THE PSYCHOMETRIC ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE OF MEDICATION ERROR REPORTING AMONG HEALTHCARE PRACTITIONERS IN PRIMARY CARE SETTINGS

Nadzirah Z[1*], Rosidah O[1], Juhairoh MS[1], Vilaashini A[1], Nurul Husna H[1], Siti Nurul Shafinaz Z[1]

[1]Padang Terap District Health Office, 06300 Kuala Nerang, Kedah, Malaysia

*Corresponding author: Nadzirah binti Zainon.
Email: nadzirahzainon91@gmail.com

Introduction
Medication errors are preventable incidents that may cause inappropriate medication use or patient harm. Assessing knowledge, attitude, and practice (KAP) of error reporting is vital to improve patient safety and healthcare quality. However, validated instruments are limited, as most studies focus mainly on pharmacists, making questionnaires highly technical and less suitable for other prescribers. This study aimed to conduct a psychometric assessment of a structured questionnaire to address this gap and support improvements in clinical practice.

Methodology
A cross-sectional study was conducted among 30 healthcare workers, including medical officers, assistant medical officers, pharmacists, pharmacist assistants, and nurses from five health clinics in Padang Terap. The questionnaire, adapted from previous studies, contained four sections: socio-demographics, knowledge, attitude, and practice. Content validity was assessed by five experts, while face validity was tested with 10 participants for clarity and feasibility. Expert feedback was used to calculate validity scores (I-CVI). Reliability was examined using Cronbach's alpha and corrected item–total correlations (CITC). All statistical analyses were performed with STATA version 14 (StataCorp LP, College Station, TX, USA).

Results
The mean I-CVI values were 0.94 for knowledge, 1.0 for attitude, and 1.0 for practice, indicating strong content validity. Items with I-CVI <1.0 were revised based on expert input. Face validity led to minor adjustments in wording and grammar, with respondents agreeing the questionnaire was clear and practical. Reliability testing with 30 respondents showed moderate internal consistency for the knowledge domain (Cronbach's alpha = 0.6688). CITC values ranged from 0.1989 to 0.7334, except for item B6 (0.0681). Removing B6 slightly improved alpha to 0.6850. Items B2 and B8 showed poor reliability with CITC values below 0.2, but their removal did not improve much of Cronbach's alpha, hence both were retained. Items B1 and B9 were constant, as all respondents gave similar answers, thus not contributing to alpha. However, they were conceptually important for defining and method of reporting errors, hence they were retained. The attitude domain demonstrated high internal consistency (alpha = 0.8908), with CITC values between 0.5374 and 0.8024, and all items were retained. The practice domain was not tested for reliability, as items reflected actual reporting behaviour.

Discussion
The knowledge domain showed moderate reliability, and item refinement improved internal consistency. Constant items were retained for conceptual importance. Overall, the questionnaire demonstrated good validity and reliability, making it a useful tool to assess KAP on medication error reporting among diverse healthcare practitioners. Limitations include purposive sampling, small sample size, and use of English only, which may limit comprehension, inclusivity, and generalizability. Further studies with larger, more diverse samples and bilingual validation are recommended.

Keywords: medication error, medication error reporting, knowledge, attitude, practice, primary care

Table 1. Cronbach's Alpha and Corrected Item Total Correlation (CITC)

Knowledge on medication error and medication error reporting					
Item	**Statement**	**Corrected Item- Total Correlation (with B6)**	**Cronbach's Alpha if item deleted (with B6)**	**Corrected Item- Total Correlation (without B6)**	**Cronbach's Alpha if item deleted (without B6)**
B1*	Medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm	-	-	-	-
B2	It is required to report the medication error even if the error did not reach the patient	0.1989	0.6694	0.1978	0.6911
B3	Reporting the error is not required if the error reached the patient but did not cause harm	0.5900	0.5865	0.6127	0.5996
B4	Medication error can only be reported by the person who made the error.	0.5259	0.5917	0.5520	0.6032
B5	Illegible handwriting will not result in a medication error	0.7334	0.5192	0.6795	0.5559
B6	Incomplete prescription is a part of medication error	0.0681	0.6850	-	-
B7	Any medications accidentally omitted from the prescription should be reported as a medication error	0.2966	0.6678	0.2837	0.6958
B8	Incorrect procedure or technique in drug administration is considered medication error	0.1989	0.6694	0.2068	0.6899
B9*	Medication Error Reporting System (MERS) is a method used in Malaysia to report medication error	-	-	-	-
B10	The Medication Error Reporting System (MERS) is accessible to doctors and pharmacists only	0.2966	0.6678	0.3225	0.6827
	Overall alpha		**0.6688**		**0.6850**

Attitude towards medication error reporting			
Item	**Statement**	**Corrected Item- Total Correlation**	**Cronbach's Alpha if item deleted**
C1	I fail to report the medication error because I'm afraid of the reaction from superior	0.5922	0.8867
C2	I fail to report the medication error because most of my colleagues ignore the reporting	0.8024	0.8663

C3	I fail to report the medication error because I think the error is not serious to warrant reporting	0.6783	0.8761
C4	I fail to report the medication error because I'm afraid that I might lose the job	0.7086	0.8790
C5	I fail to report the medication error because the error does not reach or harm the patient.	0.7220	0.8716
C6	I fail to report the medication error because I have a lot of works to do.	0.6284	0.8807
C7	I fail to report the medication error because I do not know how to report.	0.5374	0.8888
C8	I fail to report medication error because I do not have enough time to report.	0.7753	0.8660
	Overall alpha		**0.8908**

*Note: Items B1 and B9 were constant in the analysis sample and were excluded from CITC and Cronbach's alpha calculations.