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ORIGINAL RESEARCH

Clinical practice guidelines, patient education and discharge planning used by physical therapists for patients with knee osteoarthritis: cross-sectional study

Diretrizes de prática clínica, educação do paciente e planejamento de alta usados por fisioterapeutas para pacientes com osteoartrite de joelho: estudo transversal

Guías de práctica clínica, educación del paciente y planificación del alta utilizadas por fisioterapeutas para pacientes con osteoartritis de rodilla: estudio transversal

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ABSTRACT | This study aimed to identify whether Brazilian physical therapists use clinical practice guidelines (CPGs) to treat knee osteoarthritis (KOA), what type of care education they give and what criteria they use to plan for KOA patients discharge. This is a cross-sectional survey carried out with Brazilian physical therapists. The Chi-square test was used to analyze the proportion of physical therapists who partially or totally considered interventions recommended by the CPGs. Logistic regression was performed to identify the relationship between professional experience and rest recommendations for patients with KOA. The survey was responded by 303 participants, mostly female, with a mean age of 35.9 ± 9.8 years. In total, 52.8% of participants were from southeast Brazil, 43.9% had up to 5 years of professional experience and 57.8% had specialization/residence as their highest professional qualification. A total of 75.6% said they consult clinical guidelines. Professionals who fully adhere to CPGs more frequently provide disease education, self-management and weight loss guidance. The main discharge criterion was performance improvement in activities of daily living, followed by pain and quadriceps muscle strength. In view of the findings, it is concluded that Brazilian physical therapists consult CPGs to support their clinical choices, however, most partially follow the guidelines to (treat) patients with KOA. For the participants of this study, improvement in activities of daily living, pain level and quadriceps muscle strength are important criteria to justify the discharge of patients with KOA.

Keywords | Osteoarthritis knee; Physical therapists; Practice guideline; Patient discharge.

RESUMO | Este estudo teve como objetivo identificar se os fisioterapeutas brasileiros utilizam as diretrizes de prática clínica (DPC) para lidar com o tratamento da osteoartrite de joelho (OAJ), qual tipo de educação em cuidados eles orientam e quais critérios eles consideram para planejar a alta de pacientes com OAJ. Trata-se de um estudo transversal, do tipo survey, realizado com fisioterapeutas brasileiros. O teste qui-quadrado foi utilizado para analisar a proporção de fisioterapeutas que consideraram parcial ou totalmente as intervenções recomendadas pelas DPCs. Foi realizada regressão logística para identificar a relação entre anos de experiência profissional e a orientação de repouso para pacientes com OAJ. A pesquisa foi

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respondida por 303 participantes, a maioria do sexo feminino, com média de idade de 35,9 ± 9,8 anos. 52,8% dos participantes eram da região Sudeste do Brasil, 43,9% tinham até cinco anos de experiência profissional e 57,8% tinham especialização/residência como maior qualificação profissional. 75,6% disseram consultar as diretrizes clínicas. Profissionais que aderem integralmente às DPCs fornecem com mais frequência educação sobre a doença, autogerenciamento e orientação para perda de peso. O principal critério de alta foi uma melhora no desempenho das atividades da vida diária, seguido por dor e força muscular do quadríceps. Em vista dos achados, conclui-se que os fisioterapeutas brasileiros consultam as DPCs para embasar suas escolhas clínicas; no entanto, a maioria segue parcialmente as recomendações das diretrizes para (tratar) pacientes com OAJ. Para os participantes deste estudo, melhora nas atividades da vida diária, nível de dor e força muscular do quadríceps são critérios importantes para justificar a alta desses pacientes.

Descritores | Osteoartrite do joelho; Fisioterapeutas; Guia de Prática Clínica; Alta do Paciente.

RESUMEN | Este estudio tuvo como objetivo identificar si los fisioterapeutas brasileños utilizan las guías de práctica clínica (GPC) para el tratamiento de la osteoartritis de rodilla (OAJ), qué tipo de educación asistencial brindan y qué criterios consideran para planificar el alta de los pacientes con OAJ. Se trata de un estudio transversal de tipo encuesta realizado con fisioterapeutas brasileños. La prueba de chi-cuadrado se utilizó para analizar la proporción de fisioterapeutas que consideraron parcial o totalmente las intervenciones recomendadas por las GPC. Se realizó una regresión logística para identificar la relación entre la experiencia profesional y la orientación de descanso para pacientes con OAJ. La encuesta fue respondida por 303 participantes, la mayoría son mujeres, con una edad media de 35,9 ± 9,8 años. El 52,8% de las participantes eran de la región Sudeste de Brasil, el 43,9% tenía hasta cinco años de experiencia profesional, y el 57,8% tenía especialización/residencia como la más alta calificación profesional. El 75,6% dijo que consultaba las guías clínicas. Los profesionales que se adhieren plenamente a las GPC brindan información frecuente sobre enfermedades, autocontrol y orientación sobre la pérdida de peso. El principal criterio de alta fue una mejora en el desempeño en las actividades de la vida diaria, seguido de dolor y fuerza muscular de los cuádriceps. A partir de los hallazgos, se concluye que los fisioterapeutas brasileños consultan las GPC para respaldar sus elecciones clínicas; sin embargo, la mayoría sigue parcialmente las recomendaciones para (tratar) pacientes con OAJ. Para los participantes de este estudio, la mejora en las actividades de la vida diaria, el nivel de dolor y la fuerza muscular de los cuádriceps son criterios importantes para justificar el alta de estos pacientes

Palabras clave | Osteoartritis de la Rodilla; Fisioterapeutas; Guía de Práctica Clínica; Alta del Paciente.

INTRODUCTION

Knee osteoarthritis (KOA) is a chronic and progressive musculoskeletal disease, characterized by pain and functional impairment[1]. KOA treatment has been composed of conservative and surgical procedures. Notably, the conservative approach is the best first-line option, because it can improve symptoms, like reducing pain, slowing or arresting KOA progression, maintaining functioning and avoiding surgery[2,3].

According to the importance of conservative KOA treatment, clinical practice guidelines (CPGs) have been published to guide clinicians in treating KOA[4–6]. CPGs are systematic declarations built to handle clinicians and patients' decisions about the best health care for specific clinical conditions[7]. As many CPGs for KOA are available nowadays, healthcare professionals may face difficulties choosing which one is the best or holds more appropriate information[8,9]. Besides, clinicians' lack of current evidence and databases is a barrier for the successful use of CPG[10].

In a recent study, Bichsel et al.[11] have found 17 CPG from 10 different societies, in which five presented higher quality according to AGREE II (Appraisal of Guidelines for Research and Evaluation II). These authors described that CPGs have recommended patient education on OA, medication intake, joint protection, self-management and exercises for KOA treatment. However, the CPGs do not guide clinicians how to plan for KOA patients' discharge.

As KOA is a chronic disease, it is important to stimulate patient self-management during rehabilitation, because after reaching function and symptom improvement, the physical therapist will discharge the patient. But the patient must be able to handle their condition or manage treatment care at home. Although CPGs describe the best instruments to assess KOA patients and how to treat them, the lack of information

remains at what level or which function parameters and symptom improvement clinicians should consider to make a discharge plan.

Several studies have discussed discharge planning but they were limited to the hospital facility, and to specific musculoskeletal conditions. In a hospital setting, Gonçalves-Bradley et al.[12] have demonstrated that discharge planning can help reduce the length of care and avoid patient readmittance after discharge. Also, discharge planning is a custom plan that could help the patient move from a health organization or clinical setting to their home, and maybe reduce patient anxiety or the fear of losing the physical therapist.

The definition of KOA discharge planning by the CPGs could help clinicians easily identify important factors involved in KOA treatment, reducing length of care, as well as patient costs, and maybe reduce the high variability in physical therapy treatment for patients. Thus, this survey aimed to identify whether Brazilian physical therapists use CPG to handle the treatment of KOA patients, which type of patient care education they give, and which criteria they consider to make a discharge plan for KOA patients.

METHODOLOGY

Study design and population

This cross-sectional study followed the Checklist for Reporting Results of Internet E-Surveys (CHERRIES)[13]. The study included physical therapists from all over Brazil who have taken care of KOA patients for at least three months and signed an informed consent form.

Physical therapists were invited, by convenience sampling, to respond a structured questionnaire, developed in an electronic format on the Google Forms application, disseminated via folders on social networks and by direct email from the Regional Councils of Physiotherapy and Occupational Therapy (CREFITO) of each state and on their respective social networks.

Survey development and data collection procedures

Data collection took place from October 16, 2020 to May 23, 2022. A pilot study was carried out with 14 physical therapists in order to analyze the time required to respond to the survey, as well as identifying possible doubts about the questionnaire and difficulties with the application. The suggestions were analyzed, and the questionnaire was updated. The final version of the questionnaire had five sections, with a 5-minute response time . The first section contained the title, objectives and inclusion criteria of the study. In the following section, participants had to read and agree to the consent form for the questions to be made available. The third section contained questions about participants' demographic data, such as date of birth, gender, city and state. The fourth section included questions related to the professional profile of the participants, such as graduation year, length of professional experience, highest professional qualification, type of work institution (public or private), number of patients treated per week, time and form of patient care (individual or group). The last session contained questions about professional practices. Based on the following hypothetical case of "a 65-year-old female patient with bilateral KOA, with 5/10 pain (visual analog pain scale), without contraindications to physical therapy and preserved cognitive status," participants were asked to inform whether they considered patient guidance regarding the disease and its control to be "effective," "not very effective," or "ineffective." If the answer was "effective" or "not very effective," participants should inform which instructions from a list of options they would give to their patients, such as education, self-management, weight control, physical exercise, herbal medicine, Tai Chi Chuan, yoga, prognosis, rest or other instructions they carried out with their patients. Participants were also asked which criteria from a list of options they considered to discharge a patient with KOA, such as pain, treatment time, quadriceps muscle strength, dialogue with the physician, improvement in activities of daily living, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) or other criteria. Finally, participants should report whether they used clinical practice guidelines to support the treatment offered to patients with KOA.

Statistical analysis

Descriptive analysis was carried out using the JAMOVI software (version 2.3.13.0). The frequency of physical therapists who declared using CPG, which kind of KOA treatment recommendations they usually give

patients, and which discharge plan for KOA patients they consider were collected.

The Chi-square test was used to analyze the proportion of physical therapists who only considered interventions recommended by the CPGs, classified as delivering group; physical therapists who considered interventions recommended by the CPGs only in part, and also non-recommended interventions were classified as partial delivering group.

Logistic regression was performed to identify whether years of professional license could be associated with the use of CPGs by physical therapists and with the type of recommendation provided to patients (education, self-management, weight control, physical exercises, herbal medicine, Tai Chi Chuan, yoga, prognosis and rest). A 5% significance level was used.

The power of the sample who completed the research was carried out Post Hoc in the G*Power software with a 0.2 effect size, 0.05 alpha and three degrees of freedom, reaching a 0.8 statistical power.

RESULTS

A total of 303 participants answered this survey. The majority was female, with a mean age of 35.9±9.8 years old. In total, 52.8% of participants were from southeastern Brazil, 43.9% had up to five years of professional experience, 57.8% were specialists or/and residents with high professional qualifications and 62.7% worked in private institutions. Most physical therapists took care of one patient per hour, with a mean of 3.76±3.73 patients per week. Each session with a mean time duration of 50.2±12.5 minutes. Table 1 describes participants' characteristics.

Most participants have declared that they consult CPGs (75.6%). No association was observed between considering CPGs, years of professional experience and the level of professional education (p>0.05). In Table 2, we observe the use, total (delivering group) or partial (partial delivering group), of recommended CPGs by the volunteers. The delivering group declared using patient education (22.1%), self-management (14.9%) and weight control (13.1%), as recommendations. The partial-delivering group was based on prognosis aspects (100%), rest, herbal medicine and Tai Chi Chuan.

The logistic regression analysis indicated participants with six to 10 years of experience are more likely to deliver orientations to their patients regarding a physiotherapeutic treatment prognosis than those with less professional experience (OR= 5.69; 95%CI= 1.92–16.80; P= 0.002) and physical therapists with more than 15 years of experience are more likely to prescribe rest than those with up to five years of experience (OR= 4.68; 95%CI= 1.38–15.79; P=0.01). No association was found between length of professional experience and other recommendations, as shown in Table 3.

Table 1. Professional and demographic characteristics of the participants (n = 303)

Parameter	N (%)
Age (mean ± SD)	35.9 ± 9.8
Sex	
Female	207 (68.3)
Male	96 (31.7)
Brazilian Region	
North	17 (5.6)
Northeast	66 (21.8)
Midwest	7 (2.3)
Southeast	160 (52.8)
South	53 (17.5)
Professional experience (years)	
≤5	133 (43.9)
6-10	50 (16.5)
11–15	49 (16.2)
>15	71 (23.4)
Level of professional education	
Bachelor's degree	87 (28.7)
Specialization/residency	175 (57.8)
Master's/ Doctoral degree	41 (13.5)
Type of work institution n (%)	
Public	36 (11.9)
Private	190 (62.7)
Not reported	77 (25.4)
How the physical therapy sessions happen n (%)	
Individual	253 (83.5)
Group	50 (16.5)
Sessions per week (mean ± SD)	3.76 ± 3.73
Duration of each session (min) (mean ± SD)	50.2 ± 12.5

SD: Standard Deviation.

Table 2. Frequency of recommendations given by physical therapists to KOA patients (n = 303)

Recommendation	Delivering 74 (24.4%)		Partial delivering 226 (74.6%)		p*
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
Patient education	58 (22.1)	16 (39.0)	204 (77.9)	22 (53.7)	<.001
Self-management	33 (14.9)	41 (50.0)	188 (85.1)	38 (46.3)	<.001
Weight control	22 (13.1)	52 (38.5)	146 (86.9)	80 (59.3)	<.001
Physical exercises	2 (10.5)	72 (25.4)	17 (89.5)	209 (73.6)	0.30
Herbal medicine	0 (0.0)	74 (25.7)	15 (100)	211 (73.3)	0.06
Tai Chi Chuan	0 (0.0)	74 (26.6)	18 (100)	208 (73.0)	0.03
Yoga	4 (19.0)	70 (24.8)	17 (81.0)	209 (74.1)	0.73
Prognosis	0 (0.0)	74 (94.9)	225 (100)	1 (1.3)	<.001
Rest	0 (0.0)	74 (25.9)	17 (100)	209 (73.1)	0.04

*According to the Chi-square test.

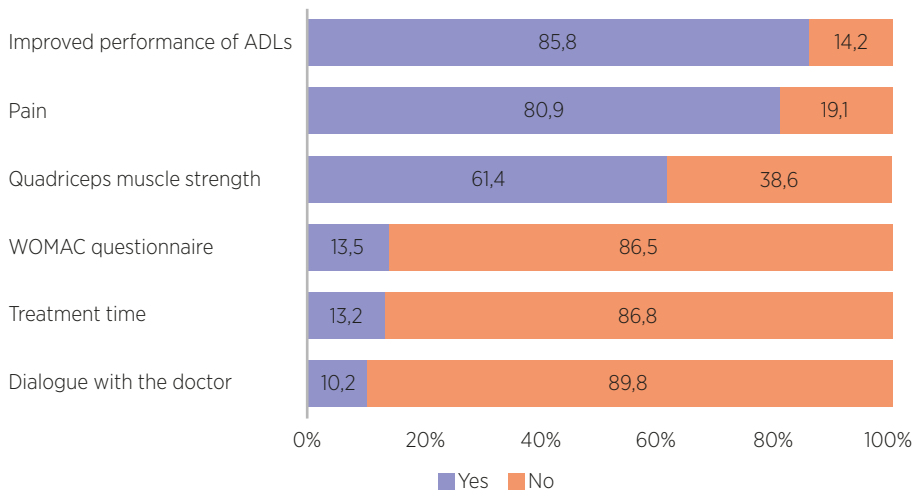
Table 3. Association between professional experience and recommendations given to patients with KOA (n = 303)

Recommendations	6–10 years			11–15 years			>15 years		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Patient education	1.00	0.36 – 2.73	0.99	0.98	0.36 – 2.67	0.96	0.61	0.27 – 1.35	0.22
Self-management	1.48	0.67 – 3.28	0.32	1.28	0.59 – 2.78	0.52	0.68	0.36 – 1.27	0.22
Weight control	1.97	0.99 – 3.91	0.05	1.24	0.63 – 2.39	0.52	1.01	0.56 – 1.80	0.97
Physical exercises	0.65	0.13 – 3.17	0.59	1.38	0.39 – 4.83	0.60	1.18	0.37 – 3.76	0.77
Herbal medicine	3.76	0.81 – 17.47	0.09	1.84	0.29 – 11.38	0.51	4.00	0.96 – 16.50	0.05
Tai Chi Chuan	1.56	0.43 – 5.59	0.49	1.17	0.29 – 4.73	0.82	1.07	0.30 – 3.80	0.91
Yoga	1.35	0.39 – 4.72	0.63	1.77	0.55 – 5.71	0.33	0.93	0.27 – 3.21	0.91
Prognosis	5.69	1.92 – 16.80	0.002*	1.71	0.79 – 3.66	0.16	1.35	0.71 – 2.56	0.35
Rest	1.34	0.23 – 7.57	0.73	1.37	0.24 – 7.74	0.72	4.68	1.38 – 15.79	0.01*

Reference category ≤5 years. OR: odds ratio; CI: confidence interval; *According to Binomial logistic regression.

Figure 1 shows discharge planning criteria considered by the participants for KOA. For 85.8% of them, the performance of activities of daily living (ADLs) should be considered a discharge planning criterion for their patients. For 80.9% of respondents, the patient's pain level was considered a discharge criterion and for 61.4%, quadriceps muscle strength was taken into account. WOMAC (Western Ontario and McMaster Universities) questionnaire results, treatment time and dialogue with the physician were the least considered as discharge planning criteria by the participants.

Graph 1. Frequency of discharge planning criteria for knee osteoarthritis patients according to participants (n=303)



ADLs: activities of daily living; WOMAC: Western Ontario and McMaster Universities.

DISCUSSION

This study enquired which CPGs physical therapists from all over Brazil use with their KOA patients, which recommendations and whether they use a discharge plan for this condition. Most participants were women, living in southeast Brazil, with up to five years of training, specialization or residency as their highest professional qualification and working in a private institution. Participants demonstrate that they frequently consult CPGs and health education, followed by self-management and weight control as the most common recommendation guidelines for patients by professionals who fully adhere to such guidelines. Physical therapists with more experience showed greater chances of recommending rest to their patients. Besides, improvement in ADLs, pain and quadriceps muscle strength were the main discharge planning criteria considered by participants.

To date, no study has investigated physical therapists from all over Brazil on KOA treatment. Monteiro et al.[14,15] carried out two studies with 370 physical therapists from northern Brazil , one of them regarding the perception of professionals about the KOA treatment and the other on the basis of information that Brazilian physical therapists use to guide KOA treatment decision making. Participants' characteristics observed in our study were similar to those found by these authors[14,15], who found that most participants were women, with a mean age of 32.1±6.89, with up to five years of training (49.1%) and specialization/residence as their highest professional qualification (58.1%). In a survey conducted by De Souza, Ladeira, and Costa[16], about adherence of physical therapists, affiliated to two Brazilian associations of musculoskeletal physical therapy, to use CPGs for back pain, the researchers observed that most professionals had an average of 36.6 years of experience, 49.2% had a specialist degree and a private clinic as their main place of work (66%), which corroborates our findings, and also with the fact that partial adherence to guidelines was higher when compared to full adherence (ranging from 32 to 75%).

Participants in our study indicated that they frequently used CPGs. Similar results were found by Monteiro et al.[14] that affirmed 60.5% of physical therapists in northern Brazil, who treat patients with KOA, declared to know the CPGs. However, unlike our results, the authors found an association between the participants' professional qualifications and the use of GPCs, that is, professionals with a specialization/residence were more likely to know GPCs existence than physical therapists with a master's/doctoral degree. Regarding this finding, the authors justified that specialization/residence programs are more focused on training professionals for better performance in a specific area, motivating adherence to guidelines, while in master's and doctoral courses, professionals dedicate themselves more to conducting research in a specific area. In our results, we also did not find a relationship between the participants' training time and the use of CPGs or the management of KOA, corroborating Monteiro et al.[14].

In the literature, the study by Monteiro et al.[14] was the only one that investigated the association between qualification, professional experience and the use of CPGs. One hypothesis is that these associations were not found in our study because of the underrepresentation of participants, which may not reflect the profile of most Brazilian professionals, since the survey obtained high variability of responses between Brazilian regions. Another factor is that most participants had up to five years of training, which may interfere with familiarity with CPGs.

Although most participants have declared that they considered CPGs in the KOA treatment, it was also found that physical therapists with more than 15 years of experience were more likely to advise rest, which opposes CPGs recommendations. Similarly, when physical therapists were separated in the groups that fully use or partially use CPGs recommendations, most of them (74.6%) partially used CPGs, and these findings indicate that three quarters of Brazilian physical therapists still use recommendations that are not effective for the KOA treatment, such as rest. In the state of Florida, the United States, Da Costa et al.[17] assessed how physical therapists treat people with KOA and patient education was considered by participants to be effective(93%), which was associated with professionals who declared to follow the principles of evidence-based practice (OR=3.63;95%CI=1.40–9.43). Also, according to Da costa et al. (2017), professionals with more than 10 years of practice were more likely to recommend rest (OR=2.27; 95% CI=1.31–3.95), which is in accordance with this study.

We did not find other studies that have associated professional experience with guidance on prognosis. Concern regarding treatment goals was also reported by Australian physical therapists[19]. It is believed

that physical therapists of other nationalities may be concerned about the state of their patients after rehabilitation, although this is still little studied.

Patient education, self-management and weight control were the most frequent recommendations given by professionals who fully followed the CPGs recommendations, while prognosis, followed by patient education and self-management, were the most used guidelines by participants who partially followed the recommendations. Patient education was also one of the main approaches applied by Indian physical therapists in the management of patients with KOA (69.7%) and rest was the least indicated[18]. Similar results were observed by Barton et al.[19] with Australian physical therapists, of which 98% agreed that providing patient education is part of their job, 95% also reported providing written exercise instructions, 88% conducted discussion of treatment goals and 83% advise about physical activity. In a survey of 267 Nigerian physical therapists, Ayanniyi, Egwu, & Adeniyi[20] described that 49.1% of participants declared including weight control counseling in their discussion with patients with KOA, 39% reported rest as part of the treatment approach and 59.2% justified using scientific evidence to determine patient treatment. MacKay, Hawker and Jaglal[21] corroborated these findings when exploring how physical therapists in Canada approached the management of early KOA, describing that weight control was highly recommended for these patients.

The discharge planning most used by physical therapists in this study was, first, improvement in ADLs performance, followed by pain and quadriceps muscle strength. There are no studies to date that have investigated the criteria used by physical therapists for KOA treatment discharge planning. In a study aiming at identifying whether therapeutic exercises chosen by physical therapists from the United Kingdom are in line with CPGs recommendations, Holden et al.[22] found that after patients were discharged, physical therapists expected patients to self-manage KOA. Thus, the absence of need for additional follow-up sessions for these patients could be considered by these professionals as discharge planning. However, the authors do not clarify how physical therapists conduct KOA self-management.

The use of criteria like improved performance of activities of daily living, pain and improvement in muscle strength used by most physical therapists is in accordance with what is established in the literature, which recommends a biopsychosocial approach with patients. This information is relevant in KOA treatment because it does not consider only structural changes, but also the impact of individual activities and participation on KOA. It is also expected that patients with KOA will reach an acceptable clinical state after treatment, defined by the Osteoarthritis Research Society International (OARSI), as the consensus between patient and physical therapists about what current symptom state is acceptable, requiring reassessments of comorbidities, pain, function, stiffness, effusion, instability, malalignment and also emotional and environmental aspects to determine it; the documentation of changes or symptom progression is also required[24].

Surprisingly, in our study, the Western Ontario McMaster Universities (WOMAC) questionnaire, a specific self-report measurement instrument for KOA that assesses pain level, stiffness and physical function aspects from the patient's perception[25] was not reported by most professionals that have been interviewed (86.5%). This questionnaire is a recommended[23,25], free and easy tool to be administered by professionals, which can help determine a patient's clinical status, follow its development and assist with the patient's discharge decision process.

This study had limitations: the sample analyzed does not represent the general population of Brazilian physical therapists, as it was based on a convenience sample, which limits the generalization of results. Additionally, physical therapists from northern and central-western areas had the lowest participation in our study and those residing in the southeastern area had the highest participation, which may have resulted in an underrepresentation of the opinion of the majority of participants in this subject.

CONCLUSION

Brazilian physical therapists who responded to this survey consult CPGs to support their clinical choices, however, most have shown to only partially follow the guideline recommendations to treat patients with KOA. Although there are no discharge planning protocols for people with KOA, participants in this study believe that improvement in activities of daily living, pain level and quadriceps muscle strength are important criteria to justify the discharge of these patients.

Clinical messages

- Brazilian physical therapists consult the clinical practice guidelines to guide the treatment of patients with knee osteoarthritis.
- There is an association between education about the disease, self-management, weight loss and Brazilian physical therapists who fully adhere to the clinical practice guidelines.
- The improvement in activities of daily living, pain and quadriceps muscle strength were the main criteria used for discharging KOA patients.

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