

## VALIDATION OF MALAY KNOWLEDGE OF PTSD QUESTIONNAIRE (MKPQ) AMONG MALAYSIAN ADULTS IN JOHOR

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### Abstract:

**Background:** Post-Traumatic Stress Disorder (PTSD) is a prevalent but often under-recognised mental health condition. Limited awareness among Malaysian and the lack of culturally adapted assessment tools makes it difficult for early detection and intervention, particularly within Malaysian multilingual populations. **Objective:** This study aimed to validate the Malay Knowledge of PTSD Questionnaire (MKPQ) for use among Malaysian adults. **Methods:** The 28-item PTSD Knowledge Questionnaire underwent forward-backward translation and cognitive debriefing for face validation. Construct validity was assessed through Exploratory Factor Analysis (EFA) on data collected from 97 adults in Johor Bahru and Pontian in order to determine the suitability of the instruments. Reliability was evaluated using Cronbach's alpha and interclass

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correlation coefficient (ICC). **Results:** The Malay Knowledge of PTSD Questionnaire demonstrated excellent face validity (FVI=0.97), good construct validity with two-factor structure across domains and outstanding reliability. Internal consistency was high with a Cronbach's alpha of 0.905 and parallel-form reliability indicate excellent stability (ICC of 0.98,  $p<0.001$ ). **Conclusion:** The Malay Knowledge of PTSD Questionnaire is a valid and reliable instrument for assessing PTSD knowledge among Malay speaking adults. Its use can improve understanding of PTSD as well as facilitating in educating and screening within Malaysia's diverse communities.

#### Keywords:

PTSD, Validity, Reliability, Questionnaire

## Introduction

Post-traumatic stress disorder (PTSD) is a serious and often chronic psychiatric condition that can develop following exposure to traumatic events such as major accidents, natural disasters, sexual assault, or the sudden loss of a loved one (Benjet, et al., 2016). Globally, over two-thirds of individuals are estimated to experience at least one traumatic event in their lifetime, with approximately 5.6% developing PTSD as a consequence (Koenen, et al., 2017). However, the exact prevalence of PTSD remains uncertain, with estimates in the literature ranging widely from 2.5% to 74% across different populations and study methodologies (Schincariol, Orrù, Otgaard, Sartori, & Scarpazza, 2024). This variability is influenced by numerous factors, including the frequency and severity of trauma exposure, sociodemographic characteristics, and individual psychological vulnerability (Atwoli, Stein, Koenen, & McLaughlin, 2015), (Kessler, et al., 2014) & (Sareen, 2014).

In Malaysia, the burden of PTSD has become increasingly apparent. Recent studies have shown that 25% of healthcare workers experienced PTSD following the COVID-19 pandemic (Mohd Noor, Ariffin, Silim, & Md Said, 2022) (7), 7.4% of motor vehicle accident survivors were diagnosed with PTSD (Bahari, Mohamad Alwi, Ahmad, & Mohd Saiboon, 2017), and between 20–50% of juvenile offenders have PTSD, primarily due to childhood maltreatment (Ghazali, Chen, & Aziz, 2017). Traumatic experiences and PTSD are now increasingly acknowledged not only for their psychological toll but also for their strong association with the onset of chronic physical diseases (Schincariol, Orrù, Otgaard, Sartori, & Scarpazza, 2024). These findings underscore the need for early recognition, accurate screening, and improved public awareness of PTSD within the Malaysian population.

In recent years, doctors and researchers suspect that there is a discrepancy between the true prevalence of PTSD due to difficulty in diagnosing PTSD. One of the challenges, aside from stigma and ignorance, is the lack of translated and validated screening tools for the Malaysian population (Syed Jaapar, Abidin, & Othman, 2014). Due to the diversity in ethnicity and culture, Malaysia is recognised as a multilingual nation, with Malay (Bahasa Malaysia) being the official language used in government services, including public education and the health care system. Although English is recognised as the second language in Malaysia, not all Malaysians are fluent in the language, particularly those with low education or socioeconomic level. Evidence suggests that limited language proficiency has been closely linked to under-recognition of mental conditions and reduced utilisation of psychiatric services (Ohtani, Suzuki, Takeuchi, & Uchida, 2015) & (Syed Jaapar, Abidin, & Othman, 2014). Furthermore,

incorporating local languages into healthcare delivery can significantly enhance mental health communication and improve access to services (Ohtani, Suzuki, Takeuchi, & Uchida, 2015), (Babalola, Johnson, Oromakinde, & Omole, 2025) & (Marquine & Jimenez, 2020). Therefore, the use of culturally and linguistically adapted tools in Malay is crucial for ensuring inclusivity, bridging communication gaps, and enhancing the reach and effectiveness of public health interventions across diverse communities. Over the past decade, several PTSD screening tools have been translated and validated in Bahasa Malaysia, demonstrating good reliability and validity (Syed Jaapar, Abidin, & Othman, 2014), (Fadzli, Salleh, Arip, & Tamizi, 2025) & (Bahari R., Mohamad Alwi, Ahmad, & Mohd Saiboon, 2015). These tools are important steps toward reducing language-related barriers and improving early detection of PTSD within the Malaysian population.

This study is part of a larger research project aimed at assessing PTSD awareness and the relationship between the sociodemographic factors and PTSD knowledge within government primary care settings in Johor Bahru and Pontian. The first phase of this research involved the development and validation of the adapted English version of PTSD knowledge questionnaire for use in the Malaysian adult population. The current study (Phase 2) aims to validate the Malay version of the PTSD knowledge questionnaire (MKPQ) to ensure its reliability for use in the adult population in Malaysia.

## Methods

This study is part of a larger research project aimed at assessing PTSD knowledge and exploring its relationship with sociodemographic factors within government primary care settings (Klinik Kesihatan) in Johor Bahru and Benut, Pontian. Specifically, this phase aims to validate the Malay (Bahasa Malaysia) version of a 28-item PTSD Knowledge Questionnaire.

## Material

The material used in this study was the 28-item English PTSD Knowledge Questionnaire, which had been previously validated during Phase 1 of the research. To produce a valid Malay version, a series of translation procedures were conducted (Wan Ahmad, Mohamad, & Abdul Rohim, 2021). First, forward translation was performed by two independent translators – one with a medical background and the other without – who translated the English version into Malay. The resulting translations were reviewed and synthesized into a single refined Malay version. Subsequently, backward translation was carried out by two different individuals, again one with a medical background and one without, who translated the Malay version back into English independently. This step ensured semantic equivalence between the original and translated versions. To assess face validity, 20 individuals – 10 healthcare professionals and 10 laypersons – were invited to review the Malay version of the questionnaire. Participants completed the questionnaire and provided feedback on the clarity, wording and comprehensibility of each item. This process aligns with the pre-testing (cognitive debriefing) step recommended by Beaton et al. (2000), which ensures that translated items are understood as intended across diverse respondent groups. Feedback was used to make minor linguistic refinements to enhance clarity and cultural appropriateness of the instrument (Beaton, Bombardier, Guillemin, & Ferraz, 2000). Content validity was not assessed in this phase, as it had already been established during Phase 1 of the study.

## Study Design

To assess construct validity, the Malay version of the questionnaire was distributed using convenience sampling to adult Malaysians attending Klinik Kesihatan Johor Bahru and Klinik Kesihatan Benut, Pontian, between 15 April and 15 June 2025.

To assess reliability, this study employed a parallel forms design and was conducted at Klinik Kesihatan Johor Bahru, between 15 April and 15 June 2025. Adult Malaysian participants were required to complete both the Malay and validated English versions of the questionnaire and only those proficient in both languages were recruited. Due to language limitations among the rural population in Benut where many patients are not proficient in English – the reliability study was limited to Klinik Kesihatan Johor Bahru. To minimise recall bias and carry over effects, a 10-minute interval was provided between the two questionnaire administrations. The order of the administration was determined based on participants' preferred language; each participant began with the version they were more comfortable with. Although the order was not randomised, this participant-centred approach allowed for natural variation, which helped mitigate potential order effects and improved data quality.

### ***Sample Size Calculation***

For construct validity, the sample size was calculated on Nunnally's method (Nunnally & Bernstein, 1994), which recommends a ratio of 3 to 5 participants per questionnaire item. With 28 items, the minimum required sample size was 84. To account for potential missing or unusable data, the sample size was increased by 10%, bringing the final target to 93 participants.

For reliability testing using parallel forms, the sample size was determined using the method described by Walter et al. (1998), which is suitable for reliability studies utilising the Intraclass Correlation Coefficient (ICC). The following assumptions were applied: an expected ICC ( $\rho_1$ ) of 0.80, a minimum acceptable ICC ( $\rho_0$ ) of 0.60, a significance level ( $\alpha$ ) of 0.05 (two-tailed), and a power ( $1 - \beta$ ) of 0.80. Given two replicates (the English and Malay versions), the required minimum sample size was 49 participants. To allow for potential dropouts or incomplete responses, and additional 10% was added, resulting in a final target of 54 participants.

### ***Data Analysis***

Construct validity was assessed to determine whether the MKPQ accurately captures the underlying construct it was intended to measure, that is, knowledge about PTSD. This involved examining whether participants' responses to the translated items aligned with theoretical expectations and whether the overall structure of the questionnaire remained consistent with the original English version.

Internal consistency of the Malay questionnaire was evaluated using Cronbach's alpha. Reliability between the two forms was assessed using the intraclass correlation coefficient (ICC), applying a two-way mixed-effects model based on consistency. ICC values were interpreted as follows: values below 0.50 indicated poor reliability, 0.50 to 0.75 moderate reliability, 0.75 to 0.90 good reliability, and values above 0.90 indicated excellent reliability (Wan Ahmad & Mohamad, 2021). All statistical analysis were performed using SPSS Version 29.

## Results

The original PTSD Knowledge Questionnaire was reviewed by ten experts and ten laypersons of the experts were aged between 40 to 60 years old and resided in the Johor Bahru and Klang areas. All the experts held postgraduate qualifications and demonstrated a specific interest in mental health. The lay reviewers were predominantly based in Johor Bahru.

A total of 97 participants were recruited for the main study (Table 1). The sample was predominantly female and primarily of Malay ethnicity, with over half of the participants being married. In terms of educational background, most had completed SPM or SPM qualifications. The most frequently reported occupations included professionals, factory workers and administrative staff.

**Table 1: Participant's Characteristics**

		N	(%)
Total participants		97	
Gender	Male	43	46.7
	female	49	53.3
Age group	<25	19	20.7
	26-40	45	48.9
	40-65	25	27.2
	>65	3	3.3
Race	Malay	73	79.3
	Chinese	12	13.0
	Indian	3	3.3
	Others	4	4.3
Marital Status	Married	49	53.3
	Single	39	42.4
	Others	4	4.3
Occupation	Managers	5	5.4
	Professionals	16	17.4
	Technicians	5	5.4
	Administrative staff	12	13.0
	Service and sales workers	12	13.0
	Agricultural, forestry and fishery workers	0	0
	Craft and related trades workers	0	0
	Construction workers	13	2.2
	Factory workers	11	14.1
	Elementary occupations	8	8.7
	Self-employed	11	12.0
	Student	3	3.3
Highest level of education	Unemployed	5	5.4
	Postgraduate	7	7.6
	Undergraduate	21	22.8
	Diploma	18	19.6

Skills certificate	5	5.4
STPM/SPM	32	34.8
SRP/PMR/PT3	7	7.6
Others	2	2.2

### Validity

Two forms of validity were evaluated to establish the suitability of the instrument: face validity and construct validity.

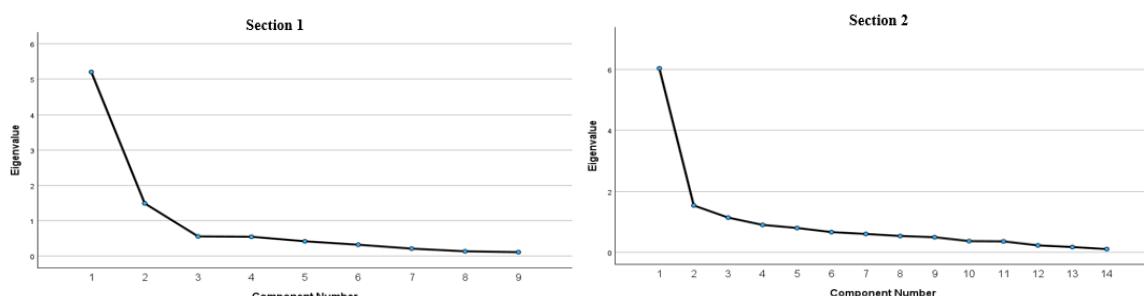
#### Face Validity

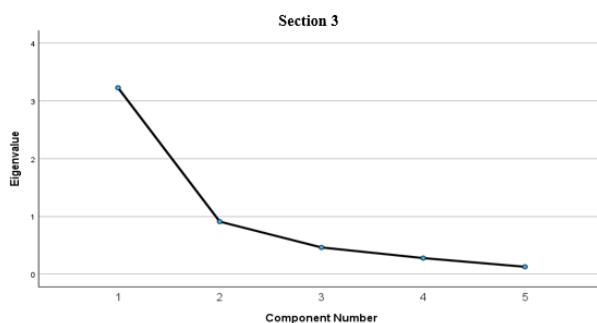
Since content validity was established in the previous study, it is not required in this study. In this study, the Face Validity Index (FVI) is calculated for all 28 items in the Bahasa Malaysia version of the questionnaire. The overall FVI score was 0.97, exceeding the recommended threshold of 0.90. This indicates that the adapted Bahasa Malaysia version demonstrates strong face validity and is appropriate for progression to subsequent stages of validation.

#### Construct validity

To evaluate construct validity and explore the underlying factor structure of the dataset, Exploratory Factor Analysis (EFA) was conducted. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy was 0.850, and Bartlett's Test of sphericity was statistically significant ( $p<0.001$ ), indicating that the data were suitable for factor analysis. Principal component Analysis (PCA) was used as the extraction method, followed by Varimax rotation to enhance interpretability.

The scree plots were used to analyse all three sections (Figure 1). It supported these solutions, with a consistent 'elbow' observed at the second component across all sections, indicating that two factors sufficiently captured the majority of variance, with a marked decline observed beyond the second component. These findings further supported the retention of a two-factor structure, reinforcing the construct validity of the instruments.





**Figure 1: Scree Plot of the Components of the Malay Knowledge of PTSD Questionnaire**

The analysis revealed two distinct components within each of the questionnaire's three sections (Table 2).

**Table 2: Outcome Of Exploratory Factor Analysis with All Items Included.**

Rotated Component Matrix		Components	
		1	2
Section 1	Being in a war	.900	
	Being in a serious car accident	.762	
	Being raped or sexually assaulted	.901	
	Seeing someone else get killed	.918	
	Being physically abused	.812	
	Learning that a loved one was seriously injured in an accident		.384
	Getting fired from a job		.870
	Learning that your spouse or partner had an affair		.738
	Having serious financial problems		.867
Section 2	Nightmares about the trauma	.835	
	Feeling very upset when reminded of the trauma	.887	
	Avoiding places or people that remind you of the trauma	.819	
	Feeling irritable or having angry outbursts	.530	
	Avoiding thinking or talking about the trauma	.802	
	Being very alert, watchful, or on guard	.378	
	Having negative feelings about the trauma, such as anger or shame	.662	
	Getting addicted to alcohol or drugs		.479
	Experiencing decreased appetite		.606
	Feeling hyper, extremely happy or excited for several days straight		.793
	Sleeping too much		.436
	Having chronic chest pain		.444
	Hearing voices that tell you to harm others		.667
	Washing your hands again and again		.714
Section 3	Cognitive Behavioural Therapy (CBT)		.401

Antidepressants medications	.804
Eye-movement desensitization and reprocessing (EMDR)	.922
Support groups	.924
Family therapy	.912

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 3 iterations.

In Section 1 (item1-9), which assessed exposure to potentially traumatic events, two components were extracted. The first component comprised items reflecting direct, high-impact traumatic experiences, including rape or sexual assault, physical abuse, and witnessing a violent death. These events are commonly associated with a higher risk for PTSD. The second component considered of items representing significant but non-life-threatening stressors, such as job loss, partner infidelity and financial problems. This differentiation demonstrates the tool's ability to distinguish between clinically significant trauma and broader psychosocial stressors.

For Section 2 (item 10-23), focused on PTSD symptomology, a two-component solution was again identified. The first component included items closely aligned with core PTSD symptoms, such as nightmares, emotional distress upon reminders, avoidance behaviours, and being alert. The second component grouped items that are not typically considered part of the PTSD symptoms profile, including hallucinations, compulsive behaviour and prolonged episodes of elevated mood. This structure supports the instrument's discriminant validity by effectively separating hallmark PTSD symptoms from unrelated or comorbid psychological features.

In Section 3 (item 24-28), related to treatment approaches, two components emerged. The first grouped items related to adjunctive or non-specific interventions, such as support groups and family therapy. The second component included treatments supported by evidence based for PTSD, including Cognitive Behavioural Therapy (CBT) and Eye-Movement Desensitization and Reprocessing (EMDR). Notably, antidepressant medications, though not specific for PTSD, were also included in this component, indicating their perceived relevance in the broader context of trauma-related treatment. The ability to distinguish between evidence-based interventions and general supportive approaches contributes further to the scale's content validity.

## Reliability

### ***Internal Consistency***

To evaluate the reliability of the instrument, internal consistency was assessed using Cronbach's alpha. This statistic was calculated for the full 28 item scale as well as for each of its conceptual domains. A Cronbach's alpha value above .8 is considered indicative of good internal consistency (Wan Ahmad & Mohamad, 2021). The MKPQ demonstrated excellent reliability with an overall Cronbach's alpha of .949 (Table 3), indicating that the items consistently measure the intended construct.

**Table 3: Internal Consistency of the PTSD Knowledge Questionnaire**

	Cronbach's Alpha	N of Items
Overall	.949	28
Section 1	.905	9
Section 2	.894	14
Section 3	.855	5

Analysis of the individual sections revealed strong internal consistency across all three domains of the questionnaire. The section assessing exposure to potentially traumatic events (Section 1) demonstrated high reliability, with a Cronbach's alpha of .905. The PTSD symptom section (Section 2) also showed excellent internal consistency, yielding an alpha of .894. The treatment-related item section 3 produced a Cronbach's alpha of .855, indicating acceptable reliability. Overall, the full 28-item scale achieved a Cronbach's alpha of .949, reflecting outstanding internal consistency. These results suggest that each domain effectively and reliably captures its intended construct.

#### **Parallel Form Reliability**

Parallel form reliability of the PTSD knowledge questionnaire was evaluated using the interclass correlation coefficient (ICC). The analysis yielded a single-measure ICC of 0.98 ( $p < 0.001$ ), indicating excellent reliability. This result reflects a strong positive correlation between repeated administrations of the instruments, suggesting the questionnaire produces highly consistent scores across parallel forms.

**Table 4: Test-Retest Reliability of the PTSD Knowledge Questionnaire**

Intraclass Correlation	95% Confidence Interval		F Test with True Value 0				
	Lower Bound	Upper Bound	Value	df1	df2	Sig	
Single Measures	.983	.970	.990	117.321	49	49	<.001
Average Measures	.991	.985	.995	117.321	49	49	<.001

One-way random effects model where people effects are random.

#### **Discussion**

This study demonstrates that the translated Malay Knowledge of PTSD Questionnaire (MKPQ), adapted from Harik et. al. (2016) has good psychometric properties and can be used in the Bahasa Malaysia speaking population of Malaysia reliably and accurately. The MKPQ demonstrated excellent face validity, good construct validity and outstanding reliability (internal consistency and parallel form). As mentioned previously, a Malay-language measure for awareness of PTSD and its treatment is needed if the issue is to be addressed properly in the Malaysian population. Indeed, a trustworthy measure of PTSD knowledge such as the MKPQ is a welcomed addition.

PTSD is a prevalent mental health condition affecting survivors of traumatic events (Charlson, et al., 2019). However, it is often under-recognised, leading to poor presentation to mental health professionals and under-utilisation of treatments (Harik, Matteo, Hermann, & Hamblen, 2016). Despite significant advances in its clinical interventions, the public and even health professionals continue to have limited knowledge with regards to the causes, symptoms and

treatments of PTSD (Harik, Matteo, Hermann, & Hamblen, 2016) (Coventry, et al., 2020) (Warner & Chamaa, 2024) (Ross, Smith, Campbell, & Taylor, 2025).

An American study by Harik et. al. (2016) uncovered significant shortfalls in public understanding of PTSD even among those experiencing symptoms. While recognition of types of trauma and symptoms fared slightly better, knowledge of effective treatments of PTSD were dismal, and infused with stigma and misconceptions. In middle and low-income countries, the same level of poor awareness is also found, with detrimental effects as the condition is often then left untreated (Purgato, et al., 2018). Warner & Chamaa (2024) found that stigma is a major barrier preventing patients from seeking help and getting the treatment they need. This is supported by a study by Coventry et. al. (2020) which demonstrated that, although numerous studies have established the effectiveness of trauma-focused therapies, treatment uptake is frequently limited by poor awareness and stigma. Furthermore, if they do seek treatment, stigma and low level of PTSD awareness often hamper good engagement with therapists, which in turn reduced the effectiveness of trauma interventions (Neylan, et al., 2025).

Hence, improving awareness of PTSD is vital to enhance the public's recognition of the condition, reduce stigma and increase uptake of treatment. Strategies to enhance PTSD awareness could include public education, trauma-informed training for health professionals and responders, as well as outreach programmes in high-risk settings. However, having a tool where the level of awareness can be gauged would be the first step in this effort. This is where the Malay Knowledge of PTSD Questionnaire (MKPQ) exerts its importance.

## Conclusion

The Malay Knowledge of PTSD Questionnaire (MKPQ) has demonstrated strong psychometric performance, confirming its reliability and validity for use in the Malaysian adult population. It can be a dependable tool for measuring public knowledge of PTSD with its high internal consistency, robust construct validity and excellent parallel-form reliability. The Malay Knowledge of PTSD Questionnaire fills in a critical gap in culturally and linguistically appropriate instruments for mental health research and awareness initiatives in Malaysia. The application of this questionnaire can support public health efforts to enhance PTSD literacy among Malaysian, reducing stigma and promoting early intervention among vulnerable populations that are exposed to trauma.

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