SHORT COMMUNICATION

Development and Psychometric Evaluation of the Malaysian Pharmacoethics Instrument

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ABSTRACT

This study aimed to devise an instrument based on the Malaysian Code of Conduct for Pharmacists and Bodies Corporate for the measurement of ethical practices among community pharmacists in Malaysia, and to test its validity and reliability. A set of questionnaire was designed and refined via an expert group discussion and statistical analysis. It contains four sections; personal information, pharmacy information, undergraduate training information and profession-related questions. The latter section was scored on 5-point Likert scale. The instrument was administered to 32 randomly-chosen community pharmacists (male=12, female=20; majority age-range=31-35years; bumiputra=30; married=25). Data was analysed using SPSS for Windows version 12.0. Validity of the instrument was examined by performing exploratory factor analysis. Its internal consistency reliability was measured via Cronbach's alpha value while test-retest reliability was assessed by intraclass correlation coefficient. Four main factors were extracted from 33 items in the profession-related section (explaining 46.4 % of total variance); which emerged under four themes identified as *Business Practice, Ethical Practice, Professional Practice and Personal Attitude*. After deletion of one unstable item, Cronbach's alpha values were 0.730 (*Business Practice*), 0.80 (*Ethical Practice*), 0.71 (*Professional Practice*) and 0.66 (*Personal Attitude*). The test-retest intraclass correlation coefficient values were 0.80 (*Business Practice*), 0.80 (*Ethical Practice*), 0.74 (*Professional Practice*) and 0.73 (*Personal Attitude*). These results indicate early evidence of the instrument's validity and reliability for use in Malaysia. As such, the study of pharmacoethics among community pharmacists holds a promising future with the generation of this new instrument.

KEYWORDS

Pharmacoethics, Community Pharmacist, Malaysia

INTRODUCTION

Pharmacoethics involves the study of the ethical implications of drug therapy, development, promotion, sales, prescription, and use of pharmaceuticals (www.pharmacoethics.com).

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Community pharmacists occasionally face a serious potential conflict of interest, between being ethically professional and promoting the sale of products for income generation[1]. This is especially pertinent in countries without dispensing separation such as Malaysia whereby the major business income could not be lawfully segregated between ordinary and medicinal products.

There have been various investigations studying the ethical behaviour of pharmacists or other professions in many countries but the use of instruments has not been standardised. Azizi used a questionnaire whereby all the questions were constructed based on scenarios[2]. Singer used both interview and the repertory grid procedures[3] while Cooper[4] and Chaar[5] conducted a qualitative study using a semi-structured interview.

Despite these efforts, no previous study has been discovered which measured the ethical practices among community pharmacists in Malaysia based on the Code of Conduct of Pharmacy and Bodies Corporate. Consequently, there is a need to establish such a Malaysian tool to gauge the general community pharmacists' ethics level. In this study, a new tool was devised and later preliminarily tested for its validity and reliability.

MATERIALS AND METHOD

Instrument

A set of questionnaire with close-ended questions was designed. This preliminary version consisted of four sections - section I (12 questions: personal and general demographic information), section II (10 questions: place of work and business-related information), section III (9 questions: pharmacist's undergraduate training) and section IV (33 questions: compliance with ethical behaviour).

Development of the Malaysian Pharmacoethics Instrument

The 33 statements related to the pharmacist's ethics in Section IV are based on the Code of Conduct for Pharmacists and Bodies Corporate in Malaysia. In this section, each statement is followed by a 5-point Likert-type scale response; 'Always', 'Usually', 'Sometimes', 'Seldom' and 'Never'. Respondents were required to indicate the response they thought most suitable in reflecting their usual practice. Each response represents level of ethical behaviour, with 1 being the most unethical and 5 being the most ethical.

The statements were formulated in both negative and positive constructs to avoid stereotype answers. Face validity and content validity of this section were confirmed via expert group discussions with a pharmacy management professor, an survey-based research expert, a community pharmacist, a statistician and a social science professor (not our co-authors).

Study Design and Selection

Upon approval from the university research and ethics committee, the instrument was administered to 34 practicing community pharmacists in Malaysia, randomly chosen from the list obtained from the Pharmaceutical Service section of the states. The questionnaires were mailed with self-reply envelopes to the respondents.

No marking or coding was made on the questionnaires to preserve the respondents' anonymity. They were requested to provide feedbacks and ideas with regard to errors, readability, understandability, uniformity, interpretation and clarity of the questionnaire. Questions that the respondents indicated as difficult to understand were revised to improve the clarity.

A pilot study was later performed to determine the instrument's reliability via the test-retest method. A group of 32 selected respondents was requested to answer the questionnaire twice for this purpose, within a one-month interval. Intraclass correlation coefficient was used as the indicator

Psychometric Evaluation - Validity and Reliability

The construct validity for Section IV of the instrument was examined by performing exploratory factor analysis[6]. In this study, the factors with loading >0.30 and Eigenvalue >1.0[7], were retained. The internal consistency reliability of the questionnaire was measured via Cronbach's alpha (α) value.

Data was analyzed using SPSS for Windows Version 12.0.

RESULTS

From the 34 questionnaires distributed, 32 were returned (response=94.1%). Most respondents were females (n=20), between 31-40 years (n=15), have been practicing for 6-10 years (n=15) and possessed a Bachelor in Pharmacy degree (n=25).

Validity

Factor analysis yielded 4 main components of the instrument, which accounted for 46.4% of the total variance explained. The components were identified as *Business Practice* (9 items), *Ethical Practice* (11 items), *Professional Practice* (6 items) and *Personal Attitude* (7 items). The items with factor loadings ranging from 0.30 to 1.00 were grouped together. *Ethical Practice* was an exception, whereby one of the items had factor loadings of 0.23 but it was retained for reliability confirmation before further decision.

Reliability

Cronbach's α value for *Business Practice* was 0.73, 0.80 for *Ethical Practice*, 0.55 for *Professional Practice* and 0.66 for *Personal Attitude*. There was only one unstable item, which was in *Professional Practice* (Factor 3). The deletion of this item resulted in expansion of Cronbach's α for *Professional Practice* from 0.55 to 0.71. The previously low-loading item from *Ethical Practice* was finally included due to evidence of its reliability. Test-retest reliability further indicated a strong intraclass correlation coefficient values: 0.80 (*Business Practice*), 0.81 (*Ethical Practice*), 0.74 (*Professional Practice*) and 0.73 (*Personal Attitude*).

After the pilot study, the number of questions in section IV was reduced from 33 to 32.

DISCUSSION

A valid and reliable device to assess pharmacoethics among the community pharmacists in Malaysia was developed in this study. In measuring the construct validity of the instrument, factor analysis produced four pharmacoethics dimensions, which are Business Practice (9 items), Ethical Practice (11 items), Professional Practice (6 items) and Personal Attitude (7 items). Cronbach's α value of more than 0.70 for these pharmacoethics dimensions suggested that the instrument is reliable. The reliability of this questionnaire was further clarified by the test-retest results where all groups produced alpha values above 0.70. The findings showed that the test-retest values are satisfactory to further strengthen the reliability of this instrument.

There was no specific instrument to study ethics in pharmacy practice. Every researcher approached the study of ethics differently. As the questions in this instrument were critically and empirically tested for reliability and validity, therefore, were deemed valid and reliable to be used to study ethics in community pharmacy settings.

Some limitations of this study included the small sample size and the honesty level of the respondents which could be subjected to argument due to the sensitivity of the subject investigated.

CONCLUSION

The study of pharmacoethics among community pharmacists holds a promising future with the development of this new instrument. In the future research, bigger sample size should be employed and the confidentiality of respondents should be enhanced.

REFERENCES

1. Barrett, S. (2011). Unethical behaviour of pharmacists. *Quackwatch Home Page* 2001. Retrieved March 13, from: http://www.quackwatch.com/01QuackeryRelatedTopics/pharm.html

2. Azizi, S. W. S. (1989). A cross cultural study of business ethical standards among graduate business students from Indonesia, Malaysia, Thailand and the United States of America. *Doctoral dissertation, United States* International University.

3. Singer, M. S. (2000). Ethical and fair work behaviour: a normative-empirical dialogue

concerning ethics and justice. *Journal of Business Ethics,* 28(3), 187-2009.

4. Cooper, R. (2006). Ethical problems and their resolution amongst UK community pharmacist: a qualitative study. *Doctoral dissertation, University of Nottingham*, United Kingdom.

5. Chaar, B. (2009). Professional ethics in pharmacy practice: developing a psychometric measure of moral reasoning.

Pharmacy World & Science. Retrieved June 24, 2013 from http://www.springerlink.com/content/rju2126 8318g2rpo/

6. Salkind, N. J. (2006). *Exploring research.* (6th Ed.). New Jersey: Pearson International Edition.

7. Rust, J., Golombok, S. (1989). *Modern psychometrics: the science of psychological assessment*, (1st Ed.). London: Routledge.