

Validation of a simplified Chinese version of the pain self-efficacy Questionnaire (PSEQ) and PSEQ-2 for patients with chronic pain in mainland China

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Research Article

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Abstract

Background: PSEQ has been cross-culturally adapted into many languages with excellent reliability and validity. Recently, the short form of PSEQ-2 was developed and exhibited satisfactory psychometric properties. However, PSEQ and PSEQ-2 has not been translated or validated in mainland China. The present study aimed to evaluate the psychometric properties of simplified Chinese version of PSEQ and PSEQ-2 in patients with chronic pain.

Methods: The original version of PSEQ and PSEQ-2 were linguistically translated and adapted to formulate the simplified Chinese version, which were then administered by 219 patients with chronic pain, along with a set of self-report health-related instruments. Statistical analysis was performed to evaluate the psychometric properties of the simplified Chinese version PSEQ and PSEQ-2.

Results: The simplified Chinese version of PSEQ and PSEQ-2 had been determined good to excellent internal consistency (Cronbach's alpha, 0.95 and 0.83), test-retest reliability (overall ICC,). and sound construct validity, which was supported by moderately strong association with the criterion measures. Additionally, exploratory and confirmatory factor analysis have found and confirmed one factor solution as hypothesized.

Conclusion: The simplified Chinese version of PSEQ and PSEQ-2 showed satisfactory psychometric properties in Chinese population with chronic pain, and could be safely utilized to evaluating the self-efficacy in clinical and research setting.

Keyword. PSEQ; PSEQ-2; simplified Chinese; validation

Background

Chronic pain has been worldwide healthy and social issue, resulting in varieties of physical function damages, psychological problems and immeasurable economic losses[1, 2]. It was estimated that more than 10% of population around the world suffer from it[3]. In the past decades, a majority of studies have illustrated the significant role of psychological and social factors in the development of chronic pain, discovering cognitive pattern and emotional reaction to pain may strongly impact pain duration and effect of consequent therapy[4, 5]. Self-efficacy, refers to self-reported confidence of engaging in specific behaviors to accomplish desire performances despite experiences of pain, has been suggested to be one of the most important psychological constructs modeling individual adjustment to chronic population[6-9]. Growing evidences showed that predictive function of pain self-efficacy on disabilities and mental health[10-12], and chronic pain patients with higher self-efficacy appeared to have better rehabilitation level, lower psychological stress and enhanced opportunity to return to work, whereas lacking of self-efficacy usually means lower quality of life and worse general health status. In addition to influence of long-term therapy outcomes, Pain self-efficacy is also associated with chronic pain patient's coping strategy reference and outcomes after intervention[11, 13], so clinicians should adapt personalized

coping strategies to patients with different self-efficacy beliefs in order to obtain ideal function adjustments to chronic pain.

To assess self-efficacy in chronic pain population, Micheal[14] originally developed the Pain Self-Efficacy Questionnaire (PSEQ), which covered amounts of functions including household chores, socializing, work conditions and coping with pain without medication as well. The 10-item PSEQ has been widely validated in many different countries, including Australia[14], Japan[15], Iran[16], Portugal[17], and Denmark[18], and exhibited excellent reliability and validity in different cultures. Although PSEQ has been confirmed applicable to evaluating patients with all persist pain presentations, but still not brief enough for administration in busy outpatient setting. In order to improve clinical practicability and time efficiency, a 2-item short form of the Pain Self-Efficacy Questionnaire (PSEQ-2) was then developed in 2015[19]. Of which the PESQ-2 items selected from the original 10-item version, one item was identified with the highest item-total correlation (item 9 in PSEQ), and the other was calculated to be most representative of overall construct (item 5 in PSEQ). The PSEQ-2 has manifested acceptable reliability and validity and seems to be a promising brief pain self-efficacy measurement.

Unfortunately, the simplified Chinese version of PESQ and PSEQ-2 are not available in mainland China, and clinician have no access to quantify the self-efficacy in patients with chronic pain. Therefore, the present study aims to translate the original version of the PSEQ into simplified Chinese and validate the psychometric properties of the Chinese version of the PSEQ and PSEQ-2.

Methods

The original English version of PESQ and PSEQ-2 was firstly translated and cross-culture adapted into simplified Chinese according to guidelines for cross-cultural adaptation of self-report measures. Then, 118 patients diagnosed with chronic pain (last for more than six months) was enrolled into our program from pain clinic and orthopedic department, and required to finish a whole set of questionnaires. Finally, statistical analysis was performance to validate the psychological properties of PSEQ and PSEQ-2.

Linguistic Translation and Cross-cultural Adaptation

The translation and cross-cultural adaptation procedure of original PSEQ and PSEQ-2 into simplified Chinese version were conducted followed by international guidelines[20]. Two bilingual translators, both were native Mandarin speakers, forward translated two original version into simplified Chinese independently. An author of the present study, being aware of translation motivation and questionnaire concept, were assigned to engaged in translation process, while the other translators were an English teacher, and fully blind to the research purpose. Subsequently employing two English speakers majoring in Chinese specialism into the program to complete the backward translation respectively. Then, an expert panel consisting of two rehabilitation clinicians, two translators, one statistician and three patients with chronic pain were established to compare translation versions with the original ones, modify all possible inconsistencies and finally arrived to the consensus on semantic, experiential, and idiomatic equivalences between the English version and the simplified Chinese one. The pretest questionnaire was then

administered by a cohort of 45 patients with chronic pain to detect any difficulties in understanding or completing each item. After thoroughly revising by expert panel, the final simplified Chinese version of PSEQ and PSEQ-2 was developed.

Participants

219 consecutive patients diagnosed with chronic pain in pain clinic of Changhai hospital, a tertiary hospital in Shanghai, was enrolled into our program between June 2016 and August 2017, which is consistent with the rule that at least 10: 1 ratio of the number of participants to that of items[21]. The inclusion criterions were as follows: 1) older than age of 18 and pain duration lasted for more than 6 months; 2) no history of surgery, tumor, systematic diseases or psychological problems; 3) capable of understanding and completing series of questionnaire independently. After signing a written informed consent, all the recruited subjects were required to complete demographic data collection and administration of questionnaires, which included the simplified Chinese version of PSEQ and PSEQ-2, the Roland–Morris Disability Questionnaire (RMDQ), the Hospital Anxiety and Depression Score (HADS), the Brief Pain Inventory (BPI), 36-Item Short Form Health Survey (SF-36), and the Tampa Scale for Kinesiophobia (TSK). Our research was approved by Human Research Ethics Committee of Second Military Medical University.

Instruments

The Pain Self-Efficacy Questionnaire (PSEQ) and PSEQ-2

The Pain Self-Efficacy Questionnaire (PSEQ) is a 10-item questionnaire designed to measure the confidence of engaging in the routine activities despite ongoing pain. It assesses the extent to how confident in performing a range of certain activities by 7-point Likert scales, with 0 denotes no confidence at all and 6 complete confidence. A higher total score, by adding up scores of each item, indicating stronger confidence in mastering self-efficacy. Previous studies on psychological properties of PSEQ has been manifested reasonable reliability and validity in different culture backgrounds, and the one factor structure has been confirmed by CFA and EFA. In order to shorten administration time and improve self-efficacy assessment efficiency, Nicholas selected 2 items (item 5 and item 9) from the original version and formed the strong short form of PSEQ2. It has been suggested to be prior to the other alternatives (including 3-item form or 4-item form) and appropriate for the heterogeneous sources of chronic pain patients, and satisfactorily meet the criteria of reliability, validity and sensitivity to change.

The Roland–Morris Disability Questionnaire (RMDQ)

The RMDQ is designed to assess the degree of function limitation of chronic pain patients, covering a range of 24 items to identify the impact of pain on routine activities while pain exiting. The extent of disabilities ranges from 0 (no disability at all) to 24 (maximal disability). The Simplified Chinese Version of the RMDQ has claimed to be a valid and reliable self-reported disability and outcome measurement for patients with chronic pain.

Hospital Anxiety and Depression Scale (HADS)

In 1980s, Zigmond proposed the HADS to evaluate psychological status of outpatients with physical diseases, aiming to quickly distinguish symptoms of anxiety and depression by a series of 14 items. The questionnaire is divided into two subscales, and each item with higher scores (ranges from 0 to 3) means worse emotional condition. The Chinese version HADS has been proved to be of acceptable reliability and validity[22].

The Brief Pain Inventory (BPI)

The BPI entitles patients to assess pain intensity and pain-related interference by scoring from 0 (no pain or no pain interference at all) to 10 (worst pain or interference imaginable). The pain-related interference items consist of multiple aspects of normal life including general activity, mood, walking ability, social relationships, normal work, sleep and life enlightenment, and higher scores indicating less disability caused by pain. The validated Chinese BPI has been widely used in outpatient for its simplicity and good psychological properties[23].

36-Item Short Form Health Survey (SF-36)

The SF-36 questionnaire is a widely utilized tool to evaluate health-related quality of life, of which one item aims at the general health status (GH domain), and the other 35 items focus on specific physical and mental health, belonging to domain of physical functioning (PF), role-physical (RP), bodily pain (BP), vitality (VT), social functioning (SF), role emotional (RE), and mental health (MH) respectively. Similarly, higher score of each item (from 0 to 100) represents the better status of health-related quality of life. The Simplified Chinese SF-36 has already been cross-cultural adapted and used in many studies[24].

The Tampa Scale for Kinesiophobia (TSK)

The TSK assesses the fear of movement-related pain, being made up with 17 self-report items scored from 1 (strongly disagree) to 4 (strongly agree). The total scores summed up determines the degree of kinesiophobia, and higher scores means greater fear of movement. The translated Chinese version has been confirmed to have satisfactory reliability and validity[25].

Data Analytic Strategy

Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 18.0 (SPSS, Chicago, IL). Demographic characteristics and all the questionnaire item scores were evaluated by descriptive statistics with mean values and standard deviations (SD), and Pearson product-moment correlations were used to compare the association between PSEQ and demographic characteristics. The P value <0.05 was considered to be statistically significant.

The psychological properties, consisting of reliability, construct validity and concurrent validity, were assessed to confirm reasonability of the cross-cultural adaptation. Reliability of the PSEQ and PSEQ-2

was calculated, with Cronbach's coefficient to test internal consistency, and intraclass correlations (ICCs) to evaluate test-retest reliability. Response trend were used to assess the extent to that all the items measure the same property, and item with Z-skewness value more than 1.96 should be eliminated due to the poor consistency with normal distribution[26]. To verify the construct validity, an exploratory factor analysis (EFA) was conducted to explore the underlying structure of the SC-PSEQ and SC-PSEQ2 and one-factor solution was expected, as demonstrated by previous study in many other cultural background. Then, confirmatory factor analysis (CFA) was conducted to evaluate the goodness fit of the one-factor structure by fit indices, and commended values of indices should be followed by: (1) CMIN/DF < 3.00; (2) NNFI > 0.90; (3) CFI > 0.90; (4) GFI > 0.90; (5) RMSEA < 0.08.34. Pearson product-moment correlations was calculated to assess the associations between PSEQ/PSEQ-2 and other validated criterion measures, in addition, a strict standard required for statistically significant was set due to great deals of intercorrelations, only absolute correlation values more than 0.40 and p value less than 0.01 could be considered significant.

Results

Two hundred and nineteen consecutive patients (125 males and 94 females) with chronic nonmalignant pain were enlisted into the program from June 2016 to August 2017, and complete the whole set of the questionnaires, 174 of which (114 males and 60 females) finished the second data collection thorough e-mails follow-up 2 weeks later. The mean age of participants was 53.4 (standard deviation =11.5) years, and average pain duration was 15.7 (range from 1-240) months. The patients demographic and clinical characteristics were summarized in table 1. The mean total score of PSEQ, PSEQ-2 were 32.74 and 6.34, respectively. Table 2 smmaried socres of pain intensity, pain interference, anxiety, depression, SF-RP, SF-BP, SF-VT, SF-SF, SF-RE, SF-MH, SF-PF, and SF-GH.

Internal Consistency and Test-retest Reliability

The PSEQ and PSEQ-2 exhibited excellent internal consistency, with the Cronbach's alpha were 0.95 and 0.83, respectively. The item-total correlations of PSEQ ranged from 0.62 to 0.84, while that of PSEQ-2 was 0.71, indicating items of both questionnaires were strongly correlated to the total scores. In Addition, the highest item-deleted Cronbach's alpha of each item was 0.95 in PSEQ, suggesting there was no redundant item existing. The overall ICC values for the simplified Chinese version of PSEQ and PSEQ-2 were 0.91 (95% CI, 0.87-0.93) and 0.88(95% CI, 0.83-0.91), respectively, so the test-retest Reliability of the scales were considered relatively high. Details were presented in Table 3.

Content Validity and Construct Validity

The expert committee thoroughly revised the forward and backward translation and cross-cultural adaptation process, and then successfully developed the final simplified Chinese version of PSEQ and PSEQ-2. the Z-skewedness values of each item were calculated to assess the response trend, and results of PSEQ were no more than 0.61, suggesting that all PSEQ items followed a normal distribution pattern. The associations between PSEQ/PSEQ-2 and other validated instruments were assessed by the Pearson

correlation. As is presented in Table 3, PSEQ were calculated to be positively correlated to SF-36 domain of the role physical (RP), the bodily pain (BP), the vitality (VT), the social functioning (SF), the role of emotional (RE), and the mental health (MH) ($r=0.43, 0.45, 0.50, 0.49, 0.40, 0.57$), and negatively correlated to scores of RMDQ, pain interference, anxiety, depression and fear avoidance ($r=-0.41, -0.40, -0.59, -0.67, -0.54$), while PSEQ-2 was significant positive correlated to SF-36 domain of BP, SF and MH ($r=0.46, 0.43, 0.47$). However, neither PSEQ nor PSEQ-2 was found significantly correlated with scores of pain intensity and SF-36 domain of general health, which were consistent with previous studies.

The exploratory factor analysis [EFA] demonstrated both PSEQ and PSEQ-2 possessing a one factor solution based on the scree plot and eigenvalues, which accounting for 68.4% and 85.78% of total variance, and there was no need to rotate the solution because of one factor extraction. The factor loading of PSEQ ranged from 0.69 (item 7) to 0.88 (item 9), and that of PSEQ-2 were 0.54 (both item 5 and 9). The CFA was used to evaluate the goodness fit of the structure, and error terms correlation was taken into consideration because of the similar text content between different items (such as correlation between e2 and e5, and correlation between e8 and e9). The results for PSEQ (CMIN/DF=1.487; NNFI=0.922; CFI=0.973; GFI=0.892; RMSEA=0.082) were perfectly matched to the one factor solution.

Discussion

In the present study, the simplified Chinese version of PSEQ and PSEQ-2 were successfully translated and cross-cultural adapted to ensure acceptable to Chinese population. The mean score of pain intensity obtain from samples was 16.37, along with scores of physical disability in RMDQ and pain inference in BPI were 11.23 and 33.51, suggesting patients enrolled into the program had a mild to moderate level of pain intensity and physical function limitation. Moreover, the mean score of simplified Chinese version of PSEQ was higher than that of the version developed in Australia[19], Denmark[18], and Hongkong[27], but less than Japan[15], and Iranian version[16], evidencing that pain self-efficacy of mainland Chinese belonged to medium level as well.

The psychological properties were examined to confirm the reliability and validity of the questionnaires in the unique culture background of mainland China, which was quite different from the previous studies. The results revealed that PSEQ and PSEQ-2 possessed strong psychological properties, which could be safely utilized in the chronic pain clinic and research setting.

The good reliability of two questionnaires were demonstrated by excellent internal consistency, test-retest reliability, and respond trend. Each item in PSEQ and PSEQ-2 were assessed with ideal item-total correlations (PSEQ, 0.63-0.84; PSEQ-2, 0.71), item-deleted Cronbach's alpha (PSEQ, 0.93-0.94), and Z-skewness value (PSEQ, -0.57-0.25; PSEQ-2, -0.04), therefore, all 10 items of PSEQ and 2 items of PSEQ-2 were preserved in our validation version.

EFA was firstly conducted to explore the underlying structure of PSEQ, and one factor solution, accounting for 68.45% of total variance, was deduced according to scree plot and eigenvalues criteria, which is consistent with the previous studies. Then, CFA was used to test whether the proposed structure

best fit for PSEQ. Based on the experiences of precedent analysis, error terms correlations (e2 and e5, e8 and e9) were taken into consideration due to the similar test contents between items[16]. And then standard estimates exhibited perfect model parameters fully comply with recommended fit index, strongly supporting the one factor structure suitable for simplified Chinese version of PSEQ.

The associations between PSEQ/PSEQ-2 and other validated criterion measurements were performed by Pearson product-moment correlation. The results showed that there were significant positive correlations between PSEQ and SF-36 domains including RP, BP, VT, SF, RE, and MH, which were consistent with the original version and other validation processes. As for PSEQ-2, the significant positive correlations were found between total scores and BP, SF, and MH domains, showing the short form of PSEQ indeed sacrificed convergent validation to some extent. Whereas both PSEQ and PSEQ-2 was shown negatively correlated to the scores of RMDQ, the pain interference in BPI, psychological distress (anxiety and depression) and fear avoidance, indicating the pain self-efficacy beliefs assessed by PSEQ and PSEQ-2 could not only strongly reflected the psychological changes due to chronic pain but also sensitive to physical disabilities, which could influence the confidence of completing the specific behaviors in reverse. However, there was no significant correlation found between pain intensity and PSEQ, as well as PSEQ-2, suggesting pain itself was not powerful enough to impact the confidence of completing specific behaviors directly, which was consistent with the result of validation in most of other languages[15-18]. Nonetheless, no statistically significant association between self-efficacy score and pain interference was found in Japanese version[15], which probably attributed to psychometric characteristics discrepancy across cultures. Although PSEQ-2 did not appear such great significant correlation with validated criteria as PSEQ, it still demonstrated acceptable convergent validity. Overall, the findings of our study presented sound psychological properties of PSEQ and PSEQ-2 in mainland Chinese population.

According to current study, the PSEQ and PSEQ-2 scores were both positively correlated with quality of life (QOL) of chronic pain patients including the social functioning (SF), the role of emotional (RE), and the mental health (MH) in SF-36, indicating pain self-efficacy could be a reliable predictor for vital aspects of physical, psychological, and social functioning. A recent study conducted by Du s also revealed that self-efficacy plays a direct, positive role in predicting QOL for patients with chronic low back pain, and an indirect, positive role in predicting QOL through active coping styles as well[28]. Moreover, PSEQ and PSEQ-2 were evidenced to significant predictor of psychological distress and fear avoidance in present study. Another recent research[29] assessed the coexistence of self-efficacy and fear avoidance beliefs in chronic lumbar pain population as well, not only found significant negative correlation between the total score of both beliefs, but also detected that an improved self-efficacy and depressed fear avoidance were related to an increased level of disability. Therefore, cognitive behavioral treatments (CBTs) aiming to increase pain self-efficacy of chronic pain patients may lead to advanced adjustment[30], and PSEQ and PSEQ-2 may critical helpful in assessing the treatment involving criterion and therapy outcomes. However, the physical disability caused by loss of pain self-efficacy was not confirmed by our study and other PSEQ validation version, and further research needed to explicit the difference.

There were several limitations in the present study, firstly, all the recruited samples came from one pain clinic of a tertiary hospital in Shanghai, which may not represent the heterogeneity of the whole population in mainland China, and further study should pay more attention on economically underdeveloped areas. The second limitation was absence of evaluation of the sensitivity to change, since there was no long term follow up and gold standard of health status change. The further studies need to determine whether PSEQ and PSEQ-2 could be a reliable measurement to assess the therapy effect and compare to other validated simplified Chinese criterion scales. Finally, due to the absence of a gold standard measurement for pain self-efficacy in China, criterion validity cannot be conducted. Additional researches needed to explore communalities between the others pain self-efficacy scales and simplified PSEQ and PSEQ-2.

In conclusion, the present study has supported that the simplified Chinese version of PSEQ and PSEQ-2 been of sound reliability and validity, and suggested the measures could be safely utilized to evaluating the self-efficacy in research and clinical setting for heterogenous mainland Chinese population with chronic pain.

Abbreviations

PSEQ: Pain Self-Efficacy Questionnaire; PSEQ-2: 36-Item short form of Pain Self-Efficacy Questionnaire; RMDQ: Roland–Morris Disability Questionnaire; HADS: Hospital Anxiety and Depression Score; BPI: Brief Pain Inventory; SF-36: 36-Item Short Form Health Survey; TSK: Tampa Scale for Kinesiophobia

Declarations

Ethics approval and consent to participate

The study was approved by the ethics committee of our university (Local Ethics Committee of Changhai Hospital, SMMU, No.CHEC2017–163). All the participants signed informed consent in accordance with the 1964 Helsinki declaration.

Consent for publication

Not applicable

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available as they will be studied for further research, but are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

YYL, YMY, JZ and BJY collected data, performed the statistical analysis with interpretation and wrote the manuscript. CK and ZXY participated in the design of the study and coordination and helped to draft the manuscript. WXZ and ML participated in the design of the study and proofread the manuscript as the corresponding author. All authors read and approved the final manuscript.

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Tables

Table 1 Demographic Characteristics of Patients from Pain Clinic

Variable	Mean (SD) or N
Age[Ys]	53.4(11.5)
Gender	
Male	125
Female	94
Occupation	
Labor	29
Peasant	45
White Collar	36
Free Lancer	19
Retired	57
Unemployed	33
Marital status	
Single	15
Married	184
Separated or divorced	20
Education	
Primary school	33
Middle school	40
High school	82
University	64
Pain Duration(months)	15.7(13.4)
Income (RMB)	
Low <3000	51
Medium 3000-6000	97
High 6000-10000	48
Very high >10000	23

Table 2. Mean, SD and range of scores of psychological measures (N=219).

Instruments	Mean	SD	Range
PSEQ	32.74	13.18	0-60
PSEQ-2	6.34	2.82	0-12
RMDQ-SC	11.23	5.41	0-24
BPI-pain intensity	16.37	6.74	0-40
BPI-pain interference	33.51	9.13	0-70
SF-36-Physical Functioning (0-100)	48.49	29.10	0-100
SF-36-Role Physical (0-100)	59.90	24.77	0-95
SF-36-Bodily Pain (0-100)	38.31	21.38	0-100
SF-36-General Health (0-100)	44.87	26.01	0-90
SF-36-Vitality (0-100)	41.32	24.03	0-100
SF-36-Social Functioning (0-100)	51.94	29.97	0-100
SF-36-Role Emotional (0-100)	43.16	25.90	0-100
SF-36-Mental Health (0-100)	51.95	28.12	0-100
HADS-Anxiety (0-21)	9.64	4.24	0-21
HADS-Depression (0-21)	9.33	4.97	0-17
TSK (17-68)	34.50	13.52	17-68

Table 3. Corrected item-total correlation and response trend and factor loading for each item in the Chinese version of PSEQ

	Z-Skewedness	Corrected item-total correlation	Item-deleted Cronbach`s alpha	Factor Loading
Item 1	-0.61	0.65	0.92	0.72
Item 2	-0.43	0.67	0.92	0.74
Item 3	-0.51	0.76	0.92	0.81
Item 4	-0.25	0.75	0.92	0.82
Item 5	0.16	0.79	0.91	0.84
Item 6	-0.10	0.76	0.91	0.81
Item 7	0.08	0.53	0.93	0.60
Item 8	-0.14	0.77	0.91	0.83
Item 9	-0.27	0.78	0.91	0.83
Item10	-0.30	0.69	0.92	0.76

Table 4. Forced one-Factor Solution by Principal Components Loading for the Chinese version of PSEQ (n= 219)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
	1	6.84	68.44	68.44	6.84	68.44
2	0.70	7.04	75.48			
3	0.59	5.86	81.34			
4	0.43	4.31	85.65			
5	0.33	3.33	88.98			
6	0.31	3.12	92.11			
7	0.25	2.49	94.59			
8	0.21	2.14	96.73			
9	0.18	1.83	98.56			
10	0.14	1.44	100.00			

Table 5. Correlation between Simplified Chinese version of the PSEQ/PSEQ-2 and Related Psychological Measures

Instruments	PSEQ		PSEQ-2		
	Correlation	Sig	Correlation	Sig	
	Coefficient (r)		Coefficient (r)		
PSEQ	-	-	0.94	P<0.001	
PSEQ-2	0.94	P<0.001	-	NS(0.042)	
RMDQ	-0.41	NS(0.042)	0.43	P<0.001	
BPI					
	pain intensity	-0.29	P<0.001	0.31	P<0.001
	pain interference	-0.40	P<0.001	0.43	P<0.001
SF-36					
	Physical Functioning	0.25	P<0.001	0.26	P<0.001
	Role Physical	0.43	P<0.001	0.38	P<0.001
	Bodily Pain	0.45	P<0.001	0.46	P<0.001
	General Health	0.37	P<0.001	0.37	P<0.001
	Vitality	0.50	P<0.001	0.35	P<0.001
	Social Functioning	0.49	P<0.001	0.43	P<0.001
	Role Emotional	0.40	P<0.001	0.31	<0.001
	Mental Health	0.57	<0.001	0.47	<0.001
HADS					
	Anxiety	-0.59	<0.001	-0.63	<0.001
	Depression	-0.67	<0.001	-0.49	P<0.001
TSK					
		-0.54	P<0.001	-0.45	P<0.001

Figures

Scree Plot for PSEQ

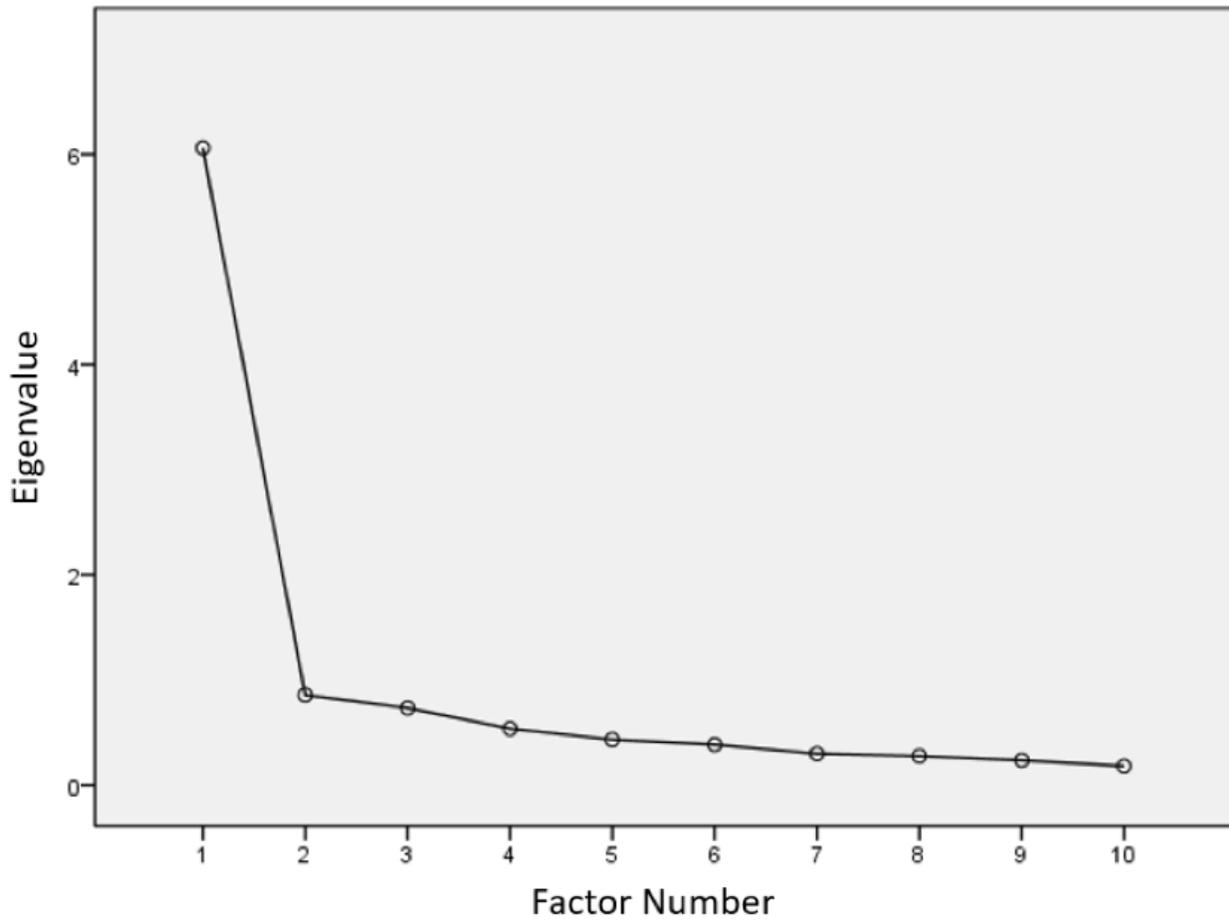


Figure 1

Scree plot indicates an optimal one-factor solution for the Chinese version of the PSEQ.

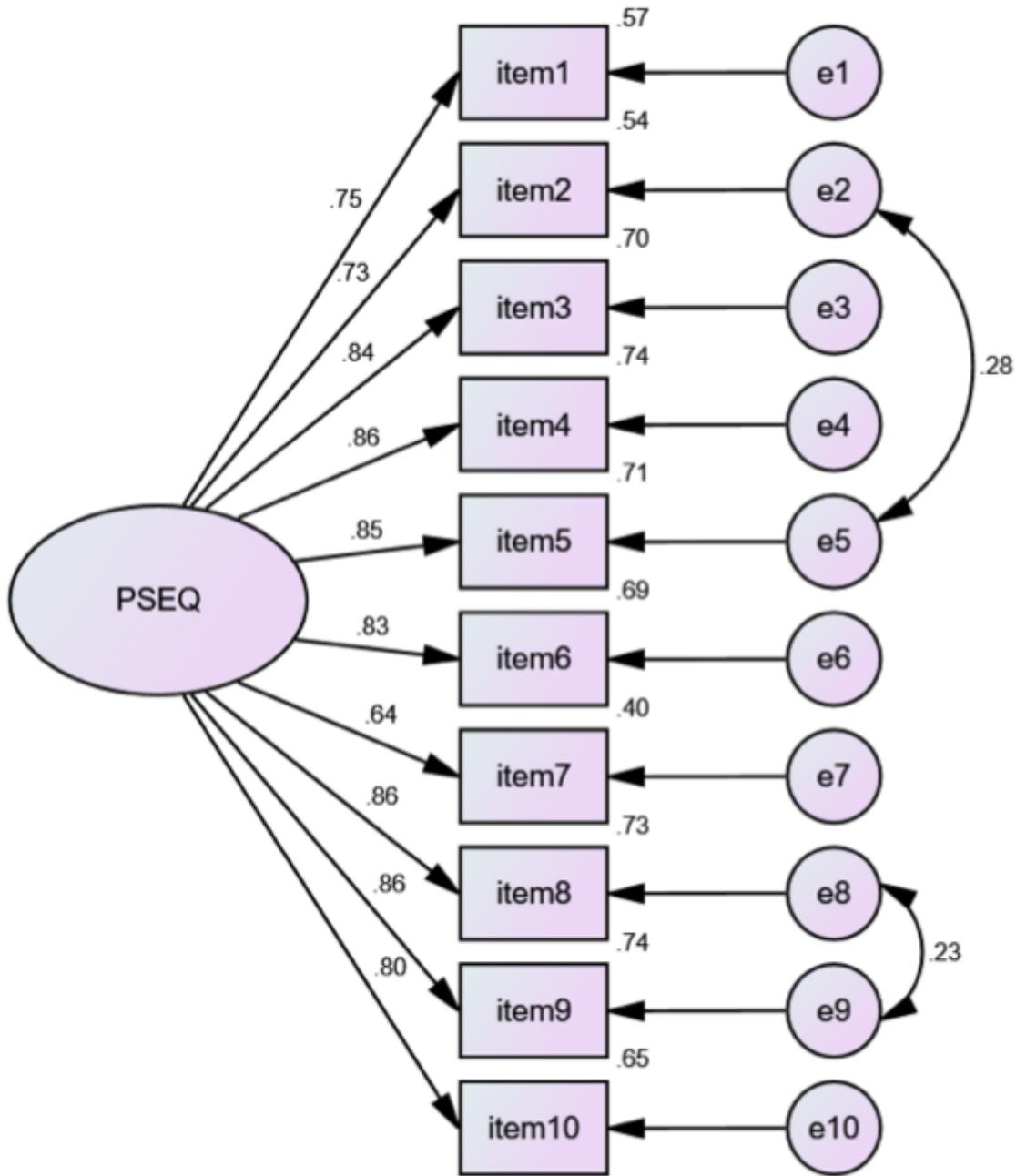


Figure 2

One-factor structure of the Chinese version of the PSEQ (n=219) with standardized parameter estimates (CMIN/DF=1.487; NNFI=0.922; CFI=0.973; GFI=0.892; RMSEA=0.082).

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