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The Role of Epidemiology in the Planning of Physiotherapy Services

María de Lourdes Llerena Cepeda¹, Josselyn Gabriela Bonilla Ayala², Javier Caiza Lema³, Lisbeth Josefina Reales Chacón⁴

^{1,2,3}Universidad Técnica de Ambato, Carrera de Fisioterapia,

⁴Universidad Nacional del Chimborazo

Corresponding author (*): María de Lourdes Llerena Cepeda

Email: mdl.llerena@uta.edu.ec

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Abstract

Introduction Epidemiology is currently described as the study of the distribution and determinants of the health-disease process. Using epidemiology, different types of studies and epidemiological indicators, it is established that it is necessary to review these for the planning of physiotherapy services. The objective of the review is to determine the role of Epidemiology for the planning of Physiotherapy services and to propose guidelines in the planning of these health services **Methods** A selective search of studies was carried out using descriptors such as epidemiology, planning and quality, epidemiological indicators and studies, physiotherapy services in databases such as Pubmed, Scopus, ScienDirect, Google scholar, Dialnet and Boolean operators such as AND, OR, NOT finding 58 eligible records based on title and abstracts **Results** From the review carried out, criteria of epidemiology and its evolution were found, studies that are carried out applied to physiotherapy in different pathologies and age groups, as well as studies concerning the planning and quality of physiotherapy services, satisfaction with physiotherapy services **Conclusions** Given that epidemiology and its studies provide measurement data on health status such as frequency, distribution, and causal relationship, it is necessary to consider sociodemographic indicators, morbidity, incidence, prevalence, etc., for the planning of quality services in physiotherapy.

Key words: Epidemiology, Planning and Quality, Epidemiological Indicators and Studies, Physiotherapy Services

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Introduction

Nowadays, epidemiology is important in the study of the causes, distribution and frequency of diseases, and the participation of this discipline in the planning of quality physiotherapy services is necessary. The different types of epidemiological studies show the relationship between the causes and effects of diseases, as well as the prevalence, incidence, risks, etc. It went from studying infectious diseases and how to prevent them through epidemiology to studying other variables that are related to the pillars of time, place and person with the planning of quality health services.

In order to establish health policies, in addition to health promotion and disease prevention actions, it is necessary to review the health organization and within this, the planning of health services such as physiotherapy. Laframbiose proposed 4 models for field analysis in health policy, these being: lifestyle, the environment, the health organization and human biology that all of these together seek to implement measures that reduce morbidity and mortality in the world population. (1)

Epidemiological studies in their general division are divided into observational, and experimental, within observational cross-sectional, cohort studies, case-control studies, experimental clinical trials Cross-sectional studies group the prevalence of a disease or risk factor at a specific time, but do not establish causality. Case-control studies retrospectively compare individuals with and without the disease by identifying risk factors. Cohort studies follow groups of individuals exposed or not exposed to a risk factor over time and determine how many develop the disease, allowing for the calculation of incidence rates. These incidence rates are indicators for the planning of physiotherapy services. Clinical trials demonstrate causality, but because they are expensive, they limit the generalization of results to the population. (2) (2)

The classification of epidemiological studies provides the possibility of reviewing the determinants related to access to and organization of health services of physiotherapy of health using an appropriate design, different questions about planning could be resolved; Cross-sectional or frequency studies make it possible to establish the frequency of a disease or its sequelae, disabilities, limitations, etc. Since the frequency of diseases is mandatory in the planning of physiotherapy services, these studies are pillars in public health. (3)

Specific factors of interest can generate hypotheses related to physiotherapy intervention, change and impact on patients' lives. In this logic, cross-sectional studies are useful in the planning of physiotherapy services as they account for the burden of disease in different population groups and can identify those with the greatest need for physiotherapy services. For example, studies related to alterations of the musculoskeletal system have been found, inferring the need for services that treat these alterations, indicators such as the prevalence of odds ratio and the prevalence ratio are also useful (4) .

The social approach to epidemiology reflects that health is influenced by social and structural determinants, looking for similarities and differences in the social structure and lifestyle of populations.

Materials and Methods

Study Type and Design

The study is a systematic review with the intention of finding information to determine the role of epidemiology in the planning and quality of physiotherapy services.

Search strategy

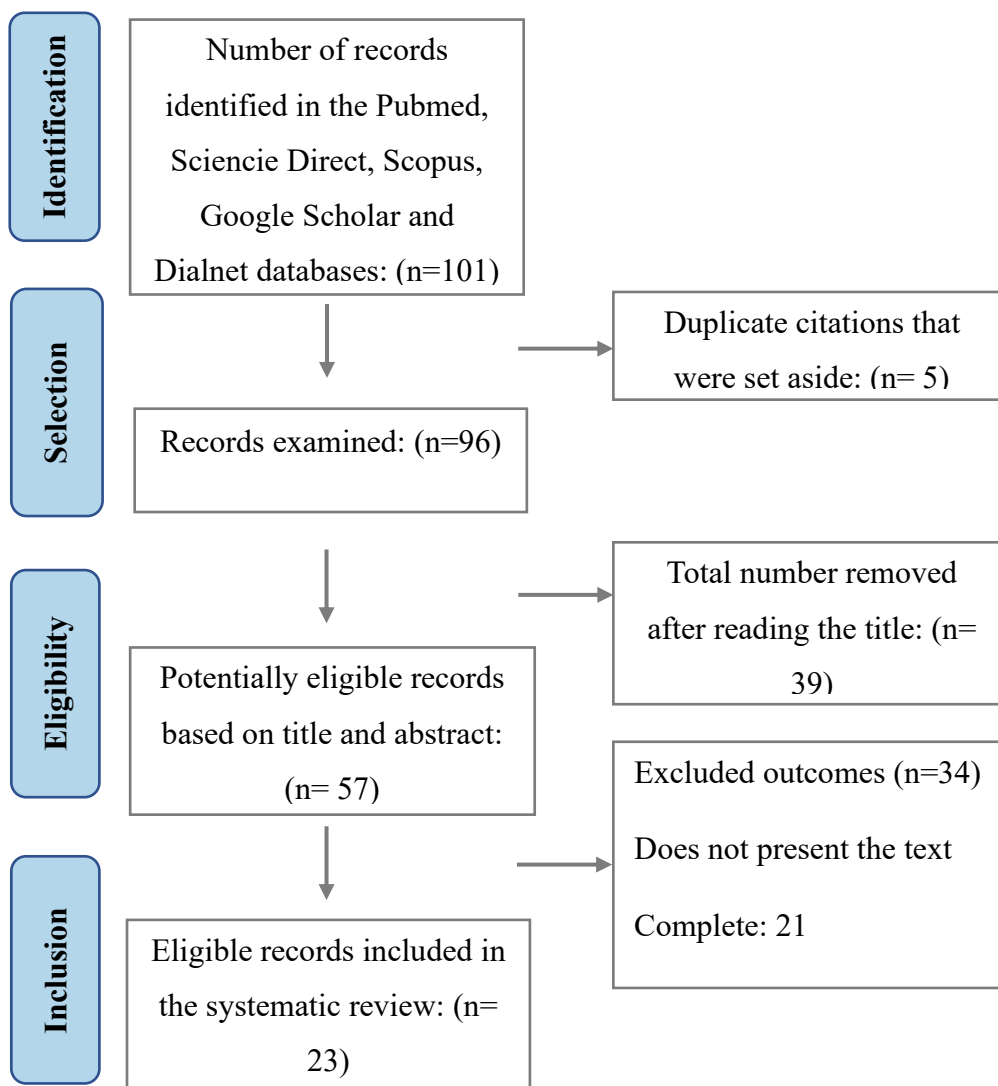
A selective search of studies was carried out using epidemiology, planning and quality descriptors, epidemiological indicators and studies, physiotherapy services in Pubmed, Scopus, Sciencedirect, Google scholar, Dialnet and boolean operators such as "AND", "OR" and "NOT" finding 57 eligible records based on title and abstracts in the period from September 2023 to January 2024.

Given the lack of information on epidemiology and physiotherapy, bibliographic references were considered in the writing of the introduction, making a critical reading based on the title of the article, the objective, the type of research and the conclusions.

Selection and assessment criteria

Descriptive cross-sectional cohort systematic reviews, randomized controlled trials, original and opinion articles were included, articles unrelated to the descriptors used in the study were excluded. A systematic review of the literature has been carried out following the guidelines established by the PRISMA Guide. The applied search strategy is presented in **Figure 1**.

Figure 1.



Rating of Articles

In this study, various scales were used for the methodological rating of the studies. AMSTAR 2 (A MeaSurement Tool to Assess systematic Reviews 2) is an assessment tool used to measure the quality of systematic reviews in the health sciences. This tool is used to evaluate the methodology and transparency of studies, helping to determine their reliability and reliability in the synthesis of scientific evidence. The rating is qualitative in nature and has 4 levels of confidence: High, Medium, Low, and Critically Low. (5)

16 (Table 1).

Tabla 1. AMSTAR 2

Autores	Dieciséis ítems basados en la Tabla 1																Nivel de confianza
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Critically Low (6) Stocking	N	S	S	SP	S	S	S	S	N	S	NM	NM	N	N	NM	S	Críticamente bajo
Critically Low (8)	S	SP	N	S	S	S	N	S	N	S	NM	NM	N	N	NM	S	Críticamente bajo
Loud (9)	S	S	S	S	S	S	S	S	S	N	NM	NM	S	S	Table 1. AMSTAR 2 Authors		Sixteen items based on Table 1

Stocking (10)	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Loud (11)	Garcia-Perez et al. 2014	N	S	S	SP	S	S	S	S	N	S	NM	NM	N	N	NM	S
Stocking (12)	Soto-Mora et al. 2022	S	S	S	SP	S	S	S	S	S	S	NM	NM	S	S	NM	S
Loud (13)	Llerena et al. 2023	S	SP	N	S	S	S	N	S	N	S	NM	NM	N	N	NM	S
S: YES N: NO SP: Yes partially NM: No meta-analysis (14)	Surace et al. 2020	S	S	S	S	S	S	S	S	S	N	NM	NM	S	S	NM	S
Loud																	

The PEDro scale is an assessment tool used to measure the methodological quality of randomized controlled clinical trials in the field of physiotherapy. This scale rates the quality of studies based on 11 specific criteria, evaluating aspects such as allocation concealment, participant follow-up, and statistical analysis, among others. It offers a numerical score that helps determine the validity and reliability of the evidence provided by clinical trials. (15)

11/10

Kocarnik et al. 2021													
S	S												S /10
	N	S	S	S	S	N	S	NM	S	S	NM		
9/10 (16)	Bell et al. 2022	S	S	S	S	S	S	S	S	S	S	N	S
7/10 (17)	Loud	S	S	S	S	Loud	Govaerts et al. 2021	S	S	S	S	S	S
7/10 (18)		S	S	N	S	S	S	S	N	S	Stocking	Cunningham et al. 2023	S
9/10 (19)		S	S	S	S	S	S	S	N	NM	NM	S	S
meets the criterion : 1 point does not meet the criterion : 0 points (20)		S	Loud	Núñez - Cortes et al. 2022	S	S	S	S	S	S	SP	S	S

N

*El primer ítem se refiere a la validez externa del estudio y no otorga puntos.

The Newcastle-Ottawa Scale is a tool used to assess the quality of observational studies. It focuses on assessing the methodological quality and risk of bias of cohort, case-control, case-series and retrospective studies. This scale assigns stars or points to studies based on specific criteria, such as participant selection, cross-group comparability, and outcome evaluation. (21)

Additional factor:

S										
S		S					S			
S	S: YES N: NO SP: Yes partial ly NM: No meta- analys is	Sele cción de la cohor te no exposi ción de la exposi ción	Deter minac ión de la exposi ción	Res ulta do de inte rés no pre sent e al inici o del estu dio	Table 2. PEDro Scale		Aut hor s	Ele ven ite ms bas ed on Tab le 1	Tot al	S 9/9
					6	7				
9/9 (22)	Reich enbac h et al. 2021	1	1	1	1	1	0	1	1	1
8/9 (23)	1	9/1 0	Nasb et al. 2019	1	1	1	1	0	0	1
Yes: + (1point) No: - (0 points) (24)	0	1	1	7/1 0	Aboa gye et al. 2022	1	1	1	1	0
0										

The JBI Critical Appraisal Checklist for Cross-Sectional Analytical Studies is a tool used to critically assess methodological quality in cross-sectional analytical studies. It makes it easier for researchers to analyze elements such as study design, sample representativeness, data management, and statistical analysis, among others, in order to determine the strength and reliability of the evidence presented in such research. Instead of generating a numerical score, an overall assessment is carried out based on the presence or absence of the specific criteria in the list in the study analyzed. (25)

Total

0										
1	1	1	1	7/10	Udina- Cortés et al. 2020	1	1	1	1	1
5/8 (26)	0	1	1	1	1	1	9/10	Østerås et al. 2019	1	1
6/8 (27)	1	1	0	0	1	1	1	1	1	1

6/8 (28)	meets the criterion: 1 point does not meet the criterion: 0 points	S	S	S	Table 3. Newcastle-Ottawa Stopover	Authors	Selection	Comparability	Results
6/8 (29)	S	Representativeness of the exposed cohort	Selection of the Unexposed Cohort	Exposure Determination	Result of interest not present at the start of the study	Cohort Comparability	Evaluation of the result	Sufficient follow-up time	Adequacy of follow-up
7/8 (30)	S	S	S	S	S	Main Factor	Additional Factor	S	7/8
Unclear PC Not applicable = (31)	S	Blanco-Muñiz et al. 2018	+	+	+	+	+	+	+
<p>Yes = S No = N +</p> <ol style="list-style-type: none"> 1. ¿Se definieron claramente los criterios de inclusión en la muestra? 2. ¿Se describieron en detalle los sujetos del estudio y el entorno? 3. ¿Se midió la exposición de manera válida y confiable? 4. ¿Se utilizaron criterios objetivos y estándar para medir la afección? 5. ¿Se identificaron factores de confusión? 6. ¿Se indicaron estrategias para abordar los factores de confusión? 7. ¿Se midieron los resultados de manera válida y confiable? 8. ¿Se utilizó un análisis estadístico apropiado? 									

Results and Discussion

The Characteristics of the articles

+	
1.9/9	
Gopinath et al. 2020	+
Health Service Planning Physical Therapy (6)	-
+Revisión sistemática País de publicación: España Título: Revisión sistemática de utilidades relacionados con la salud en España: el caso de la salud mental. Objetivo: Actualmente no existe ningún registro de valores de utilidad para la población española que potencialmente pueda ser utilizado en evaluaciones económicas. En consecuencia, se realizó una revisión sistemática de las utilidades o preferencias por los estados de salud de la población española. Se informan los resultados relacionados con la salud mental.	

	<p>Resultados:El análisis de 12 estudios reveló mediciones relacionadas con la salud mental: esquizofrenia (28 mediciones), depresión (18 mediciones), ansiedad (7 mediciones) y otros trastornos mentales (16 mediciones). En pacientes con ansiedad, las mediciones oscilaron entre 0,53 y 0,71. En depresión, variaron de 0,25 a 0,91. Para la esquizofrenia, las mediciones fueron de 0,4 a 0,78. En otros problemas mentales, las mediciones oscilaron entre 0,55 y 0,74.</p>
<p>II. +</p>	
<p>Type of study: (26)</p>	<p>+Descriptivo con un diseño de corte transversal. País de publicación:Colombia Título: Percepción de la calidad del servicio en un centro de fisioterapia de una institución universitaria. Objetivo: Describir la percepción de la calidad de atención en un centro de fisioterapia de una institución universitaria de Boyacá. Muestra: 40 personas que recibieron atención de fisioterapia en una institución universitaria de Boyacá, en septiembre y octubre del 2017. Indicadores de evaluación en los servicios: Cuestionario Servperf, el cual reúne las características necesarias para la evaluación del servicio (instrumento que mide la calidad y utiliza la percepción como una aproximación a la satisfacción del cliente. Evalúa cinco dimensiones: responsabilidad, confiabilidad, seguridad, empatía y elementos tangibles. Se califica según una escala de tipo Likert: 1, totalmente en desacuerdo; 2, en desacuerdo; 3, neutral; 4, de acuerdo; y 5, totalmente de acuerdo). Resultados:Se encontraron aspectos por mejorar, como la accesibilidad al servicio y la demarcación de la ruta que deben seguir los usuarios para llegar a él. El 73 % de los pacientes refirieron satisfacción total y, el 27 %, satisfacción, lo que indicó conformidad con el servicio.</p>
<p>Type of study: (22)</p>	<p>+Descriptivo retrospectivo. País de publicación:España Título: Evaluación y mejora de la calidad asistencial en fisioterapia a pacientes con cefalea. Objetivo: Evaluar el efecto de un ciclo de mejora en la atención a pacientes con cefalea en dos centros de Fisioterapia sobre la calidad asistencial y su asociación con la satisfacción percibida y su mejora clínica. Muestra: Pacientes diagnosticados de migraña, CT y CCG atendidos en ambos centros y, como base para la obtención de los datos, el registro de las historias clínicas, entre el año 2010 y 2014. Indicadores de evaluación en los servicios: Para medir la calidad asistencial se observó el cumplimiento de quince criterios de calidad en las historias clínicas de todos los pacientes con diagnóstico de cefalea tensional, cervicogénica o migraña en dos centros de Fisioterapia entre 2010 y 2014. En 2015, tras introducir en uno de los centros (C1) medidas correctivas, se reevaluó la calidad asistencial en ambos centros, usando el otro como control (C2). Resultados:En la primera evaluación, en ambos centros se observó un número muy elevado de incumplimientos en todos los criterios. Tras el ciclo de mejora, en el C1 hubo un aumento significativo en el cumplimiento de los criterios de calidad, como la entrega de un calendario de cefalea, que pasó del 0% a un 100% de cumplimiento, o el uso de la escala HIT-6, que pasó del 30 a un 100%, Asimismo, hubo una mejor valoración en la calidad percibida por el paciente en el C1 respecto al C2, incluyendo una mejora en el estado de salud.</p>
<p>Type of study: (7)</p>	<p>8/9Revisión sistemática País de publicación:España Título: Identificación de indicadores de calidad para fisioterapia: una revisión sistemática. Objetivo: Identificar los indicadores de calidad (IC) descritos o desarrollados en la evidencia que puedan ser utilizados para evaluar la calidad en la prestación de servicios de fisioterapia. Muestra: Se realizó una revisión sistemática, en las bases de datos Embase, Web of science SciELO, LILACS y OPEN GREY, hasta marzo del 2021, de estudios publicados en español, inglés y portugués que describieron el desarrollo de IC específicamente para la práctica de fisioterapia. Se evaluó la calidad metodológica</p>

	<p>de los indicadores por medio del instrumento AIRE. Se clasificaron los indicadores siguiendo el modelo de Donabedian.</p> <p>Resultados: Se incluyeron 8 estudios que describieron 8 conjuntos de IC, con un total de 199 indicadores. Seis de los conjuntos fueron publicados en países bajos. El 62,5% del total de los indicadores eran de proceso, relacionados en su gran mayoría con la atención de pacientes con patologías musculoesqueléticas. Del total de estudios, el 37,5% alcanzó una alta calidad en tres dominios del instrumento AIRE.</p>
<p>Type of study: (27)</p>	<p>+Diseño no experimental, observacional, descriptivo, de carácter transversal.</p> <p>País de publicación:</p> <p>Título: Características epidemiológicas y demográficas de la atención fisioterapéutica en alteraciones osteomusculares en un hospital deii nivel.</p> <p>Objetivo: Con el objetivo de contar con este tipo de información se desarrolló un proceso de investigación en el programa de Fisioterapia de la Institución Universitaria Iberoamericana a partir del cual se establecieron las condiciones demográficas, epidemiológicas y de atención brindada en Fisioterapia a personas con afecciones osteomusculares, el servicio de Fisioterapia del Hospital de La Victoria.</p> <p>Muestra: Tomaron la totalidad de los registros de los pacientes con afecciones osteomusculares, que fueron atendidos por los estudiantes de Fisioterapia durante el segundo semestre de 2004.</p> <p>Indicadores de evaluación en los servicios: Las fuentes de información con que trabajo el estudio corresponden a las de tipo secundario, puesto que, se tomaron los registros estadísticos de atención y de ellos se tomó esencialmente información relacionada con aspectos demográficos como género y edad. Igualmente se registraron las características de atención referidas al tipo de atención hospitalaria o ambulatoria, número de sesiones, y periodo del año en el cual el paciente fue atendido en el Servicio de Fisioterapia.</p> <p>Resultados: Como se planteó en la introducción, las afecciones osteomusculares son hoy en día muy frecuentes dentro de la población, razón por la cual se consideran como una de las entidades que genera mayor morbilidad. Los resultados con relación a las variables demográficas demuestran que las afecciones osteomusculares tienden a presentarse en todos los grupos de edad de la población, aunque se observó que este tipo de patologías tienden a concentrarse después de la tercera década de la vida.</p>
<p>Quality in Physiotherapy Services (28)</p>	<p>+Descriptivo correlacional de corte transversal. (Tesis)</p> <p>País de publicación: Perú</p> <p>Título: Calidad del servicio y satisfacción del usuario en el Centro de Fisioterapia y Rehabilitación "Manos Curativas" de la ciudad de Lima.</p> <p>Objetivo: Establecer el nivel de la calidad de servicio que ofrece el Centro de Fisioterapia y Rehabilitación Manos Curativas desagregadas en las dimensiones de la calidad como son: los elementos tangibles, la confiabilidad, la capacidad de respuesta, el grado de seguridad y la empatía de los colaboradores; relacionado a la satisfacción de los usuarios.</p> <p>Muestra: Participan como fuentes primarias de información los usuarios del servicio del el Centro de Fisioterapia y Rehabilitación Manos Curativas; del cual se obtuvo una muestra de 282 a quienes se aplicó el cuestionario para medir la calidad de servicio SERVPERF.</p> <p>Indicadores de evaluación en los servicios: Se aplicó un cuestionario SERVPERF.</p> <p>Resultados: Existe una relación directa y significativa entre la calidad de servicio y la satisfacción de los usuarios en el Centro de Fisioterapia y Rehabilitación Manos Curativas.</p>
<p>III. +</p>	
<p>Type of study: Descriptive (29)</p>	<p>+Estudio descriptivo de corte transversal.</p> <p>Título: Intervención educativa para mejorar el bienestar emocional asociado a ejercicios físicos en adolescentes con diabetes mellitus tipo I en Ecuador.</p> <p>Objetivo: Desarrollar una estrategia educativa de intervención comunitaria, destinada a pacientes adolescentes diabéticos y sus familiares.</p> <p>Muestra: 73 adolescentes con diabetes tipo I</p>

	<p>Resultados: La práctica de ejercicio físico demostró ser positiva para pacientes adolescentes con diabetes, mejorando su bienestar emocional y estabilizando sus niveles de glucemia. La propuesta de intervención educativa fue respaldada por expertos y se sugiere su aplicación en entornos educativos y de salud.</p>
<p>Type of study: (8)</p>	<p>+Revisión bibliográfica sistemática. Título: Atención de calidad en fisioterapia Objetivo: Examinar la relevancia de la excelencia en la atención de fisioterapia, identificar las distintas facetas de la calidad y proponer tácticas para garantizar la plena satisfacción de los pacientes. Muestra: Literatura obtenida de las bases PubMed, Medline, Cochrane, Revistas Médicas Scholar Google. Resultados: Se resalta la importancia de la fisioterapia y la necesidad de mantener altos estándares de calidad en los servicios. Propone herramientas para medir la satisfacción del paciente, menciona principios de calidad y destaca la relevancia de establecer indicadores para evaluar y mejorar la atención fisioterapéutica, buscando una evaluación más objetiva de la satisfacción del paciente. También destaca la importancia ética en esta evaluación.</p>
<p>Epidemiological Indicators for the Use of Physiotherapy (30)</p>	<p>8/9 Observacional, transversal y descriptivo Título: Calidad de servicio y satisfacción de pacientes geriátricos tratados con el método Feldenkrais en fisioterapia. Objetivo: Determinar la relación entre la calidad de servicio y la satisfacción en los pacientes geriátricos con limitación de movimiento atendidos con el método Feldenkrais de un centro de fisioterapia de Lima entre abril y junio del 2021. Muestra: Centro de fisioterapia de la ciudad de Lima, 100 pacientes. Resultados: Se estudiaron 100 pacientes geriátricos en un centro de fisioterapia en Lima. Mayoritariamente mujeres (60%) con edad promedio de 69 años. Las patologías más comunes fueron escoliosis (25%), Parkinson y hernia discal (5% cada una). La cantidad de sesiones influyó en la mejora y satisfacción. La correlación entre frecuencia de asistencias y sesiones fue alta (Rho de Spearman = 0,789, p < 0,0001). El 65% se mostró satisfecho y el 34% muy satisfecho según Servqual. Varios estudios resaltaron la satisfacción en diferentes centros, y se encontró una relación entre el método Feldenkrais y mejoras en la coordinación y equilibrio en adultos mayores, reduciendo el riesgo de caídas.</p>
<p>IV. Yes: + (1point) No: - (0 points)</p>	
<p>Type of study: (9)</p>	<p>Tipo de estudio: Revisión sistemática. Título: Terapia de onda de choque para la enfermedad del manguito rotador con o sin calcificación. Objetivo: Determinar los beneficios y daños del tratamiento con ondas de choque para la enfermedad del manguito rotador, con o sin calcificación, y establecer su utilidad en el contexto de otras opciones de tratamiento disponibles. Muestra: Se recolectó información de las bases Ovid MEDLINE, Ovid Embase, CENTRAL, ClinicalTrials.gov y ICTRP de la OMS. Un total de 32 ensayos incluyeron 2281 pacientes. Trastorno: Enfermedad del manguito rotador entre ellas tendinitis, tendinopatía, tendinitis del supraespinoso, infraespinoso o subescapular, bursitis subacromial o desgarros. Se incluyó a pacientes con ≥30 % de dolor o con dolor general, en reposo, a la actividad, diurno y nocturno.</p>
<p>Type of study: (10)</p>	<p>Table 4. JBI Critical Appraisal Checklist for Cross-Sectional Analytical Studies Análisis sistemático. Título: Incidencia de cáncer, mortalidad, años de vida perdidos, años vividos con discapacidad y años de vida ajustados por discapacidad para 29 grupos de cáncer de 2010 a 2019. Objetivo: Estimar la carga y las tendencias del cáncer a nivel mundial para 204 países y territorios y por quintiles del índice socioeconómico de 2010 a 2019. Muestra: Se utilizó la metodología del Estudio de Carga Global de Enfermedades (GBD 2019) para estimar la carga del cáncer, el cual incorporó 104076 nuevas fuentes específicas de datos sobre cáncer. Se identificó 20 tipos de cáncer clasificados en 30 grupos de cáncer, nivel 3 (algunos de ellos se subdividieron en grupo 4). Se excluyeron las neoplasias benignas e in situ.</p>

	<p>Trastorno: En 2019, se registraron globalmente 23,6 millones de nuevos casos de cáncer, aumentando a 17,2 millones si se excluyen los casos de cáncer de piel no melanoma. Esto representó un incremento del 26,3% desde 2010. Hubo alrededor de 10 millones de muertes por cáncer y aproximadamente 250 millones de años de vida ajustados por discapacidad debido al cáncer. Se observaron aumentos significativos en todos los niveles de desarrollo económico, siendo más pronunciados en los estratos socioeconómicos más bajos.</p>
Type of study: (11)	<p>1Revisión sistemática y metaanálisis. Título: ¿La terapia con ejercicios en tierra mejora la actividad física en personas con osteoartritis de rodilla? Una revisión sistemática con metanálisis. Objetivo: Investigar los efectos de la terapia con ejercicios en tierra sobre la actividad física en personas con osteoartritis de rodilla (KOA). Muestra: Artículos incluidos de una revisión de Chocrane y también una búsqueda de MEDLINE (OVID), EMBASE (OVID), CINAHL (EBSCO), PEDro, CENTRAL. Hubo un total de 28 ensayos con 3384 pacientes. Trastorno: Osteoartritis de rodilla.</p>
Study Type: (16)	<p>3Ensayo clínico aleatorizado Título: Efecto de la estimulación nerviosa eléctrica transcutánea (TENS) sobre el dolor de la rodilla y la función física en pacientes con osteoartritis de rodilla sintomática: el ensayo clínico aleatorizado ETRELKA Objetivo: Determinar la eficacia del TENS para aliviar el dolor y mejorar la función física en comparación con la TENS placebo, y determinar su seguridad, en pacientes con osteoartritis de rodilla. Muestra: 220 pacientes, TENS (108) y TENS placebo (112) Trastorno: Osteoartritis de rodilla sintomática, con dolor de ≥ 6 meses y osteofitos en la articulación tibio-femoral y 63 % de crepitación en la rodilla.</p>
Type of study: (17)	<p>5Ensayo controlado aleatorizado. Título: Comparación de los efectos de la terapia de movimiento inducida por restricción modificada y la terapia convencional intensiva con una inyección de toxina botulínica en la recuperación de la función motora de las extremidades superiores en pacientes con accidente cerebrovascular. Objetivo: Comparar la efectividad de BTX-mCIMT con la BTX-ICT para mejorar la función motora de los sobrevivientes de un accidente cerebrovascular y para aumentar la capacidad del paciente para realizar las actividades de la vida diaria. Muestra: 64 pacientes, 32 en cada grupo. Trastorno: Accidente cerebrovascular unilateral</p>
Type of study: (18)	<p>7Ensayo controlado aleatorizado. Título: Terapia manual versus consejos para mantenerse activo para el dolor de espalda y/o cuello inespecífico: un análisis de costo-efectividad Objetivo: evaluar la rentabilidad de la terapia manual en comparación con el consejo de mantenerse activo para personas en edad laboral con dolor de espalda y/o cuello inespecífico. Muestra: 409 participantes, mantenerse activo (203) y terapia manual (206) Trastorno: Dolor inespecífico y discapacidad en la espalda y/o cuello, con disfunción laboral o en tiempos libres y más de 1 año de dolor.</p>
Type of study: (12)	<p>TotalRevisión sistemática y metaanálisis. Título: Prevalencia e incidencia de trastornos musculoesqueléticos relacionados con el trabajo en las industrias secundarias de la Europa del siglo XXI: una revisión sistemática y un metanálisis Objetivo: El objetivo es analizar la incidencia de trastornos musculoesqueléticos en trabajadores manuales de las industrias secundarias en Europa durante el siglo XXI. Se realizará una revisión sistemática y un metaanálisis para comprender mejor la situación epidemiológica actual y sus factores asociados. Muestra: Se incluyó 34 estudios para el análisis cualitativo y 17 para el análisis cuantitativo. Trastorno: Trastornos musculoesqueléticos relacionados con el trabajo entre los más comunes encontramos espalda (60%), hombro/cuello (54%), cuello (51%), hombro (50%), espalda baja (47%) y muñeca (42%). La incidencia de trastornos de extremidades superiores fue de 0,04 y 0,26.</p>
Study type: Randomized (19)	<p>NEstudio controlado aleatorizado (prospectivo). Título: Efectos de la terapia de electroestimulación neuroadaptativa sobre el dolor y la discapacidad en la fibromialgia</p>

		<p>Objetivo: Determinar la eficacia de la terapia de electroestimulación neuroadaptativa (NAE) no invasiva para el tratamiento del dolor crónico y la discapacidad en pacientes con fibromialgia.</p> <p>Muestra: 37 mujeres, NAE (20) y grupo control (17)</p> <p>Trastorno: Fibromialgia (dolor, discapacidad, alteración del sueño, modulación condicionada del dolor).</p>
Study (20)	Type:	<p>S Ensayo aleatorio grupal escalonado</p> <p>Título: Implementación de un modelo estructurado para la atención de la osteoartritis en la atención primaria de salud: un ensayo aleatorio grupal escalonado</p> <p>Objetivo: Evaluar la efectividad de este modelo en atención primaria.</p> <p>Muestra: 393 pacientes, grupo control (109) y grupo intervención (284), y en el personal de atención primaria 40 médicos generales y 37 fisioterapeutas.</p> <p>Trastorno: Osteoartritis de rodilla, que causa dolor y discapacidad importante</p>
Type of study: (23)		<p>PC Estudio de cohorte.</p> <p>Título: Predictores de la calidad de vida relacionada con la salud después de una lesión no catastrófica sufrida en un accidente de tránsito</p> <p>Objetivo: Evaluar la asociación entre las lesiones por accidentes de tránsito no catastróficos y la calidad de vida relacionada con la salud (CVRS) y los factores que afectan de forma independiente la CVRS a largo plazo.</p> <p>Muestra: 1201 pacientes</p> <p>Trastorno: Demencia o deterioro cognitivo, Lesiones cerebrales traumáticas graves, lesiones de la médula espinal, quemaduras extensas o amputaciones múltiples</p>
Type of study: (24)		<p>S Análisis sistemático.</p> <p>Título: Carga mundial, regional y nacional de la artritis reumatoide, 1990-2020 y proyecciones hasta 2050: un análisis sistemático del Estudio de la carga mundial de enfermedades 2021.</p> <p>Objetivo:</p> <p>Muestra: 204 países entre 1990 y 2020 (98 estudios de prevalencia y 25 de incidencia)</p> <p>Trastorno: Artritis reumatoide</p>
Type of study: (13)		<p>5/8 Revisión de alcance.</p> <p>Título: Modelos de atención de la osteoartritis basados en la atención primaria; una revisión de alcance</p> <p>Objetivo: Identificar y describir el alcance, la naturaleza, las características y el impacto de los modelos de atención (MoC) basados en la atención primaria para la osteoartritis que se han desarrollado y/o evaluado.</p> <p>Muestra: 63 estudios, 37 de MoC</p> <p>Trastorno: Osteoartritis de rodilla y cadera, tres tipos de modelo de cuidado: programas de gestión de OA, mejora en la consulta inicial y vías de atención integrada para derivación a atención especializada. Los resultados clínicos más evaluados es el dolor y función.</p>
Type of study: (14)		<p>S Revisión sistemática y metaanálisis.</p> <p>Título: Efectos de los factores cognitivos y de salud mental sobre los resultados posteriores a la liberación del túnel carpiano: una revisión sistemática y un metaanálisis</p> <p>Objetivo: Determinar los efectos de los factores cognitivos y de salud mental sobre los resultados después de la liberación del túnel carpiano (CTR).</p> <p>Muestra: 15 estudios con 2599 pacientes.</p> <p>Trastorno: Se llevó a cabo un estudio en varios países que examinó diferentes tipos de cirugía de túnel carpiano. Los resultados mostraron que los síntomas de depresión y ansiedad estaban asociados con un mayor dolor y gravedad de los síntomas. Además, se encontró que estos síntomas estaban vinculados a un deterioro funcional más significativo en los pacientes.</p>
Type of study: (31)		<p>S Estudios transversal</p> <p>Título: Conocimientos sobre el autocuidado de la DM en adultos mayores en la atención primaria de salud.</p> <p>Objetivo: Evaluar el conocimiento sobre diabetes y factores asociados a través de un estudio transversal con adultos mayores diabéticos en atención primaria de salud.</p> <p>Muestra: Se estudiaron 202 diabéticos ancianos</p>

Trastorno: La mayoría fue mujeres (73,3%) con una edad promedio de 66 años. La mitad fue diagnosticada en los últimos 10 años. Las principales comorbilidades fueron dislipidemia (47%) y complicaciones crónicas (79,2%), como retinopatía (64,9%) y neuropatía (34,7%). El sobrepeso se encontró en el 51%, pero la mayoría (76,7%) tenía un buen control glucémico. Sin embargo, la mayoría (77,7%) tenía conocimientos insuficientes sobre su enfermedad.

Ballesteros et al., 2007, when studying the epidemiological and demographic characteristics of physiotherapeutic care in musculoskeletal disorders, demonstrated the morbidity treated and the need for prevention programs to reduce risks, improve working conditions and promote therapeutic exercises to promote biomechanical balance. (27)

García-Pérez et al. (2014) studied mental health cases in Spain, finding problems of anxiety, depression, schizophrenia, and other mental illnesses, including alcohol-related mental illnesses. (6)

The quality of physiotherapy services has different aspects, as mentioned by Cobo-Mejía et al., 2018 (26) in their study on the Perception of the quality of the service in a physiotherapy centre of a university institution. Finding quality variables such as the quality of the spaces, the responsiveness of the unit, safety and empathy, no relationship was found between quality and the sociodemographic variables raised in the study of the study.

Blanco-Muñiz et al. 2018 (22) in the Evaluation and improvement of the quality of care in physiotherapy to patients with headache, based on the improvement cycle of the center found that patient satisfaction is related to the effectiveness of the improvement cycle that previously established the improvement criteria, finding that patient satisfaction is improved when care is provided by the same physiotherapist, among other variables identified in three large groups, namely, staff training, modifications to the registration system and modifications in the work methodology, so that services must be planned precisely considering the results of the studies.

For Soto-Mora et al. 2022 who identified quality indicators for physiotherapy in their study established 8 sets of Quality Indicators (CI) in physiotherapy, adding up to 199 individual indicators. Among them, those related to the care process, the structure for providing care, and measured the results of specific interventions. It also found insufficient information to evaluate quality services in physiotherapy, which makes it necessary in the planning of physiotherapy services to take into account a quality indicator to evaluate services, in addition to measuring the objective of the services for which they were created, at the international level the need to plan services based on quality indicators and organize them in such a way that it satisfies the needs of the services is being seen. and contribute to reducing the levels of limitations and disabilities of patients who use physiotherapy services. (7)

For Lyly et al. 2020 who demonstrated in their study the direct and significant relationship between Service Quality and user satisfaction by establishing dimensions such as tangibility, reliability, safety, response and empathy in the quality variable, in turn in the satisfaction variable I relate to the quality dimensions establishing a significance compared to the level of statistical significance ($\alpha < 0.05$), suggest the existence of significant relationships between these variables and the degree of satisfaction. The study also demonstrates the indicators of each dimension, establishing the importance of having indicators to measure physiotherapy services. Quality comprises a series of steps that start from the planning of services, and it is necessary to establish the relationship between physiotherapy service planning, patient satisfaction and measurement indicators (28)

Llerena et al. 2023 (8) noted the relevance of physiotherapy as an integral part of treatment for various conditions, emphasizing the need to maintain high quality standards in the services provided. From promoting healthy habits to functional rehabilitation, physical therapy addresses multiple dimensions of health, seeking to relieve pain, improve bodily functions, and contribute to the overall well-being of the individual. To assess quality, tools such as surveys (SERVQUAL, PSQ E) are proposed to measure user satisfaction with specific criteria such as tangibility, reliability, response, security and empathy. In addition, the quality principles proposed by Avedis Donabedian are highlighted, and the importance of establishing indicators to evaluate and improve physiotherapy care is underlined. Therefore, the text highlights the evolution of physiotherapy and how quality standards have advanced to make patient satisfaction more objective, while emphasizing the ethical importance in the evaluation of physiotherapy services.

Carbajal-Alvarado et al. 2023 examined the quality of service and satisfaction of geriatric patients treated with the Feldenkrais method in physiotherapy, finding in addition to the sociodemographic characteristics the most common pathologies such as scoliosis, Parkinson's and herniated disc. We found that the number of treatment sessions had an impact on patient improvement and satisfaction. The correlation between the frequency of attendances and the number of sessions was high (Spearman's Rho = 0.789, $p < 0.0001$). 65% of patients were satisfied, 34% very satisfied, and only 1% indifferent, according to the Servqual instrument. In addition, a relationship was established between service quality and user satisfaction (Spearman's Rho = 0.789). Similar studies found patterns of satisfaction and quality of service in different health centers. However, inconsistencies were identified in the quality of service in some centers, which suggests the requirement of specialized treatments and appropriate techniques depending on the pathology and age of the patient. (30)

When studying diseases and their relationship with physiotherapy, we find the frequent causes of physiotherapeutic treatments such as rotator cuff diseases, as mentioned.

Surace et al. 2020 and these pathologies are expected to increase with aging. (9)

Kocarnik et al. 2021 in their study on Cancer Incidence, Mortality, Years of Life Lost, Years Lived with Disability, and Disability-Adjusted Life Years for 29 Cancer Groups from 2010 to 2019, found in the different types of cancer an increase and decrease in incidence and morbidity Cancer was the second leading cause of disability-adjusted life years, Deaths and years of life lost due to disability, after heart disease, with these indicators suggests the need to plan physiotherapy services aimed at reducing disability. (10)

On the other hand, pathologies such as those related to the knee are also studied Bell et al. 2022 found in knee osteoarthritis (OA), in the effect of the intervention on general health measures we found that long-term exercise decreases BMI, which does not happen with exercise in the medium and short term. Relieving symptoms Reichenbach et al. 2021 reviewed (11) (16) the effects of transcutaneous electrical nerve stimulation (TENS) on knee pain and physical function in patients with symptomatic knee osteoarthritis: the ETRELKA randomized clinical trial.

Østerås et al. 2019 (20) in their study "Implementation of a structured model for osteoarthritis care in primary health care: a tiered cluster-randomized trial" mention that OA is a very common condition that causes significant pain and disability. Some of their treatments include weight management with exercise therapy.

Back pain is studied by Aboagye et al. 2022 finding non-specific pain and disability in the back and/or neck, which has led to marked dysfunction at work or in leisure time. 56% of participants reported pain for more than 1 year. (18)

Govaerts et al. 2021 studied the "Prevalence and incidence of work-related musculoskeletal disorders in secondary industries in 21st century Europe" finding that the most common musculoskeletal disorders are back (60%), shoulder/neck (54%), neck (51%), shoulder (50%), lower back (47%) and wrist (42%). Upper extremity disorders were further investigated, with incidence rates between 0.04 and 0.26. The highest prevalence figures were obtained in musculoskeletal disorders (60%), being higher than all subgroups, suggesting long-term problems. Which determines the need to plan physical therapy services to care for them (12)

The causes of musculoskeletal disorders in industries are related to the presence of biomechanical risk factors, such as lifting heavy loads or performing repetitive tasks, and psychosocial risk factors, such as having poor job control or receiving a low level of support from colleagues. These factors have been shown to be correlated with increased development of work-related musculoskeletal disorders, and this association has been found in most of the studies mentioned. (12)

Black et al. 2023 (24) in the study titled "Global, Regional and National Burden of Rheumatoid Arthritis, 1990-2020 and Projections to 2050: A Systematic Analysis of the Global Burden of Disease Study 2021", mention that rheumatoid arthritis affects women more and is more prevalent in high-income countries, although a decrease in mortality is observed in these places. The prognosis may improve with early care and effective therapy. Rheumatoid arthritis is diagnosed when a person presents 4 of the 7 criteria for at least 6 weeks: morning stiffness, arthritis in three or more joint areas, symmetrical arthritis, inflammation in the joints of the hands, presence of rheumatoid nodules, positive serum rheumatoid factor, and changes detectable on x-rays. The only risk factor included was smoking.

In 2020, rheumatoid arthritis affected around 17.6 million people worldwide, with a 121% increase since 1990. The case rate per 100,000 population was 208.8 in 2020, up 14.1% from 1990. This shows a considerable increase in the global prevalence of this disease in recent decades. (24)

In 2020, around 38,300 deaths from rheumatoid arthritis were estimated worldwide, with a mortality rate of 0.5 per 100,000 people. Between 1990 and 2020, there was a 23.8% decrease in mortality rates globally due to this disease, especially in high-income regions, with a decrease of 43.8%. However, increases in the mortality rate were observed in some specific regions, such as Central Asia (530.6%), Eastern Europe (6.4%), and Western Sub-Saharan Africa (19.4%). (24)

In 2020, rheumatoid arthritis resulted in around 719,000 years of life lost to disability (DALYs) globally, with 76.4% attributed to disability-adjusted life years (DALYs). Women experienced higher rates of both ADLs and DALYs compared to men in all age groups. Although the global DALYLY rate showed no significant changes between 1990 and 2020, there were regional variations, such as a 27.8% increase in North Africa and the Middle East. In addition, between 1990 and 2020, the global ADL rate increased by 13.8%. The highest rates of ADL for women were seen in the 70-74 age group, while for men it was in the 75-79 age group. (24)

It is predicted that by the year 2050, approximately 31.7 million people will have rheumatoid arthritis globally, representing an increase of 80.2% since 2020. It is estimated that about 68.7% of these cases will be women (21.7 million). While some regions will see no significant change, a steep increase of more than 200% is expected in areas such as central, eastern, and western sub-Saharan Africa. (24)

The effects of neuroadaptive electrostimulation therapy on pain and disability in fibromyalgia was studied by Udina-Cortés et al. 2020 According to the article, fibromyalgia has several points to deal with such as pain intensity, disability, sleep disturbance, and conditioned pain modulation. (19)

From what has been stated by the different authors, it is essential to relate the planning of quality physiotherapy services, taking into account the epidemiological, sociodemographic, prevalence, and incidence of diseases, as well as those that establish a causal relationship with the purpose that physiotherapist plans actions for health promotion, disease prevention, rehabilitation, and re-education.

In their study, Gopinath et al. 2020 (23) mention that due to traffic accidents, some disorders can occur, such as: dementia or cognitive impairment, severe traumatic brain injuries, spinal cord injuries, extensive burns or multiple amputations, neck injuries being more common whiplash, as well as injuries to the head and face. Some psychological disorders or negative moods and distress related to the trauma may also manifest. These epidemiological indicators provide information on how different variables are associated with the evolution of Health-related Quality of Life in a specific group of people during a 12-month follow-up period after an event, such as an accident.

Cunningham et al. 2023 mentions that among the epidemiological indicators we found are the number of studies (63) and the number of countries (13). Different types of care models were identified, such as OA management programs, improvement in initial consultation, and integrated care pathways for referral to specialized care. It is also relevant to note that most of the models were developed in high-income countries (95%). These models focused primarily on hip and knee OA. The most common clinical outcomes assessed were pain and function, followed by joint flexibility, physical activity, BMI, analgesic use, self-sufficiency, mental health, quality of life, and satisfaction. (13)

In the 2022 study by Núñez-Cortés et al. (14), which covered several countries such as the United States, South Korea, the United Kingdom, the Netherlands, Spain, and Denmark, it focused on describing various types of surgery, including carpal tunnel release (CTR) surgery, open CTR, and endoscopy. The patients were followed for a period ranging from 3 months to 2 years. The results highlighted a significant association between symptoms of depression and anxiety with greater severity and higher intensity of pain experienced by patients. In addition, catastrophic pain, as well as symptoms of depression and anxiety, were found to be linked to more marked functional impairment in the individuals studied.

Beltrán et al. 2022 analyzed 202 elderly diabetics. Of these, 73.3% were women, with a median age of 66.0 years. About 46.0% were married or in a union, while 83.7% lived with someone. The median schooling was 5.0 years and the majority (53%) belonged to socioeconomic class C. In terms of clinical variables, 50.5% had been diagnosed with diabetes in the last 10 years, with a

median of 9 years since diagnosis. The most commonly reported comorbidities were dyslipidemia (47.0%) and chronic complications (79.2%), including retinopathy (64.9%), neuropathy (34.7%), and nephropathy (6.9%). 7.4% smoked and 15.8% consumed alcohol. (31)

51.0% were overweight, with an average abdominal circumference of 100.1 cm. The majority (76.7%) had adequate glycemic control, with HbA1c levels below 7%. Regarding knowledge about the disease, 77.7% had insufficient knowledge, with better results in issues related to uncontrolled blood glucose and normal capillary blood glucose values. (31)

Older adults with diabetes in this study show a troubling lack of knowledge about how to manage hypoglycemia. Your increased risk of hypoglycemia is due to kidney problems, medication effects, and cognitive deficits, making it difficult for you to self-care. Hypoglycemia has been linked to an increased risk of cognitive decline in this population. (31)

Cueva et al. 2022(30) in their study "Educational intervention to improve emotional well-being associated with physical exercise in adolescents with type I diabetes mellitus in Ecuador", focused on a mostly male sample (60%). They revealed a significant decrease in glycosylated Hb levels in patients who engaged in physical exercise, showing a possible therapeutic benefit. The results of the emotional well-being questionnaire indicated that exercise was associated with well-being in the majority of respondents (32 patients out of a total sample of 42). However, some patients experienced emotional distress, attributed to several factors, which led to the development of an educational program with the collaboration of university students of Medicine, Nursing and Psychology. This program seeks to promote healthy lifestyle habits, educate about the importance of physical activity and improve the quality of life of adolescents with diabetes mellitus, integrating educational actions in communities, educational centers and medical offices. The connection between emotional well-being and physical activity in adolescent diabetic patients is considered crucial for maintaining stable glucose levels. The results obtained through expert consultation supported the validity and importance of this educational intervention.

Other pathologies that require physiotherapy intervention are cerebrovascular diseases. Nasb et al. 2019 compared the effects of modified restriction-induced movement therapy and intensive conventional therapy with an injection of botulinum toxin on the recovery of upper extremity motor function in stroke patients given that some of the sequelae are: ability to extend the wrist by 20° and the metacarpophalangeal and interphalangeal joints by 10°, a score ≥ 1 on the modified Ashworth scale for finger, wrist, or elbow flexors, impaired balance, fixed contractures, spasticity, and cognitive deficit. (17)

DISCUSSION

Recognizing the role of epidemiology, and its different studies, as well as the specific designs, the physiotherapy service prior to its implementation should plan its services considering epidemiological indicators resulting from the different measurements of the disease prevalence, incidence, ratio, rates, etc. as mentioned by Arturo fajardo Gutiérrez in his study Measurement in epidemiology: prevalence, incidence, risk, impact measures. (32)

Angélica Cifuentes, Carmen Martínez, Claudia Melo, María Zambrano It mentions the need to consider epidemiological indicators to improve the provision of physiotherapeutic services in hospitals. (33)

Planning is not exempt from quality criteria, so the planning of physiotherapeutic health services must also consider indicators of quality and user satisfaction.

Listed below are guidelines for planning physical therapy services, which may include:

1. Study the population to be served by reviewing the different types of epidemiological studies in which we also find sociodemographic characteristics of the population
2. Review epidemiological indicators, morbidity, mortality, rates, frequency rates, disease incidence, etc.
3. Establish prioritized physiotherapeutic services based on the measurement of the population's diseases to offer services based on the population's need
4. Define quality dimensions in the planning of physiotherapeutic services, such as structure, process and results, which are related to the satisfaction of the service received
5. Identify care by program linking primary, secondary, and tertiary prevention to achieve better results. In this sense, primary prevention promotes health with postural hygiene measures, for example; and defines specific physiotherapist interventions, with secondary

prevention it would achieve damage limitation, and with tertiary prevention it rehabilitates using different techniques and methods to achieve functionality.

Conclusion

The role of Epidemiology in the planning of Physiotherapy services was determined, its studies focus on demonstrating health conditions and risk factors, determining factors and specific characteristics. Guidelines for the planning of these health services are proposed.

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