Interdisciplinary actions of integrative physiotherapy in pain therapeutic processes

Ações interdisciplinares da fisioterapia integrativa nos processos terapêuticos de dor

Acciones interdisciplinarias de fisioterapia integrativa en procesos terapéuticos del dolor

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REVISA

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RESUMO

Objetivo: demonstrar e discutir através de uma visão Integrativa o impacto do atendimento fisioterápico em pacientes portadores de dores neuromioarticulares agudas e crônicas por meio da aplicação do Questionário SF-36. **Método:** estudo observacional, transversal realizado com 299 pacientes que participaram do núcleo integrativo de dor no período de março a outubro de 2016, em um programa de atendimento padronizado de três blocos de fisioterapia, aplicado o questionário SF – 36 (medical outcomes study 36 – item short – form health survey) como indicador de resposta clinica. Foram incluídos pacientes advindos dos ambulatórios e encaminhados pelos médicos e como critérios de exclusão utilizamos: Pacientes com perda de mobilidade e dor exacerbada ao movimento; não adaptação ao programa; contra indicação médica e abandono do programa com 3 faltas consecutivas. **Resultados:** Ficou evidenciado, que a fisioterapia com o modelo integrativo interdisciplinar , através dos resultados do programa no núcleo da dor efetivamente promoveu a melhora nos quesitos de capacidade funcional, limitação por aspectos físicos e dor com redução de passagem em pronto socorro, consultas em ambulatórios médicos de ortopedia, cirurgia e grupo de avaliação em coluna e especialidades gerais. **Conclusão:** Demonstra-se que o paciente monitorado por uma equipe integrativa melhora a saúde funcional e gera impacto nos gastos administrativos de um convênio privado através de uma visão integral de saúde.

Descritores: Fisioterapia; Interdisciplinar; dor; Integrativa; SF-36.

ABSTRACT

Objective: to demonstrate and discuss through an Integrative view the impact of physiotherapeutic care in patients with acute and chronic neuromyoarticular pain through the application of the SF-36 Questionnaire. **Method:** observational, cross-sectional study conducted with 299 patients who participated in the integrative pain nucleus from March to October 2016, in a standardized care program of three physiotherapy blocks, applied the Questionnaire SF - 36 (medical outcomes study 36 - item short - form health survey) as an indicator of clinical response. Patients from outpatient clinics and referred by physicians were included and exclusion criteria were used: Patients with loss of mobility and pain exacerbated by movement; non-adaptation to the programme; against medical indication and abandonment of the program with 3 consecutive absences. **Results:** It was evidenced that physiotherapy with the interdisciplinary integrative model, through the results of the program in the pain nucleus effectively promoted improvement in the terms of functional capacity, limitation by physical aspects and pain with reduced passage in the emergency room, consultations in orthopedic medical outpatient clinics, surgery and evaluation group in spine and general specialties. **Conclusion:** It is demonstrated that the patient monitored by an integrative team improves functional health and generates an impact on the administrative expenses of a private agreement through an integral view of health.

Descriptors: Physiotherapy; Interdisciplinary; pain; Integrative; SF-36.

RESUMEN

Objetivo: demostrar y discutir a través de una visión integradora el impacto de la atención fisioterapéutica en pacientes con dolor neuromioarticular agudo y crónico a través de la aplicación del Cuestionario SF-36. Método: estudio observacional, transversal, realizado con 299 pacientes que participaron en el núcleo integrativo del dolor de marzo a octubre de 2016, en un programa de atención estandarizado de tres bloques de fisioterapia, se aplicó el Cuestionario SF - 36 (estudio de resultados médicos 36 - ítem corto - encuesta de salud forma) como indicador de respuesta clínica. Se incluyeron pacientes de ambulatorios y referidos por médicos y se utilizaron criterios de exclusión: pacientes con pérdida de movilidad y dolor exacerbado por el movimiento; la no adaptación al programa; contra indicación médica y abandono del programa con 3 ausencias consecutivas. **Resultados:** Se evidenció que la fisioterapia con el modelo integrador interdisciplinario, a través de los resultados del programa en el núcleo del dolor promovió efectivamente la mejoría en términos de capacidad funcional, limitación por aspectos físicos y dolor con paso reducido en la sala de emergencias, consultas en ambulatorios médicos ortopédicos, cirugía y grupo de evaluación en columna vertebral y especialidades generales. Conclusión: Se demuestra que el paciente monitoreado por un equipo integrador mejora la salud funcional y genera un impacto en los gastos administrativos de un contrato privado a través de una visión integral de la salud.

Descriptores: Fisioterapia; Interdisciplinario; Dolor; Integrante; SF-36.

ORIGINAL

Introduction

Health care had different models developed according to the context and cultural bases of each era. In relation to the current model, which is biomedical in its functioning, it has presented fantastic solutions to health and disease problems. However, in recent decades, it has been a growing source of dissatisfaction among the population due to the dichotomy of care and overspecialization in the various areas of health.[1]

Such dissatisfaction led to a search for alternative practices, intensifying in the 1960s, motivated by several other factors, such as a change in the morbidity and mortality profile, with the decrease in infectious and contagious diseases and the increase in chronic-degenerative diseases in some countries; increased life expectancy; criticism of the asymmetrical power relationship between doctors and patients, in which the professional does not provide enough information about the patient's treatment and cure; awareness that conventional medicine is deficient in solving certain diseases, especially chronic ones; dissatisfaction with the functioning of the modern healthcare system, which includes long waiting lists and financial constraints; information about the danger of side effects of medications and surgical interventions.[2]

In the field of health, the alternative model of medicine is understood as the opposite pole of the biomedical model, because while biomedicine invests to develop the diagnostic dimension and deepen the biological explanation, mainly with quantitative data, alternative medicine turns to the dimension of therapy, delving deeper into the problems explained by lifestyle and environmental theories.[2]

At the end of the 1990s, in an attempt to describe a new health model that demonstrates the integration of the different therapeutic models, rather than simply operating with a complementary logic, and that offers comprehensive health care, the term "Medicine" was created. Integrative" (MI). The word "integration" means the act or effect of integrating; action or policy aimed at integrating racial, religious, social minorities into a group. A variety of definitions have been used to describe the idea of integration between conventional and unconventional practices, however, currently, a consistent conceptualization is still being sought.[3]

The concept of physiopathology allows a distance between the subject and his health/disease in a fragmented and instrumentalist practice, in this sense, it is undeniable that the object of study is the physiopathology, which is hegemonic in the formulation of Clinical Medicine, considering the disease and not the sick.[4]

Together with the question of integrative medicine, the term Integrative and Complementary Practices in Health also appears, regulated and inserted in the National Policy of Integrative and Complementary Practices of the Ministry of Health (PNPIC/MS), which was approved by Ordinance 971 of the Ministry of Health in May 2006, with the publication of the expansion of action by the SUS with ordinance nº 145/2017. Includes art therapy, meditation, music therapy, naturopathic, osteopathic, chiropractic and Reiki treatment.[5]

Integrative physiotherapy is a different way of observing and treating through another perspective of global therapy, in which the patient ceases to passively receive treatment and starts to actively participate in his functional recovery, through oriented lifestyle adaptations and combinations of physiotherapeutic procedures. It is a concept that analyzes how the

biopsychosocial system directly interferes with the patient's different kinetic-functional imbalances, through the interdisciplinary and transdisciplinary integrative model idealized by the president of the Brazilian society of integrative medicine.[6]

One of the main pillars of the treatment base are the manual therapies in which it rebalances the bodily symptoms, mainly the myofacial and visceral parts through modern kinesiotherapeutic techniques.

For this, the best techniques of different conceptual methods are used, such as chiropractic, manual and instrumental therapies, neuromuscular techniques, myofascial therapies, massage, kinesiotherapy, segmental stabilization and functional training. The fundamental pillar of treatment is to help the patient to manage and direct with the use of self-knowledge and self-management tools in the maintenance and recovery of their functional health.

In this concept, the objective of this study was to demonstrate and discuss in an interdisciplinary and transdisciplinary view the impact of integrative physiotherapy in relation to the improvement of functional capacity, pain, limitation by physical aspect and general health status through the SF-36 questionnaire in patients of the Center Integrative of Pain in the ABC health operator and correlate with managerial administrative data.

Method

This is an 8-month observational, cross-sectional study with a descriptive predominance of patients enrolled in the Núcleos Integrativo de Dor program at the ABC health operator with a prescription of integrative physiotherapy by the medical team.

A total of 299 patients who participated in the integrative core were selected, 86 males and 213 females aged between 0 and 80 years, from March to October 2016.

To start the program, patients had an initial consultation with an orthopedist, clinician or physiatrist who established the nosological diagnosis and prescribed the therapies in which the patients would participate, including physiotherapy, which was divided into individual or group therapy. Psychology, acupuncture, yoga, massage therapy, oriental therapies, somato-emotional rebalancing were also referred when necessary for therapeutic complementation. After an average period of two months of therapy, the patient returned for a consultation with the physiatrist, orthopedist or clinician who initially consulted him, for reassessment of the clinical condition. Regarding physiotherapy, each patient was evaluated and performed 1 session a week for 8 weeks with an average of 50 minutes each session.

The physiotherapy care program was standardized within a three-block care model protocol as described in the standard operating procedure (SOP), developed by the physiotherapy team itself (Appendix 1).

For the entire sample population, regardless of the profile of the clinical picture and the service block that proceeded with the referral, the SF - 36 questionnaire (medical outcomes study 36 - item short - form health survey) of the model already translated into Portuguese in its version was applied. abbreviated, both in the first consultation and in the last by the physiotherapist present. The SF36 quality of life questionnaire is a basic instrument that is easy

to apply and understand, with that it has a wide level of international recognition since it is able to collect values to be able to quantify its 8 domains, which are functional capacity, limitation due to physical aspects, pain , general state of health, vitality, social aspects, emotional aspects and mental health, the first four being the most relevant to this study. For our study, improvement in the domains was considered those patients who obtained a score greater than or equal to 5 points as referenced and followed for interpretation. This questionnaire has quality and acceptance because it is able to collect the details of each segment and has specific values and its own calculation formula with fine reproducibility and susceptibility, obtaining a final score from 0 to 100, the highest value being considered as a good state of health. health, such refinement leads it to be used in several studies around the world (Erez G., et all, 2016; Lacerda D.C., 2011).

The SF-36 data were tabulated, calculated and the results demonstrated through tables and graphs by the system developed by the QUALIPES website (www.app.qualipes.com.br). Thus, the presented results were demonstrated through descriptive statistics of the SF-36 domains, correlating the values of the first application of the questionnaire with the last one in the final physiotherapy appointment for the domains selected for this study.

In order to refer to the clinical improvement and correlate it with the administrative quality profile, some institutional internal markers were analyzed in line with the management recommendations of the ANS (National Health Agency): spine evaluation group and outpatient clinics of general clinical specialties of the agreement.

Results

For a total sample of 299 patients analyzed, 10 are aged up to 20 years, 40 aged between 20 and 40 years, 118 patients are the second largest group in the age group of 40 to 60 years and the largest group fits the range of 60 to 80 years old with a total of 124 patients, remaining 7 patients over 80 years old. By gender division, the female collective is larger than the male, having 213 people for just 86 men.

When analyzing the general result of the sum of the questionnaire points joining the age groups and genders of the pre-tests in the period of time defined by the study, the functional capacity category presents a value of 56 points, limitation by physical aspect an amount of 47 points , 58 points for the pain variant and for the general state of health the amount of 57 points. The post-test also points out that the functional capacity mode obtained a weight of 61 points, the modality of limitation due to physical aspects generated a relevant increase to 56 points, pain demonstrated a value of 63 points, however the only modality that did not obtain a result with Significant importance was general health status with 61 points.

In this way, it is possible to state, according to Figure 1, that there was an improvement in functional capacity with 5 more points, limitation due to physical aspects with 9 sum points and pain also with 5 differential points. However, the general state of health did not show significant improvement, pointing to only 4 differential points.

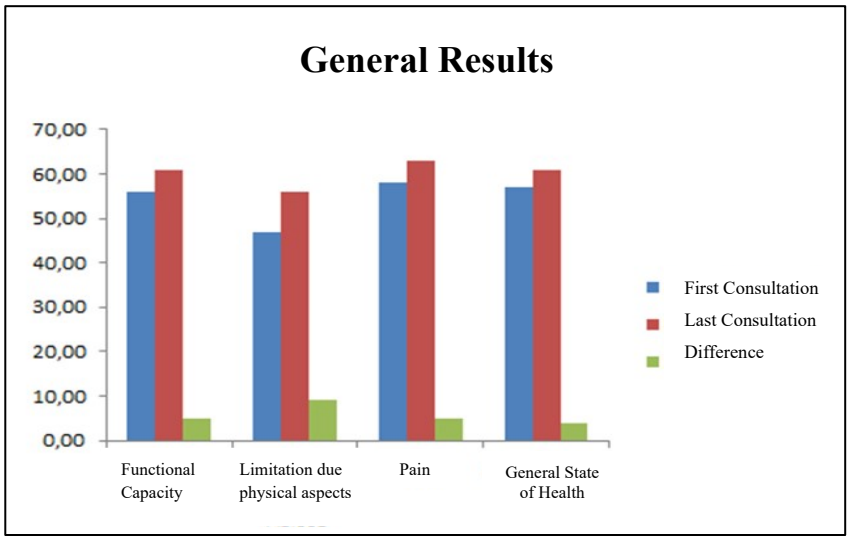


Figure 1–Difference in General Results)

When making the correlation between gender and age group for the results of pre and posttests, according to Figure 2, female it is possible to say that for general health status there was no significant improvement according to the standardization of the SF36 questionnaire because for aged 60 to 80 years there was a decrease of 0.12 points, 40 to 60 points an increase of 4.84 points, 20 to 40 years also an increase of 1.24 points, for the population aged 0 to 20 years there is a reduction of 4 points and for 80 years plus a significant decrease of 6 points. In contrast, the male group showed a significant improvement only for the population aged 0 to 20 years, with an increase of 6.25 points, and for those aged 60 to 80 years, the increase was only 4.94 points, 40 to 60 years, a gain of 2 .65 points and for 20 to 40 years the evolution of 3.13 points.

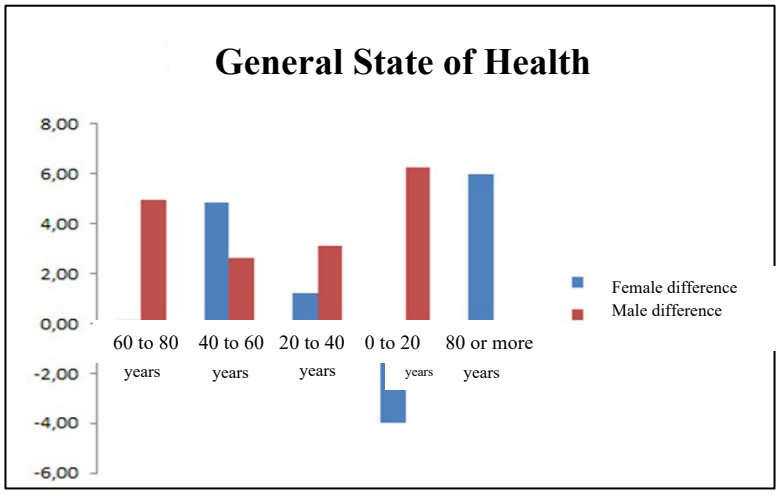


Figure 2 – general state of health

Regarding the pain mode, shown in Figure 3, the analysis of the values is evident that there was a significant improvement for the female population aged 60 to 80 years with an increase of 6.27 points, the population aged 20 to 40 years also had an increase of 6 .8 points, from 0 to 20 years old important gain of 10.33 points and 8.71 points added to 80 years old and over, being the one from 40 to 60 years old the only one without significant gains for pain with only 3.26 points added. The same can be said in relation to the male part, since there was a

significant gain for 60 to 80 years with an increase of 8.69 points and 12.75 points for 0 to 20 years, and there was no gain for 20 to 40 years with 1. 54 points added and only to the public aged 40 to 60 there was a decrease of 0.26 points.

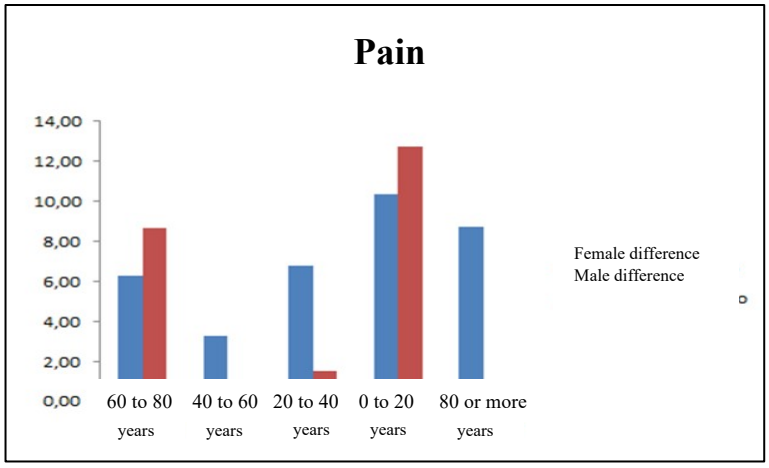


Figure 3 – Pain

The score referring to the limitation due to physical aspects showed that for the female corporation there is a significant improvement since in the group of 60 to 80 years old there was an increase of 11.54 points, for the group of 40 to 60 years old 8.93 points also increased and what is most surprising is the 21.43 points for the 80-year-old class, while for the 0-20-year-old class there was no change, but for the 20-40-year-old class there was a small increase of 3 points, not being considerable for the study. In the male circle, the results are also positive because for the group of 60 to 80 years old the increase in points was 12.12, for those from 40 to 60 years old there was an increase of 6.62 points and the one from 0 to 20 years old as well with a gain of 12.5 points, where the only group that did not show significant improvement was the 20 to 40 year old group with a simple increase of 3.33 points (Figure 4).

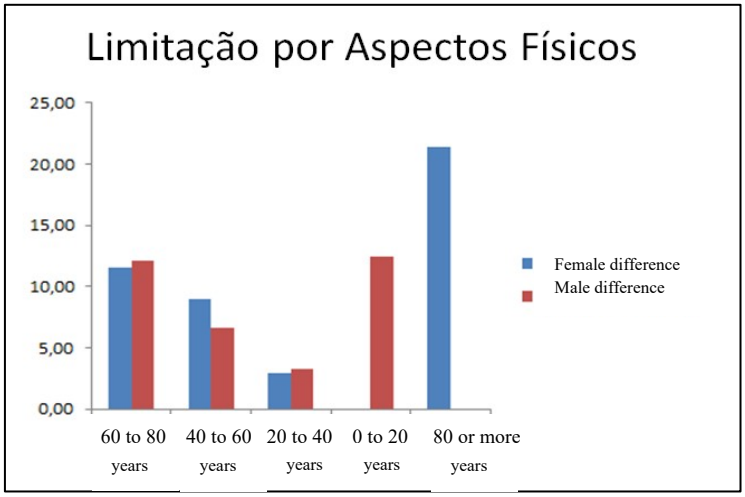


Figure 4 – Limitation by Physical Aspects

For functional capacity, in Figure 5, it is possible to state that the female group had a significant improvement for the 60 to 80 years old class, with an increase of 9.56 points, as well as for the 0 to 20 years old class, with a great evolution of 15 points, however, the other classes did not show a significant

improvement in the study, since the 40 to 60 year old group had only an evolution of 2.26 points, the 20 to 40 year old group 2.4 points and the 80 year old group 0.71 points more. For men, there was only a significant improvement in the group aged 60 to 80 years, with a gain of 6.67 points, in the others they were below the necessary cutoff, obtaining a gain of 3.97 points in the class of 40 to 60 years, 2.5 points in the 0-20 years and no gain or loss in the 20-40 years.

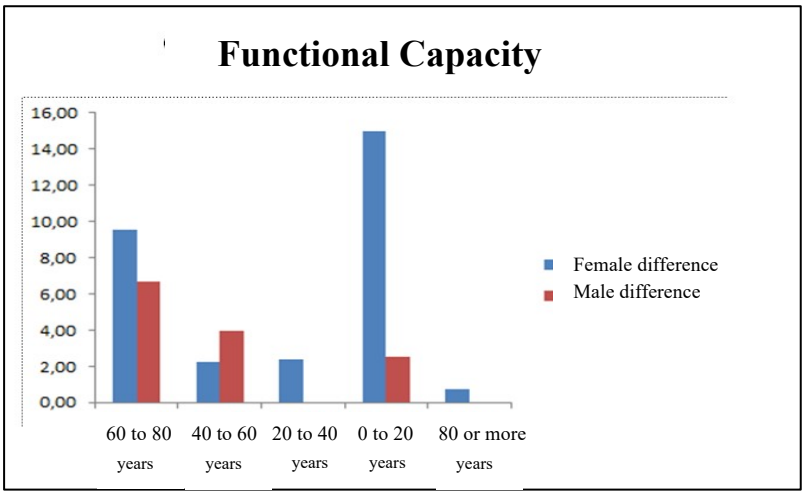


Figure 5 – Functional capacity

Bearing in mind that the results of the SF36 quality of life questionnaire point to a significant improvement in functional capacity, limitation due to physical aspects and pain for the total population of this study during a period of eight months in treatment with physiotherapy and other therapeutic modalities in the model of integrative medicine in a private health plan, it is also possible through a specific search in the database of these patients, an analysis of the number of consultations in specialties of this particular study population of 299 patients in relation to the determined time of ninety days before and ninety days after the time outlined in this study, from March to October corresponding to the eighth month, authenticate that this form of care with integrative medicine reached a reduction of 321 visits to emergency care, orthopedics and pediatrics corresponding to 57% fewer visits.

The initial period of ninety days before March the total was 563 consultations and ninety days after October it reached only 242 consultations, as well as 62% less consultations for outpatient orthopedics, surgery and spine evaluation groups, being a reduction of 135 consultations where initially there were 219 and at the end of the ninety days after October it reached only 84 consultations, also demonstrating that for outpatient clinics of general clinical specialties an incredible reduction of 161 consultations to an initial value of 476 falling to 315 consultations equivalent to the total of 34% decrease.

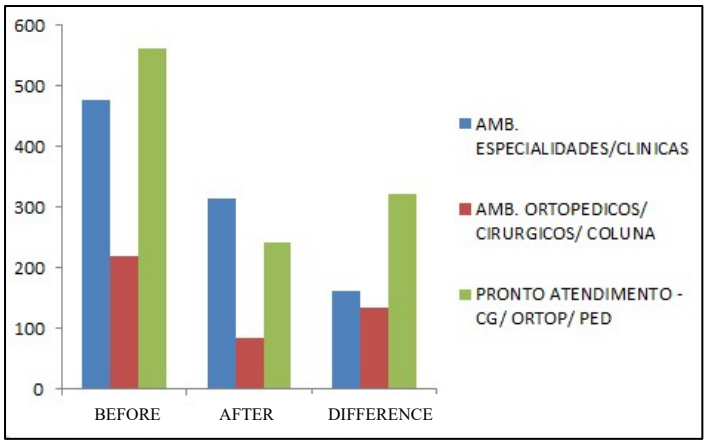


Figure 6 – Specialties

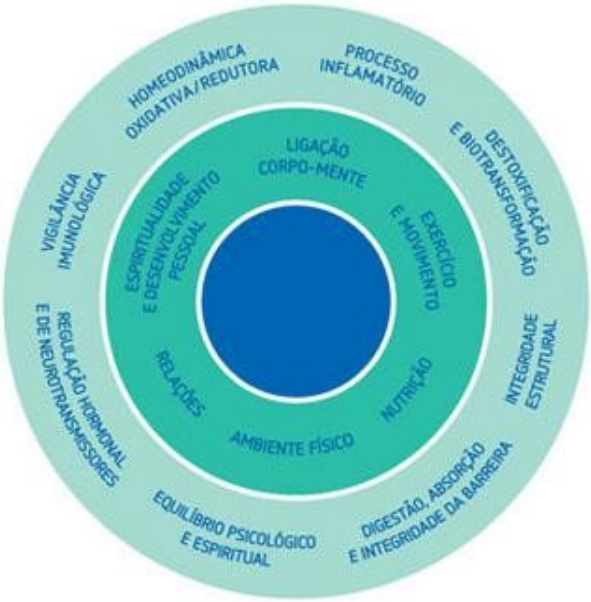
Table 1- List of consultations in specialties.

Specialties	Before	After	Difference	%
Outpatient Clinic Specialties	476	315	161	34%
Outpatient Orthopedic/Surgical/Spine	219	84	135	62%
Emergency Room -GC/orthop./Ped	563	242	321	57%

Discussion

While interdisciplinarity seeks to integrate different disciplines, understood as specific fields of scientific knowledge, transdisciplinarity seeks, in addition, the integration of scientific knowledge to other modes of knowledge production historically constructed by humanity, seeking a rigorous dialogue not only between exact sciences and humanities, but also between science, art, culture, tradition, religion, inner experience and symbolic thought. Contrary to the neutrality and objectivity of traditional science, transdisciplinarity recognizes the importance of human subjectivity in the production of knowledge.[7]

Interdisciplinarity and transdisciplinarity make it possible to move across disciplines in different ways, seeking to reconnect knowledge, just as it is possible to move from the part to the whole, from the local to the global, from the individual to the collective, without, however, overcoming or extinguish the disciplines and, at the same time, without having a reductionist view of reality.[8] Therefore, the Integrative Center seeks this dynamic of coming to understand the patient as a whole and at the same time focus on the physiotherapeutic treatment in an individualized way, adding other therapies previously described to enhance the treatment according to the guidelines of integrative medicine in the broad aspect of health as shown in the image below:



Available in: http://www.cristinasales.pt/pt/sobre-nos/metodo/

Among the main pathologies and physical conditions treated today for physiotherapy, we can mention knee osteoarthritis (OA) as one of the main ones in this survey. However, what is observed in many scientific studies, for this pathology, is that they only point to some specific techniques that aim to directly treat the main involvement.

The use of TENS electrostimulation for 26 weeks as a treatment modality for knee OA, confirming that such means are not immediately resolving the study's patients aiming at pain and functional capacity when compared to a placebo group. This note clearly demonstrates that the closed view only on top of the pathology becomes erroneous given the positive results obtained in our study with an integralist view of the patient.[9]

Chronic low back pain is the second leading cause of pain in the world's population. It was demonstrated that physiotherapeutic techniques performed randomized for three groups (Iso group (Isostretching), RPG group (Global Postural Reeducation) and Iso+RPG), and assessed for pain and quality of life before and after physiotherapeutic interventions and reassessed again after 2 months of follow-up, demonstrated that there was a decrease in pain and a statistically significant improvement in quality of life according to the domains of the SF-36 Instrument after 2 months of treatment. These pain improvement data in the SF-36 are consistent with the data obtained in this study.[10]

Still to list the main diseases in physiotherapy, we can also mention tendinopathies of the cuff as the main aggravating factor in shoulders. Manual therapy associated with programmed exercises to be done at home also do not have an immediate positive result for patients with such impairment. This fact becomes directly opposite to the findings obtained by our study, since many patients had this aggravating factor associated with others in a chronic way and in the final result they showed a significant improvement according to the questionnaire.[11]

This proof of an important reduction is not only feasible for consultations when seeking a private health plan, but also with regard to economic issues, since today it is known for all the high amounts that are spent on each service performed. For this study, a small sample number was used, but when thinking

about the large contingent of lives that a plan is responsible for and accounting for the results of this study for the total number of lives of the plan, the numbers can certainly be even more impressive. In a specific way, adopting the model of integrative medicine as the basis for administering a plan is not only feasible, but also humane when thinking that the quality of life of patients could significantly improve.

A study carried out in relation to quality measures in urgent and emergency care showed in its analysis that the rate of unscheduled medical consultations in Emergency Care was 13.64%.12 This can be compared to the present study in which the patient is assisted by an integrative team, we can reduce the need for urgent care by better stabilizing the clinical condition of the initial DIC, demonstrating the outpatient quality of care and better awareness of the patient in relation to his disease and treatment performed and in pain control.

Final considerations

According to the objective proposed by this study, it was evident that physiotherapy is an important segment for the model of integrative medicine care with an interdisciplinary and transdisciplinary vision, because through the results of the SF-36 quality of life questionnaire it was possible to demonstrate an improvement in terms of functional capacity, limitation due to physical aspects and pain. Just as there were improvements for physical issues, it was also possible to show a certain reduction in the number of consultations for emergency rooms, outpatient medical clinics and spinal evaluation groups, this fact directly implies an extremely important reduction in expenses. It is demonstrated that the patient monitored by an integrative interdisciplinary and transdisciplinary team improves the functional health and impact on the administrative expenses of a private health plan in the integral vision of health treatment.

Annex 1 - Physiotherapy Service Protocol

Centers and Therapies -Núcleo da Dor Integrativo
Author: Rodrigo Tadine

Integrative Physiotherapy

It is an approach oriented towards a broader sense of healing, which aims to treat the individual as a whole, emphasizing the relationship between the patient and the professional, which combines conventional treatments and complementary therapies whose safety and efficacy have been scientifically proven. It is not uncommon to find patients who do not obtain satisfactory results with the treatment offered or return of complaints after its completion. This can be attributed important conditions:

* Inadequate therapeutic choice
* Lack of guidelines and/or programs for preventive maintenance of the results obtained
* Lack of interaction between team professionals.

Thinking about minimizing these effects as much as possible and obtaining the best possible results to provide well-being and the functional capacity of patients, the Physiotherapy Team of the Centers and Therapies is organized in such a way as to maintain

total integration between professionals both in therapeutic programs and programs preventive. Our activities are divided as shown below.

Patients being monitored at the São Bernardo do Campo unit initially undergo a medical consultation, which can be done with the Physiatrics and Orthopedics specialties, and are referred to Individual Integrative Physiotherapy for the treatment of pain or functional limitation. Patients who, at the medical appointment, have controlled pain and/or no pain may be referred directly to group activities. The same is true for patients treated in the General Medical Clinic specialty. Associated with physiotherapeutic treatment, the core includes Medical Acupuncture, Oriental Integrative Practices, Massage Therapy, Yoga, Body Awareness and Somato-Emotional Rebalance, as shown in general in the organization chart below:

Upon entering the physiotherapy sector, the patient may be directed to 3 assistance blocks according to their complaints or functional disabilities detected, as described and shown in the organization chart below:

Block 1 - This block includes patients with conditions such as: severe osteoarthritis, disabling radiculopathies, severe functional disability, among other conditions, with the profile below:

- Severe pain VAS > 7 - Individual
- Fully committed ADL;
- Specific rehabilitation on a particular injury
- Total indication for surgery or preoperative period
- TTO Physio: electrothermophototherapy, kinesiotherapy
- Acupunture / Eastern integrative therapies
- Expected treatment time: 1-3 mnths with referral to the original physician, referral to other blocks or activities according to the patient's clinical condition.

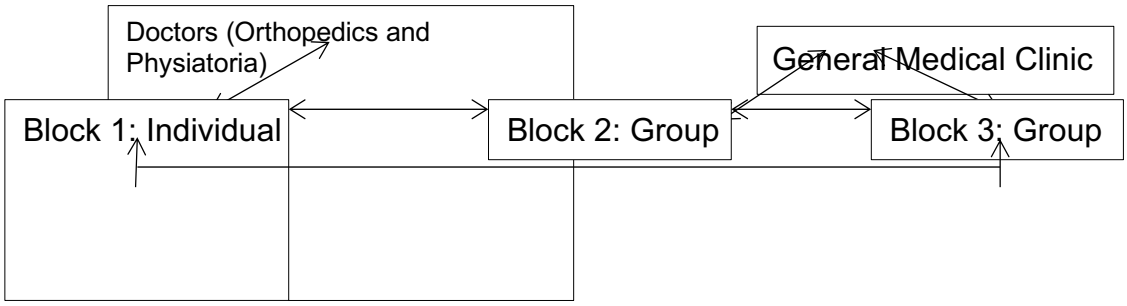
Block 2 - Included in this block are patients with conditions such as: moderate/mild osteoarthritis, non-disabling radiculopathies, moderate functional incapacity, tendonitis injuries, ALS, among other conditions, with the profile below:

- Moderate Pain VAS 5-7 Group
- ADL partially compromised
- Rehabilitation for 2 injuries
- Partial surgical indication
- Function maintenance
- TTO FISIO: kinesiotherapy and manual therapy
- Acupuncture/Eastern integrative therapies
- Expected treatment time: 1-2 months with referral to the original physician, referral to other blocks or activities according to the patient's clinical condition.

Block 3 - Included in this block are patients without major impairments, good response to previous treatments, with the profile below:

- Mild pain VAS < 2 Group
- No limitation of ADLs
- Mild disability
- General rehabilitation
- No surgical indication
- PHYSIOTHERAPY treatment: kinesiotherapy/body awareness
- Treatment time: 1 month
- Redirection to the originating physician or other activities.

Physiotherapeutic organization chart



INDIVIDUAL PHYSIOTHERAPY

1. Goal

The main objective of Individual Physiotherapy is the treatment and rehabilitation of musculoskeletal, tendon and neural dysfunctions, resulting from traumas that lead to acute and chronic complications, orthopedic pathologies associated or not with others, postural dysfunctions, repetitive strain injuries, among others.

The main focus in this model of care is the most serious physical involvement and the patient's complaint, since in many clinical situations they tend to have other pathologies, complaints and dysfunctions.

Therefore, after a period of treatment and rehabilitation in Individual Physiotherapy, the patient will be referred to the Group Physiotherapy model, with a global focus on the patient, if necessary.

2. Patient Flow

2.1 Patient profile

All patients of any age, gender, class, race, religiosity, who have an orthopedic pathology, associated or not with others, with disabling kinetic dysfunctions, complaints of severe pain, with total or partial surgical indication will be admitted.

2.2 Entrance

According to a pre-determined flow, patients who have a medical prescription, coming from appointments with Physiatrics and Orthopedics, as well as General Practice. Since only patients from team members will be accepted Cores and Therapies.

2.2 Medical Release

Those who, after a period of treatment and rehabilitation, are in perfect general condition of equal pre-pathological intensity, without complaints of pain and kinetic dysfunctions, with complete resolution of the clinical picture, will be

discharged and will wait for the medical return, without the need to continue to the next call block.

2.3 Flow evolution

After a period of treatment and rehabilitation, still complaining of pain, but at a lower intensity, as well as kinetic dysfunctions, the patient will be referred to the Physiotherapy Group module to maintain follow-up and monitoring.

2.3 Absences

The maximum limit of allowed, unexcused absences is two within the number of sessions scheduled, not being cumulative in case of need for a new cycle of sessions.

2.4 Clearance

They will not be considered as absences when the patient notifies in advance that he will not attend a given session and cancels the appointment in advance at the reception or through the system.

2.5 Fitting

Fitting in is allowed at any time in the schedule, with the exception of times that already have the maximum limit of patients or another fit already scheduled.

3. Clinical Care

3.1 Local

The service will be carried out in a room with two stretchers, a wall backrest, mirror and chairs.

This program operates at the service center of Núcleos e Terapias, Rua João de Azevedo Marques, 202, Jardim Três Marias, São Bernardo do Campo, CEP: 0975003

3.2 Materials

- Two stretchers the mirror;
- Wall back;
- Electrotherapy devices: TENS, FES, RUSSA, Ultrasound;
- Halter 1, 2, 3, 4, 5 kg;
- Thera band / therapeutic elastic (red, low resistance, green – medium resistance, blue- strong resistance)
- Stretching cloth bands;
- Neuromuscular tape (kinesio tape);
- TIQ (instrumental chiropractic instrument);
- Therapy ball;
- Proprioceptive disc.
- 3.3 Service Dynamics

As an initial procedure, a functional kinetic evaluation is carried out always aiming at the intensity of pain using the VAS scale, inspection, palpation, range of motion, specific orthopedic tests, muscle strength, tests of maximum flexibility of the trunk and limbs, neurodynamics, basic

postural evaluation as well such as gait, orthoses and prostheses, in addition to the application of the simplified SF-36 questionnaire.

In cases of greater severity, the patient will have two weekly sessions within a period of two to three months, for clinical conditions of lesser intensity, once a week from one to two months will be prioritized.

Sessions will last from thirty minutes to sixty minutes depending on the need for therapies.

Two patients every thirty minutes must be seen, and with fitting a third can also be seen.

3.4 Epidemiological Framework

Considering the epidemiological basis of patients referred to Individual Physiotherapy, it is possible to differentiate the main pathologies:

3.4.1 Tendinopathy/Myalgia: tendinitis/tendinosis/tenosynovitis of the rotator cuff, biceps, gluteus maximus, knee flexors; medial/lateral epicondylitis, subacromial and greater trochanter bursitis of the femur, tender points, trigger points, myofascial blocks, plantar fasciitis, partial/total rupture of the ACL/PCL, meniscal injuries.

3.4.2. Arthropathies: cervical/lumbar osteoarthritis/osteoarthritis, glenohumeral, intercarpal, femoral hip, femoral patella, tibial femorus, calcaneal talus; patellar chondromalacia, glenohumeral dislocation/subluxation, adhesive capsulitis, preoperative hip/knee arthroplasty.

3.4.3. Vertebral Column/ Neuropathies: cervical/lumbar disc herniation, late postoperative arthrodesis, spondylolisthesis, cervicobrachialgia, lumbosciatic pain, carpal tunnel syndrome, trigger finger.

3.4.4. Amputations: lower limb amputations.

3.5 Therapeutic conduct

3.5.1 *Tendinopathies / Myalgias*

- Acute: myofascial release (kneading, digital pressure, fascia mobilization, roller), neuromuscular taping (analgesia), stretching (passive/active – static), manual therapy (manual/instrumental chiropractic, maitland, mulligan), electroanalgesia (TENS and Ultrasound – sonophoresis), Hypothermotherapy (guidelines for the use of cryotherapy at home), general guidelines (ergonomics, activities of daily living, physical activity, orthoses).

- Chronic: myofascial release (kneading, pressure, fascia mobilization, roller), stretching (passive/active – static), manual therapy (manual/instrumental chiropractic), functional muscle strengthening (focusing on the affected muscle group –

isometric/concentric/eccentric, aided by FES and Russa focusing on muscle neural stimulation to gain tone), Hypothermotherapy (guidelines for the use of cryotherapy at home), general guidelines (ergonomics, activities of daily living, physical activity, orthoses).

3.5.2. *Arthropathies*

- Acute: neuromuscular banding (dynamic joint correction), manual therapy (manual/instrumental chiropractic, Maitland, mulligan), electroanalgesia (TENS, Ultrasound - sonophoresis), Hypothermotherapy (guidelines for the use of cryotherapy at home), general guidelines (ergonomics, activities of daily living, physical activity, orthoses).

- Chronic: myofascial release (digit pressure, mobilization of fascia), stretching (passive/active - static), functional muscle strengthening (focusing on the affected muscle group - isometric, however in cases of high blood pressure or severe muscle weakness evolve in low isotonic intensity), electroanalgesia (TENS), Hypothermotherapy (guidelines for the use of cryotherapy at home), general guidelines (ergonomics, activities of daily living, physical activity, orthoses).

3.5.3. Vertebral Column / Neuropathies

- Acute: neuromuscular taping (analgesia), manual therapy (manual/instrumental chiropractic), electroanalgesia (TENS, Ultrasound - sonophoresis), vertebral segmental stabilization (cervical/lumbar), neural mobilization (static or dynamic – UL/ULL), myofascial release (kneading, pressure, fascia mobilization, roller), stretching (passive/active – static), general guidelines (ergonomics, activities of daily living, physical activity, orthoses).

- Chronic: myofascial release (kneading, type pressure, fascia mobilization, roller), stretching (passive/active - static), muscle strengthening (isometric focusing on CORE, however in cases of high blood pressure or severe muscle weakness evolve in low isotonic intensity), spinal segmental stabilization (cervical/lumbar), general guidelines (ergonomics, activities of daily living, physical activity, orthoses).

- Amputations: regardless of the time of amputation, such procedures should be followed: binding of the stump, desensitization of the stump (massage, contrast, texture), muscle strengthening (proximal region of the stump as well as the contralateral limb and CORE, gradual concentric isotonic), stretching (stump passive, contralateral limb active), Training: balance (different levels of difficulty), fall, gait (with braces and prosthesis, evolving the braces), stairs, ramp.
Integrative Physiotherapy - Group

1. Objective

1.1 It is an approach oriented towards a broader sense of healing, which aims to treat the individual as a whole, emphasizing the relationship between the patient and the professional, which combines conventional treatments and complementary therapies whose safety and efficacy have been scientifically proven. One of the most important goals of the treatment is to support, facilitate and increase functional capabilities, in addition to taking into account the individual in his various aspects: physical, mental and emphatically encouraging changes in lifestyle. Accompany and monitor patients who are admitted to the integrative therapy center to improve the affected functional capacities and pain control through integralist group physiotherapeutic practices.

1.2 Indications

Moderate Pain: it aims that the patient can perform kinesiotherapy without the pain interfering with their ADLs and, mainly, understand controlling their pain for their weekly activities. ADL - partially compromised: objective that the patient does not have total functional limitation to perform their ADLs. At the time of the kinesio-functional evaluation, the patient describes 3 limitations of capacities in order to compare the progress of the treatment at the time of discharge from the group program. Recovery of 2 injuries: the objective is that these injuries do not have an impact on their ADLs according to the international classification of functionality with partial recovery, after treatment in individual core physiotherapy or that treatment begins in the group with drug analgesia control by the medical team . Partial indication for surgery: patients with acute or chronic orthopedic injuries whose objective is musculoskeletal functional preparation for surgery with a focus on recovery to avoid complications and reduce post-surgical recovery time. Function Maintenance: greater focus of the group program, whose patients aim at the prevention of functional disorders / correction of mild functional disorders and mainly do not present painful musculoskeletal conditions and emphasize ergonomic and lifestyle guidelines with an impact on longevity.

2. Program Operation and Flow

2.1 Age Range:
There is no age range for patients who will undergo group treatment.

2.2 Place of Treatment:
The program operates at the location where it includes the core of integrative practices – SHAM.
Address: Rua João de Azevedo Marques, 202 – Jardim Três Marias – CEP: 09750-030 / SBC.

2.3 Stay in the program:

Once a week in the 2-month interval lasting 40 minutes of therapy with a maximum of 6 participants in full time.

2.4 Fitting:
It will be allowed as long as there is space in the schedule for 6 patients.

2.5 Absences:
absences must be informed 48 hours before the consultation via the system / telephone, with 2 consecutive absences allowed. In the absence without informing the SHAM secretariat, the patient will be automatically disconnected from the program via the system.

2.6 High:
If the patient needs to improve their body awareness, maintain body flexibility, decrease anxiety and control depression associated with pain control, they can be referred by the group physiotherapist to integrative practices such as: acupuncture / oriental practices, yoga, massage therapy, somato-emotional awareness.

2.1 Follow-up:

The physiotherapy team is available from Monday to Friday, from 7:00 am to 8:00 pm, according to the proposed monthly schedule of the Center's coordination

O The physiotherapist professional responsible for the patient must request the medical prescription (integrative nucleus), in the program for the follow-up of Integrative Physiotherapy – Group composed of general practitioner, physiatrist, orthopedist, oriental physician.

After carrying out the first kinesio-functional evaluation, he will indicate the specific treatment for each patient, prioritizing the improvement of functional capacities and better pain control for ADLs, based on the medical nosological diagnostic hypothesis.

For evaluation, it prioritizes the simplified SF-36 questionnaire and visual analogue pain scale - VAS, together with the kinesio-functional evaluation described in the medical record. At the end of the treatment, the items mentioned above will be applied again to evaluate the functional gain and abilities.

The patient will be assisted for an interval of 1 x week with a duration of 40 minutes for 2 months, and the interval may be increased according to medical coordination if there is a clinical indication for it.

Discharge from group care will be done at the end of the 2 months of the program to return for monitoring with the doctor who recommended the program / nursing.

3- Procedures Used

Used as a therapeutic basis the approach of classical kinesiotherapy associated with resources of manual therapy / posture to gain functional capacities / postural awareness / body flexibility / analgesia / preoperative musculoskeletal preparation.

3.1 - Materials Used:
- Therapeutic ball (fit ball) – pilates;
- Small ball – therapeutic rubber;
- Halter of 1, 2, 3 Kg;
- Therapeutic Rim;
- 1.2 Kg shin pads,
- Stick – wood;

• Theraband / therapeutic elastics (green – light resistance, blue – medium resistance) Trampoline;
• 20mm Tatami mat for the entire therapeutic space;
• Sound equipment;
• Neuromuscular bandage (kinesiotape).
• TIQ (instrumental chiropractic instrument).

4. Therapeutic Approaches according to functional capacity disorders:

Based on the stratification of the epidemiological profile (SHAM database) of patients from the integrative therapy center referred to the Physical Therapy Group, they will be divided as follows:

- 4.1 Postural disorders: focus on improving posture using manual therapy techniques and body awareness exercises. Particularly noteworthy are vertebral discopathies, scoliosis, kyphosis, lumbar hyperlordosis and vertebral misalignment due to myofascial / proprioceptive decompensation.

Conduct: hamstring, lumbar, dorsal stretching, pelvic girdle mobilization, active exercises with a ball for dorsal and lumbar flexibility on the ground associated with lower limbs, stretching exercises with a bar in orthostatism, postural exercises on the ground, proprioceptive postural exercises on trampoline. When presenting residual pain, hypomobility and postural asymmetry, associate myofascial release, pomp, TIQ - chiropractic.

- 4.2 Painful disorders of the spine: due to chronic spinal injuries, repetitive work efforts and physiological aging processes, which will have as a therapeutic focus body awareness and ergonomic changes and exercises and stretching associated with relaxation techniques to control pain and increase mobility body / posture improvement.
Conduct: hamstring, lumbar, dorsal stretching, pelvic girdle mobilization, active exercises with a ball for dorsal and lumbar flexibility on the ground associated with lower limbs, stretching exercises with a bar in orthostatism and mobilization of limbs and trunk. When presenting residual pain, hypomobility and postural asymmetry, associate myofascial release, pomp, TIQ - chiropractic.

- 4.3 Degenerative / repetitive / traumatic disorders of the upper limbs: Therapeutic approach aimed at body awareness to reduce repetitive efforts, with increased functional capacity for degenerative / traumatic diseases based on classic kinesiotherapy, manual therapy and the use of functional bandages with exercise guidelines treatments that can be done at home during the week.
Conduct: upper limb and posterior muscle chain stretching using a barbell / mat, active and passive stretching of wrist flexors and extensors, exercises with elastic bands for muscle strengthening of the upper limbs, isometric exercises with a therapeutic hoop, active exercises with a ball for ROM and flexibility of the upper limbs, cervical stretches. When presenting residual pain, hypomobility, associate pomp and myofascial release / functional taping.

- 4.4 Degenerative / repetitive / traumatic disorders of the LL: therapeutic focus on the main dysfunctions resulting from body hypomobility, sedentary lifestyle, degenerative diseases mainly in the knees / hips and repetitive work that promote pain reduction with increased

functional skills and better flexibility / increased strength muscle and body awareness for work activities and ADLs.

Conduct: hamstring and triceps-sural and trunk stretching on the barbell / floor, active exercises with ball and stick on feet for joint and myofascial release, active exercises with a weight of 1-2 kg on lower limbs with support on a barbell in flexion- extension / abduction and adduction of hips and knees in open and closed kinetic chain, proprioceptive exercises on a trampoline. When presenting residual pain, hypomobility and lower limb asymmetry, associate myofascial release, pomp, TIQ – chiropractic, functional taping for muscle rebalancing.

At the end of each consultation, it will always end with a body relaxation activity and/or postural adjustment for pain relief lasting 5 to 10 minutes.

5.0 – Main techniques used

- Manual chiropractic and chiropractic instrumental therapy;
- Postural proprioceptive exercises;
- Spinal segmental stabilization;
- Myofascial release;
- Lumbar and cervical pomping / MMSS / MMII;
- Muscle strengthening with eccentric concentric active exercises;
- Muscle strengthening with open and closed kinetic chain exercises;
- Muscle strengthening with lower limb proprioceptive and postural exercises;
- Functional neuromuscular bandage;
- traditional manual therapy;
- Classic massage therapy;
- Body relaxation techniques.

Aknowledgement

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References

1. Otani M.A.P., Barros N.F., A Medicina Integrativa e a construção de um novo modelo na saúde, 2011.

2. Barros NF. A construção de novos paradigmas na medicina: a medicina alternativa e a medicina complementar. In: Canesqui AM, organizadora. Ciências sociais e saúde para o ensino médico. São Paulo: Hucitec; 2000. p. 201-213.

3. National Institutes of Health. National Center for Complementary and Integrative Health. Complementary, Alternative, or Integrative Health: What's In a Name? 2021. Disponível em: https://www.nccih.nih.gov/health/complementary-alternative-or-integrative-health-whats-in-a-name

4. Júnior E.T., Práticas integrativas e complementares em saúde, uma nova eficácia para o SUS, 2016.

5. Brasil. Portaria nº 145 de 11 de janeiro de 2017. Altera procedimentos na Tabela de Procedimentos, Medicamentos, Órteses,

Próteses e Materiais Especiais do SUS para atendimento na Atenção Básica. Brasília: Ministério da Saúde; 2017.

6. Esparza JJG. Introducción a la Fisioterapia Integrativa. 2016. Disponível em: http://www.efisioterapia.net/cursos/31129-introduccion-fisioterapia-integrativa

7. Nicolescu, Basarab. O Manifesto da Transdisciplinaridade. Trad. Lucia Pereira de Souza. 3ª ed. – São Paulo: TRIOM, 2005. p. 52-53.

8. Ferriori M.L., Equipe multiprofissional, transdisciplinaridade e saúde: desafios do nosso tempo., São Paulo, 2009.

9. Fary R.E., *et all,* The Effectiveness of Pulsed Electrical Stimulation in the Management of Osteoarthritis of the Knee, Arthritis & Rheumatism, Vol. 63, No. 5, May 2011, pp 1333–1342.

10. Adorno M.L.G.R, *et all,* Avaliação da qualidade de vida com o Instrumento sf-36 em lombalgia crônica., 2013.

11. Bennell K., *et all,* Efficacy of standardised manual therapy and home exercise programme for chronic rotator cuff disease: randomised placebo controlled trial., 2010.

12. Viola D.C.M, *et all,* Unidades avançadas: medidas de qualidade no atendimento de urgência e emergência., 2014.

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