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**Programa de Pós-graduação em Reabilitação e Desempenho Funcional**

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**DEFININDO HABILIDADES, INTERVENÇÕES E FORMATOS DE ENTREGA  
PARA O AUTOGERENCIAMENTO DA DOR DE COLUNA IDIOPÁTICA:  
RESULTADOS DE UM ESTUDO DELPHI MODIFICADO**

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Dissertação apresentada ao Programa de Pós-graduação em Reabilitação e Desempenho Funcional da Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM) como requisito para obtenção do título de Mestre.

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Dissertação apresentada ao PROGRAMA DE PÓS-GRADUAÇÃO EM REABILITAÇÃO E DESEMPENHO FUNCIONAL, nível de MESTRADO da Universidade Federal dos Vales do Jequitinhonha e Mucuri, como requisito parcial para obtenção do título de MESTRE EM REABILITAÇÃO E DESEMPENHO FUNCIONAL.

Orientador: Prof. Dr. Vinícius Cunha de Oliveira

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**Diamantina**

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“Está mais do que na hora de o foco da saúde pública estar voltado para o autocuidado, em vez de apenas pensar na saúde da porta do hospital pra dentro”. Márcio Atalla

## RESUMO

O objetivo deste estudo Delphi-modificado foi chegar a um consenso na definição das habilidades, intervenções e formatos de entrega aceitáveis para o autogerenciamento no tratamento da dor de coluna idiopática. Foram convidados especialistas em dor de coluna. O estudo foi conduzido em três etapas. Na primeira, os participantes receberam por e-mail um questionário contendo uma lista de potenciais itens para definir autogerenciamento e deram sua opinião a respeito de cada item por meio de uma escala Likert de cinco pontos (1:concordo totalmente; 2:concordo; 3:nem concordo nem discordo; 4:discordo; 5:discordo totalmente). O questionário apresentou três partes específicas: definição das habilidades essenciais para autogerenciamento, intervenções e formatos de entrega utilizados para otimizar autogerenciamento da dor de coluna. Os participantes poderiam sugerir modificações para os itens existentes ou propor novos itens. Os itens que alcançaram uma mediana de até dois em cinco, foram incluídas na segunda etapa. Ao questionário foram acrescentados novos itens provenientes dos comentários para compor a terceira etapa. A terceira etapa foi semelhante à segunda e os itens que alcançaram a mediana proposta formaram o conceito final. Cinquenta e oito especialistas de cinco continentes participaram de pelo menos uma das etapas, sendo que 26 deles responderam à terceira etapa. O consenso alcançado definiu as habilidades essenciais para autogerenciamento em dor de coluna como: o conhecimento dos indivíduos a respeito de sua condição, o impacto da dor de coluna e opções de cuidado; a responsabilidade individual no plano de cuidado e no auto monitoramento e gerenciamento de seu potencial impacto; o aprendizado individual e a confiança nos serviços de suporte. Além disso, estratégias comportamentais e exercícios podem ser utilizadas por profissionais de saúde em diferentes formatos para aperfeiçoar a autonomia do indivíduo, quando for necessário. Um processo de aprendizado individualizado deve ser adicionado, se for necessário. Concluindo, um consenso a respeito das habilidades necessárias, intervenções e formatos de entrega para o autogerenciamento da dor de coluna idiopática foi alcançado com foco na autonomia do paciente. A intervenção principal é o aprendizado individual, e a principal forma de garantir isto deve ser o acompanhamento com retornos periódicos. Esta definição poderá guiar futuras pesquisas investigando a efetividade do autogerenciamento, e suas recomendações na prática clínica.

**Palavras-chave:** Dor de coluna, Auto-cuidado, Auto-gerenciamento, Método Delphi.



## ABSTRACT

The purpose of this Delphi-modified study was to reach consensus on the self-management skills, interventions and delivery formats for non-specific spinal pain treatment. International experts in spinal pain were invited. The study was conducted in three stages. In the first, the participants received a questionnaire by email containing a list of potential items to define self-management and gave their opinion on each item using a five-point Likert scale (1: totally agree; 2: agree; 3: neither agree nor disagree; 4: disagree; 5: totally disagree) and a field for comments. The questionnaire had three specific parts: essential skills to management spinal pain, interventions and formats used to optimize the self-management of back pain. Participants could suggest modifications to existing items or propose new items. Items that reached a median of up to two in five were included in the second stage. The second stage consisted of items with a median of up to two in five with the comments from participants. The third stage was similar to the second and the items that reached the proposed median made up the final concept. Fifty-eight experts from five continents participated of at least one of the stages and twenty-six answered the third round. The consensus reached defined self-management in spinal pain, such as: the knowledge of patients about their condition, the impact of spine pain and care options; individual responsibility in the care plan and in self-monitoring and managing its potential impact; individual learning and confidence in support services. In addition, behavioral strategies and exercises can be used by health professionals in different formats to optimize the patient's autonomy, when necessary. An individualized learning process should be added, if necessary. In conclusion, a consensus on the definition of self-management skills for non-specific spine pain has been reached with focus on autonomy. The main intervention is the individual learning, and the main way to guarantee this must be the follow-up with periodic returns in short and med-term. This definition may guide future research investigating the effectiveness of self-management, and its recommendations in clinical practice.

**Key words:** Spinal pain, Self-care, Self-management, Delphi method.

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## 1. INTRODUÇÃO

### 1.1. Definição e epidemiologia

A dor de coluna é uma condição que pode resultar de vários fatores conhecidos ou desconhecidos (HARTVIGSEN *et al.*, 2018). É altamente prevalente em todo o mundo, experimentado por pessoas de todas as idades (LEOPOLDINO *et al.*, 2016; HARTVIGSEN *et al.*, 2018). Há relatos de dor nos diferentes seguimentos da coluna. A dor lombar é localizada entre a décima segunda costela e a linha glútea (DEPINTOR *et al.*, 2016), enquanto que a dor cervical é a dor localizada entre a borda inferior do osso occipital e a espinha da escápula (DEPINTOR *et al.*, 2016). Já a dor torácica ocorre na parte posterior do tórax entre as primeiras vértebras torácicas e o contorno superior do músculo trapézio até a décima segunda vértebra torácica e borda inferior da décima segunda costela (DEPINTOR *et al.*, 2016).

A dor de coluna pode ser classificada de acordo com suas causas em radicular, idiopática ou específica. Denomina-se dor radicular quando ocorre devido à compressão de raiz nervosa, dor específica quando ocorre devido a um motivo específico como inflamações, presença de tumor, gravidez, trauma, entre outros (CASIANO; DYDYK; VARACALLO, 2020) e idiopática quando a causa da dor não pode ser determinada (MAHER, 2016). Atualmente, a maioria dos casos é classificado como dor de coluna idiopática (CHILDS *et al.*, 2008; BALAGUÉ *et al.*, 2012; KRISMER e TULDER, 2007). A dor de coluna idiopática pode ser causada por uma interação de fatores biológicos, psicológicos e sociais que prejudicam a funcionalidade (HARTVIGSEN *et al.*, 2018). Geralmente, as pessoas acometidas são aquelas que apresentam dores concomitantes em outras partes do corpo e condições de saúde física e mental mais gerais em comparação com pessoas que não possuem dor de coluna (HARTVIGSEN *et al.*, 2018).

Esta condição é uma das maiores causas de incapacidade na população mundial (CHILDS *et al.*, 2008; MURRAY *et al.*, 2015; SZITA *et al.*, 2018), tendo, portanto, um impacto significativo na qualidade de vida e produtividade do indivíduo (WADDELL, 1987; SZITA *et al.*, 2018). Estudos prévios estimaram que somente a dor lombar é responsável por uma prevalência mundial de 23,2% (HOY *et al.*, 2012; CHHABRA *et al.*, 2018), um número de aproximadamente 630 milhões de pessoas (CHOU *et al.*, 2007). Após um novo episódio

de dor de coluna, infelizmente, há um alto índice de recorrência, sendo considerada a principal causa de limitação de atividades e absenteísmo no mundo (CHILDS *et al.*, 2008; DU *et al.*, 2017). Além disso, dispõe de frequente demanda aos serviços de saúde e dos benefícios por afastamento do trabalho, gerando altos custos para o sistema de saúde pública (TULDER, 2006).

No Brasil, estima-se que a dor de coluna atinja 22% a 50% da população, o que coloca em alerta clínicos, pesquisadores e formuladores de políticas de saúde (Carregaro,2019). Na Pesquisa Nacional de Saúde de 2019, 21,6% (34,3 milhões) dos entrevistados de 18 anos ou mais de idade referiram problema crônico de coluna no Brasil (PNS- IBGE, 2019). Os dados apresentados trazem à tona a importância de um olhar apurado sobre a dor de coluna no Brasil.

## **1.2 Abordagens para prevenção e tratamento da dor de coluna idiopática**

A evidência disponível para endossar práticas de prevenção da dor de coluna ainda é muito limitada. Segundo Foster e colaboradores (2018), seria necessário um esforço conjunto dos pacientes, gestores de políticas públicas, médicos e pesquisadores para que esta lacuna fosse preenchida de forma sólida. Atualmente, os esforços têm se concentrado em prevenir a ocorrência da novos episódios incentivando os pacientes a manter um estilo de vida ativo, tomar medidas saudáveis de controle do estresse, evitar o etilismo e o tabagismo e zelar por uma boa qualidade do sono. Sendo estes os principais fatores de risco modificáveis da dor de coluna, parece razoável que sejam também os principais pontos de cuidado para a prevenção (CASIANO; DYDYK; VARACALLO, 2020). As estratégias de prevenção devem ser potencialmente replicáveis e econômicas.

Para um tratamento efetivo, faz-se necessário interromper o ciclo de dor durante a fase aguda, incentivar o indivíduo a não se afastar do trabalho, permanecendo neste de forma ativa. O controle da obesidade é primordial e a atuação de uma boa equipe multi-profissional associada a uma educação eficiente ao paciente para que se envolva de forma ativa no tratamento pode quebrar este ciclo e movê-lo em direção a uma rápida recuperação (FOSTER,2018; CASIANO; DYDYK; VARACALLO, 2020).

São amplas as possibilidades de abordagem de tratamento em pessoas com dor de coluna (AIRAKSINEN *et al.*, 2006; MAHER, UNDERWOOD, BUCHBINDER, 2017;

DELITTO *et al.*, 2012; CHOU *et al.*, 2017; STAAL *et al.*, 2013; Van TUNDER *et al.*, 2006), sendo que para definir a intervenção mais adequada para cada paciente é importante avaliar a duração da dor e o prognóstico (BARDIN, KING, MAHER, 2017). As diretrizes clínicas para gerenciamento dos pacientes com dor aguda recomendam fortemente que os profissionais orientem seus pacientes de maneira efetiva, ressaltando a importância de se evitar o repouso e incentivando a prática de atividades físicas, orientando quanto aos mecanismos de percepção e prognóstico da dor a fim de evitar os fenômenos de medo e catastrofização em relação a dor, reduzindo também as crenças limitantes. Algumas intervenções clínicas indicadas são manipulação ou mobilização vertebral para pacientes com déficit de mobilidade, tratamento multidisciplinar e uso de relaxantes musculares e anti-inflamatórios (MAHER, UNDERWOOD, BUCHBINDER, 2017; DELITTO *et al.*, 2012; CHOU *et al.*, 2017; STAAL *et al.*, 2013; Van TUNDER *et al.*, 2006). Em relação ao tratamento de pessoas com dor de coluna crônica, as diretrizes clínicas recomendam a inserção em terapias cognitivo-comportamentais, tratamento multidisciplinar, intervenções educacionais, manipulação ou mobilização articular, massagem ou terapias térmicas de curta duração, acupuntura, atividades que minimizem o estresse (*yoga* e meditação), antidepressivos e opioides (AIRAKSINEN *et al.*, 2006; Van TUNDER *et al.*, 2006; DELITTO *et al.*, 2012; MAHER, UNDERWOOD, BUCHBINDER, 2017; CHOU *et al.*, 2017; RESENDE *et al.*, 2017; LOHMAN *et al.*, 2018). Terapias com exercícios supervisionados também podem ser realizados em casa e tem se mostrado eficazes na redução da dor e da incapacidade (HAYDEN *et al.*, 2005; Van MIDDELKOOP *et al.*, 2010; ZRONEK *et al.*, 2013). Além disso, diretrizes clínicas para dor de coluna reconhecem a necessidade de mudanças em seu manejo e sugerem o autogerenciamento como alternativa (CHOU *et al.*, 2007; OLIVEIRA *et al.*, 2012).

### **1.3 Autogerenciamento para dor de coluna idiopática**

O autogerenciamento é um tipo de assistência capaz de promover certa independência aos pacientes, possibilitando que eles aprendam habilidades e a monitorar o próprio estado de saúde, o dia a dia e a tomada de decisões (GERAGHTY *et al.*, 2018). A partir deste tipo de tratamento, modelos centrados em um profissional de saúde ou com foco no próprio sistema de saúde têm dado lugar a uma maior promoção da autonomia (NICHOLL *et al.*, 2017).

Revisões e diretrizes recomendam o autogerenciamento como uma opção eficaz no tratamento da dor de coluna idiopática. A revisão sistemática de Nkhata *et al.* (2019) objetivou avaliar campanhas educativas para dor de coluna, os resultados e eficácia destas campanhas. Após a avaliação de cinco estudos, concluíram que a campanha para uma vida a mais ativa possível obteve melhores resultados, levando os autores a recomendarem estratégias independentes como o autogerenciamento. Barbari *et al.* (2019) encontraram evidências de que uma abordagem on-line de autogerenciamento foi superior ao placebo para pacientes com dor de coluna, o que pode ser um formato interessante em tempos de isolamento social. Outro grupo de pesquisadores realizou um ensaio clínico randomizado para verificar se um programa educacional e de exercícios baseado no método McKenzie e enfatizando o autogerenciamento seria capaz diminuir a recorrência da dor lombar e concluíram que, apesar de a intervenção não ter sido estatisticamente superior ao controle na diminuição da recorrência, houve uma diminuição significativa na procura por cuidados, o que sugere que um possível autogerenciamento nos momentos das crises pode impedir a procura imediata por um profissional (CAMPOS, 2020). A Sociedade Norte Americana de Coluna publicou no ano de 2020 as diretrizes clínicas baseadas em evidência para o tratamento da dor lombar. As diretrizes recomendam as escolas de coluna, exercícios aeróbicos com trabalho vigoroso para promover retorno ao emprego, diminuição da dor e incapacidade dos pacientes. Estas atividades recomendadas são citadas como autogerenciamento (NASS, 2020).

Não há cura conhecida para a dor de coluna e os tratamentos disponíveis, mesmo em variedade, não proporcionam grandes efeitos no alívio da dor e na melhora da incapacidade (GERAGHTY *et al.*, 2018; NASS, 2020). Além das citadas acima, as intervenções identificadas como autogerenciamentos indicados na literatura incluíram o uso de cartilhas, aconselhamento e intervenções ativas realizadas em diferentes formatos (BARBARI *et al.*, 2019; NKHATA *et al.*, 2019). Neste sentido, o autogerenciamento mostra-se uma alternativa eficaz para a mudança de abordagens passivas para ativas, aumentando a autonomia do indivíduo e reduzindo o custo para o manejo da dor de coluna (BARBARI *et al.*, 2019; NKHATA *et al.*, 2019). Por isto o autogerenciamento tem se apresentado como uma estratégia importante para fornecer aos profissionais e aos pacientes uma abordagem de responsabilidade compartilhada e mais centrada no indivíduo com dor.



#### **1.4 Definição de autogerenciamento de dor de coluna**

Uma revisão sistemática de ensaios clínicos controlados e randomizados encontrou inconsistência na definição das habilidades relacionadas ao autogerenciamento, possíveis intervenções e formatos de entrega para sua otimização. Tal definição pode resolver uma inconsistência de longa data na literatura. Um consenso sobre definições e formatos pode impactar positivamente a forma como a intervenção é implementada, melhorando a compreensão dos profissionais e, conseqüentemente, aumentando as chances de sucesso durante o tratamento da dor de coluna idiopática (OLIVEIRA *et al.*, 2012).

Parece claro que há necessidade de consenso sobre as habilidades relacionadas ao autogerenciamento para dor de coluna idiopática, possíveis intervenções e formatos de entrega para sua otimização a fim de melhorar sua implementação na prática clínica e diminuir a inconsistência em estudos futuros. Assim sendo, o objetivo desse estudo Delphi foi alcançar consenso entre especialistas em dor de coluna idiopática (clínicos e/ou pesquisadores) sobre as habilidades necessárias para o autogerenciamento da dor de coluna idiopática, intervenções e formas de entrega para sua otimização.

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## 2. ARTIGO CIENTÍFICO

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### **Defining skills, interventions and delivery formats for self-management of non-specific spinal pain: results of a modified Delphi study**

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## **Defining skills, interventions and delivery formats for self-management of non-specific spinal pain: results of a modified Delphi study**

**Background:** Self-management skills, interventions and delivery formats differ in literature. **Purpose:** This modified-Delphi study aimed to reach consensus on the self-management skills, interventions and delivery formats for spinal pain. **Methods:** International experts were invited to participate. In the first round, participants were e-mailed a survey containing a list of potential self-management elements and gave their opinion about each item with a 5-point Likert scale. Sections of the survey: essential skills, interventions and formats of delivery used to self-management of spinal pain. Participants could also suggest modifications to existing items or propose others. **Results:** Fifty-eight experts from five continents participated. The reached consensus defined self-management of non-specific spinal pain as: patients' knowledge of the condition, its impact and management options; personal responsibility for a plan of care and for self-monitoring and management; participation in health activities; management of its potential impact; and knowledge and confidence about support services. Individualized learning may be used as intervention in different delivery formats to improve patient's autonomy. **Conclusion:** Consensus about self-management skills for non-specific spinal pain was reached and patient's autonomy can be considered as central. This definition will guide future self-management researches and its recommendations in clinical practice.

**Keywords:** spinal pain; self-care; self-management; Delphi method;



## **Introduction**

Spine pain is a condition resultant from body changes or other diseases (Hartvigsen et al., 2018). Is highly prevalent worldwide (Leopoldino et al., 2016, Hartvigsen et al., 2018), and different approaches like exercises or education, have been proposed to manage the high individual and public health costs caused by this condition (Foster et al., 2018, Ferreira et al., 2019). The prevalence of low back pain in industrialized societies ranges from 60% to 85% (Chhabra et al., 2018) and together with cervical pain, it represents the fourth leading cause of dysfunction in the world population (Murray et al., 2015, Szita et al., 2018). It has a high recurrence rate, being considered the main cause of activity limitation and absenteeism in the world. When in chronic phase, back pain imposes a high economic burden on individuals, representing 75% to 90% of social costs (Du et al., 2017). One of the reasons why this condition is so expensive might be its association with depression, anxiety, among other problems (Oliveira et al., 2018).

Clinical guidelines for spinal pain recognize the need for changes in its management and suggest self-management as an alternative (Chou et al., 2007). Self-management is referred as a type of assistance, capable of promoting certain independency in patients, enabling them to learn skills and to monitor their own health condition, daily life and decision making (Geraghty et al., 2018). It can be an effective way of shifting from passive to active approaches, improving patient's autonomy and reducing costs with management of spinal pain (Von Korff et al., 2005, Chou et al., 2007).

Despite the high prevalence of non-specific spinal pain in global society, the recommended treatments have presented modest effects (Geraghty et al., 2018) and there are no known healing for its chronic form and the available passive treatments, even in variety, do not provide great effects for pain relief and the function improving (Geraghty et al., 2018).

Interventions actually identified as self-management included the use of leaflets; counselling; active interventions delivered in different formats (Von Korff et al., 2005, Chou et al., 2007); booklets (Kreiner et al., 2020); advice and information (Maher et al., 2017) and digital support interventions (Nicholl et al., 2017).

In a qualitative survey applied in the Hutting and collaborators study (2020), some professionals consider self-management something that the patients can do by themselves (e.g. exercises or physical activities) others talked about patients taking responsibility for their complaints, knowledge about pain and implementation of health behaviour for prevention of recurrence. Moreover, others mentioned self-management skills like self-treatment of trigger points, self-massage or resources that patients could do by themselves (Hutting et al., 2020).

With this great number of possible interventions, it seems logical that there is a need for consensus on the self-management skills, interventions and delivery formats used by health professionals in spinal pain subject, in order to improve its implementation in clinical practice and decrease inconsistency in future studies. This definition is important to best support clinicians and patients with a more patient-centred or shared-responsibility approach. Besides this, it can solve the mentioned long-standing inconsistency in literature about the skills, interventions and delivery formats of self-management for nonspecific spinal pain. A consensus can positively impact the way in which the intervention is implemented, improving the understanding of clinicians and, consequently, increasing the chances of success during treatment for non-specific spinal pain.

The aim of this Delphi study was to define self-management skills for non-specific spinal pain, acceptable interventions and formats of delivery to its improvement through consensus among experts in spinal pain subject.

## **Materials and methods**

### ***Delphi procedure***

We used a modified Delphi approach in this study (Hasson et al., 2000) to reach consensus. This research method conducted via e-mail improves the possibility of concealment, minimizes the influence on respondent's opinions, and allows feedback with more than one round, comments and suggestions (Awang et al., 2016). The design of this survey did not require face to face contact with participants and facilitated a heterogeneous recruitment in different geographic locations. It is recommended as the appropriate methodology when there is lack of agreement, incomplete knowledge, uncertainty or lack of evidence for a particular subject (Schenkman et al., 2009). Therefore, we consider the choice of this Delphi approach appropriate.

### ***Selection of participants***

This study included a convenience sample composed by international experts, who participated as guests in the 2011 International Back Pain Forum in Melbourne, Australia. Active researchers in spinal pain (i.e., authors of at least one paper/year on spinal pain), and/or experienced clinicians that worked in the subject for the last five years were invited to participate. As inclusion criteria, participants had to understand English. All individual participants who accepted to participate provided an Informed consent. The number of participants expected for this study was 40 participants. The project was approved by the Ethics Committee of the University of Sydney (i.e., protocol 15010).

### ***First round survey***

For the first-round survey, we captured all essential self-management skills, interventions and delivery formats identified in a broad literature search to improve this approach in spinal pain. This search occurred in 2011 and the survey included those concepts identified in systematic

review investigating effectiveness of self-management of non-specific spinal pain (Berwick et al., 1989, Von Korff et al., 2005, Lamb et al., 2010).

Definition criteria included in the first-round survey comprised the essential self-management skills of non-specific spinal pain (e.g., patient's knowledge, shared responsibility, and management of the impact of spinal pain on physical functioning, personal and emotional relationships). Interventions comprised psychological and educational strategies, and exercises used to improve self-management of non-specific spinal pain. Formats of delivery included methods of delivery (i.e., remote or in person) and tutoring (i.e., led by an allied health professional, trained lay person or a team), duration of follow up (i.e., less than a year and more than 1-year), number of sessions (i.e., up to 6 and over 6) and settings (i.e., instructed to use strategies in community and occupational or healthcare settings). See Table 1 for the list of items included in the first-round survey.

**[TABLE 1 NEAR HERE]**

The survey was formulated into three sections (essential skills, interventions and delivery formats used to self-manage spinal pain) with a 5-point Likert scale (1-Strongly agree, 2-Somewhat agree, 3-Neither agree nor disagree, 4-Somewhat disagree and 5-Strongly disagree) for each item. The Likert scale ensures that respondents participate in an assertive way (Joshi et al., 2015).

Participants were contacted and e-mailed the first-round survey with the compiled list of essential self-management skills, acceptable interventions and delivery formats using the Research Electronic Data Capture "REDCap" version 6.16.3, a research tool for building and managing online surveys (Awang et al., 2016). Survey participants considered whether each item constituted part of the self-management skills for spinal pain, and its potential

interventions and formats of delivery (used as self-management approaches). They could also add comments and suggest new items.

After this first round of the study, it was interrupted for personal reasons of the authors and it was resumed in 2018 performing the necessary bibliographic update and taking into account any new concepts when moderating participants' comments.

### ***Second and third rounds***

Participants' responses to the first- and second-round surveys were scored by the study authors. Items with a median score of at least 2 on the 5-point Likert scale (i.e., strongly agree and agree) were retained for the next Delphi round. Their suggestions for new items for skills, interventions and formats were also accommodated in the next round. This procedure was repeated for the third round (the final one).

### ***Final decisions to define self-management for non-specific spinal pain, and acceptable interventions and formats used to its improvement***

The final decision concerning self-management skills, interventions and formats of delivery was obtained from the third round. Responses from the third round were scored, and items with a median score of at least 2 on the 5-point Likert scale were considered to constitute consensus on the items that defined the self-management skills for non-specific spinal pain, its interventions and formats of delivery.

## **Results**

### ***Participants***

Of the 156 participants of LBP Forum invited to participate, 58 consented to participate of this study (40 males, 68%). Respondents were from five continents (i.e., Africa, Asia, Europe, Oceania and America), including 14 different countries (Australia, Brazil, Ghana, Kingdom of

Saudi Arabia, Denmark, Netherlands, Norway, Sweden, United States, United Kingdom, Ireland, Switzerland, Canada, New Zealand). Their mean age was 48.0 (SD=9.4) years old, and they worked as clinicians (n=12, 20.6%), researchers (n=13, 22.4%) or both (n=34, 58.6%). The mean duration working in the spinal pain subject was 19.5 (SD=7.4) years. A flowchart of the response rate in each of the three rounds is presented in **Figure 1**.

**[FIGURE 1 NEAR HERE]**

### *Consensus*

The initial survey (**Table 1**) comprised items separated into the three sections related to self-management skills, its acceptable interventions and formats of delivery. After the first round, the compiled list was modified (see **Table 2**). The final list constituting the consensus definition of self-management for non-specific spinal pain, better interventions and formats of delivery to its improvement was presented in **Table 3**.

**[TABLE 2 NEAR HERE]**

**[TABLE 3 NEAR HERE]**

### **Discussion**

This Delphi approach reached consensus on the definition essential self-management skills for non-specific spinal pain, better interventions and formats of delivery to its improvement. Participants with clinical and research expertise, from many cultural backgrounds built this definition by assessing a broad list of items identified in the literature, adding comments and suggestions. These results will allow to clarify inconsistencies found in previous studies (Oliveira et al., 2012) and to establish recommendations for the clinical implementation of the

approach.

Regarding the consensus reached by the experts, the essential self-management skills are concerned with ensuring patient's autonomy (Koponen et al., 2017), but the need for autonomy is not consistent in the literature. Some trials have emphasized the importance of patient's autonomy related to their own health to promote self-efficacy and physical activity (Damush et al., 2003, Von Korff et al., 2005, Schenkman et al., 2009, May, 2010), among other things (Damush et al., 2003, Strong et al., 2006); however, Chou et al (2007) raised the need of therapeutic assistance in a self-management approach (Chou et al., 2007). Reached consensus identified that patient's may present autonomy and ability to deal with their spinal pain when essential contents are present. When it is not, contents should be improved using one or more of the interventions, in many different formats.

There was agreement on the acceptable interventions and delivery formats of a self-management approach to improve patient's autonomy, including: learning; counselling; and health promotion focused on the patient needs. In this context, formats such as books, leaflets, videotapes and other resources make sense as an approach only if their application targets specific needs. Identified interventions may help people to learn how to self-manage their spinal pain and to search health care when needed (Buchbinder et al., 2018). Another acceptable intervention was an effective explanation of the pros and cons of a range of strategies during exacerbation and remission to avoid those harmful ones (Chou et al., 2007).

For the delivery format of a self-management approach, participants reached consensus that any format alone or combined for provision of self-management may be appropriate. We consider an appropriate format to be the identification of potential methods to improve self-management of non-specific spinal pain. Participants agreed that it is not an essential criterion since there are many different formats to deliver the self-management

approach. For instance, depending on patient's needs, individualized educational material may be delivered by a health care professional or team of professionals, in person or remotely, in group or not. Follow-up sessions are advised for reinforcement of patient's autonomy, mainly at the short-term. This format is consistent with previous recommendations. Bussières et. al. ( 2018 ) showed that reinforcement enables the monitoring of patient progression of self-management, discouraging the use of harmful treatments (Bussieres et al., 2018).

Some authors suggest that the health professional support is critical to effective self-management, with mentorship or coaching process performed on an active, responsible, informed and autonomous way. This suggestion is consistent with the agreed statements in the present study relating to acceptable interventions of self-management of non-specific spinal pain (Bussieres et al., 2018). Consistent with our findings, a previous study indicated that being active, having good health literacy and appropriate attitudes (e.g., morality) constitute part of the concept of self-management (Ellis et al., 2017). Moreover, this study suggested that self-management is a dynamic process, and its success depends on the chosen interventions and formats (e.g., follow up).

The current study only included researchers and clinicians and did not seek opinion from consumers. Ellis and collaborators investigated the concept of "good self-management" from the consumers', consumers' relatives and health professionals and showed that they share the understanding that "good" self-management occurs when the patient is engaged in the professional's self-management strategies (Ellis et al., 2017). However, the concept of self-management does not seem to be clear, which makes it difficult to understand should be considered a "good" self-management. Moreover, the opinion from policymakers may also be important but it is still unclear. In the future studies, updates may be done to comprise their opinions as well.



We believe that our participants represented the area of spinal pain because they were clinicians (20.6%), researchers (22.4%) or both (58.6%) from 15 different countries (all continents), with mean duration of practice in the spinal pain subject of 19.5 years. Maybe the small number of participants in third round (26) in comparison to the initial number (156) can be considered a potential limitation of this study. The main reason probably was the long-time in-between rounds (six years). However, the final sample was composed by participants from 12 countries, not meaning loss in representativeness. Beyond this, some studies with a small number of participants obtained significant results and deserve to be cited. (Fox et al., 2016) reached a consensus in diagnostic criteria for no paraneoplastic autoimmune retinopathy with the help of 17 experts.

The study of (Bao et al., 2020) counted on 23 participants to obtain a consensus on interventions for reducing blood loss and transfusion in open myomectomy, and the (Alrajhi and Alsaawi, 2019), counted on 25 collaborators and identified the core elements essential for an emergency department physician to physician handoff. Beyond this, there was an attempt to solve the potential limitation by sending four weekly reminders to participants in each round. Other potential limitation was the interruption of this study for seven years. Despite the impossibility of to change this, a robust revision and new actualization of the literature was done and taken into account in moderation of each round.

## **Conclusion**

After the three rounds of the modified Delphi study, a consensus was reached on the definition of the essential self-management skills in non-specific spinal pain, interventions and different delivery formats for these interventions. The patient autonomy can be treated as the main skill and, so that this autonomy is achieved effectively, the main intervention indicated by panelists was the individual learning. The options of delivery formats don't need

to be listed, due to their large number, but it is a consensus that the mid-term and long-term follow up should be conducted until patient and clinician agree with the definitive discharge. These results can be explored by clinicians to improve the management and researchers to guide other studies and health politics. In the future, it is necessary to investigate the effectiveness of each format found in the literature, to promote increasingly solid recommendations.

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#### **Conflict of interest**

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**Table 1.** First-round survey mailed to participants

---

*Essential self-management skills for non-specific spinal pain \**

Individuals' knowledge of their condition and management options

Individuals' shared responsibility for a plan of care

Individuals' participation in health activities

Individuals' self-monitoring and management of signs and symptoms

Individuals' management of impact on physical functioning, emotional and personal relationships

Individuals' confidence in use of support services

---

*Interventions used to self-manage spinal pain\*\**

Educational material (i.e., leaflets, books, videotapes and other audiovisual resources) comprised of information about simple anatomy and how spinal pain is generated

Educational material showing evidence-based treatment approaches emphasizing independent strategies such as general exercises (i.e., aerobic, stretching and strengthening exercises) and lifestyle modification

Educational material emphasizing independent strategies for coping with emotional and interpersonal problems often accompanying chronic illness (behavioral strategies)

Educational material showing interactive aspects, encouraging individuals to list the movements or positions that increase their pain, asking to identify positions in which they are most comfortable with suggestions and encouraging activities

In person advice, reassurance and emphasis that is safe to move and to use the back without restriction

Supervised behavioral therapy

Supervised exercise including general exercises, motor control exercises and extension exercises such as the McKenzie approach

---

*Formats of delivery used to self-manage spinal pain\*\*\**

Educational material mailed

Educational material provided in person

In person group discussion

Remote group discussion (e.g., internet)

Led by a trained clinician

Led by a trained person (not allied health professional)

Team consisting of allied health professionals



Instruction mailed without follow-up session

Instruction in person with as many follow-up sessions as individual requires within short-term follow-up (less than a year)

Instruction in person with as many follow-up sessions as individual requires within long-term follow-up (at least a year)

A small number of supervised treatment sessions (i.e., from 1 to 6) within short-term follow-up (less than a year)

A small number of supervised treatment sessions (i.e., from 1 to 6) within long-term follow-up

A moderate number of supervised treatment sessions (i.e., from 7 to 13) within short-term follow-up (less than a year)

A moderate number of supervised treatment sessions (i.e., from 7 to 13) within long-term follow-up (at least a year)

An approach with over 13 supervised treatment sessions (i.e., over 13) within short-term follow-up (less than a year)

An approach with over 13 supervised treatment sessions (i.e., over 13) within long-term follow-up (at least a year)

Instructed to use strategies such as general exercise in the community and occupational settings

Instructed to use strategies such as general exercise in medical settings

---

\*All skills must be fulfilled to consider self-management of spinal pain

\*\*The number of interventions used to self-manage spinal pain may vary depending on individual's needs

\*\*\*There are many different formats of delivery and these are some options

**Table 2.** Second-round survey mailed to participants

---

*Essential self-management skills for non-specific spinal pain \**

Individuals' knowledge of the condition, its impact on physical functioning, emotional and personal relationships, and management options

Individuals' shared responsibility for a plan of care and responsibility for self-management of their symptoms

Individuals' participation in health promoting activities

Individuals' management of impact on physical functioning, emotional and personal relationships

Individuals' knowledge and confidence in use of support services. Support services are a shared service, which provides a set of technologies, supplies, workforce, and financial services to public health services

---

*Interventions used to self-manage spinal pain\*\**

Educational material (i.e., leaflets, books, videotapes and other audiovisual resources) comprised of information about simple anatomy and how spinal pain is generated

Educational material showing evidence-based treatment approaches emphasizing independent strategies such as general exercises (i.e., aerobic, stretching and strengthening exercises) and lifestyle modification

Educational material emphasizing independent strategies for coping with emotional and interpersonal problems often accompanying chronic illness (behavioral strategies)

Educational material showing interactive aspects, encouraging individuals to list the movements or positions that increase their pain, asking to identify positions in which they are most comfortable with suggestions and encouraging activities

In person advice, reassurance and emphasis that it is safe to move and to use the back without restriction

In person advice that self-management is effective

Supervised behavioral therapy (i.e., Supervised behavioral therapy is a behavioral type of therapy whose goal is to reinforce desirable behaviors and eliminate unwanted or maladaptive ones. The main thought is focused on the idea that we learn from our environment)

Interactive internet opportunities for information (i.e., websites, videos)

Supervised exercise including general exercises, motor control exercises and extension exercises such as McKenzie

Supervised exercises with the only goal of to learn individuals how to perform exercises at home without supervision

---

*Formats of delivery used to self-manage spinal pain\*\*\**

Educational material mailed or provided in person

In person or remote (e.g., internet) group discussion

Led by a trained clinician, a trained person (not allied health professional) or a team consisting of allied health

professionals

Interventions individual focused, identifying the key factors for the individual (neurophysiologic, behavioral, movement, emotional, lifestyle)

Instruction with as many follow-up sessions as individual requires within short-term follow-up (less than a year)

Instruction with a small number of follow-up sessions (i.e., from 1 to 6) within long-term follow-up (at least a year)

A small number of supervised treatment sessions (i.e., from 1 to 6) within short-term follow-up (less than a year)

A small number of supervised treatment sessions (i.e., from 1 to 6) within long-term follow-up (at least a year)

Instructed to use strategies such as general exercise in the community and occupational settings, or in medical settings

---

\*All skills must be fulfilled to consider self-management of spinal pain

\*\*The number of interventions used to self-manage spinal pain may vary depending on individual's needs

\*\*\*There are many different formats of delivery and these are some options

**Table 3.** Final consensus on the definition of self-management for non-specific spinal pain, acceptable components and formats of delivery to its improvement

<b>Essential self-management skills for non-specific spinal pain*</b>	<b>Agreement**</b>
	%
Individuals' knowledge of the condition	100%
Individuals' knowledge of the condition impact on physical functioning, emotional and personal relationships, and management options	88.5%
Individuals' shared responsibility for a plan of care focused on function (not on pain)	92.3%
Responsibility for self-monitoring and management of signs, symptoms and behavioral changes	73.1%
Individuals' participation in health activities	84.6%
Individuals' management of impact on physical functioning, emotional and personal relationships	88.5%
Individuals' knowledge about support services and their appropriate use. Support services are a shared service, which provides a set of technologies, supplies, workforce, and financial services to public health services	65.4%
Individuals' confidence about support services and their appropriate use. Support services are a shared service, which provides a set of technologies, supplies, workforce, and financial services to public health services	61.5%
<b>Interventions used to self-manage spinal pain***</b>	<b>Agreement**</b>
	%
Educational material (i.e., leaflets, books, videotapes and other audiovisual resources) emphasizing independent evidence-based treatments such as general exercises and lifestyle modification	92.3%
Educational material (i.e., leaflets, books, videotapes and other audiovisual resources) emphasizing independent strategies for coping with potential physical, emotional and interpersonal issues	96.2%
Educational strategies must focus on health promotion, prevention, treatment and functional recovery	92.3%
Advice, reassurance and emphasis that it is safe to move and to use the back without restriction	69.2%
Advice that self-management is effective	92.3%
Take-home behavioral therapy developing individuals' understanding that we learn from our environment without supervision	73.1%
Take-home exercise developing individuals' understanding of exercises without further supervision	88.5%
Focused intervention, identifying key factors to be addressed for each individual (i.e., physical, emotional and/or personal), and their preferences. It may include communication with their health care providers, relatives and employers	53.9%

<b>Formats of delivery used to self-manage spinal pain****</b>	<b>Agreement**</b>
	<i>%</i>
Educational material mailed or in person	69.2%
Educational material needs to be individualized	96.2%
In person or remote (e.g., internet) group discussion	76.9%
Led by a trained clinician	61.5%
Led by a team consisting of allied health professionals	95.7%
Instruction with as many follow-up sessions as individual requires within short-term follow-up (less than a year)	80.7%
Instruction with a small number of follow-up sessions (i.i., from 1 to 6) within long-term follow-up (at least a year)	80.3%

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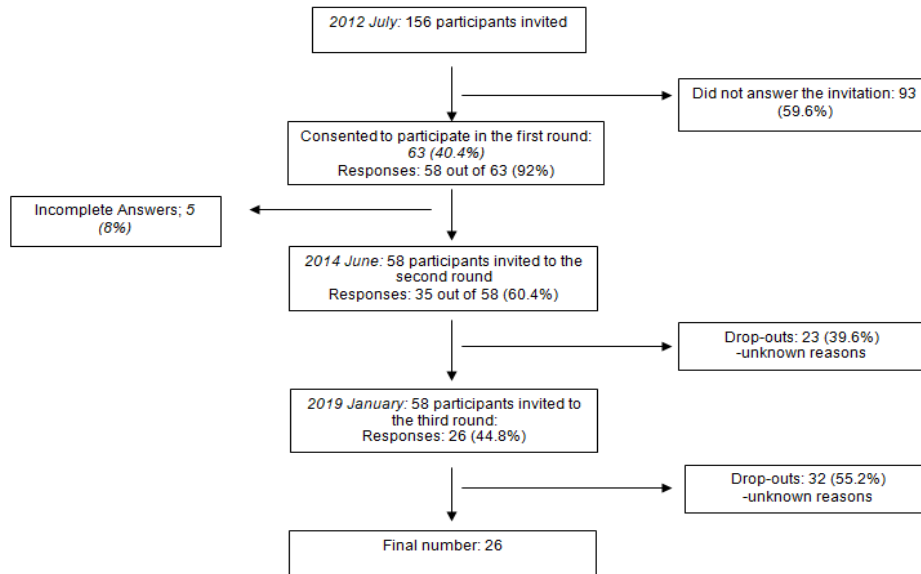
\*All skills must be fulfilled to consider self-management of spinal pain

\*\**Agreement: panelist answered strongly agree or somewhat agree.*

\*\*\*The number of interventions used to self-manage spinal pain may vary depending on individual's needs

\*\*\*\*There are many different formats of delivery and these are some options

**Figure 1.** A flowchart of the response rate in each of the three rounds



### 3. CONSIDERAÇÕES FINAIS

Após as três etapas do estudo Delphi modificado, o consenso foi alcançado sobre a definição das habilidades essenciais para autogerenciamento na dor de coluna idiopática, possíveis intervenções e formatos para sua otimização. A autonomia do indivíduo pode ser tratada como intervenção central desta definição, importante para que este saiba gerenciar sua condição nos momentos em que não estiver sendo acompanhado diretamente por um profissional especializado. Esta autonomia deve ser promovida inicialmente com a adequação do tratamento na fase aguda às características individuais e, posteriormente, com o engajamento do paciente no período crônico. Para que esta autonomia seja alcançada de forma eficaz, a principal intervenção apontada pelos especialistas participantes do estudo é o aprendizado individual, incluindo todos os aspectos da dor de coluna idiopática. Este é um fator garantidor de empoderamento do paciente e pode ser potencializado se utilizadas estratégias comportamentais e exercícios também individualizados. Não é necessário que o formato como isto seja apresentado ao paciente seja enquadrado em uma lista de opções ou sugestões, desde que seja respeitado um quesito destacado pelos participantes: o retorno (ou follow-up) em curto e médio prazo até que, tanto terapeuta quanto paciente estejam seguros do aprendizado e concordem com a alta definitiva.

Tudo o que foi considerado sobre o autogerenciamento pode ser explorado por clínicos e população na prevenção e tratamento da dor de coluna idiopática. A recomendação de uma abordagem eficaz e de baixo custo pode ser também de grande valia para o poder público e para construtores de políticas de saúde, e espera-se que a promoção da autonomia do paciente guiando-o para o autogerenciamento possa ser estudada para outras condições crônicas de saúde pública. Este estudo pôde contribuir com os estudos que procuram soluções para a dor de coluna idiopática, pois, através deste consenso, futuros Ensaio Clínicos Randomizados e revisões sistemáticas podem investigar com maior clareza a estimativa dos efeitos do autogerenciamento para dor de coluna idiopática e possibilidade de redução dos custos públicos e privados com o tratamento da dor de coluna.

## APÊNDICE

### APÊNDICE I – QUESTIONÁRIO DA PRIMEIRA RODADA

#### How should self-management of spinal pain be defined?

##### First round of the modified-Delphi survey

This study aims to reach consensus among a panel of experts on definition of a self-management approach for non-specific spinal pain, its components and formats for provision.

This survey is being performed in two rounds, of which this is the first. The subsequent round will clarify the core content, components and formats for provision highlighted by the respondent panel. Other items that you consider important plus any relevant comments can be noted in the space provided.

**Please enter the following details so we can record your responses and include you in the subsequent rounds of this study. Your personal details and responses will remain confidential and available only to the chief investigators of this study:**

Name:  
Country:  
Email address:

Profession:

- Researcher
- Clinician
- Researcher and Clinician
- Other (Please specify): \_\_\_\_\_

Have you been an author on at least one paper per year covering clinical research of spinal pain in the past 5 years?

- Yes
- No

Have you had experience in spinal pain management for at least 5 years?

- Yes
- No



**Definition criteria of a self-management approach for spinal pain.**

**Do you agree that each of these treatment goals constitute a core content in self-management interventions, and if absent would be reason to exclude the intervention as self-management for spinal pain?**

**Developing patients' knowledge of the condition and management options**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Developing patients' shared responsibility for a plan of care**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Developing patients' participation in health promoting activities**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Developing patients' self-monitoring and management of signs and symptoms**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Developing patients' management of impact on physical functioning, emotional and personal relationships**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Developing patients' confidence in use of support services**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Comments and/or suggestions of additional core contents:**

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### Components of a self-management intervention for spinal pain.

Do you agree that each of the interventions below constitute a component of a self-management approach for spinal pain?

**Pre-designed educational material (i.e. leaflets, books, videotapes and other audiovisual resources) comprised of information about simple anatomy and how spinal pain is generated**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Pre-designed educational material (i.e. leaflets, books, videotapes and other audiovisual resources) showing evidence-based treatment approaches emphasizing independent strategies such as general exercises (i.e. aerobic, stretching and strengthening exercises) and lifestyle modification**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Pre-designed educational material (i.e. leaflets, books, videotapes and other audiovisual resources) emphasizing independent strategies for coping with emotional and interpersonal problems often accompanying chronic illness (behavioral strategies)**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Pre-designed educational material (i.e. leaflets, books, videotapes and other audiovisual resources) showing: interactive aspects, encouraging patients to list the movements or positions that increase their pain, asking to identify positions in which they are most comfortable with suggestions and encouraging activities**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**In person advice, reassurance and emphasis that it is safe to move and to use the back without restriction**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Supervised behavioral therapy**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Supervised exercise including general exercises, motor control exercises and extension exercises such as McKenzie**

Strongly agree     
  Somewhat agree     
  Neither agree or disagree     
  Somewhat disagree     
  Strongly disagree

**Comments and/or suggestions of additional components:**

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### Formats for provision of a self-management intervention for spinal pain.

Do you agree that each of these formats for provision of self-management is appropriate?

**Pre-designed educational material (i.e. leaflets, books, videotapes and other audiovisual resources) mailed**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Pre-designed educational material (i.e. leaflets, books, videotapes and other audiovisual resources) provided in person**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Group discussion**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Remote group discussion (e.g. internet)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Led by a trained clinician**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Led by a trained person (not allied health professional)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Team consisting of allied health professionals**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Instruction mailed without follow-up session**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Instruction in person without follow-up session**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Instruction in person with as many follow-up sessions as patient requires within short-term follow-up (less than a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Instruction in person with as many follow-up sessions as patient requires within long-term follow-up (at least a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**A small number of supervised treatment sessions (i.e. from 1 to 6) within short-term follow-up (less than a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**A small number of supervised treatment sessions (i.e. from 1 to 6) within long-term follow-up (at least a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**A moderate number of supervised treatment sessions (i.e. from 7 to 13) within short-term follow-up (less than a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**A moderate number of supervised treatment sessions (i.e. from 7 to 13) within long-term follow-up (at least a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**An approach with over 13 supervised treatment sessions (i.e. over 13) within short-term follow-up (less than a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**An approach with over 13 supervised treatment sessions (i.e. over 13) within long-term follow-up (at least a year)**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Settings:**

**Instructed to use strategies such as general exercise in the community and occupational settings**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Instructed to use strategies such as general exercise in medical settings**

Strongly agree       Somewhat agree       Neither agree or disagree       Somewhat disagree       Strongly disagree

**Comments and/or suggestions of additional formats:**

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## ANEXOS

### ANEXO I - NORMAS DA REVISTA

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