Psychometric properties of the Hindi version of the Fear-Avoidance Beliefs Questionnaire in patients with chronic non-specific low back pain

Panhale, Vrushali P., Gurav, Reshma S., Shah, Pooja and Nayak, Neelam

Psychometric properties of the Hindi version of the Fear-Avoidance Beliefs Questionnaire (FABQ) in patients with chronic non-specific low back pain.

Vrushali P. Panhale[a],PhD; Reshma S. Gurav[a],PT; Pooja Shah[a],PT; Neelam Nayak[a,b],PT*

[a]Department of Physiotherapy, MGM College of Physiotherapy, Kamothe 410209 Navi Mumbai, India

[b] School of Physiotherapy, Australian Catholic UniversityBanyo 4014, QLD Australia

*Corresponding author:

Neelam Nayak

School of Physiotherapy,

Australian Catholic University

Banyo 4014, QLD Australia

Email ID: drneelamnayakpt@gmail.com
Contact No.: +61-468584267

Study Design: Prospective cohort study

Objective: To translate, adapt and establish psychometric properties of the Fear-Avoidance Beliefs Questionnaire (FABQ) for Hindi-speaking patients with chronic non-specific low back pain.

Summary of Background Data: The FABQ is a patient-reported measure to assess beliefs regarding how physical activity and work are influenced based on fear related to low back pain.

Methods: Standardised translation guidelines were implemented to confirm Hindi-version of the FABQ (FABQ-H). A cross-sectional study design was utilised. Construct validity analysis included factor analysis of the FABQ and use of Pearson's correlation coefficients to report convergent and divergent validity. Reliability assessment included calculation of intraclass correlation coefficient (ICC) and Cronbach's alpha for internal consistency. Outcome measures consisted of Numeric Rating Scale (NRS), Roland Morris Disability Questionnaire (RMDQ) Hindi and Tampa Scale of Kinesiophobia (TSK).

Results: In total, 100 patients with chronic non-specific low back pain were recruited, with a mean age of 36.89 (±7.78). Factor analysis revealed a three-factor structure of the FABQ, which consisted of subscales FABQ Physical activity, FABQ Work and FABQ Work prognosis. Convergent validity analysis demonstrated a moderate correlation between FABQ-H and TSK ($r = 0.413$). Divergent validity analysis displayed a moderate correlation between FABQ-H and NRS ($r = 0.362$) and RMDQ Hindi ($r = 0.399$). ICC value for the FABQ-H was observed as 0.938 indicating high significance for test-retest reliability. Cronbach's alpha for the FABQ-H was recorded as 0.806 demonstrating high internal consistency.

Conclusions: A successful translation and adaptation of the Hindi version of FABQ is reported in this study. The three-factored FABQ-H exhibited satisfactory construct validity, test-re-test reliability and internal consistency. Based on findings of this study, the FABQ-H can be implemented in Hindi-speaking patients with chronic non-specific LBP.

Keywords: Low back pain, Psychometrics, Fear-Avoidance Beliefs Questionnaire (FABQ), Hindi

Level of Evidence: 3

Key points:

1. Fear-avoidance behaviour contributes to self-reported disability and reduced physical activity in patients with chronic non-specific low back pain.

2. The FABQ-Hindi is successfully adapted and shows satisfactory construct validity, internal consistency and reliability.

3. The FABQ-Hindi is suitable for application in Hindi-speaking, working age-group patients with chronic non-specific LBP.

Introduction

Low back pain (LBP) is a primary cause of disability worldwide [1] with a high prevalence and global burden [2]. LBP is the most common cause for years lived with disability than any other condition, with working age groups being most commonly affected [1,2]. For developing countries, the massive burden of LBP is projected to increase with growing and ageing populations in forthcoming decades [1,2]. This may be concerning for developing countries like India, where informal employment is a norm [3] and with probably scarce chances of job modification, disability associated with LBP may upsurge in the working age group and ageing population.

One of the common causes of disability due to LBP is rooted in the fear avoidance behaviour [4,5]. Pain-related fear in chronic conditions leads to avoidance of daily activities, subsequently resulting in functional disability [5]. Fear-avoidance behaviour has been associated with disability in chronic LBP [6]. Understanding pain-related fear can aid clinicians in better management of patients with chronic LBP to alter the fear-avoidance cycle [7]. Assessment of beliefs related chronic LBP is important [4] not only to gain psychosocial data related to fear-avoidance beliefs, but also for evaluating efficiency of treatment for chronic LBP[8].

The Fear-Avoidance Beliefs Questionnaire (FABQ) offers a patient-report of beliefs regarding how physical activity and work are influenced based on their fear related to LBP [9]. The FABQ has been used in patients with chronic LBP and has demonstrated good reliability and validity [9]. The FABQ has been adapted to suit a range of European [10-13] and Asian languages [14-16], enabling application of this measure in clinical and research practice in the respective region. The FABQ has not been culturally adapted and psychometrically tested to suit Hindi-speaking population with chronic LBP. Establishing psychometric properties of the FABQ in Hindi would aid in obtaining fear-avoidance data in chronic LBP patients in India and would benefit in planning efficient treatment.

The purpose of this study is to report the cultural adaptation, translation, and psychometric properties (construct validity including factor analysis, and reliability) of Hindi version of the FABQ (FABQ-H) in patients with chronic non-specific LBP.

Methods

Design and Participants

A prospective, cross-sectional study design was utilised. A convenience sample of participants with chronic (more than three months) non-specific LBP was included. Participants were excluded if they were 1) diagnosed with acute LBP or infectious and malignant conditions leading to LBP 2) Post-surgery LBP 3) pregnant females 4) unable to provide informed consent. A research candidate screened for eligible participants from patients visiting the physiotherapy out-patient department. Eligible participants were provided with participant information sheet and had purpose of the study explained to them. Before commencement of the study, all participants provided informed consent. The study was conducted at Mahatma Gandhi Mission (MGM) Hospital physiotherapy out-patient department and was approved by MGM College of Physiotherapy's Institutional Research Review Committee. The study was conducted in agreement with the principles of the Declaration of Helsinki for human experiments [17].

Translation

Standardised guidelines [18] were implemented to translate original English version of the FABQ to Hindi. Two bilingual translators performed the translation independently. One of the translators was a registered Hindi language academic and was not medically trained. The other translator was a native Hindi speaker with knowledge of medical terms and was aware of the purpose of the study. Backward translation was conducted by two independent English translators who were blinded to the original FABQ.

Translated version of the FABQ was reviewed by an expert committee that consisted of two physiotherapists and two Hindi language experts. The committee reviewed and assessed translated version of the FABQ for meaningful items and cultural adaptability. After reaching consensus, pilot version of the FABQ-Hindi (FABQ-H) was finalised by the committee.

Twenty chronic non-specific LBP patients were requested to complete the pilot version of the FABQ-H, to evaluate clarity and comprehensibility. This version was reassessed by the expert committee. As none of the items needed modification based on the feedback of the patients, final version of the FABQ-H was confirmed (Appendix).

Procedure

Assessment was undertaken by the research candidate who documented data including demographic information, pain history and scores on outcome measures. The FABQ -H was administered in this session and was repeated after 24 hours by the same research candidate for the purpose of test-re-test reliability. The patients were not receiving any active treatment during this time. The following outcome measures were used.

Fear-Avoidance Beliefs Questionnaire (FABQ)

The FABQ consists of 16 items and each item is scored from 0 to 6 [9]. The FABQ includes two subscales, namely FABQ Physical Activity and FABQ Work. Greater fear- avoidance beliefs are inferred by higher scores of the FABQ [9]. The translated Hindi version was used in the current study.

Numeric Rating Scale

Intensity of low back pain was measured using the Numeric Rating Scale (NRS)[19]. NRS is a self-reported measure to rate the intensity of pain, and ranges from 0 meaning no pain to a score of 10 indicating worst pain [19].

Roland Morris Disability Questionnaire- Hindi

Hindi version of the Roland Morris Disability Questionnaire (RMDQ) was implemented, which is culturally adapted and translated from the original RMDQ [20]. A self-report measure, RMDQ comprises 24 items indicating a range of activities of daily living [21]. Total score ranges from 0 meaning no disability to 24, indicating severe disability [21].

Tampa Scale of Kinesiophobia

Tampa Scale of Kinesiophobia (TSK) was utilised to evaluate fear of movement. The self-reported scale includes 17 items which are graded ranging from a score of 1 to 4. Total score ranges from 17 to 68, with higher score indicating higher fear of movement [22].

Statistical analysis

Demographic characteristics are presented using mean, standard deviations and percentage. Exploratory factor analysis was employed to assess the structure of the FABQ-H. The Kaiser–Meyer–Olkin (KMO) measure was utilised to test sampling adequacy and the Bartlett's Test of Sphericity was used to verify appropriateness of the data for factor analysis

[23]. Pearson correlation coefficients were used to test convergent and divergent validity between the FABQ-H and scores on other measures; correlation coefficients <0.30 were inferred as weak, 0.30–0.59 as moderate, and > 0.60 as indicating strong validity [24]. Reliability analysis involved calculating intraclass correlation coefficient (ICC) and internal consistency (Cronbach's alpha); a satisfactory ICC was regarded as a minimum score of 0.75 [24]. The Statistical Package for the Social Sciences, version 21.0 (SPSS Inc., Chicago, IL), was employed to analyse the data.

Results

Participants

The study included 100 participants with a mean age of 36.89 (±7.78). Demographic characteristics are illustrated in Table 1.

Factor Analysis

Exploratory factor analysis (principal axis factoring) with varimax rotation was utilised to analyse the FABQ-H items. Suitability of data for factor analysis was established by KMO value of 0.74 indicating an adequate sample and a significant Bartlett's Test of Sphericity. Item 1 was excluded because on removal of this item, the scale seemed to be more homogeneous according to the Cronbach's alpha. Item 8 and 16 were excluded based on their skewed distribution. Items 13 and 14 were excluded as they correlated very closely with item 12. Thus, after excluding item 1, 8, 13, 14 and 16, the free factor analysis included 11 items. On applying varimax rotation, the composition involved items 2, 3, 4 and 5 loaded on factor 1; items 6, 7, 9, 10 loaded on factor 2; item 12 loaded on factor 3; item 15 on factor 4; and item 11 on factor 5. This solution explained 52 % of the variance. These five core factors with their item distribution did not seem to retain the original meaning of the FABQ. Further factor analysis was implemented where the number of factors were forced to three with the aim to achieve a balance between the explained variance and clinical significance. The three factors were called FABQ Physical activity (items 2, 3, 4 and 5), FABQ Work (items 6, 7, 9, 10 and11), and FABQ Work prognosis (items 12 and 15) (Table 2). The three-factored 11-item questionnaire was adopted for further analysis.

Validity

Convergent validity analysis indicated a moderate correlation between the FABQ-H and TSK (r = 0.413). Divergent validity analysis presented a moderate correlation between the FABQ-

H and NRS (r = 0.362) and RMDQ Hindi (r = 0.399) (Table 3). The FABQ-H subscales demonstrated a moderate correlation with each other and are presented in Table 4.

Reliability

Cronbach's alpha for the FABQ-H total score was recorded as 0.806 demonstrating high internal consistency. Cronbach's alpha for FABQ Physical activity was 0.778, FABQ Work was 0.781, and FABQ Work prognosis was 0.555. ICC value for total score of the FABQ-H was identified as 0.938 indicating high significance for test-retest results within a 24-hour interval. All three subscales demonstrated high significance (Table 5).

Discussion

This study established psychometric properties of the translated FABQ-Hindi version. Findings from this study demonstrated that the FABQ-H is suitable for application in Hindi-speaking patients with chronic non-specific LBP. Psychometric properties of the FABQ-H demonstrated satisfactory construct validity and overall internal consistency of 0.80, and ICC score of 0.93 for test-re-test reliability.

Due to the possibility of a multi-factorial structure [9,10] [,11,12], expected number of factors were not hypothesised and the exploratory factor analysis was preferred. The three subscales established in this study are comparable to the Finnish, German and Greek versions [10-12]. The FABQ Physical activity subscale corresponds to that reported in earlier studies [9,12] confirming the robustness of this subscale. The FABQ Work and Work prognosis subscales are similar to previously reported versions [10-12] suggesting the soundness for these subscales as well.

The 11-item structure of the FABQ-H is identical to that proposed in the original English[9] version, and to some extent similar to the 12-item Italian[13] and Swiss-German[27] version. In fact, in the scoring system of the original version, items 1, 8, 13, 14 and 16 items are not scored as they are considered illusory[9]. Similarly, in our study, these excluded items were not considered for scoring. In addition, item 8 (*I have a claim for compensation for my pain*) may not be completely relevant to chronic LBP patients in India, as the access to work-compensation is likely to be very limited. Exclusion of items 13 (*...cannot do my normal work with present pain*) and 14 (*...cannot do my normal work till pain is treated*) due to redundancy, which is similar to the original version [9], but is in contrast to the German and Greek versions[11,12], did not seem to change the findings. Similarly, exclusion of item 16

(...*don't think I will ever return to work*) due to skewing is identical with the English[9], Greek[12] and Italian[13] version and did not appear to influence the findings.

The FABQ-H demonstrated overall high internal consistency, which is comparable with the previous literature [11,12] and reflects homogeneity of constituent items forming the subscales. The FABQ Physical activity and FABQ Work subscales indicated a better internal consistency than FABQ Work prognosis. This is in contrast to other three-factored versions where the FABQ Work and Work prognosis subscales showed good internal consistency [10-12]. The conflicting results may point towards multidimensionality of the FABQ constructs. A recent Rasch analysis of Italian version demonstrated that the FABQ subscales measure different psychological or conceptual constructs [25].

All three FABQ-H subscales showed a moderate correlation among them (0.31-0.39), possibly indicating that individual parameters of the same constructs are being measured. These findings are in-line with the Greek three-factored version [12] and ascertain the existence of separate FABQ Work and Work prognosis subscales. The convergent validity was established based on the nature of association of the FABQ-H and the TSK, which showed moderate correlation. All three subscales presented a weak to moderate correlation with the TSK and are in-line with what has been previously reported [12,13,26]. The FABQ-H and TSK are intended to assess fear-avoidance behaviour. However, the moderate correlations reported in our study may indicate that these two scales may not measure specifically same conceptual constructs. The overlap in the constructs of the FABQ and TSK is possible, with TSK possibly more intended to measure a fear of (re)injury, as opposed to the FABQ which is intended to measure fear of pain precisely caused by work or physical activities [26].

The divergent validity was determined based on correlations between the FABQ-H and measures of pain (NRS) and disability (RMDQ Hindi). The FABQ Physical activity and Work prognosis demonstrated a weak correlation with pain intensity, which is similar to the original version[9] and may indicate that these FABQ subscales may be independent of pain intensity. In contrast, a moderate correlation of the FABQ Work and pain intensity was demonstrated and represents a probable association between fear-avoidance beliefs relating to work and pain intensity. This is similar to the Swiss-German and Persian version [15,27]; however, the reason for this occurring in our study may be attributed to the work-culture in India, involving financial concerns related to sick-leaves from work. Difficulty in taking sick-

leaves from work and lack of job modification opportunities may have contributed to the association between fear-avoidance beliefs related to work and intensity of the low back pain.

In agreement with previous research [9,14,27], a moderate correlation between FABQ-H subscales and disability was observed. These findings acknowledge the relationship between fear avoidance beliefs and self-reported disability. Higher fear of movements has been associated with higher disability in chronic non-specific LBP patients[28]. The implications of this association are relevant to the working age group, as individuals with long sick-leaves at work due to LBP are reported to have more negative beliefs about work activities [29]. The disability from chronic LBP has also been reported to be the highest among the working age group [1].

The test-re-test reliability, with ICC (0.93) computed for all the items of the FABQ-H is comparable to the literature [9,10,12,13,27]. Similarly, all subscales exhibited excellent ICC values (0.88 - 0.94). The time-interval for test-re-test reliability was relatively short (24-hours) in the current study. However, inclusion of all 100 patients for test-re-test reliability assessment and implementation of ICC may reduce the confounding factors related to short time interval to some extent [30].

Participants in this study belonged to the working age group (mean age 37 years), confirming the common occurrence of chronic LBP in this age group [2]. Participants belonged to a range of employment sections including corporate office workers, homemakers and labour workers. More than 50% participants reported moderate to severe pain intensity, with LBP persisting for more than six months to three years. These findings may reflect upon the broader association between work and chronic LBP in developing countries, where informal employment and low possibilities of job modification are common [3], in addition to a lack of occupational health policies [1].

Some of the limitations of the current study must be acknowledged. Data was collected at a single point in time and any significant result does not reflect cause-effect relationship. Future study is recommended in order to evaluate the responsiveness of the translated FABQ-H in an experimental, pre and post intervention setting. The sample belonged to the working age group and possibly with a gender bias (63% females), thus results should be interpreted with caution. Additionally, the time-interval for test-re-test reliability was relatively short and

longer time-intervals can be further examined, which might be more relevant for treatment follow-ups. Lastly, even if the 11-item structure is statistically stable, the possible implications of excluded items should be considered, and the questionnaire utilised within individualised psychosocial context for each patient.

Conclusion

This study demonstrated a successful translation and adaptation of the Hindi version of FABQ. The satisfactory internal consistency, reliability and construct validity of the three-factored FABQ-H presented in this study, makes it appropriate for clinical and scientific use in Hindi-speaking clients with chronic non-specific LBP.

References

1.   Hartvigsen J, Hancock MJ, Kongsted A, et al. What low back pain is and why we need to pay attention. *The Lancet.* 2018;391(10137):2356-2367.

2.   Hoy D, March L, Brooks P, et al. The global burden of low back pain: estimates from the Global Burden of Disease 2010 study. *Ann Rheum Dis.* 2014;73(6):968.

3.   Ghose AK. Employment: The Fault Line in India's Emerging Economy. *Comp Econ Stud.* 2012;54(4):765-786.

4.   Walsh AD, Radcliffe CJ. Pain beliefs and perceived physical disability of patients with chronic low back pain. *Pain.* 2002;97(12):23-31.

5.   Vlaeyen JWS, Linton SJ. Fear-avoidance and its consequences in chronic musculoskeletal pain: A state of the art. *Pain.* 2000;85(3):317-332.

6.   Lundberg M, Frennered K, Hägg O, Styf J. The Impact of Fear-Avoidance Model Variables on Disability in Patients With Specific or Nonspecific Chronic Low Back Pain. *Spine (Phila Pa 1976).* 2011;36(19):1547-1553.

7.   Bunzli S, Smith A, Schütze R, Lin I, O'Sullivan P. Making Sense of Low Back Pain and Pain-Related Fear. *J Orthop Sports Phys Ther.* 2017;47(9):628.

8.   Wertli MM, Rasmussen-Barr E, Held U, Weiser S, Bachmann LM, Brunner F. Fear-avoidance beliefs—a moderator of treatment efficacy in patients with low back pain: a systematic review. *The Spine Journal.* 2014;14(11):2658-2678.

9.   Waddell G, Newton M, Henderson I, Somerville D, Main CJ. A Fear-Avoidance Beliefs Questionnaire (FABQ) and the role of fear-avoidance beliefs in chronic low back pain and disability. *Pain.* 1993;52(2):157-168.

10.   Terho H, Haapea M, Paananen M, Korniloff K, Häkkinen A, Karppinen J. Translation and validation of the Finnish version of the Fear-Avoidance Beliefs Questionnaire (FABQ). *Scand J Pain.* 2016;10(1):113.

11.   Pfingsten M, Kröner-Herwig B, Leibing E, Kronshage U. Validation of the German version of the Fear-Avoidance Beliefs Questionnaire (FABQ). *Eur J Pain.* 2000;4(3):259-266.

12.   Georgoudis G, Papathanasiou G, Spiropoulos P, Katsoulakis K. Cognitive assessment of musculoskeletal pain with a newly validated Greek version of the Fear-Avoidance Beliefs Questionnaire (FABQ). *Eur J Pain.* 2007;11(3):341-351.

13.   Monticone M, Baiardi P, Bonetti F, et al. The Italian Version of the Fear-Avoidance Beliefs Questionnaire (FABQ-I): Cross-Cultural Adaptation, Factor Analysis,

Reliability, Validity, and Sensitivity to Change. *Spine (Phila Pa 1976)*. 2012;37(6):E374-E380.

14. Cheung P, Wong C, Cheung J. Psychometric validation of the cross-culturally adapted traditional Chinese version of the Back Beliefs Questionnaire (BBQ) and Fear-Avoidance Beliefs Questionnaire (FABQ). *Eur Spine J.* 2018;27(8):1724-1733.

15. Rostami M, Noorian N, Mansournia MA, Sharafi E, Babaki AES, Kordi R. Validation of the Persian version of the fear avoidance belief questionnaire in patients with low back pain. *J Back Musculoskelet Rehabil.* 2014;27(2):213-221.

16. Matsudaira K, Kikuchi N, Murakami A, Isomura T. Psychometric properties of the Japanese version of the Fear-Avoidance Beliefs Questionnaire (FABQ). *J Orthop Sci.* 2014;19(1):26-32.

17. World Medical Association. World medical association declaration of helsinki: Ethical principles for medical research involving human subjects. *JAMA.* 2013;310(20):2191-2194.

18. Beaton ED, Bombardier EC, Guillemin EF, Ferraz EMB. Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. *Spine (Phila Pa 1976)*. 2000;25(24):3186-3191.

19. Childs DJ, Piva RS, Fritz MJ. Responsiveness of the Numeric Pain Rating Scale in Patients with Low Back Pain. *Spine (Phila Pa 1976)*. 2005;30(11):1331-1334.

20. Roland Martin. Roland Morris Disability Questionnaire. Accessed June 2017.

21. Roland M, Morris R. A study of the natural history of back pain. Part I: development of a reliable and sensitive measure of disability in low-back pain. *Spine (Phila Pa 1976)*. 1983;8(2):141-144.

22. Kori SH. Kinisophobia : A new view of chronic pain behavior. *Pain Manage.* 1990:35-43.

23. Aljandali A. *Multivariate Methods and Forecasting with IBM® SPSS® Statistics.* Cham: Springer International Publishing; 2017.

24. Andresen EM. Criteria for assessing the tools of disability outcomes research. *Arch Phys Med Rehabil.* 2000;81(12 Suppl 2):S15-20.

25. Meroni R, Piscitelli D, Bonetti F, Zambaldi M, Guccione AA, Pillastrini P. Rasch analysis of the Italian version of fear avoidance beliefs questionnaire (FABQ-I). *Disabil Rehabil.* 2015;37(2):151-157.

26. Swinkels-Meewisse EJCM, Swinkels RAHM, Verbeek ALM, Vlaeyen JWS, Oostendorp RAB. Psychometric properties of the Tampa Scale for kinesiophobia and

the fear-avoidance beliefs questionnaire in acute low back pain. *Man Ther.*
2003;8(1):29-36.

27. Staerkle R, Mannion AF, Elfering A, et al. Longitudinal validation of the Fear-
Avoidance Beliefs Questionnaire (FABQ) in a Swiss-German sample of low back
pain patients. *Eur Spine J.* 2004;13(4):332-340.

28. Carvalho FA, Maher CG, Franco MR, et al. Fear of Movement Is Not Associated
With Objective and Subjective Physical Activity Levels in Chronic Nonspecific Low
Back Pain. *Arch Phys Med Rehabil.* 2017;98(1):96-104.

29. Lehmann TR, Spratt KF, Lehmann KK. Predicting long-term disability in low back
injured workers presenting to a spine consultant. *Spine (Phila Pa 1976).*
1993;18(8):1103-1112.

30. Polit D. Getting serious about test–retest reliability: a critique of retest research and
some recommendations. *Qual Life Res.* 2014;23(6):1713-1720.

Table 1. Participants characteristics (n=100)

Characteristics	Percentage
Age (mean years ±SD)	36.89 (±7.78)
Gender (% female)	63
Education level	
University Graduates/Higher education	50
Secondary education	16
Less than secondary education	34
Employment	
Corporate Office workers	34
Homemakers	26
Students	14
Labour workers	20
Doctors	6
Pain duration	
3-6months	40
6-12months	20
1-3years	26
>3years	14
Pain intensity	
1-3	14
4-6	55
7-10	31

SD: Standard deviation

Table 2. Factor loadings in principal component analysis of the Fear-Avoidance Beliefs Questionnaire (FABQ)-Hindi

Items[*]	Factors		
	Physical Activity	Work	Work prognosis
3. ...might harm my back	0.800		
4. ...should not do physical activities	0.772		
5. ...cannot do physical activities	0.553		
2. …makes pain worse	0.512		
10…work makes pain worse		0.767	
7. …aggravated pain		0.664	
9. …work is too heavy		0.626	
11. ..might harm my back		0.626	
6. …pain caused by work		0.492	
15. ..don't think will be back to work			0.726
12. ..shouldn't do my normal work			0.531

FABQ-H= Fear-Avoidance Beliefs Questionnaire – Hindi

*Source: Waddell, Newton, Henderson, Somerville, Main [9]

Table 3. Convergent and Divergent validity of the Fear-Avoidance Beliefs Questionnaire (FABQ)-Hindi, using Pearson's correlation coefficient

	TSK	NRS	RMDQ Hindi
FABQ-H total	0.413	0.399	0.362
FABQ Physical activity	0.349	0.212	0.314
FABQ Work	0.243	0.348	0.333
FABQ Work prognosis	0.412	0.227	0.398

FABQ-H: Fear-Avoidance Beliefs Questionnaire – Hindi, TSK: Tampa Scale of Kinesiophobia , NRS: Numeric Rating Scale , RMDQ: Roland Morris Disability Questionnaire

Table 4. Fear-Avoidance Beliefs Questionnaire (FABQ)-Hindi subscales correlation

FABQ-H subscales	r
FABQ Physical activity and FABQ Work prognosis	0.333
FABQ Work and FABQ Physical activity	0.314
FABQ Work prognosis and FABQ Work	0.398

*Pearson's correlation coefficient

Table 5. Test-re-test reliability of the Fear-Avoidance Beliefs Questionnaire (FABQ)-Hindi (n=100)

Item	ICC	*p*-value	95% CI
2	0.896	<0.001	0.767 to 0.974
3	0.886	<0.001	0.805 to 0.946
4	0.950	<0.001	0.903 to 0.984
5	0.856	<0.001	0.733 to 0.942
6	0.939	<0.001	0.893 to 0.973
7	0.896	<0.001	0.748 to 0.981
9	0.947	<0.001	0.903 to 0.982
10	0.648	<0.001	0.430 to 0.966
11	0.808	<0.001	0.698 to 0.905
12	0.793	<0.001	0.665 to 0.896
15	0.903	<0.001	0.802 to 0.972
FABQ-H total	0.938	<0.001	0.905 to 0.973
FABQ Physical activity	0.944	<0.001	0.845 to 0.976
FABQ Work	0.926	<0.001	0.816 to 0.938
FABQ Work prognosis	0.886	<0.001	0.889 to 0.970

FABQ-H: Fear-Avoidance Beliefs Questionnaire – Hindi, ICC: intra-class correlation coefficient, CI: Confidence Interval.