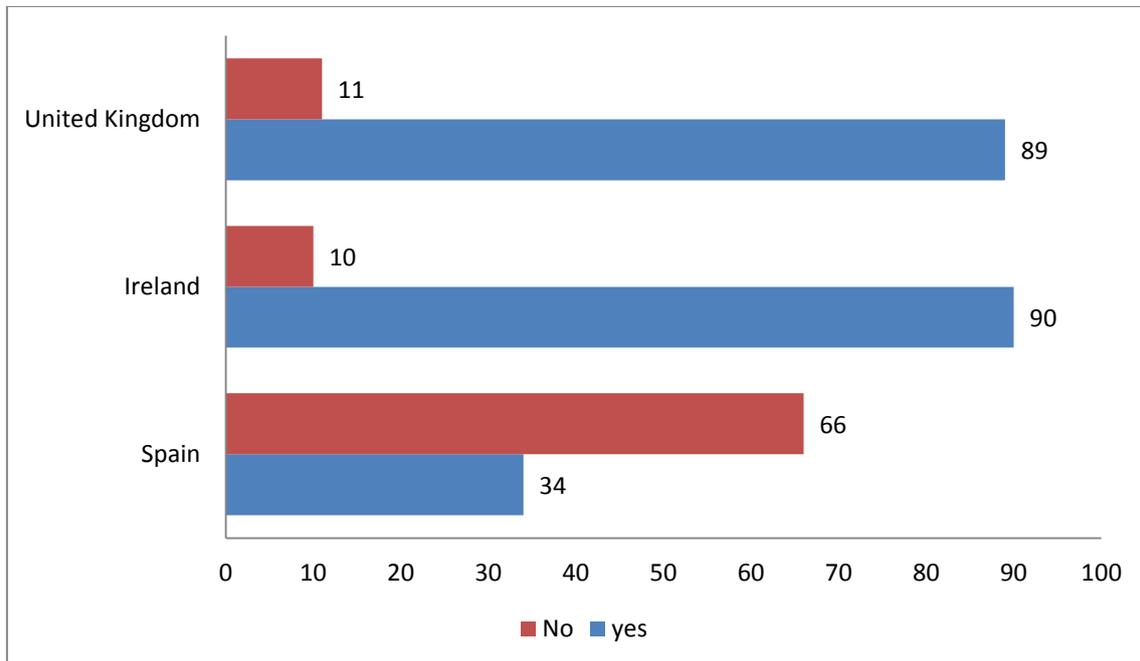


Figure 3.8. Knowledge of physiotherapy related to traumatology

According to the results, Spain had the lowest proportion of people who knew that physiotherapists were related to neurology. 66% of the Spanish people interviewed ignored that people who suffer from a stroke, facial paralysis and many other neurological issues, would be attended by a physiotherapist in order to recover as much mobility as possible. On the other hand, Ireland and United Kingdom kept a more balanced proportion. Almost half of the people interviewed already knew which health professional would take care of the sequels which come from a neurological source.

3.9. Question 9. Did you know physiotherapy is related to cardiology?

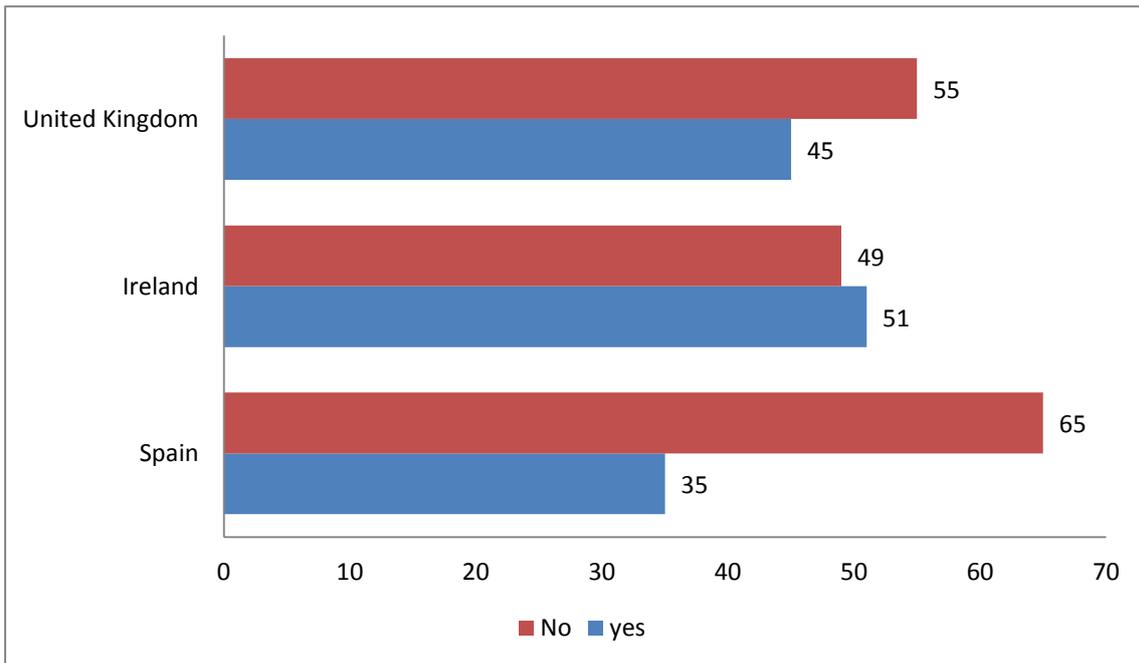


Figure 3.9. Knowledge of physiotherapy related to cardiology

If we go back to the question related to sports (nº2), we could notice that near to 95% of the population already knew that physiotherapy supports athletes. Nevertheless, the results given in cardiology were quite stunning, since around 50% of the people interviewed in each country did not link it to effort re-education in other sort of patients.

Physiotherapy is dramatically associated to exercise prescription, therefore, heart pace increases, so we do not know why this question did not reach more positive answers. Ireland kept the highest proportion with a 51% of positive answers. This is the first time that Ireland's average is over the other two countries.

3.10. Question 10. Did you know physiotherapy is related to paediatrics?

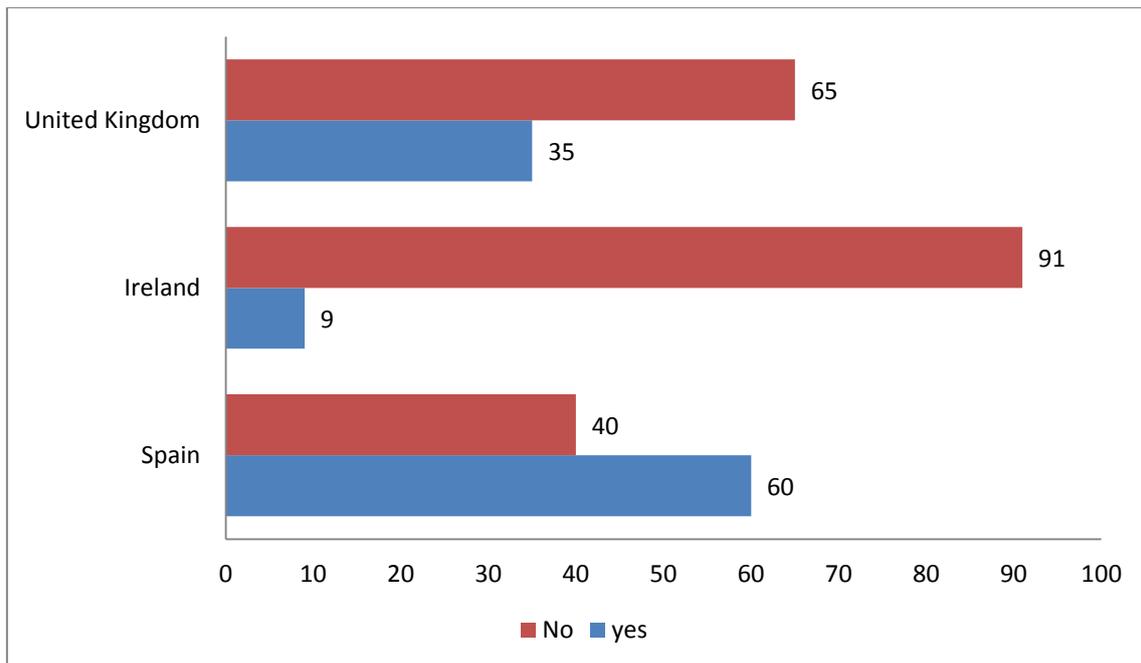


Figure 3.10. Knowledge of physiotherapy related to paediatrics

This question is one that gave a big difference between countries. 60% of the Spanish people would go to the physiotherapists or would know that their offspring would be given physiotherapy treatment if he or she suffers from a knock-kneed foot, or child paralysis. In the case of UK, the positive answers only reached the 35%, but the largest difference was in Ireland, where just 9% of the population knew that physiotherapists can take care of multiple child diseases. We think that this point would be interesting to be chosen for a future research, in order to inform about the benefits of physiotherapy in paediatrics.

3.11. Question 11. Did you know physiotherapy is related to pneumology?

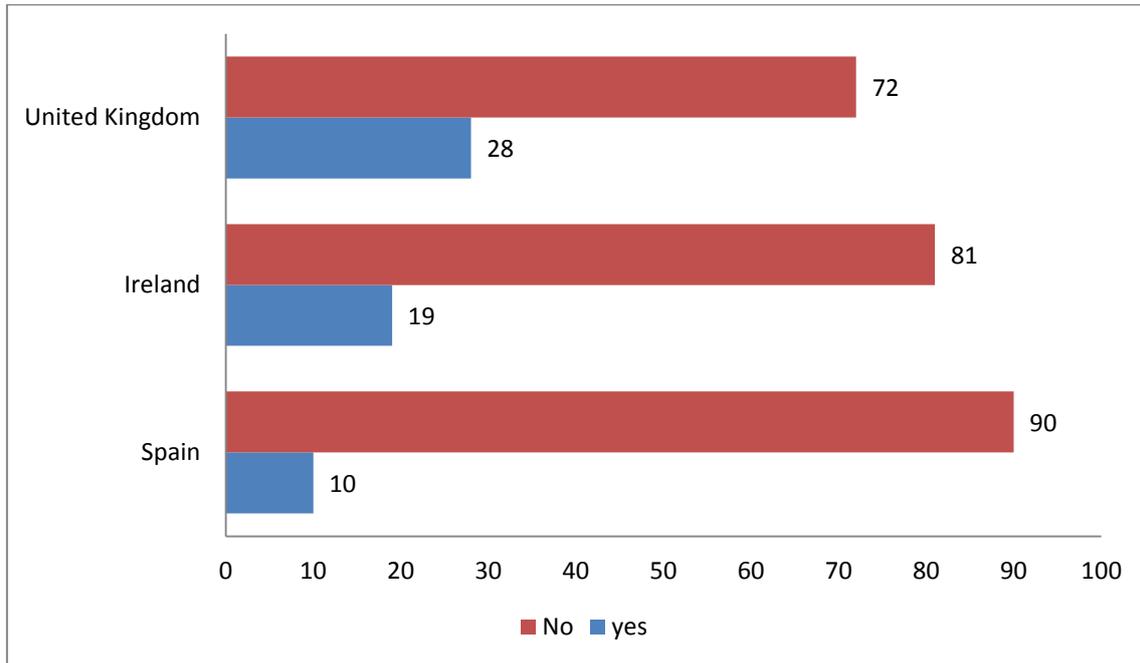


Figure 3.11. Knowledge of physiotherapy related to pneumology

This specialization is with a huge difference, the one who has the lowest positive answers in the three countries chosen. In a general way, people ignore the benefits that a physiotherapist could provide to a person who has breathing problems. By manual skills such as postural drainage or huffing, patients who suffer from COPD or cystic fibrosis will be aided by removing secretions and re-educating how to breathe properly. Focusing on the results given, United Kingdom just collected 29% of positive answers, and Spain, the lowest, only 9%.

3.12. Question 12. Did you know physiotherapy is related to gastroenterology?

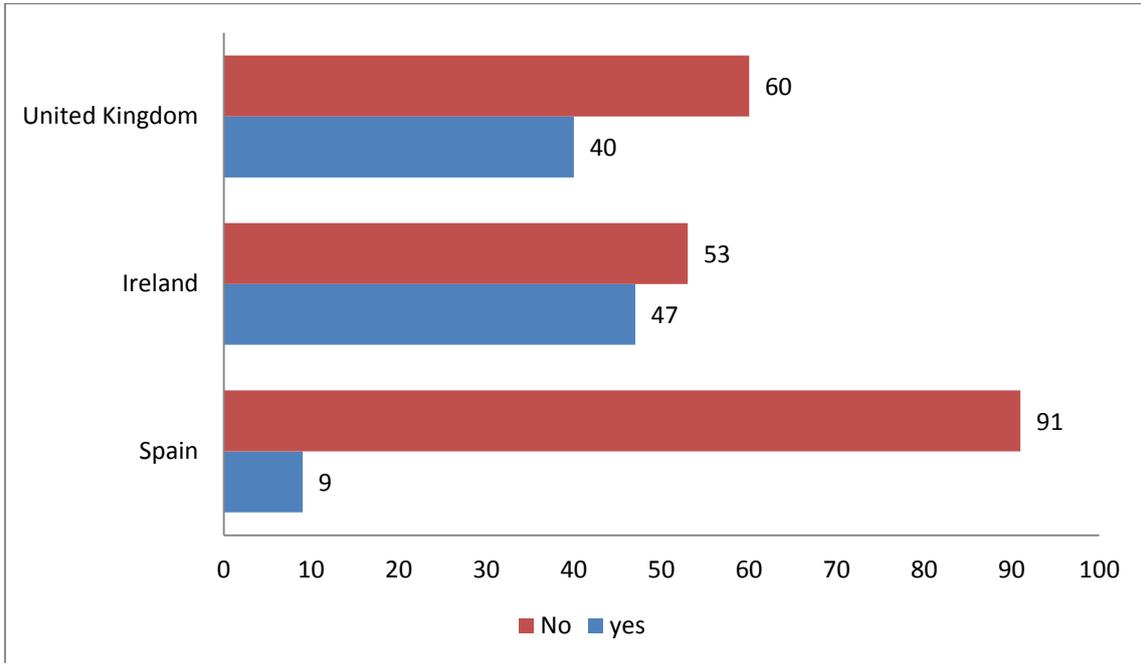


Figure 3.12. Knowledge of physiotherapy related to gastroenterology

This question combined with question 14 is related to incontinences and they had a similar percentage of answers. Spain had the lowest proportion of people who knew that physiotherapists could help to avoid faecal incontinence (just 9%). Once more, United Kingdom is on the top with a 60% of affirmative answers.

3.13. Question 13. Did you know physiotherapy is related to gynaecology?

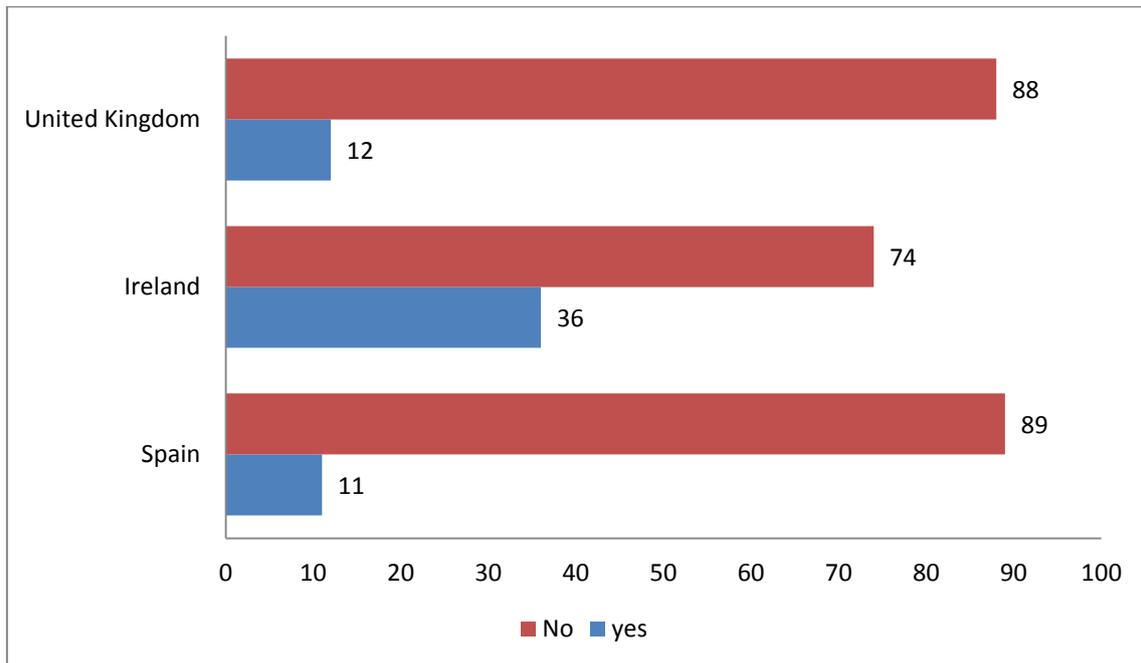


Figure 3.13. Knowledge of physiotherapy related to gynaecology

According to the fact that these three questions (12,13,14) deal with pelvic floor, is the case of the gynaecology the less known. Comparing the averages of these questions we can set, that people better know that physiotherapy may help by strengthening the pelvic floor for incontinences than for strengthening it after the birth.

3.14. Question 14. Did you know physiotherapy is related to urology?

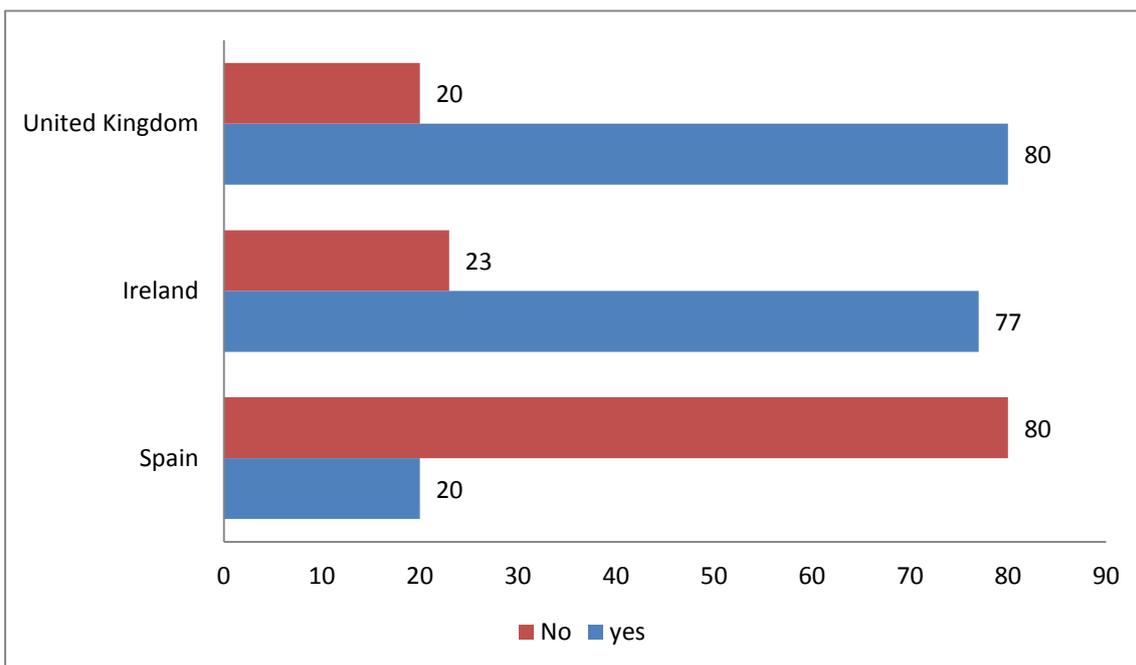


Figure 3.14. Knowledge of physiotherapy related to urology

This question has a really high difference in answers by looking at the results of United Kingdom and Spain, they exactly have the same proportion of answers but UK with affirmative and Spain with negative ones (80%-20%). Therefore, the variance comparing these two countries is the same: 0'16. We might think that it is not common seeing physiotherapists in Spain treating urinal incontinence rather than in United Kingdom and that is the reason of this result.

3.15. Question 15. Did you know physiotherapists can work in any kind of job?

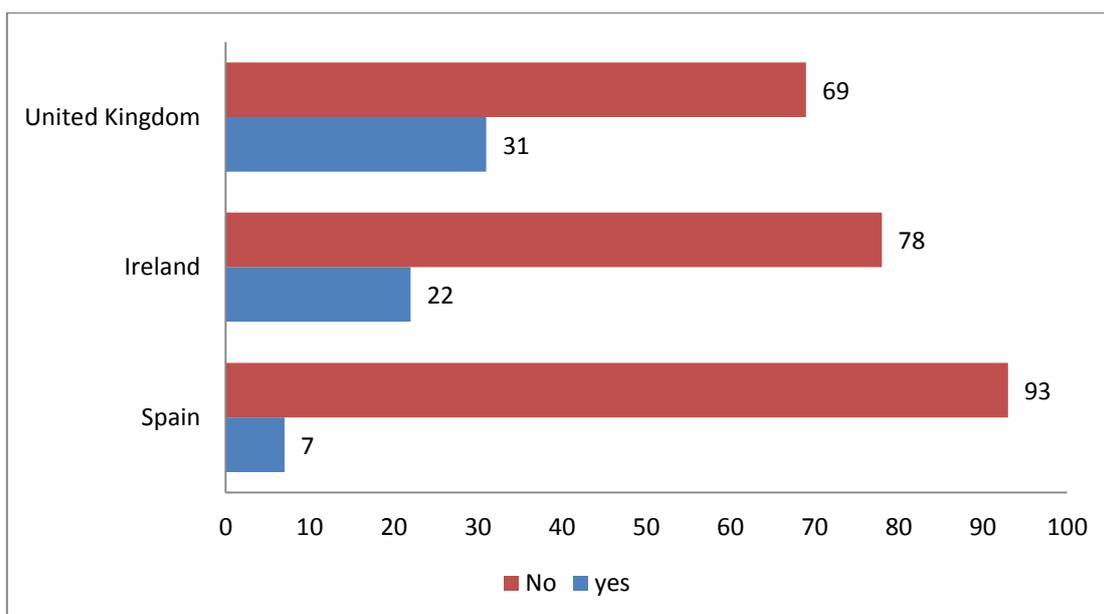


Figure 3.15. Knowledge of physiotherapy related to working in any kind of job.

It is not usual having a physiotherapist who looks after the employees of a company. According to the results, it will be interesting to perform a future research about this point. If you keep your employees healthy there will not be medical leaves, therefore benefits for the company will increase.

3.16. Question 16. Did you know physiotherapists can treat the joint situated in between the jawbone and cranium?

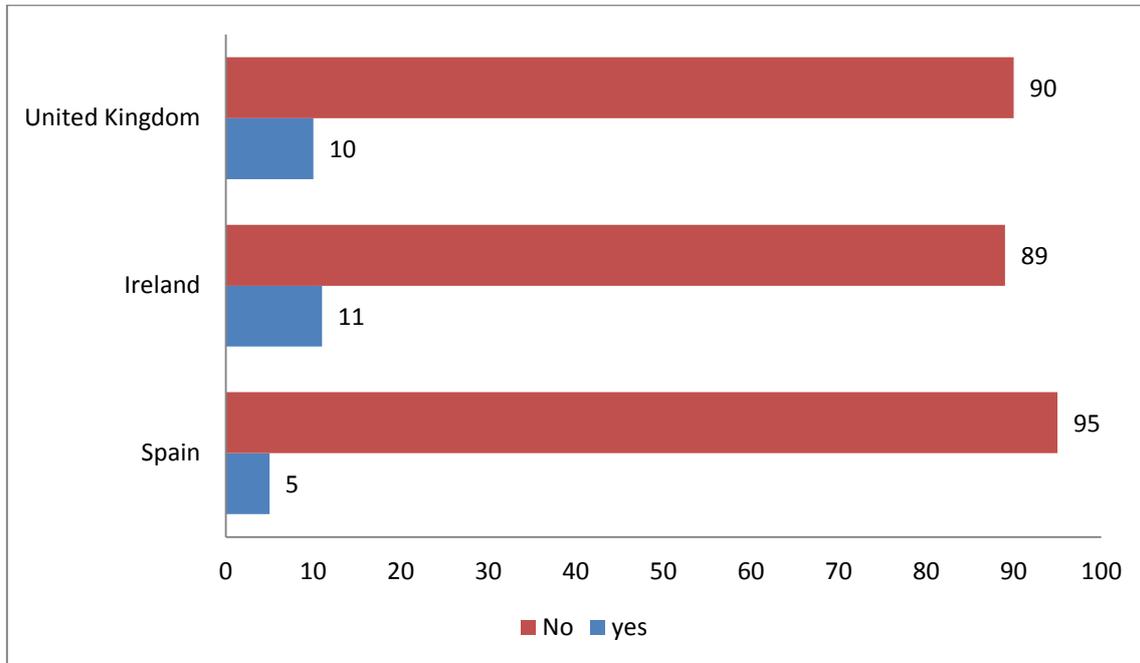


Figure 3.16. Knowledge of physiotherapy related to temporomandibular joint

As expected, if we look back to the question related to pneumology (nº11) the same happened here. People ignore that their joint may be treated by a physiotherapist, they would rather go to the dentist. The results are quite stunning, in all the countries chosen, especially in Spain with an amount of 95% negative answers.

4. CONCLUSIONS

We can see by looking at our results, that United Kingdom is the country which knows better physiotherapists' competences. It has a total of 636 negative answers in contrast with Spain which is in the last position with 814 negative responses.

It is relevant to state that some questions have almost the same proportion of answers regardless of the country we are referring to. We are talking about questions number 2 (Health Service) 4 (massages) and 5 (university degree).

This means that questions related to general topics are well known by population. However, the proportion dramatically changes when we are talking about particular specializations. Questions related to pneumology (question 11) gastroenterology (question 12) gynaecology (question 13) rheumatology (question 7) and working in any job (question 15) are clear examples.

There are also unusual results like the case of neurology (question 8) where the proportion of negative answers in Spain is almost the opposite of positive answers in Ireland and UK. The same happens with urology (question 14).

The specialization which has only more than 50% of positive answers is traumatology. Nevertheless, as said before, almost all of the remaining questions maintain a negative proportion.

So we can confirm that in a general way, the citizen does not know physiotherapists' skills further than with regard to general interventions. It is necessary for people to know that they can visit the physiotherapist for other matters, like temporomandibular joint issues or breathing problems. Physiotherapists should announce their performances in order to trigger a need in population. We can determine, by looking at the results that there is still much promotion in need.

In relation with Health Care Systems we can establish that the three countries chosen follow a similar physiotherapy development, even though Ireland and United Kingdom are one step ahead in considering the lack of Rehab Doctors in their systems. On the other hand, there would be interesting to find the allocation that happens in Spain between nurses and doctors but not with physiotherapists.

Needless to say, United Kingdom is the only country which has kept a good relationship between Osteopaths and Physiotherapists by legalizing osteopathy. This is something that the remaining countries should do.

Finally by looking at the contributions given by each country, once more, United Kingdom is the one which has given the most.

We can conclude then, that physiotherapy in United Kingdom is better, according to the amount of expenditure given to primary care, the results of the survey, its division from osteopathy being two different and independent

professions (providing lack of professional encroachment). The next one would be Spain, despite there are rehab doctors there, going back to the results related to GDP, Spain is one of the first European countries which expends in Health Care, so there is a higher amount of physiotherapists in primary care than in Ireland, which still has a high amount of Health Services that work privately.

We think the proper evolution of physiotherapy will occur in Public Health Care Services, especially in the Primary Care Services, as a way of prevention and treatment.

5. REFERENCES

1. Google statistics [web] [27 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_pop_totl&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
2. Google statistics [web] [27 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_dyn_le00_in&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
3. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_dyn_tfrt_in&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
4. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sh_med_phys_zs&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&tstart=830559600000&tend=1303858800000&hl=es&dl=es&ind=false
5. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_pop_totl&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
6. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_dyn_le00_in&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
7. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_dyn_tfrt_in&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false

alse

8. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sh_med_phys_zs&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&tstart=830559600000&tend=1303858800000&hl=es&dl=es&ind=false
9. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_pop_totl&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
10. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_dyn_le00_in&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
11. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sp_dyn_frft_in&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&hl=es&dl=es&ind=false
12. Google statistics [web] [29 January 2014]
https://www.google.es/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_totl&hl=es&dl=es&idim=country:GBR:FRA:DEU#!ctype=l&strail=false&bcs=d&nselm=h&met_y=sh_med_phys_zs&scale_y=lin&ind_y=false&rdim=region&idim=country:ESP:IRL:GBR&ifdim=region&tstart=830559600000&tend=1303858800000&hl=es&dl=es&ind=false
13. Grupo MENSOR. Servicios de Salud. Formación módulo 1.
14. Who.int [web] [20 March 2014] Available at:
http://www.who.int/sysmedia/search_error/en/?q=health+system&ie=utf8&site=who&client=en_r&proxystylesheet=en_r&output=xml_no_dtd&e=utf8&getfields=doctype
15. Ibid.
16. NICHOLAS B. (2012). *The relevance of efficiency to different theories of society* Economics of the Welfare State (5th ed.). Oxford University Press.

17. Euro.who.int [web] [21st March 2014] Available at:
http://www.euro.who.int/_data/assets/pdf_file/0010/113302/E55363.pdf
18. Estadísticas Sanitarias Mundiales 2008. Ginebra, Organización Mundial de la Salud 2008 [web] [23rd March 2014]. Available at:
http://www.who.int/gho/publications/world_health_statistics/PDF_ES_WH_S08_Full.pdf
19. Ddd.uab.cat [web] [29th March 2014] Available at:
<http://ddd.uab.cat/pub/revpsidep/19885636v10n2p239.pdf>
20. Revistas.una.ac.cr [web] [30 March 2014] Available at:
<http://revistas.una.ac.cr/index.php/mhsalud/article/view/312>
21. Health Systems in Transition. Ireland Health system review. European Observatory on Health System and Policies 2009
22. Gestion-sanitario.com [web] [1^{sr} April 2014] Available at:
<http://www.gestion-sanitaria.com/1-sistemas-sanitarios-union-europea.html>
23. Ibid.
24. Health Systems in Transition. United Kingdom Health system review. European Observatory on Health System and Policies. 2011
25. OECD HEALTH DATA 2008, versión junio. Datos correspondientes a 2006
26. Grupo MENSOR. Servicios de Salud. Formación módulo 1
27. Health Systems in Transition. Spain Health system review. European Observatory on Health System and Policies. 2010
28. PELLEGRINO E.D. (2007) *What is a profession?* J. Allied Health
29. University of Colorado Health Sciences Center School of Nursing in Denver, USA. *Benefits of massage therapy for hospitalized patients: a descriptive and qualitative evaluation* 2012
30. Grupo MENSOR. Servicios de Salud. Formación módulo 1
31. Health Systems in Transition. Spain Health system review. European Observatory on Health System and Policies. 2010
32. GALLEGO IZQUIERDO T. (2007) *Bases teóricas y fundamentos de la fisioterapia*. Edición Panamericana.

33. Ibid.
34. Ibid.
35. Ibid.
36. Slideshare.net [web][10 May 2014] Available at:
<http://www.slideshare.net/emprendeperu/manual-de-masaje-transverso-profundo-masaje-de-cyriax>
37. Bloq.wellcomelibrary.org [web] [11 May 2014] Available at:
<http://blog.wellcomelibrary.org/2013/06/james-cyriax-father-of-orthopaedic-medicine/>
38. Slidershare.net [web] [12 May 2014] Available at:
<http://www.slideshare.net/Manudue/electrolisis-percutnea-intratisular-epi>
39. Mvclinic.es [web] 13 may 2014] Available at:
<http://www.mvclinic.es/tratamientos/electrolisis-percutanea-intratisular-epi>
40. Resolución 2/2009. Sobre la Ordenación de la osteopatía en la formación y ejercicio profesional del fisioterapeuta.
41. Association of Osteopaths in Ireland (IRL) [Web][14 may 2014] Available at: <http://www.osteopathy.ie/about-the-oci/regulation-governance>
42. Association of Osteopaths in United Kingdom (UK) [Web] [14may 2014] Available at: <http://www.osteopathy.org.uk/information/about-osteopathy/>
43. Osteopathy.org in UK [Web] [14may 2014] Available at: <http://www.osteopathy.org.uk/practice/>

6. APPENDIX 1: SURVEY

Nationality: _____ Age: _____ Please, answer with **yes** or **no**.

1. Did you know physiotherapists work in places such as spas, beauty clinics?
2. Did you know physiotherapists work in the Health Service? (Hospitals, A&E)
3. Did you know physiotherapists work in sport centers?
4. Did you know a physiotherapist perform more than massages?
5. Did you know physiotherapy is a University Degree?

6. Did you know physiotherapy is related to **traumatology**?
So they can treat sprained joints, dislocations, contractures, muscular tears, tendonitis...

7. Did you know physiotherapy is related to **rheumatology**?
So they can treat illnesses such as arthritis, osteoporosis...

8. Did you know physiotherapy is related **neurology**?
So they can treat slipped disc, multiple sclerosis, Parkinson, paralysis, spinal cord injury, sequels from a stroke (hemiplegia) facial paralysis, coordination disorders, balance disorders...

9. Did you know physiotherapy is related to **cardiology**?
So they can reeducate effort to patients who suffer from heart disorders.

10. Did you know physiotherapy is related to **paediatrics**?
So they can treat child paralysis, meningitis. Also children who are born with syndrome like Down Syndrome, Wesk Syndrome...

11. Did you know physiotherapy is related to **pneumology**?
So they can treat cystic fibrosis, lung disorders, also they can reeducate breathing.

12. Did you know physiotherapy is related to **gastroenterology**?
So they can treat fecal incontinence

13. Did you know physiotherapy is related to **gynaecology**?
So they can reeducate muscles related to birth

14. Did you now physiotherapy is related to **urology**?
So they can treat urinal incontinence

15. Did you know physiotherapists can work in any kind of job? (Offices companies) In order to keep employees' health and teach them how to prevent illnesses and pain.
16. Did you know physiotherapists can treat the joint situated in between the jawbone and cranium? (In front of your ear)

7. APPENDIX 2: KEY TREND AND DISPERSION MEASURES

7. 1. Key trend measures q1

Arithmetical average Spain	0.98
Arithmetical average Ireland	0.20
Arithmetical average UK	0.79
Arithmetical average question 1	0.65
Mode Spain	1
Mode Ireland	0
Mode UK	1
Mode question 1	1
Median Spain	1
Median Ireland	0
Median UK	1
Median question 1	1

7. 2. Dispersion measures q1

Variance Spain	0.0196
Variance Ireland	0.16
Variance UK	0.1659
Variance question 1	0.2255
Standard deviation Spain	0.14
Standard deviation Ireland	0.4
Standard deviation UK	0.4
Standard deviation question 1	0.47

7. 3. Key trend measures q2

Arithmetical average Spain	0.98
Arithmetical average Ireland	0.99
Arithmetical average UK	0.99
Arithmetical average question 2	0.98
Mode Spain	1
Mode Ireland	1
Mode UK	1
Mode question 2	1
Median Spain	1
Median Ireland	1
Median UK	1
Median question 2	1

7.4. Dispersion measures q2

Variance Spain	0.0196
Variance Ireland	0.0099
Variance UK	0.0099
Variance question 2	0.0132
Standard deviation Spain	0.14
Standard deviation Ireland	0.099
Standard deviation UK	0.099
Standard deviation question 2	0.3633

7.5. Key trend measures q3

Arithmetical average Spain	1
Arithmetical average Ireland	0.99
Arithmetical average UK	0.90
Arithmetical average question 3	0.91
Mode Spain	1
Mode Ireland	1
Mode UK	1
Mode question 3	1
Median Spain	1
Median Ireland	1
Median UK	1
Median question 3	1

7.6. Dispersion measures q3

Variance Spain	0
Variance Ireland	0.125
Variance UK	0.09
Variance question 3	0.00013
Standard deviation Spain	0
Standard deviation Ireland	0.35
Standard deviation UK	0.3
Standard deviation question 3	0.011

7. 7. Key trend measures q4

Arithmetical average Spain	1
Arithmetical average Ireland	0.99
Arithmetical average UK	0.90
Arithmetical average question 3	0.91
Mode Spain	1
Mode Ireland	1
Mode UK	1
Mode question 4	1
Median Spain	1
Median Ireland	1
Median UK	1
Median question 4	1

7. 8. Dispersion measures q4

Variance Spain	0
Variance Ireland	0
Variance UK	0
Variance question 4	0
Standard deviation Spain	0
Standard deviation Ireland	0
Standard deviation UK	0
Standard deviation question 4	0

7. 9. Key trend measures q5

Arithmetical average Spain	0.99
Arithmetical average Ireland	0.98
Arithmetical average UK	1
Arithmetical average question 5	0.99
Mode Spain	1
Mode Ireland	1
Mode UK	1
Mode question 5	1
Median Spain	1
Median Ireland	1
Median UK	1
Median question 5	1

7. 10. Dispersion measures q5

Variance Spain	0.0099
Variance Ireland	0.2491
Variance UK	0
Variance question 5	0.0099
Standard deviation Spain	0.099
Standard deviation Ireland	0.499
Standard deviation UK	0
Standard deviation question 5	0.0099

7. 11. Key trend measures q6

Arithmetical average Spain	0.82
Arithmetical average Ireland	0.53
Arithmetical average UK	0.87
Arithmetical average question 6	0.74
Mode Spain	1
Mode Ireland	1
Mode UK	1
Mode question 6	1
Median Spain	1
Median Ireland	1
Median UK	1
Median question 6	1

7. 12. Dispersion measures q6

Variance Spain	0.1476
Variance Ireland	0.2491
Variance UK	0.1131
Variance question 6	0.1924
Standard deviation Spain	0.3841
Standard deviation Ireland	0.4990
Standard deviation UK	0.336
Standard deviation question 6	0.4386

7. 13. Key trend measures q7

Arithmetical average Spain	0.18
Arithmetical average Ireland	0.20
Arithmetical average UK	0.47
Arithmetical average question 7	0.28
Mode Spain	0
Mode Ireland	0
Mode UK	0
Mode question 7	0
Median Spain	0
Median Ireland	0
Median UK	0
Median question 7	0

7. 14. Dispersion measures q7

Variance Spain	0.1476
Variance Ireland	0.16
Variance UK	0.2491
Variance question 7	0.203
Standard deviation Spain	0.3841
Standard deviation Ireland	0.4
Standard deviation UK	0.4991
Standard deviation question 7	0.4505

7. 15. Key trend measures q8

Arithmetical average Spain	0.34
Arithmetical average Ireland	0.90
Arithmetical average UK	0.89
Arithmetical average question 8	0.71
Mode Spain	0
Mode Ireland	1
Mode UK	1
Mode question 8	1
Median Spain	0
Median Ireland	1
Median UK	1
Median question 8	1

7. 16. Dispersion measures q8

Variance Spain	0.2244
Variance Ireland	0.09
Variance UK	0.0979
Variance question 7	0.2059
Standard deviation Spain	0.47
Standard deviation Ireland	0.3
Standard deviation UK	0.31288
Standard deviation question 7	0.453

7. 17. Key trend measures q9

Arithmetical average Spain	0.35
Arithmetical average Ireland	0.51
Arithmetical average UK	0.45
Arithmetical average question 9	0.43
Mode Spain	0
Mode Ireland	1
Mode UK	0
Mode question 9	0
Median Spain	0
Median Ireland	1
Median UK	0
Median question 9	0

7. 18. Dispersion measures q9

Variance Spain	0.2275
Variance Ireland	0.2499
Variance UK	0.2475
Variance question 9	0.2460
Standard deviation Spain	0.476
Standard deviation Ireland	0.499
Standard deviation UK	0.4974
Standard deviation question 9	0.4959

7. 19. Key trends q10

Arithmetical average Spain	0.60
Arithmetical average Ireland	0.09
Arithmetical average UK	0.35
Arithmetical average question 10	0.34
Mode Spain	1
Mode Ireland	0
Mode UK	0
Mode question 10	0
Median Spain	1
Median Ireland	0
Median UK	0
Median question 10	0

7. 20. Dispersion measures q10

Variance Spain	0.24
Variance Ireland	0.0819
Variance UK	0.2275
Variance question 10	0.22653
Standard deviation Spain	0.489
Standard deviation Ireland	0.286
Standard deviation UK	0.476
Standard deviation question 10	0.4751

7. 21. Key trend measures q11

Arithmetical average Spain	0.10
Arithmetical average Ireland	0.19
Arithmetical average UK	0.28
Arithmetical average question 11	0.19
Mode Spain	0
Mode Ireland	0
Mode UK	0
Mode question 11	0
Median Spain	0
Median Ireland	0
Median UK	0
Median question 11	0

7. 22. Dispersion measures q11

Variance Spain	0.09
Variance Ireland	0.1539
Variance UK	0.2016
Variance question 11	0.1539
Standard deviation Spain	0.3
Standard deviation Ireland	0.392
Standard deviation UK	0.4489
Standard deviation question 11	0.3923

7. 23. Key trends q12

Arithmetical average Spain	0.09
Arithmetical average Ireland	0.47
Arithmetical average UK	0.40
Arithmetical average question 12	0.32
Mode Spain	0
Mode Ireland	0
Mode UK	0
Mode question 12	0
Median Spain	0
Median Ireland	0
Median UK	0
Median question 12	0

7. 24. Dispersion measures q12

Variance Spain	0.0819
Variance Ireland	0.2491
Variance UK	0.24
Variance question 12	0.1539
Standard deviation Spain	0.286
Standard deviation Ireland	0.499
Standard deviation UK	0.489
Standard deviation question 12	0.392

7. 25. Key trend measures q13

Arithmetical average Spain	0.11
Arithmetical average Ireland	0.36
Arithmetical average UK	0.12
Arithmetical average question 13	0.196
Mode Spain	0
Mode Ireland	0
Mode UK	0
Mode question 13	0
Median Spain	0
Median Ireland	0
Median UK	0
Median question 13	0

7. 26. Dispersion measures q13

Variance Spain	0.0979
Variance Ireland	0.24336
Variance UK	0.1056
Variance question 14	0.157
Standard deviation Spain	0.3128
Standard deviation Ireland	0.4933
Standard deviation UK	0.3249
Standard deviation question 14	0.3962

7. 27. Key trend measures q14

Arithmetical average Spain	0.20
Arithmetical average Ireland	0.77
Arithmetical average UK	0.80
Arithmetical average question 14	0.59
Mode Spain	0
Mode Ireland	1
Mode UK	1
Mode question 14	1
Median Spain	0
Median Ireland	1
Median UK	1
Median question 14	1

7. 28. Dispersion measures q14

Variance Spain	0.16
Variance Ireland	0.1771
Variance UK	0.16
Variance question 14	0.2419
Standard deviation Spain	0.4
Standard deviation Ireland	0.4208
Standard deviation UK	0.4
Standard deviation question 14	0.4918

7. 29. Key trend measures q15

Arithmetical average Spain	0.07
Arithmetical average Ireland	0.22
Arithmetical average UK	0.31
Arithmetical average question 15	0.2
Mode Spain	0
Mode Ireland	0
Mode UK	0
Mode question 15	0
Median Spain	0
Median Ireland	0
Median UK	0
Median question 15	0

7. 30. Dispersion measures q15

Variance Spain	0.0651
Variance Ireland	0.1716
Variance UK	0.2139
Variance question 9	0.16
Standard deviation Spain	0.255
Standard deviation Ireland	0.4142
Standard deviation UK	0.4624
Standard deviation question 9	0.4

7. 31. Key trend measures q16

Arithmetical average Spain	0.05
Arithmetical average Ireland	0.11
Arithmetical average UK	0.10
Arithmetical average question 16	0.08
Mode Spain	0
Mode Ireland	0
Mode UK	0
Mode question 16	0
Median Spain	0
Median Ireland	0
Median UK	0
Median question 16	0

7. 32. Dispersion measures q16

Variance Spain	0.0475
Variance Ireland	0.0979
Variance UK	0.09
Variance question 16	0.0792
Standard deviation Spain	0.2179
Standard deviation Ireland	0.312
Standard deviation UK	0.3
Standard deviation question 16	0.889