



**Bac**

Chronic non-specific low back pain syndrome (cnsLBP) is a severe health problem in developed countries. Low back pain (LBP) syndrome can be classified according to the duration of the pain as well as the causes triggering the pain. Based on the duration of the pain it can be acute, subacute or chronic. In the case of acute LBP pain lasts for up to 6 weeks, in case of subacute LBP lumbosacral pain lasts from 6 to 12 weeks. Having chronic LBP pain stays for more than 12 weeks. In the case of non-specific LBP diagnosis, a clarified cause can be defined only in 15% of the cases [1–4].

information stating that by filling in the questionnaire the respondent agrees to take part in the study.

This study followed the principles of the Declaration of Helsinki, ethics approval number: ETT TUKEB 5739/2015).

The present research consisted of three validated standard questionnaires and a demographic questionnaire designed by our team.

The 36-Item Short Form Health Survey (SF-36) [27] was used to measure patients' HRQoL, which is adapted for respondents over the age of 14 and validated in Hungary [28]. The summary scores of the different items can be derived (range: 0–100) with higher scores indicating better HRQoL. Quality of life is evaluated according to eight different dimensions: Physical functioning (PF), Physical role functioning (RP), Bodily pain (BP), General health (GH), Vitality (VT), Social role functioning (SF), Emotional role functioning (RE), Mental Health (MH).

The assessment of spine prevention and low back pain disease-specific knowledge was performed with validated Low back pain knowledge questionnaire [24]. The questionnaire consists of 16 single or multiple-choice questions. The questions can be divided into three categories: (1) general knowledge about lower back pain, spinal anatomy and biomechanics, (2) definitions related to lower back pain, (3) prevention and treatment of lower back pain. The maximum score of the questionnaire is 24 points [24, 26].

Roland Morris Disability Questionnaire (RMDQ) was used to measure the functional status of the spine. The 24-item RMDQ can be applied in the cases of acute, subacute and chronic low back pain patients to measure the functional status and the decreased function of the lumbar spine during daily physical activity. The questionnaire has been validated in Hungary, its maximum score being 24 that indicates decreased function/restraint, value 0 implies the maximum [29, 30].

Descriptive statistics were used to summarize demographic parameters. The continuous variables were analysed by using non-parametric statistical tests (Kruskal-Wallis test, the Mann-Whitney U test and Spearman's rank correlation). Multiple regression analysis was performed using a linear regression model to identify the determinants of HRQoL for the SF-36. Cronbach's alpha

was used to measure the instruments' internal consistency. SPSS 24.0 was used for all data analyses and all  $p$ -values  $< 0.05$  were indicated as being of a statistical significance adjusting also for multiple comparisons.

Patients with cnsLBP were recruited into our cross-sectional study, through selection 1500 forms were planned to be included in our research; after falling-off (due to rejection or exclusion because of inadequate filling in) 1155 participants (439 female, 716 male) were included. Their mean age was  $45.25 \pm 16.90$ .

Among 1155 participating cnsLBP patients the ratio of women was 61.99%, two-thirds of the respondents were town residents, 46.03% of them were married. Based on their age ( $p = 0.17$ ) and place of residence ( $p = 0.35$ ) no significant difference was found between genders. According to their marital status, the ratio of the married was significantly higher among men (50.93%), the ratio of the widow was higher among women (9.99%). 65.89% possessed secondary level qualification, among men the ratio of those having a lower qualification is significantly lower ( $p < 0.01$ ). 67.53% are active employees (among women the ratio of the inactive is significantly higher: 35.99%5f(ted)1TD[(<)C2khe

**Taby 1** The c -de ga hc cha ace c fc LBP a e

	1157	(N)	E (61.99%)	(17.34)	(38.01%)	( )	( )
( )	45.25	16.90	45.89	17.34	44.16	16.10	0.17
( )	28.41%		30.29%		25.49%		0.35
( )	42.34%		40.63%		45.10%		
( )	29.25%		29.08%		29.41%		
( )	22.18%		21.38%		23.61%		< 0.01
( )	46.03%		43.04%		50.93%		
( )	15.63%		15.61%		15.74%		
( )	9.17%		9.99%		7.64%		
( )	6.99%		9.99%		2.08%		
( )	5.71%		7.00%		3.40%		< 0.01
( )	65.89%		49.40%		58.00%		
( )	28.40%		43.60%		38.60%		
( )	67.53%		64.01%		74.20%		< 0.01
( )	32.47%		35.99%		25.80%		
( )	24.10%		28.06%		18.77%		< 0.01
( )	32.35%		37.19%		25.85%		
( )	30.41%		26.73%		35.38%		
( )	13.14%		8.02%		20.00%		
( )	4.81	4.59	4.81	4.54	4.80	4.68	0.63
( )	15.28	12.55	15.48	12.82	15.27	12.52	0.65

2.68. We tested the LBPQ score differences according to different socio-demographic parameters and we found significant differences in scores by age, education, place of living, work type and marital status also (Table 3).

In the course of our examination we assumed that the increase of the years spent since the first episode of low-back pain implies a further decrease in the quality of life of cnsLBP patients. Regarding all 8 dimensions of the

questionnaire significant correlation was found between the number of years spent in pain and the mean value of the certain HRQoL dimension ( $p < 0.05$ ).

Among the examined scores weak correlation was found ( $R < 0.30$ ), except for PF that showed medium strength correlation with the number of years, indicating significantly decreased function by the ongoing of years ( $R = -0.41; p < 0.01$ ) (Table 4).

**Taby 2** Re ab . a d e a c e c. f he dffe e SF-36 d e (C bach' A ha) [29]

	25	( )	( )
( )	64	<b>55.69</b>	20.86
( )	78	<b>64.24</b>	23.07
(E)	80	<b>76.86</b>	23.77
( )	71	<b>67.34</b>	19.38
( )	70	<b>53.46</b>	19.91
( )	78	<b>73.69</b>	37.24
( )	79	<b>63.94</b>	38.71
(E)	91	<b>74.67</b>	23.19



In our survey, the participants' low back pain prevention knowledge was between 6.20–8.39 points. We also found similar results in international literature Maciel et al. [24] measured 46-year-old participants who did not receive a spine prevention education program, their point was 8.6 points. In the King of Saud University survey, 40-year-old participants who did not receive spine prevention education achieved 9 points [35].

Patients who participated in education and back school programs reached 16–22.2 points [24, 26]. The disease-specific knowledge of health workers was 19.1–19.2 points [26, 36] (Table 5).

In our research the LBPQ was showed a significant positive correlation with general health, pain, social function and role of physical health, which fact has important role in planning the future interventions for cnsLBP patients.

While examining the quality of life of patients bearing nscLBP syndrome our research has proven that chronic pain has a notable effect on patients' quality of life. The longer nscLBP syndrome has been present in patients' lives, the less favourable their quality of life is. The disease accounts for greater and greater measures of restraint regarding functional, bodily and mental health. Similar results were found when comparing RMDQ and SF-36 results: the greater the level of pain and restraint is, the more unfavourable the patients' bodily and mental health is, furthermore the more unfavourable social function turns into. In our research patients evaluated the functional status of their spine  $4.81 \pm 4.59$  through RMDQ. The functional status of the spine of nscLBP

patients participating in international studies resulted diverse. On the whole it can be stated that studies specifying interventions are characterized by higher RMDQ values while quantitative research as the present one found lower values (Table 6) [37–40].

According to the regression analysis our finding is that the RMDQ sum value is strongly and significantly associated with all of the 8 dimensions of HRQoL, which furthermore attests that functional drawbacks originating from the disease have an impact on all fields of HRQoL.

Among socio-demographic determinants, the significant effect of sitting for more than 30 min has been proven for the most dimensions followed by age and gender. Hence, sedentary work, the rise of age or belonging to female gender account for the highest risk on the decrease of quality of life among acLBP patients. Sedentary work accounts for a higher risk of a decrease in quality of life also in compari-

According to further findings among nscLBP patients possessing qualifications in higher education general health and physical functioning are more favourable in comparison with patients with lower education that may be explained by the assumption that people with higher education devote more attention and apply a wider range of treatment options, resulting in a higher quality of life. Moreover, low education has a significantly negative effect on social and mental health as well that reinforces nscLBP patients' exclusion and the accumulation

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