

# The attitudes and beliefs of physiotherapists, family physicians and physiatrists concerning chronic low back pain

✉ Merve Yerlikaya, ✉ İsmail Saraçoğlu

Kutahya Health Sciences University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Kutahya, Turkey

**Cite this article as:** Yerlikaya M, Saraçoğlu İ. The attitudes and beliefs of physiotherapists, family physicians and physiatrists concerning chronic low back pain. J Health Sci Med 2022; 5(2): 393-398.

## ABSTRACT

**Objective:** To examine the chronic low back pain (CLBP)-related attitudes and beliefs of primary and secondary healthcare professionals responsible for the treatment of this condition.

**Material and Method:** The study was conducted with 40 family physicians, 30 physiatrists, and 40 physiotherapists. The beliefs and attitudes of the participants concerning CLBP were evaluated using the Back Belief Questionnaire (BBQ), Health Care Providers' Pain and Impairment Relationship Scale (HC-PAIRS), and Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT).

**Results:** Among all the participants, the rate of those with predominantly biomedical beliefs was 80.9%, while the rate of those with predominantly biopsychosocial beliefs was 15.5%. In addition, it was observed that the BBQ, HC-PAIRS and PABS-PT scores were not affected by educational status, number of patients with CLBP treated or examined in a week, and years of experience ( $p>0.05$ ). The BBQ and HC-PAIRS scores of the family physicians were statistically significantly lower compared to the physiotherapists and those of the physiotherapists were statistically significantly lower compared to the physiatrists ( $p<0.05$ ). However, the PABS-PT scores were similar among different healthcare professionals ( $p>0.05$ ).

**Conclusion:** This study revealed that family physicians, physiotherapists, and physiatrists in Turkey might have negative attitudes and beliefs concerning CLBP and the biopsychosocial approach should be further adopted among healthcare professionals.

**Keywords:** Chronic low back pain, attitudes and beliefs, healthcare professionals, physiotherapists, family physicians, physiatrists

## INTRODUCTION

Chronic low back pain (CLBP) is an important public health problem going beyond the repair process and recovery of the biological function of tissues, in which the underlying pathology is not fully understood and complaints last for more than three months. CLBP is the second leading cause of disability and constitutes an economic problem globally (1). CLBP reduces productivity, resulting in a significant loss of work force and placing a large economic burden on all countries. Immobilization, postural deformities, smoking, occupation, educational level, inactivity/sedentary life, obesity, not paying attention to body biomechanics, age, and psychological and psychosocial factors play a role in the etiology of CLBP (2,3). Negative changes are observed in people's daily life activities, quality of life and functional movement due to the progression of acute pain to chronic pain; i.e., prolongation of pain experience. In

these people, fear avoidance reactions develop as a result of the belief that pain will occur or increase in response to movement or activity, and therefore people begin to avoid such activity (4). People who continue their lives with the fear of movement try to avoid the possibility of new disability or repetition of disability (5). As a result, they limit their activity levels and adopt a more sedentary lifestyle (6). Pain and avoidance behaviors, which emerge through the reduction of physical activities, play an important role in the etiopathogenesis of CLBP (7). Therefore, the attitudes and beliefs of patients with CLBP and those of healthcare professionals providing care for these patients also affect the therapeutic process (8). Patients with chronic pain are in constant interaction with healthcare professionals for their treatment. Healthcare professionals make recommendations for their patients throughout the treatment process. These recommendations vary according to the beliefs and

attitudes of healthcare professionals, and as a result treatment programs that determine the activity levels of patients differ from person to person. Thus, patients are affected by the attitudes and beliefs of healthcare professionals who plan and apply their pain-related treatments (9-11).

Healthcare professionals' attitudes and beliefs concerning chronic pain can be categorized into two approaches as biomedical and biopsychosocial. According to the biomedical model, pain and disability occur as a result of physical damage. In the biomechanical approach, the healthcare professional designs his/her treatment according to pain area. The priority of treatment is to detect and eliminate the damaging factor causing pain. However, the level of disability in patients with chronic pain cannot be fully explained by the degree of physical damage. At this stage, the biopsychosocial approach model becomes comes into play. According to this model, symptoms emerge and become chronic under the influence of psychological and social factors; therefore, pain can occur without any physical damage. In this approach, the treatment should be arranged by considering the social environment and psychological factors of the patient (12-15).

Parallel to the developments in pain science, the biomedical approach being more predominant than the biopsychosocial approach among healthcare professionals is accepted as a negative belief and attitude (13). Negative beliefs and attitudes of healthcare professionals concerning low back pain can lead to the development of CLBP problems in patients and inability to effectively use pain control or reactivation strategies. Healthcare professionals with such attitudes also encourage patients' negative perceptions of the disease by advising them to protect the spine, rest in bed, stay away from work, or limit normal activities, resulting in more disability and unnecessary consultations in the investigations of the disease (16). There is evidence that educational strategies to change the beliefs of patients and healthcare professionals concerning low back pain can reduce this pain and associated disability (17,18). In this context, the attitudes and beliefs of primary and secondary healthcare professionals are of great importance in order to appropriately guide patients presenting to health institutions and treat those with CLBP more effectively. However, to the best of our knowledge, there is no comprehensive study examining the CLBP-related beliefs and attitudes of healthcare professionals in different disciplines in Turkey. Therefore, in this study, we aimed to examine the related attitudes and beliefs of healthcare professionals that provide primary and secondary care and are responsible for the treatment of CLBP.

## MATERIAL AND METHOD

This research, planned as a multicenter, cross-sectional study, was carried out with the permission of Kütahya University Non-interventional Clinical Research Ethics Committee (Date: 22.12.2020, Decision No: 2020/18-03). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

The study was carried out between January and May 2021 at 14 different family health centers in Kutahya, Physical Therapy and Rehabilitation Department of Kutahya Health Sciences Hospital, and Yoncali Physical Therapy and Rehabilitation Hospital. Family physicians, physiatrists, and physiotherapists aged 21-65 years, who volunteered to participate in the study, worked actively, had clinical experience with low back pain, were included in the study. All the participants were informed about the study, and their informed consent was obtained. The descriptive data of the participants, including their occupation, age, educational status, number of patients with CLBP seen in a week, and years of experience were questioned with a previously prepared form. Then, the participants completed the Back Belief Questionnaire (BBQ), Health Care Providers' Pain and Impairment Relationship Scale (HC-PAIRS), and Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT).

### Back Belief Questionnaire

The BBQ is used to evaluate participants' expectations concerning negative conditions that may occur as a result of low back pain, their approach to returning to work, and their attitudes and beliefs concerning recovery. The items are based on a five-point Likert scale with the responses ranging from 'strongly disagree=1' to 'strongly agree=5', and the total score varies between 9 and 45 points. Low scores indicate more maladaptive and pessimistic beliefs concerning low back pain. The Turkish version of scale was adopted by Karaman and Kucukakkas (19) and they found that it is valid and reliable.

### Health Care Providers' Pain and Impairment Relationship Scale

The HC-PAIRS is a scale used to evaluate attitudes and beliefs in the clinic to examine the effects of healthcare providers on the clinical management of patients' low back pain status. The items measure four different concepts, functional expectations, social expectations, need for treatment, and predicted cognition, based on a seven-point Likert scale ranging from '1=strongly disagree' to '7=strongly agree'. The total score varies between 12 and 84 points. High scores indicate that the healthcare professional strongly believes that low

back pain is a cause of disability and tends to encourage patients to limit their activities to reduce low back pain. In other words, as the total score increases, the negative attitudes and beliefs of healthcare professional toward low back pain also increase. Aksoy et al. (20) found that the Turkish version of HC-PAIRS is reliable and valid.

**Pain Attitudes and Beliefs Scale for Physiotherapists**

The PABS-PT is used to determine the attitudes and beliefs of healthcare professionals concerning pain based on the biomedical and biopsychosocial approaches. Seven of the 13 items of the scale represent the biomedical approach of healthcare approaches; i.e., the belief that if pain increases, tissue damage will also increase based on the relationship between tissue damage and pain, while the remaining six items represent the biopsychosocial approach of healthcare professionals; i.e., in addition to tissue damage, psychological factors can also cause pain. Two scores are obtained from the scale as Factor 1 (biomedical approach) and Factor 2 (biopsychosocial approach), with the total scores ranging from 7 to 42 for the former and 6 to 36 for the latter. Depending on which score is higher, the likely treatment approach of the healthcare professional is interpreted as biomedically or biopsychosocially oriented. The Turkish version of PABS-PT was performed by Dalkilinc et al. (21) and they found that it is valid and reliable.

**Statistical Analysis**

Obtained data were analyzed using IBM SPSS v. 22 (IBM, Armonk, NY, USA) software package. Tukey’s non-additivity test was used to determine whether the items in the scales were perceived the same by the participants, and Hotelling’s T-square test was conducted to determine whether the items were prepared in a way to form an additive scale. The presence of a possible multi-connection problem was explored by examining the tolerance and Variance Inflation Factor (VIF) values. The sociodemographic data of the participants were presented as frequency (n) and percentage (%), mean, standard deviation, and minimum and maximum values. In addition, a regression analysis was performed to examine the effects of educational level, number of patients with CLBP seen in a week, and years of experience on the scale scores. One-way analysis of variance (ANOVA) was used to compare the demographic data and scale scores between different occupational groups. Accordingly, a multiple comparison method (post-hoc, Tukey HSD) was applied to determine which occupational groups caused significant differences. The statistical significance level was accepted as  $p < 0.05$ .

**RESULTS**

The study was concluded with 110 volunteer healthcare professionals, including 40 family physicians, 30 physiatrists, and 40 physiotherapists (Figure 1). Table 1 presents the sociodemographic data of the participants, such as age, sex, educational level, years of experience, and number of patients with low back pain seen in a week. Table 2 gives the internal consistency coefficients of the scales used in the study. The mean scores of the participants were  $31.57 \pm 5.70$  for BBQ,  $54.21 \pm 8.62$  for HC-PAIRS,  $28.70 \pm 5.52$  for the biomedical factor of PABS-PT, and  $21.84 \pm 0.84$  for the biopsychosocial factor of PABS-PT. Among all the participants, the rate of those with predominantly biomedical beliefs was 80.9% and the rate of those with predominantly biopsychosocial beliefs was 15.5%. Both approaches were equally present in 3.6% of the participants. According to the regression analysis, educational level, number of patients with CLBP seen in a week, and years of experience did not affect the participants’ beliefs and attitudes concerning low back pain ( $p > 0.05$ ).

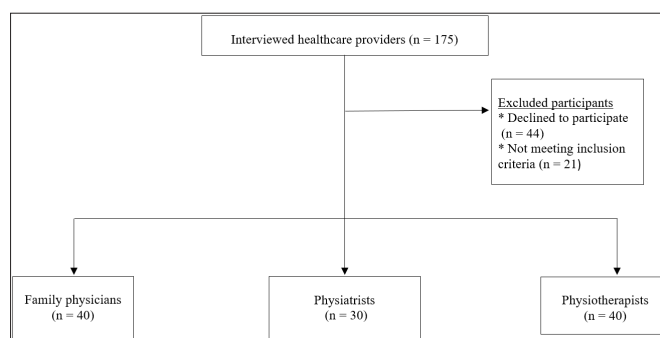


Figure 1. Flow chart of the participants

Table 1. Characteristics of the participants	
	(n=110) (Mean±SD)
Age (years)	40.55±10.89
Experience (years)	15.68±10.73
Number of patients seen per week	20.54±20.32
<b>Sex</b>	<b>n (%)</b>
Female	51 (46.4)
Male	59 (53.6)
<b>Education</b>	<b>n (%)</b>
Bachelor of science	32 (29.1)
Master of science	52 (47.3)
Doctorate	26 (23.6)

n: number of participants, SD: standard deviation

Table 2. Cronbach alpha coefficients of the scales	
Outcomes	Cronbach alpha coefficient
BBQ	0.72
HC-PAIRS	0.76
PABS-PT	0.71

BBQ: Back Belief Questionnaire, HC-PAIRS: Health Care Providers’ Pain and Impairment Relationship Scale, PABS-PT: Pain Attitudes and Beliefs Scale for Physiotherapists



When the participants were compared according to different occupational groups, there was no significant difference in relation to sex ( $p=0.540$ ), mean age ( $p=0.180$ ), years of experience ( $p=0.551$ ) and number of patients with CLBP seen in a week ( $p=0.290$ ). However, a significant difference was observed between the occupational groups in terms of education levels ( $p<0.001$ ). The physiotherapists had the lowest educational level, while the psychiatrists had the highest educational level. According to the results of one-way ANOVA, the physiotherapists had significantly lower BBQ scores than the physiotherapists [ $p=0.029$ ; 95% confidence interval (CI): (-3.820)-(-1.170)], and the physiotherapists had lower BBQ scores than the psychiatrists [ $p=0.050$ ; 95% CI: (-5.395)-(-0.004)]. Similarly, the HC-PAIRS scores of the family physicians were significantly higher compared to the physiotherapists [ $p=0.049$ ; 95% CI: (-3.513-3.963)], and those of the physiotherapists were significantly higher compared to the psychiatrists ( $p=0.021$ ; 95% CI: (0.412-10.321)). There was no significant difference between the occupational groups in relation to PABS-PT Factor 1 and Factor 2 scores ( $p>0.05$ ) (Table 3).

## DISCUSSION

This study was planned to examine the CLBP-related attitudes and beliefs of healthcare professionals, namely family physicians, psychiatrists, and physiotherapists actively working in primary and secondary healthcare institutions and completed with 110 participants. It was concluded that biomedical beliefs were more dominant than biopsychosocial beliefs in all occupational groups examined in the study. When the beliefs and attitudes of the participants were examined according to their occupational groups, it was determined that pessimistic beliefs concerning CLBP were more common among the family physicians compared to the physiotherapists, and among the physiotherapists compared to the psychiatrists. In addition, the belief that low back pain causes disability and activity limitation was at the strongest level among the family physicians and lowest level among the psychiatrists. The biomedical and biopsychosocial beliefs concerning CLBP were similar between the occupational groups.

Many researchers suggested that factors such as the educational level of healthcare professionals, clinical experience, and number of patients treated may affect their treatment approach and choices (12-15). In contrast, Alshehri et al. (22), examining the relationship between the educational level of healthcare professionals and their CLBP-related attitudes and beliefs, concluded that educational level did not have an effect on the PABS-PT scores. Innes et al. (23) determined that the number of patients treated had no effect on the chiropractors' biomedical or biopsychosocial beliefs and attitudes concerning CLBP. In another study (24), as the number of patients with low back pain seen by physiotherapists on a monthly basis decreased the belief that low back pain causes disability and activity limitation increased. In our study, according to the results of the three scales, we observed that the educational level, clinical experience, and number of patients seen in a week did not have an effect on the CLBP-related beliefs and attitudes of the family physicians, physiotherapists and psychiatrists. In light of these contradictory results, the effects of education, clinical experience, and number of treated patients on the beliefs and attitudes of healthcare professionals remain unclear.

In the literature, many studies have compared the beliefs and attitudes of different occupational groups and reported different results. In a study by Sit et al. examining the approach of family physicians and practitioners with PABS-PT (25), it was found that family physicians had less biomedical beliefs than general practitioners. In contrast, in another study by Bishop et al. (8), in which the beliefs and attitudes of physiotherapists and general practitioners were compared using PABS-PT, no significant difference was found between the occupational groups. Rainville et al. (26) investigated the beliefs and attitudes of physicians, physiotherapists, occupational therapists, psychologists, and nurses concerning low back pain using HC-PAIRS. The authors concluded that physicians and nurses had a stronger belief that low back pain causes disability and activity limitation than physiotherapists and occupational therapists. In another study (27) evaluating the attitudes and beliefs of senior students in physiotherapy and rehabilitation, medicine, and nursing using BBQ, physiotherapy

Table 3. Scores of pain attitudes and beliefs

Outcome measures	Family physicians (Mean±SD)	Physiotherapists (Mean±SD)	Psychiatrists (Mean±SD)	F (p)
BBQ	30.07±5.92	31.52±6.08	34.10±3.93	4.59 (0.01*)
HC-PAIRS	56.12±8.33	55.05±7.81	50.56±8.74	4.58(0.01*)
PABS-PT Factor 1	28.97±5.03	29.07±6.24	27.56±5.50	0.74 (0.48)
PABS-PT Factor 2	21.72±4.79	22.85±4.01	22.26±4.25	1.25 (0.29)

BBQ: Back Belief Questionnaire, HC-PAIRS: Health Care Providers' Pain and Impairment Relationship Scale, PABS-PT: Pain Attitudes and Beliefs Scale for Physiotherapists SD: standard deviation, F: Analysis of variance statistics, p: significance level; \* $p<0.05$

students were found to have more positive beliefs compared to medical and nursing students. Similarly, in a study conducted with a total of 4,964 health science students studying at various departments, including medicine, physiotherapy, chiropractic, osteopathy, nursing, and pharmacy, Lewis and Battaglia (28) reported that physiotherapy and rehabilitation students had more positive beliefs than those studying in the remaining disciplines. In the current study, we observed more pessimistic beliefs concerning CLBP among the family physicians compared to the physiotherapists, and among the physiotherapists compared to the physiatrists based on the BBQ scores. In addition, in terms of the HC-PAIRS scores, the belief that low back pain causes disability and activity limitation was the strongest in the family physicians and lowest among the physiatrists. For PABS-PT, there was no significant difference between the occupational groups in terms of the biomedical and biopsychosocial factors, but biomedical beliefs were predominant in all occupational groups. In brief, studies conducted to date have generally revealed that attitudes and beliefs concerning CLBP may differ according to occupations.

There are certain limitations to our study. Vocational courses or training on pain attended by the participants were not questioned. Similarly, the back pain experiences of the participants themselves were not evaluated. Since these factors are considered to affect attitudes and beliefs concerning CLBP, future studies can be planned to investigate the effects of these factors. Besides, the examining of the attitudes and beliefs of other health care professionals such as neurosurgeons would have great importance in such a study.

According to the results of our study, healthcare professionals should review their attitudes and beliefs concerning CLBP, which places a great economic burden on countries across the world and should especially focus on the biopsychosocial approach. All healthcare professions involved in CLBP, especially family physicians who play a key role in primary care, and physiatrists and physiotherapists providing secondary care should follow the current literature on chronic pain science or participate in vocational training and meetings on this subject to help spread biopsychosocial beliefs. This will shorten the treatment process of patients, and thus reduce costs related to this health problem, which constitutes a significant part of health expenditures.

## ETHICAL DECLARATIONS

**Ethics Committee Approval:** The study was carried out with the permission of Kütahya University Non-interventional Clinical Research Ethics Committee (Date: 22.12.2020, Decision No: 2020/18-03).

**Informed Consent:** All patients signed the free and informed consent form.

**Referee Evaluation Process:** Externally peer-reviewed.

**Conflict of Interest Statement:** The authors have no conflicts of interest to declare.

**Financial Disclosure:** The authors declared that this study has received no financial support.

**Author Contributions:** All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

## REFERENCES

1. Allegri M, Montella S, Salici F, et al. Mechanisms of low back pain: a guide for diagnosis and therapy. *F1000Res* 2016; 5: F1000 Faculty Rev-1530.
2. Glombiewski JA, Hartwich-Tersek J, Rief W. Two psychological interventions are effective in severely disabled, chronic back pain patients: a randomised controlled trial. *Int J Behav Med* 2010; 17: 97-107.
3. Manchikanti L, Singh V, Falco FJ, Benyamin RM, Hirsch JA. Epidemiology of low back pain in adults. *Neuromodulation* 2014; 17: 3-10.
4. Trinderup JS, Fisker A, Juhl CB, Petersen T. Fear avoidance beliefs as a predictor for long-term sick leave, disability and pain in patients with chronic low back pain. *BMC Musculoskelet Disord* 2018; 19: 1-8.
5. Turk DC, Wilson HD. Fear of pain as a prognostic factor in chronic pain: conceptual models, assessment, and treatment implications. *Curr Pain Headache Rep* 2010; 14: 88-95.
6. Lundberg M, Larsson M, Ostlund H, Styf J. Kinesiophobia among patients with musculoskeletal pain in primary healthcare. *J Rehabil Med* 2006; 38: 37-43.
7. van der Hulst M, Vollenbroek-Hutten MM, Rietman JS, Hermens HJ. Lumbar and abdominal muscle activity during walking in subjects with chronic low back pain: support of the "guarding" hypothesis?. *J Electromyogr Kinesiol* 2010; 20: 31-38.
8. Bishop A, Foster NE, Thomas E, Hay EM. How does the self-reported clinical management of patients with low back pain relate to the attitudes and beliefs of health care practitioners? A survey of UK general practitioners and physiotherapists. *Pain* 2008; 135: 187-95.
9. Bishop A, Thomas E, Foster NE. Health care practitioners' attitudes and beliefs about low back pain: a systematic search and critical review of available measurement tools. *Pain* 2007; 132: 91-101.
10. Fullen BM, Baxter GD, Doody C, Daly LE, Hurley DA. General practitioners' attitudes and beliefs regarding the management of chronic low back pain in Ireland: a cross-sectional national survey. *Clin J Pain* 2011; 27: 542-9.
11. Macdonald M, Vaucher P, Esteves JE. The beliefs and attitudes of UK registered osteopaths towards chronic pain and the management of chronic pain sufferers: a cross-sectional questionnaire based survey. *Int J Osteopath Med* 2018; 30: 3-11.
12. Daykin AR, Richardson B. Physiotherapists' pain beliefs and their influence on the management of patients with chronic low back pain. *Spine* 2004; 29: 783-95.
13. Houben RM, Vlaeyen JW, Peters M, Ostelo RW, Wolters PM, Stomp-van den Berg SG. Health care providers' attitudes and beliefs towards common low back pain: factor structure and psychometric properties of the HC-PAIRS. *Clin J Pain* 2004; 20: 37-44.

14. Ostelo RW, Stomp-van den Berg SG, Vlaeyen JW, Wolters PM, de Vet HC. Health care provider's attitudes and beliefs towards chronic low back pain: the development of a questionnaire. *Man Ther* 2003; 8: 214-22.
15. Overmeer T, Boersma K, Main CJ, Linton SJ. Do physical therapists change their beliefs, attitudes, knowledge, skills and behaviour after a biopsychosocially orientated university course?. *J Eval Clin Pract* 2009; 15: 724-32.
16. Liddle SD, Baxter GD, Gracey JH. Chronic low back pain: patients' experiences, opinions and expectations for clinical management. *Disabil Rehabil* 2007; 29: 1899-909.
17. Coudeyre E, Tubach F, Rannou F, et al. Fear-avoidance beliefs about back pain in patients with acute LBP. *Clin J Pain* 2007; 23: 720-5.
18. Buchbinder R, Jolley D. Effects of a media campaign on back beliefs is sustained 3 years after its cessation. *Spine* 2005; 30: 1323-30.
19. Arifoğlu Karaman Ç, Küçükakkaş O. Cross-cultural adaptation and validation of the Back Beliefs Questionnaire to the Turkish language. *Disabil Rehabil* 2021; 43: 1917-23.
20. Caner Aksoy C, Saracoglu I, Akkurt L. Turkish version of health care providers' pain and impairment relationship scale: Reliability and validity. *Musculoskelet Sci Pract* 2021; 53: 102367.
21. Dalkilinc M, Cirak Y, Yilmaz GD, Parlak Demir Y. Validity and reliability of Turkish version of the Pain Attitudes and Beliefs Scale for Physiotherapists. *Physiother Theory Pract* 2015; 31: 186-93.
22. Alshehri MA, Alzahrani H, Alotaibi M, Alhowimel A, Khoja O. Physiotherapists' pain attitudes and beliefs towards chronic low back pain and their association with treatment selection: a cross-sectional study. *BMJ Open* 2020; 10: e037159.
23. Innes SI, Werth PD, Tuchin PJ, Graham PL. Attitudes and beliefs of Australian chiropractors' about managing back pain: a cross-sectional study. *Chiropr Man Therap* 2015; 23: 17.
24. Magalhães MO, Costa LO, Cabral CM, Machado LA. Attitudes and beliefs of Brazilian physical therapists about chronic low back pain: a cross-sectional study. *Rev Bras Fisioter* 2012; 16: 248-53.
25. Sit RW, Yip BH, Chan DC, Wong SY. Primary care physicians' attitudes and beliefs towards chronic low back pain: an Asian study. *PLoS One* 2015; 10: e0117521.
26. Rainville J, Bagnall D, Phalen L. Health care providers' attitudes and beliefs about functional impairments and chronic back pain. *Clin J Pain* 1995; 11: 287-95.
27. Kennedy N, Healy J, O'Sullivan K. The Beliefs of third-level healthcare students towards low-back pain. *Pain Res Treat* 2014; 2014: 675915.
28. Lewis KL, Battaglia PJ. Knowledge of psychosocial factors associated with low back pain amongst health science students: a scoping review. *Chiropr Man Therap* 2019; 27: 1-15.