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ORIGINAL RESEARCH

Passive Treatment for Patients with Chronic Disability - Expert Survey

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Abstract

Background: Experts' opinions can be accepted as scientific evidence in fields that have controversial, issues with implications and unethical dilemmas or issues, approaches and techniques that have not yet developed formal scientific laws.

In welfare centers, and residential care centers (supervised by the Ministry of Welfare) where permanent residences with intellectual disability often accompany with abnormal muscle tone and orthopedic deformities, reside or are hospitalized. These people are defined by the medical staff as chronic residents or nursing patients who need full assistance in all daily activities and have severe locomotion and communication difficulties. Such residents or inpatients live in different institutions and departments receive passive treatments for limbs and trunk.

The aim of the study was to reach a consensus of experts on the efficacy and usefulness of passive limb movements among people with chronic nursing care.

Methods: National experts survey by e-mail. Nine steps and five rounds were performed. The first round to identify potential candidates, second round included 8 questions sent to 10 physical therapists and 7 occupational therapists, the third round included one question to clarify the passive treatment goals, the fourth round included a question with 11 variables to describe and rank the passive treatment goals, and the last round asked the experts to rank the 3 most important goals of the passive treatment.

The specialist characteristics were defined by a multidisciplinary team of 6 physiotherapists, 2 occupational therapists and a speech-language clinician. This team raised the professional dilemma, formulated the research objective and formulated the research method.

Results: In the first round of questions, 15 replies were returned (out of 17), in the second round 14 answers were returned (out of 15), in the third round 9 answers were returned (out of 14), and in the last round 5 answers were returned (out of 9). Sixty percent of respondents (9/15) agreed or strongly agreed that passive treatment was effective, and 66% (10/15) agreed or strongly agreed that passive treatment was beneficial. When asked what are the main goals of passive treatment, the answers were to maintaining range of motion, pain relief, promoting communication and wellbeing (alpha-cronbach 0.92; 0.84, 0.70, 0.70 respectively). Manual therapy is best recommended as passive therapy, for 2-3 times a week for the rest of the patient life.

Conclusions: Using the expert survey yielded consensus that rehabilitation aid should give passive treatment and the major aim of passive treatment is primarily to maintain range of motion.

Keywords

Expert survey, Passive, Disability, Efficiency

Introduction

An expert survey makes it possible to get an answer or a solution to a certain issue by a structured and systematic appeal to a number of experts. The approach of the survey is based on Delphi method on the gradual achievement of unanimity (never absolute, of course), among a group of experts, regarding the solution of a complex issue. The basic premise is that the collective knowledge of a large group of people, separated from

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each other, may yield an optimal, valid and meaningful solution. The advantages of the survey lie in the fact that they prevent pressure for uniformity and unanimity. The disadvantage is that it is required to contact a considerable number of "experts", and it is necessary to return and contact those several times in order to reach a finished solution, as optimal as possible [1-4].

Contacting the experts through a series of questions makes it possible to receive their opinion as scientific evidence in areas that have a history, complex issues with consequences or ethical dilemmas that have not yet received a consensus or developed formal scientific laws. In the health care system and especially in the nursing profession, it has been customary to contact experts for decades, and it is used through an approach with a varying number of steps, depending on the complexity of the issue [5]. A panel of individuals, each of whom is recognized as an expert on the subject under investigation, and individually and discreetly from his colleagues, judges the subject and gives an opinion in a process that is relatively quick for prospective studies such as a randomized controlled trial.

An anonymous appeal to experts is intended to replace the direct discussion and thorough brainstorming, and it does not require ethical approvals. The use of the survey aimed at experts is increasing and it is gaining both praise and criticism. And it can be seen that an expert survey is used in the fields of education, health, the business and political sectors, and in recent years has also been used in the field of physical therapy [6-9].

Passive Treatment

Passive treatment is one of the most common treatment methods in physiotherapy. Sometimes it is a treatment that stands in its own right and sometimes it is given "as a warm-up" before the active treatment. Passive treatment is usually given to the patient while he is lying down and sitting up. The goals of the passive treatment are many such as preparation for the active treatment, preservation and improvement of range of motion, prevention of contractures, pain relief, relaxation, change of physiological indices, sensory experience, improvement of oxygen pressure (PO_2) and more. The means that can be used in passive treatment include manual techniques (massage, stretching), Proprioceptive Neuromuscular Facilitation (PNF), instrumentation (brace, plaster, serial casting [10], mechanical stretching, devices such as Active Passive Trainer (APT); Continuous passive motion (CPM), rehabilitation robot, vibration and electrical stimulation. Passive movement treatment is a movement that comes from an external power source and does not force the patient.

Evaluating the effectiveness and usefulness of the passive treatment for chronic conditions has often been asked and there are disagreements about it [11-14]. The passive treatment through passive movements of the limbs and leg (and there is no intention in this study of sitting, standing, changes of position, massage, electric therapy, etc.) has consequences on the state of manpower and its optimal use, and on the benefit that such treatment yields in the short and long term for the patient himself. The issue of the benefit of passive treatment for children with cerebral palsy or nursing people who are in a chronic condition, who do not have the ability to initiate goal-directed movement, they do not communicate, and they suffer from spasticity or muscular hypotonia has been raised by clinicians as a value for muscle strengthening, functional improvement, and even as a health challenge that is also valuable and of value and ethical significance [15-18]. Passive movement did not show better results when compared with no treatment for aged patients with dementia [19].

Using the expert survey can yield insights in a relatively short time.

The purpose of the current study was to develop an updated and current consensus based on expert recommendations regarding the effectiveness and usefulness of providing passive treatment to the population defined as chronically disable.

Methods

Using an expert survey to get a consensus. The group of applicants: Staff in the physical rehabilitation department at the Neve-Ram residence, in the settlement of Rechasim, including 5 physical therapists, 2 occupational therapists, and a speech therapist. The team has many years of experience working with a profound people with intellectual and developmental disabilities (IDD) population and providing passive care. The team raised the dilemma and asked to investigate it using an expert survey.

Background for presenting the dilemma

Dozens of residential care centers (supervised by the Ministry of Social Welfare) are regularly inhabited by residents suffering from IDD, and many of them even have abnormal muscle tone. These residents are defined by the residential care center staff as a permanent resident in a chronic condition that need full help in all day-to-day functions, and they have great difficulties in communication. These residents or patients hospitalized in other institutions and different departments receive passive treatments for upper and lower limbs. Over the years, medical dilemmas have arisen in the provision of passive treatment: dilemmas related to time allocation, effective utilization of personnel, personnel training, and selection of means and treatment technique, frequency and dosage of treatments. Therefore, a possibility was raised to find out the positions and perceptions of experts on the described subject, and it was decided to use an expert survey.

First step-literary reading

An internet review conducted between January and August 2020. Knowledge bases were reviewed PsycINFO, PUBMED, Web of Science, Scopus, and Pedro. Keywords included combinations and different combinations of concepts related to passive treatment: Efficiency; Movement; Passive treatment; Range of motion; chronic condition. Only articles in English were reviewed.

Second step

After sorting, filtering and reading the relevant articles, the issue of what is passive treatment was defined, what are the reasons for giving this intervention, what types of clinical medical conditions can receive this treatment, who is qualified or in charge of giving it, and what are the different goals and ways of giving passive treatments.

After the literature review, a discussion was held on the subject of "passive treatments" and the following dilemma was raised, and this is because we did not find a single article that directly discussed the dilemma presented here:

The dilemma: What is the efficiency and what is the benefit of the passive treatment for upper and or lower limbs for the population defined as chronic disability? The passive treatment does not mean sitting, standing, position changes, massage (including alternative treatment methods such as shiatsu, reflexology), electric therapy, etc.

Third step

Another discussion was held among the group of applicants on two issues. The first, how we will obtain potential names of national experts to whom we can turn. The second topic was setting criteria for defining an "expert". Regarding the first issue, it was decided that the best platform is social networks and e-mail and to contact rehabilitation service centers in the Ministry of Welfare, the Ministry of Health and the Ministry of Education and ask them for names of potential experts. Regarding the second issue, a number of criteria were decided which must be taken into account in determining who is an "expert", and it was decided that at least 3 of the following must characterize an expert:

1. Physiotherapist, occupational therapist
2. An academic from the field of sensation or pain.
3. Worked with the IDD population for at least 3 years and knows well the degrees of mental retardation and their consequences.
4. Has therapeutic experience of at least two years in the treatment of populations in a chronic condition (such as: Cerebral palsy, developmental intellectual disability (ID), head injuries or diseases, brain degeneration, muscle dystrophy, etc.).

Fourth step-first round of the survey

Through social networks and e-mail, names of people who apparently fit the definition of an expert were obtained. 21 names were obtained, and after examination it was found that 4 did not meet the criteria of an expert, and thus it was decided to send questions to 17 experts.

Fifth step: Second round of the survey

In the second round, eight questions were sent to 17 experts (10 physical therapists and 7 occupational therapists) through the e-mail of each of them. The experts did not know each other. The answers to the questions addressed to the experts were sent back to the e-mail of the principal investigator.

Below are the eight questions (some closed questions and some open questions):

1. Is passive treatment of limbs for the described population effective (i.e., "smart" use of resources - in terms of personnel, efficient use of time, means and money)? Yes, No, Describe.
2. Is passive treatment for the limbs beneficial for the described population? (That is, the benefit to the patient from receiving the treatment, benefits in terms of the extent to which the goals of the passive treatment are achieved, and in what qualities? Yes, No, Describe.
3. Who can perform the passive treatment? You can specify a number of professionals, but they must be ranked in order of priority.
4. Who should perform the passive treatment? You can specify a number of professionals, but they must be ranked in order of priority.
5. State what are the goals of passive treatment?
6. State what are the means to achieve the treatment goals? You can specify several measures, but they must be ranked in order of priority.
7. How should the passive treatment be performed: frequency (minimum times a week), duration of treatment minutes and for how long (days, weeks, months).
8. To what extent do you agree/disagree with the following two statements? Please use the following scale.

1: Strongly disagree 2: Disagree 3: Like this 4: Agree 5. I strongly agree

"The passive treatment for the chronic disabled patient is effective".

"The passive treatment for the chronic disabled patient is beneficial".

Sixth step-third round of the survey

After receiving all the questionnaires and processing the findings, a third round was performed in which one focused question was presented.

Here is the question:

We ask for your attention to the following question. Please answer in a table:

"What are the goals of the passive* repetitive treatment (manual or mechanical) for the upper and lower limbs, and what is the dosage"?

*Please note that the repetitive passive treatment does not include sitting, positioning, position changes, massage and electrical therapy.

Seventh stage-fourth round of the survey

In this round, a questionnaire was sent to each expert in whom eleven different goals (i.e., 11 variables) were specified, proposed by the experts in the third round. The questions were presented in a table as goals of the passive treatment for the limbs.

Below are the 11 goals/variables:

Maintaining or improving range of motion; pain reduction; creating a communicative interaction (verbal or non-verbal); giving a sensory experience (including superficial and deep feeling); providing a movement experience; improving cognition; improving well-being/pleasure; change in muscle tone; change in respiratory status; change in physiological state (lower heart rate, increase in saturation levels).

Every expert was requested to:

a) Rate the degree of importance of each of the variables on a scale from 0 (least important) to 5 (most important). Any two variables can get the same score.

b) Write the dose of the passive treatment (number of times a week, number of minutes in each treatment, for how long for each variable). (This question was also sent in the second round, after receiving the recommendations of the experts, but this time we were asked to rate the dose of treatment on a scale of 0 (least important) to 5 (most important).

Eighth step

The team of researchers gathered all the goals of the passive treatment that were issued by all the experts.

Ninth stage-fifth round

Similar to the fourth round, the experts were asked to rate the three most important goals of the passive treatment for the studied population.

Analysis of the findings

The answers arrived at the e-mail of the main researcher who first compiled them and then presented them to the multi-professional team. All the details of the respondents were kept confidential and were not shown to the team members. The degree of agreement between the experts, in each separate round, was done using the alpha- Cronbach index according to an ordinal 0-5 Likert scale. Theoretical statistics included averages and percentages of agreement.

Nine stages and five rounds were performed. The discussions between the different stages were held once a week. Between rounds, the answers reached the main researcher between one and three weeks from the day they were sent to the experts by e-mail. The duration of the entire study lasted about a year.

In the second round of questions, 15 answers were returned (out of 17), in the third round, 14 answers were returned (out of 15), in the fourth round, 9 answers were returned (out of 14), and in the fifth round, 5 answers were returned out of 9. 60% of the respondents (9/15) answered that the passive treatment effective, and 73% (11/15) answered that the passive treatment is helpful. Most of the respondents recommended that it is most effective for the passive treatment to be given by an auxiliary force (Table 1a and Table 1b), it is recommended to give passive treatment with a manual technique (Table 2) and this treatment should be given for life (Figure 1a).

To the question of who can perform the passive treatment, all of them (100%) recommended a physical therapist (Table 1a).

To the question of who should perform the passive

Table 1a: Who can perform the passive treatment (it was possible to answer more than one option, ranking according to importance).

The variable	% of respondents n = 15
Physiotherapist (PT)	100
Occupational Therapist (OT)	86
PT Assistant or OT Assistant	80
Nursing care giver	73
Family	60

Table 1b: Who should perform the passive treatment (it was possible to answer more than one option, ranking according to importance).

The variable	% of respondents (n = 15)
PT Assistant or OT Assistant	93
Nursing care giver Occupational Therapist (OT)	86
PT	73
Family	60
OT	46

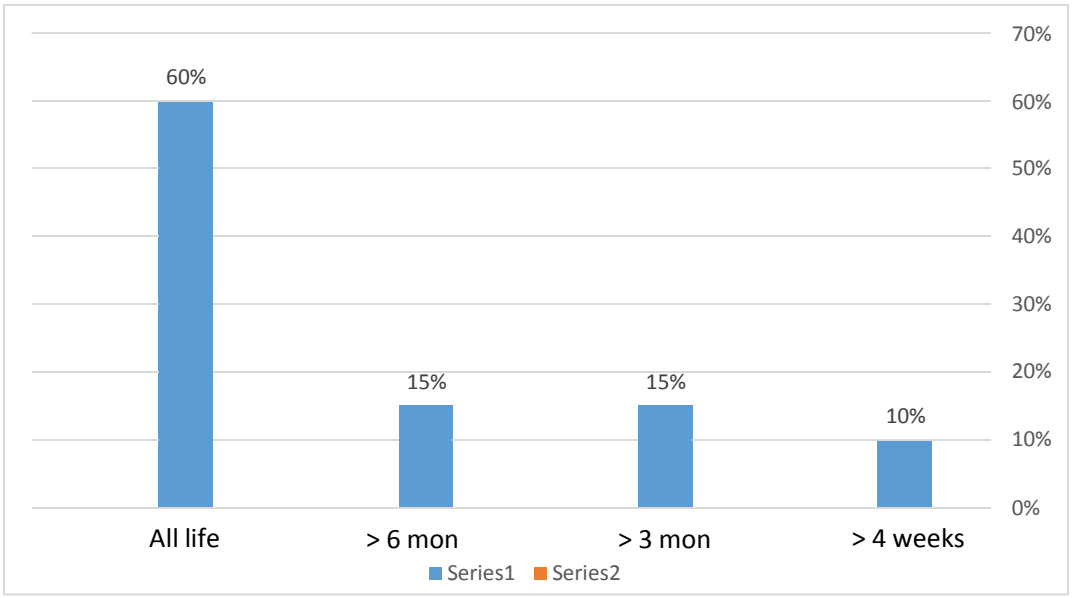

Figure 1a: How long should passive treatment be given (days, weeks, months) n = 9.

Table 2: The means to achieve the goals of the passive treatment (it was possible to bring more than one option, ranking according to importance).

The variable	% of respondents (n = 15)
Manual handling	100
APT	80
CPM	80
Static brace/series of Casts	80
Dynamic Splint	73
Mobilization	26
Vibration	13
Taiping	7

APT: Active Passive Trainer; CPM: Continuous Passive Motion

treatment, most experts (93%) recommended an auxiliary force (Table 1b).

The average agreement between the respondents regarding questions 3 and 4 (who can and who should perform the passive treatment) according to the alpha-Cronbach index was found to be 0.94 and 0.80, respectively.

Table 2 shows all the treatment measures that were recommended by the experts. The manual therapy was ranked first in the recommendation of all the experts.

The following three graphs refer to the frequency and dose of the passive treatment as agreed upon at the end of the fourth round. Most of the respondents (55%) recommended 2-3 passive treatments every week (Figure 1b); 65% of the respondents recommended that the passive treatment should be about 20 minutes at a time (Figure 1c) and 60% of the respondents recommended that the passive treatment last for the entire life of the patient (Figure 1a).

Table 3: Fourth round-the goals of the passive treatment for limbs and legs and their ranking according to the degree of agreement in the calculation of the alpha-Cronbach index.

alpha-Cronbach index n = 9	The variables
Maintaining ROM	0.89
Pain reduction	0.72
Creating a communicative interaction (verbal or non-verbal)	0.68
Giving a sensory experience (including superficial and deep feeling)	0.66
Improved range of motion	0.59
Giving a movement experience	0.54
Change in muscle tone	0.51
Cognition change	0.37
Improving well-being/enjoyment (well being)	0.37
Change in respiratory status	0.33
Change in physiological state (lower heart rate, increase in saturation levels)	0.30

ROM: Range of Motion

The variables were measured on a Likert scale

For question number 8 in the second round of questions (n = 15), to what extent do you agree/disagree with the following statements? "The passive treatment for the chronic nursing patient is effective", "The passive treatment for the chronic nursing patient is beneficial", 60% of the respondents (9/15) agreed and strongly agreed that the passive therapy is effective, and 66% (10/15) agreed or strongly agreed that the passive therapy is beneficial (Table 3 and Table 4).

Table 4: Fifth round-the main goals of the passive treatment.

alpha-Cronbach index n = 5	The variables
Maintaining ROM	0.92
Pain reduction	0.84
Creating a communicative interaction (verbal or non-verbal)	0.70
Improving well-being/enjoyment (well being)	0.70

ROM: Range of Motion

Discussion

The aim of the study was to check the degree of agreement between experts on the topic of passive treatment. For this purpose, a study of an expert survey was conducted, which to a certain extent was based on the Delphi method.

The passive treatment for various populations that are in an acute state of illness is quite different from the passive treatment given to a patient defined as a chronic nursing patient. The passive treatment of the chronic nursing patient is in disagreement among the clinical professional community. In principle, the passive

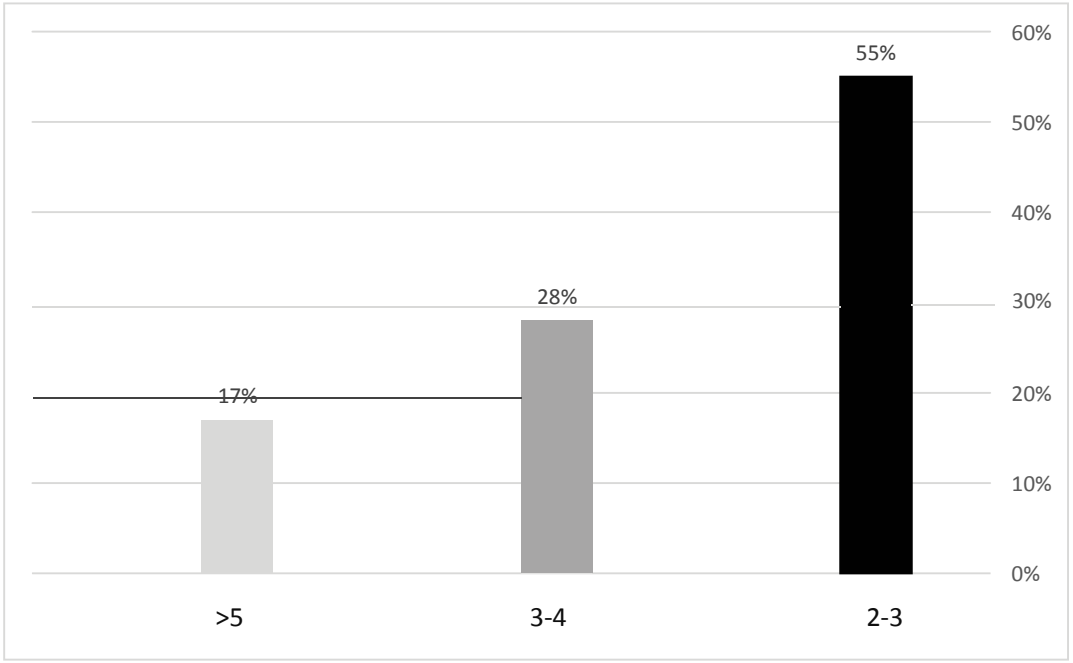

Figure 1b: Frequency of passive treatment (number of days per week) n = 9.

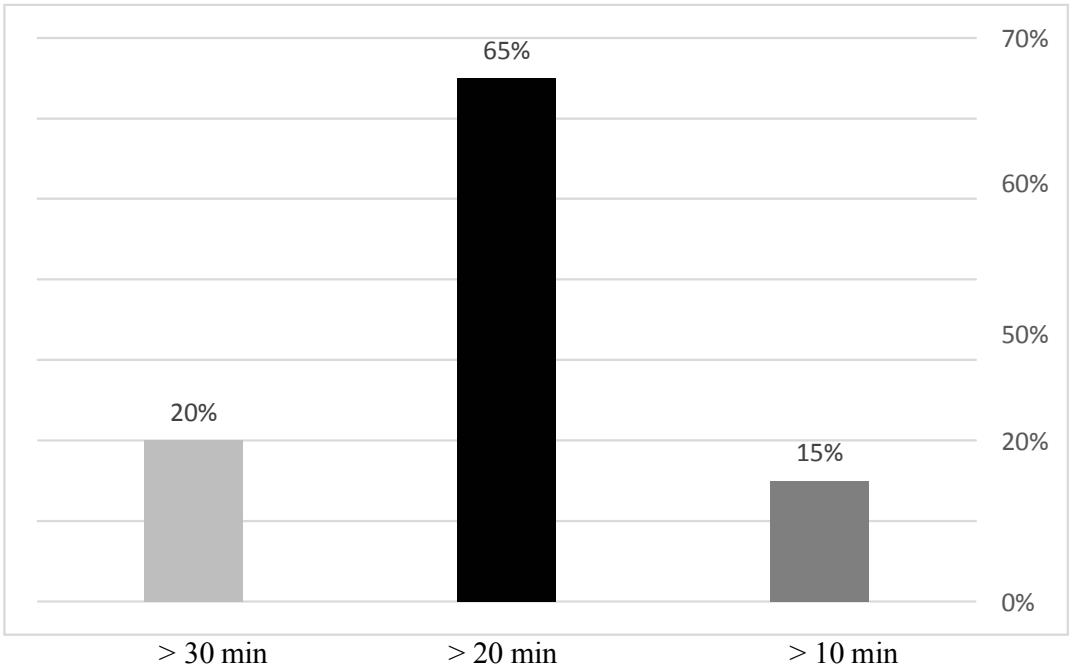

Figure 1c: How long should passive treatment be given (days, weeks, months) n = 9.

treatment has no functional purpose. It is designed to treat a movement limitation caused by impairment in the musculoskeletal system, sometimes as a side effect of abnormal muscle tone.

Since no agreement was found in the professional literature regarding the effectiveness and usefulness of passive treatment for the chronic nursing patient, the researchers turned to experts, who for the purpose of this study were defined as experts according to clear criteria, in the issue concerning various aspects of passive treatment. The researchers asked for the experts' comments on a number of concrete questions related to the effectiveness and usefulness of providing passive care to people defined as chronically nursing. The appeal to the experts was made through social networks and e-mail, after nine stages and five rounds agreement and disagreement between the experts was obtained on a number of issues.

In the professional literature, there is much evidence for the benefit of the treatment through passive movements, along with reservations regarding the benefit of such treatment. Wyart and his colleagues (2006) reported that passive treatment of children with spastic cerebral palsy did not improve range of motion or decrease muscle tone, but if it is accompanied by active treatment, it contributes to maintaining general flexibility and even functional improvement [20]. In a systematic literature review, it was found that passive therapy including stretching for stroke survivors prevents the creation of contractures. In a randomized controlled study, it was found that office workers, who receive passive therapy and do stretches for the soft tissues in the shoulder girdle and neck, reduce their pain level, improve upper limb function and quality of life [21,22]. Passive movements for the lower limb for patients with chronic obstructive pulmonary disease (COPD) in the legs of these patients also suffer from vascular disorders in the legs, improved blood circulation in the limbs [23]. Passive movements improved range of motion in a knee joint with osteoarthritis in elderly people [24].

The results of this study indicate the agreement among the experts that in order to maximize the passive treatment of a patient defined as chronic nursing, both in terms of the most correct utilization of personnel resources, time and money, and in terms of the benefit to the patient, it is desirable that the passive treatment be given by the nursing therapist or an auxiliary force in physical therapy. Such treatment should be given manually, two to three times each week and for the entire life of that patient.

In nursing institutions of the Ministry of Health as well as in sheltered dormitories of the Ministry of Welfare and nursing homes, the nursing care provider usually knows the patient very well; he knows his character and needs, and the hours of the day that they (the care provider and the patient) are most available for such care. Furthermore, the patient himself knows the therapist who is near him almost every day and for many hours, and from this it can be assumed that his response to the treatment will be good. If the nursing care provider cannot provide the passive treatment, for many different reasons, the workplace must assign a physical therapy assistant standard, part of whose job description is to provide passive care as is customary in the USA in the Physical Therapy Assistant training programs. Of course, this requires the physical therapist or the occupational healer guides, trains, inspects and monitors in a good and thorough way the auxiliary force in the way of performing the passive treatment.

The group of experts even specified a number of goals for passive treatment and recommended various methods defined as passive therapeutic measures. The goals of the treatment, on which there was a high degree of agreement, were maintaining range of motion, reducing pain, creating communicative interaction and experiencing sensory stimulation. Functional connectivity in the brain is created following tactile stimulation on the patient's skin accompanied by passive movements, which activate proprioceptive stimulation and thus create a basis for active movement [25]. In addition, there is evidence that sensory stimulation, through a therapeutic technique known as "body orientation" improves the feeling of well-being (well-being) of people and creates communication between mind, emotion and body [26].

In a randomized controlled study it was found that static stretches for the back muscles reduced chronic neck pain and thus improved quality of life [27]. Passive movements for the shoulder girdle and scapula region for patients after stroke improved active movement [28].

Among the methods for passive treatment, the experts mentioned the use of a static splint or a series of casts that are assembled mainly during the day, as well as a mechanical device for passive activation of the limb such as Continuous Passive Motion or Active Passive Trainer. These devices slowly move the limb when the patient is in bed or sitting in a chair. Disagreement between the experts was in the context of additional goals of the passive treatment. The three goals that were in disagreement were cognitive change, respiratory change and physiological change. However, Hengan and his colleagues showed in a systematic literature review that passive movements and muscle stretching improved respiratory functions in patients with COPD [29].

Iwane and his colleagues found that passive treatment of the forearm improves the contraction speed of the hand muscles, probably through proprioceptive afferent nerve conversions [30]. Although there is evidence in

the professional literature that passive treatment can improve respiratory and neurophysiological functions, the experts who participated in this study did not agree on this, and there may be room to do an RCT type study in the future to test the effect of passive therapy on neurophysiological abilities.

Anonymous and orderly application to a group of experts is a process for making decisions on a complex subject or a subject on which there is no unanimity, while taking advantage of the advantages of group discussion and maintaining anonymity, and while neutralizing cognitive biases created in the dynamics of a frontal discussion. The Delphi approach makes it possible to produce a focused and multi-stage process of gathering and gradually weighing expert recommendations until a consensus is reached. Structural survey among group of experts can lead to a better result on the subject being investigated than a quantitative research evaluation.

Limitations

Despite the various strengths of the expert survey, there are several limitations that must be clarified and taken into account when interpreting the findings. The main limitation is the process of locating and filtering the experts for the subject under investigation and getting their consent to take part in all the stages of the approach. Another limitation is the concentration of all applicants for discussion and brainstorming on the recommendations of the experts who arrived after each round of questions addressed to them.

The findings of the study should have implications both for medical policy makers, for setting priorities in the allocation of budgets, for the health professions that need to prepare for the orderly training of nursing care workers and auxiliary force for physical and occupational therapy, and for research and development personnel who need to prepare for the construction of advanced measures, such as robots, that can perform passive movements to bed bonds.

Conclusion

In order to clarify the effectiveness and usefulness of providing passive care to people defined as chronic nursing, we used an appeal to experts. The experts recommended that the effectiveness and usefulness depend on the fact that the passive treatment is given by a trained assistant or a nursing care provider. Such treatment should be given manually, two to three times each week and for the entire life of that patient.

Authors Declaration

All the authors whose names are listed above certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

Author Contribution Statements

All authors carried out the entire study: Conceived of the presented idea, developed the theory, performed the computations, verified the analytical methods, discussed the results and contributed to the final manuscript.

References

1. Goodman CM (1987) The delphi technique: A critique. J Adv Nurs 12: 729-734.
2. Keeney S, Hasson F, McKenna H (2006) Consulting the oracle: Ten lessons from using the delphi technique in nursing research. J Adv Nurs 53: 205-212.
3. Murphy MK, Black NA, Lamping DL, McKee CM, Sanderson CF, et al. (1998) Consensus development methods, and their use in clinical guideline development. Health Technol Assess 2: i-iv.
4. Rescher N (2006) The Berlin school of logical empiricism and its legacy. Erkenntnis 64: 281-304.
5. Jones J, Hunter D (1995) Consensus methods for medical and health services research. BMJ 311: 376-380.
6. Wiangkham T, Duda J, Haque MS, Rushton A (2016) Development of an active behavioral physiotherapy intervention (ABPI) for acute whiplash-associated disorder (WAD) II management: A modified delphi study. BMJ Open 6: e011764.
7. Atsumi T, Bae SC, Gu H, Huang WN, Li M, et al. (2023) Risk factors for pulmonary arterial hypertension in patients with systemic lupus erythematosus: A systematic review and expert consensus. ACR Open Rheumatol.
8. Verburg AC, van Dulmen SA, Kiers H, Nijhuis-van der Sanden MWG, van der Wees PJ (2019) Development of a standard set of outcome measures for non-specific low back pain in dutch primary care physiotherapy practices: A delphi study. Eur Spine J 28: 1550-1564.
9. Huisstede BMA, Hoogvliet P, Coert JH, Fridén J (2013) Dupuytren disease: European hand surgeons, hand therapists, and physical medicine and rehabilitation physicians agree on a multidisciplinary treatment guideline: Results from the handguide study. Plast Reconstr Surg 132: 964e-976e.
10. Milne N, Miao M, Beattie E (2020) The effects of serial casting on lower limb function for children with cerebral palsy: A systematic review with meta-analysis. BMC Pediatr 20: 324.
11. Jigjid E, Kawashima N, Ogata H, Nakazawa K, Akai M, et al. (2008) Effects of passive leg movement on the oxygenation level of lower limb muscle in chronic stroke patients. Neurorehabil Neural Repair 22: 40-49.
12. Harvey LA, Katalinic OM, Herbert RD, Moseley AM, Lannin NA, et al. (2017) Stretch for the treatment and prevention of contracture: An abridged republication of a cochrane systematic review. J Physiother 63: 67-75.
13. Lei Y, Bao S, Wang J (2016) The combined effects of action observation and passive proprioceptive training on adaptive motor learning. Neuroscience 331: 91-98.

14. Van de Pol RJ, van Trijffel E, Lucas C (2010) Inter-rater reliability for measurement of passive physiological range of motion of upper extremity joints is better if instruments are used: A systematic review. J Physiother 56: 7-17.

15. Pin T, Dyke P, Chan M (2006) The effectiveness of passive stretching in children with cerebral palsy. Dev Med Child Neurol 48: 855-862.

16. Freitas SR, Mendes B, Le Sant G, Andrade RJ, Nordez A, et al. (2018) Can chronic stretching change the muscle-tendon mechanical properties? A review. Scand J Med Sci Sports 28: 794-806.

17. Lévénez M, Theunissen S, Bottero A, Snoeck T, Bruyère A, et al. (2013) The effect of a passive stretch training protocol on performance during a drop jump in humans. J Sports Med Phys Fitness 53: 319-326.

18. Opplert J, Babault N (2018) Acute effects of dynamic stretching on muscle flexibility and performance: An analysis of the current literature. Sports Med 48: 299-325.

19. Coronado RA, Albers HE, Allen JL, Clarke RG, Estrada VA, et al. (2020) Pain-reducing effects of physical therapist-delivered interventions: A Systematic review of randomized trials among older adults with dementia. J Geriatr Phys Ther 43: 159-169.

20. Wiart L, Darrah J, Kembhavi G (2008) Stretching with children with cerebral palsy: What do we know and where are we going? Pediatr Phys Ther 20: 173-178.

21. Lecharte T, Gross R, Nordez A, Le Sant G (2020) Effect of chronic stretching interventions on the mechanical properties of muscles in patients with stroke: A systematic review. Ann Phys Rehabil Med 63: 222-229.

22. Tunwattanapong P, Kongkasuwan R, Kuptniratsaikul V (2016) The effectiveness of a neck and shoulder stretching exercise program among office workers with neck pain: A randomized controlled trial. Clin Rehabil 30: 64-72.

23. Ives SJ, Layec G, Hart CR, Trinity JD, Gifford JR, et al. (2020) Passive leg movement in chronic obstructive pulmonary disease: Evidence of locomotor muscle vascular dysfunction. J Appl Physiol 128: 1402-1411.

24. González-Ravé JM, Sánchez-Gómez A, Santos-García DJ (2012) Efficacy of two different stretch training programs (Passive vs. Proprioceptive Neuromuscular Facilitation) on shoulder and hip range of motion in older people. J Strength Cond Res 26: 1045-1051.

25. Nasrallah FA, Mohamed AZ, Campbell ME, Yap HK, Yeow CH, et al. (2019) Functional connectivity of brain associated with passive range of motion exercise: Proprioceptive input promoting motor activation? Neuroimage 202: 116023.

26. Price CJ, Hooven C (2018) Interoceptive awareness skills for emotion regulation: Theory and approach of mindful awareness in body-oriented Therapy (MABT). Front Psychol 9: 798.

27. Cunha ACV, Burke TN, França FJR, Marques AP (2008) Effect of global posture reeducation and of static stretching on pain, range of motion, and quality of life in women with chronic neck pain: A randomized clinical trial. Clinics 63: 763-770.

28. Ratanapinunchai J, Mathiyakom W, Sungkarat S (2019) Scapular upward rotation during passive humeral abduction in individuals with hemiplegia post-stroke. Ann Rehabil Med 43: 178-186.

29. Heneghan NR, Adab P, Balanos GM, Jordan RE (2012) Manual therapy for chronic obstructive airways disease: A systematic review of current evidence. Man Ther 17: 507-518.

30. Iwane F, Lisi G, Morimoto J (2019) EEG Sensorimotor correlates of speed during forearm passive movements. IEEE Trans Neural Syst Rehabil Eng 27: 1667-1675.