



## RESEARCH ARTICLE

# Factors Associated with Rational Drug Use Literacy and Amanah Store Certification Among Grocery Operators in Narathiwat

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## ABSTRACT

**Objective:** This study aimed to examine the relationship between rational drug use literacy among grocery store operators and their qualification under the Amanah Grocery Store assessment criteria in Narathiwat Province, Thailand.

**Methods:** A cross-sectional analytical study was conducted among 106 grocery store operators in Narathiwat Province. The research instrument consisted of a structured questionnaire covering general demographic information and drug use literacy scores. Quantitative data were analyzed using descriptive statistics, including frequency distribution, mean, and standard deviation. Differences in drug use literacy scores between Amanah-certified grocery store operators and general grocery store operators were compared using the student's t-test. The relationships between relevant factors and Amanah store status were analyzed using either the Chi-square test or the student's t-test, depending on the data type. A p-value of less than 0.05 was considered statistically significant.

**Results:** Among the participants, 75 (70.75%) were operators of Amanah-certified grocery stores. The majority were female (87.10%), aged between 31 and 40 years (41.50%), and held a bachelor's degree (41.50%). The drug use literacy scores of Amanah-certified grocery store operators were significantly higher than those of general grocery store operators (p-value  $\leq 0.001$ ). Furthermore, educational level and occupation were significantly associated with Amanah store status (p-value  $\leq 0.001$ ). Drug use literacy in four key areas medication labeling, critical awareness of advertising, drug selection and usage, and understanding of medical terminology was also significantly associated with Amanah store status (p-value  $\leq 0.001$ ).

**Conclusion and Recommendations:** Promoting rational drug use literacy among grocery store operators can enhance the development of Amanah-certified grocery stores. Therefore, training and capacity-building programs should be implemented to equip store operators with knowledge and understanding of standardized health products, enabling them to select safe and appropriate health products for their communities.

**Keywords:** Rational Drug Use Literacy, Amanah Grocery Stores, Narathiwat Province

## Introduction

Rational drug use literacy is a key component in developing an effective community health system. Enhancing grocery store operators' understanding of rational drug use not only improves their ability to provide accurate information about medication use, but also supports policy implementation through the dissemination of accurate knowledge. This literacy fosters individuals' capacity to manage and take responsibility for their own medication use effectively. Achieving this goal requires collaboration from both individual store operators and the broader community to integrate efforts toward sustainable improvements in drug use quality.

Grocery store operators play an important role in providing first-line healthcare through the distribution of household medicines, especially in remote areas where pharmacies are not readily accessible. In such areas, grocery stores often serve as an alternative source for healthcare products. If store operators lack knowledge in distributing safe health products, it can negatively impact public health. Therefore, it is essential to establish standardized assessment criteria for grocery stores to build community confidence in their ability to provide safe household medicines and health products.

Amanah Grocery Stores are those that have passed a quality standard assessment based on four categories: store premises, product quality (food and health products), medicinal products, and knowledge and practices of store operators. To be certified, a store must achieve at least 22 out of 28 points and have no critical deficiencies. Promoting rational drug use literacy and supporting the development of general grocery stores into Amanah-certified stores is therefore crucial for gaining community trust and ensuring the safe selection of health products for sale.

Narathiwat Province, located in the southern border region of Thailand adjacent to Malaysia, is characterized by cultural diversity. Local communities often access health products from neighboring

countries, and the local Muslim population tends to use the Malay language in daily communication. These cultural and linguistic factors are important in promoting rational drug use, especially when interventions are initiated by hospitals and health service providers across the province's 13 districts. Efforts to promote rational drug use in Narathiwat involve five main activities: Surveillance by hospitals and communities, Public participation, Support from the private sector (e.g., pharmacies and grocery stores), Educational programs aimed at increasing drug use literacy among grocery store operators. This research aims to assess and compare the rational drug use literacy of Amanah-certified store operators and general store operators to support better understanding and safe health practices within communities. The overall goal is to improve public health by encouraging safe and effective use of medicines and health products.

The objectives of this study are twofold. First, to compare the rational drug use literacy scores of Amanah-certified grocery store operators with those of general grocery store operators, highlighting the differences in their knowledge and understanding of proper medication use. Second, to explore the factors associated with rational drug use literacy among Amanah store operators, identifying key elements that influence their knowledge and practices. The findings aim to inform the development of policies and strategies to promote rational drug use literacy within communities, ultimately enhancing public health and ensuring the safe use of medicines and health products.

## Methodology

This research employed a quantitative cross-sectional design, approved by the Human Research Ethics Committee of the Narathiwat Provincial Public Health Office.

### POPULATION AND SAMPLE

The study population consisted of grocery store operators in Narathiwat Province between January 2024 and July 2024. The inclusion criterion was

grocery store operators who had undergone and passed the standard store assessment, totaling 106 stores. The exclusion criteria were operators who (1) declined to participate or (2) provided incomplete information in the questionnaire.

All 106 eligible stores were included without sample size calculation. After completing the Rational Drug Use Literacy Assessment Questionnaire, stores were classified based on their scores:

- Amanah grocery stores: operators achieving a score of  $\geq 22$  points ( $\geq 80\%$ ).
- General grocery stores: operators achieving a score of  $< 22$  points ( $< 80\%$ ).

## INSTRUMENTATION

The research instrument was a Rational Drug Use Literacy Assessment Questionnaire designed for grocery store operators in Narathiwat Province. The questionnaire was divided into two parts:

Part 1: General Information – This section collected demographic and personal background data of the store operators.

Part 2: Rational Drug Use Literacy – This section assessed the operators' knowledge across four domains, adapted from the Community Rational Drug Use System Development Manual. The section contained 42 questions, including: General respondent information (12 items), Understanding and following drug labels and packaging (6 items), Awareness of drug advertisements (7 items), Drug selection and appropriate use (5 items), Understanding pharmaceutical terminology (10 items), Access to drug-related information (2 items).

The literacy assessment was scored with a maximum of 28 points, with a passing score set at  $\geq 22$  points (80%), indicating a sufficient level of rational drug use literacy. This scoring system was designed to evaluate the operators' knowledge and understanding of rational drug use effectively.

## DATA COLLECTION

The study collected data on factors associated with rational drug use literacy among Amanah grocery

store operators and compared their literacy scores with those of general grocery store operators. The questionnaire was developed specifically for this study and validated by three experts from the Narathiwat Provincial Public Health Office.

Field visits were conducted across 13 districts. During the initial phase, a baseline assessment was performed, revealing that literacy scores were relatively consistent among participating stores. Following this, educational interventions were implemented to promote rational drug use literacy. These interventions involved interactive training sessions and practical workshops conducted directly within the community context. A second round of assessments was subsequently performed to evaluate changes in literacy levels and to identify factors associated with literacy improvement.

## DATA ANALYSIS

Quantitative data were analyzed using descriptive statistics, including frequency distribution, percentages, means, and standard deviations. Inferential statistical analysis was performed using either the Fisher's exact probability test or the Student's t-test, depending on the data characteristics. A  $p$ -value  $< 0.05$  was considered statistically significant.

Group comparability was assessed prior to statistical analysis. Although the sample sizes of the two groups, Amanah grocery stores ( $n=75$ ) and general grocery stores ( $n=31$ ), were unequal, statistical methods appropriate for unequal group sizes, including Fisher's exact test and Student's t-test, were applied to analyze baseline characteristics. No statistically significant differences were observed between the groups in key demographic variables ( $p > 0.05$ ), supporting the validity of group comparisons.

## Results

The findings indicated that Amanah store operators had significantly higher average scores than general store operators in all four assessed domains: Understanding and following medication labels,

Critical awareness of advertisements, Appropriate drug selection and usage, Understanding pharmaceutical terminology.

### SAMPLE CHARACTERISTICS

Table 1 presents the demographic characteristics of Amanah and general grocery store operators. Among the Amanah store operators, the majority were female (66 individuals), with an average age between 31–40 years (45.33%), and most held a bachelor's degree (53.33%). The main occupations were daily laborers, farmers, and homemakers (46.67%). In contrast, general grocery store operators were also mostly female (27 individuals), but with a higher average age, primarily between 41–60 years

(41.94%). Their educational level was mostly at the secondary level (Grade 10–12) (32.26%), and their main occupations were similar: daily laborers, farmers, and homemakers (83.87%). Statistical analysis revealed that educational level and occupation were significantly associated with rational drug use literacy among Amanah store operators ( $p$ -value  $\leq 0.001$ ). However, gender, age group, and presence of chronic diseases showed no statistically significant association. These findings highlight the critical role that education and occupational background play in the development of drug use literacy among grocery store operators.

**Table 1: Demographic Characteristics of Grocery Store Operators in the Study**

Personal Factors	Amanah Grocery Stores (n = 75)		General Grocery Stores (n = 31)		P-value*
	n	%	n	%	
<b>Gender</b>					1.000
Female	66	88.00	27	87.10	
Male	9	12.00	4	12.90	
<b>Age Group (years)</b>					0.077
21–30	7	9.33	2	6.45	
31–40	34	45.33	10	32.26	
41–50	25	33.33	13	41.94	
51–60	9	12.00	6	19.35	
> 60	0	0.00	0	0.00	
<b>Educational Level</b>					0.001
Primary (Grade 1–6)	6	8.00	9	29.03	
Lower Secondary (Grade 7–9)	2	2.67	6	19.35	
Upper Secondary (Grade 10–12)	16	21.33	10	32.26	
Vocational Certificate	2	2.67	1	3.23	
High Vocational Certificate	9	12.00	1	3.23	
Bachelor's Degree	40	53.33	4	12.90	
Postgraduate	0	0.00	0	0.00	
<b>Occupation</b>					0.001
Government/State Enterprise	19	25.33	1	3.23	
Trading/Private Business	21	28.00	4	12.90	

Laborer/Farmer/Homemaker	35	46.67	26	83.87	
<b>Chronic Illness History</b>					1.000
No chronic illness	58	77.33	25	80.65	
Has chronic illness	15	20.00	6	19.35	
Never tested	2	2.67	0	0.00	

### RATIONAL DRUG USE LITERACY

The assessment of rational drug use literacy among Amanah-certified and general grocery store operators, as presented in Table 2, revealed significantly higher scores among Amanah operators across all four key domains. In Domain 1: Understanding and Following Medication Labels, Amanah operators achieved a mean score of 5.8 out of 6, compared to 3.73 for general store operators ( $p\text{-value} \leq 0.001$ ). In Domain 2: Critical Awareness of Drug Advertisements, Amanah operators scored 5.5 out of 7, while general operators scored 2.33 ( $p\text{-value} \leq 0.001$ ). For Domain 3: Appropriate Drug Selection and Usage, the mean scores were 4.41 out of 5 for Amanah stores and 3.23 for general stores ( $p\text{-value} \leq 0.001$ ). Lastly, in Domain 4: Understanding Pharmaceutical Terminology, Amanah operators scored 9.53 out of 10, compared to 7.33 among general operators ( $p\text{-value} \leq 0.001$ ).

These results indicate that across all domains, Amanah grocery store operators consistently outperformed general store operators, with statistically significant differences observed in each area ( $p\text{-value} < 0.05$ ). This disparity may be attributed to the rational drug use promotion activities conducted in Narathiwat Province, which Amanah store operators were more likely to participate in. Their engagement in these activities likely contributed to their significantly higher literacy scores in rational drug use compared to their general store counterparts.

### ACCESS TO HEALTH PRODUCT INFORMATION

Among Amanah grocery store operators, 69% reported being able to independently search for accurate and reliable health product information. Trusted sources included pharmacists, physicians, and public health officials. In contrast, only 6% of

Amanah store operators reported relying on unreliable sources such as the internet or informal advice from relatives and friends. On the other hand, among general grocery store operators, only 15% reported accessing information from trusted sources, while a higher proportion (16%) relied on unreliable sources. These findings demonstrate a statistically significant difference ( $p\text{-value} \leq 0.001$ ) in information-seeking behavior between the two groups. Amanah grocery store operators showed a greater tendency to consult accurate and credible sources, contributing positively to community health management and reducing susceptibility to misleading online advertisements. These results are summarized in Table 3.

Table 2: Comparison of Rational Drug Use Literacy Scores Between Amanah and General Grocery Store Operators

Domain	Amanah Grocery Stores (n = 75)	General Grocery Stores (n = 31)	P-value*
	Mean $\pm$ SD	Mean $\pm$ SD	
Total Rational Drug Use Literacy Score	25.25 $\pm$ 1.91	16.70 $\pm$ 4.72	$\leq$ 0.001
Medication Label Understanding (6)	5.80 $\pm$ 0.43	3.73 $\pm$ 1.91	$\leq$ 0.001
Awareness of Drug Advertisements (7)	5.50 $\pm$ 1.18	2.33 $\pm$ 1.26	$\leq$ 0.001
Drug Selection and Usage (5)	4.41 $\pm$ 0.69	3.00 $\pm$ 1.10	$\leq$ 0.001
Understanding of Pharmaceutical Terminology (10)	9.53 $\pm$ 0.74	7.33 $\pm$ 2.42	$\leq$ 0.001

Table 3: Access to Health Product Information Among Amanah and General Grocery Store Operators

Information Access Category	Amanah Grocery Stores (n = 75)		General Grocery Stores (n = 31)		P-value*
	n	%	n	%	
Trusted Sources	69	92.00	15	48.39	$\leq$ 0.001
Unreliable Sources	6	8.00	16	51.61	$\leq$ 0.001

## Discussion

This study aimed to compare the levels of rational drug use literacy between Amanah grocery store operators and general grocery store operators in Narathiwat Province, and to investigate the factors associated with literacy among Amanah store operators. The findings revealed that Amanah store operators had significantly higher literacy scores than general store operators across all domains assessed, including understanding medication labels, critical awareness of drug advertisements, appropriate drug selection and usage, and understanding pharmaceutical terminology.

A key factor associated with higher literacy was educational attainment. Operators with a bachelor's degree achieved significantly higher average scores (9.53 vs. 7.33 points,  $P \leq 0.001$ ). This finding aligns with the conceptual frameworks proposed by Sørensen et al. (2012), highlighting education as a structural determinant that enhances individuals' abilities to read, analyze, and make decisions about health information. Additionally, those with higher education levels were more likely to access credible sources of health information, thereby reducing the risk of misinformation from unreliable sources.



These results are consistent with the findings of Isler (2018) in Turkey, who demonstrated that higher education levels were positively associated with health literacy and rational drug use behaviors. However, it is important to recognize contextual differences: Turkey benefits from a centralized healthcare system that facilitates widespread access to health information, while Narathiwat faces geographical, linguistic, and cultural barriers that may impede effective health communication.

Language context emerged as a crucial factor in Narathiwat, where the majority of the population communicates in the local Malay dialect. Studies by Songsri (2017) and Sittisaman (2014) emphasized that linguistic differences can cause significant communication distortions, particularly in the interpretation of medical terminology or complex health concepts. Therefore, developing culturally and linguistically tailored assessment tools is critical to accurately reflect the true literacy levels of the population and to prevent misinterpretation during assessments, as emphasized by Kreuter and McClure (2004). Tailoring communication to cultural contexts significantly enhances understanding, credibility, and responsiveness to health information.

Beyond education and language, community participation played an essential role in improving rational drug use literacy. Involving community leaders, grocery store operators, and village health volunteers (VHVs) throughout the development of assessment tools and training activities helped align content and delivery methods with local realities and community needs. This approach is supported by findings from studies conducted by Pattamasaravut and Muenpa (2020) in Buriram Province, and Kaewkambong et al. (2024) in Nakhon Ratchasima Province, which showed that training initiatives supported by local networks significantly improved rational drug use literacy across socially diverse settings.

The critical role of VHVs was also evident in Narathiwat, where VHVs served not only as health information disseminators but also as frontline

monitors against inappropriate drug sales in communities. These findings are consistent with observations by Ponyon (2024) and Seeha (2024), who emphasized the proactive role of VHVs in bridging public health systems and local communities.

Overall, the analysis indicates that fostering strong community participation from developing assessment tools to implementing training programs is a vital factor in sustaining improvements in rational drug use literacy within communities. A community-based approach ensures that interventions are contextually appropriate, continuous, and scalable for long-term impact.

An important recommendation for further promoting Amanah grocery stores is for provincial health offices, particularly the Narathiwat Provincial Public Health Office, to leverage these findings to plan training programs and strengthen the skills of public health personnel and partner networks. Furthermore, expanding the use of rational drug use literacy assessment tools to general grocery stores in Narathiwat can help enhance their literacy and ensure safer selection of health products. Private sector entities, such as pharmacies and clinics, should also be encouraged to collaborate in disseminating accurate drug use knowledge to the wider population.

However, this study has certain limitations, notably the restricted sample size and geographic focus limited to Narathiwat Province, which may affect the generalizability of the results to other regions. Future research should involve more diverse areas and develop assessment tools adapted for different linguistic and cultural groups to broaden the applicability of findings and support evidence-based public health policy planning more effectively.

## Conclusion

The analysis demonstrated that Amanah store operators exhibited significantly higher mean scores compared to general store operators. Notably, elevated scores were observed across four critical domains: interpretation of medication labels, awareness of pharmaceutical advertising, appropriate

drug selection and use, and understanding of pharmaceutical terminology. Educational attainment and occupational status were identified as significant factors associated with rational drug use literacy.

## Recommendations

Based on the research findings, which emphasize the importance of developing rational drug use literacy among grocery store operators and the general public, the following recommendations are proposed for relevant stakeholders to effectively implement the results in practice: First, the Provincial Public Health Office can utilize the findings as a guideline to enhance the capacity of public health personnel. This could involve collaborating with community networks to promote rational drug use literacy at the community level. Second, the rational drug use literacy assessment tool used in this study should be expanded to other areas within Narathiwat Province. Targeting areas with lower literacy scores will help increase awareness among general grocery store operators, enabling them to select and distribute health products more appropriately. This will, in turn, improve public access to safe health products. Lastly, the approaches derived from this study should be further developed in the private sector, including pharmaceutical establishments and clinics. This will promote wider health literacy and improve overall healthcare service efficiency. Integration of knowledge and collaboration across sectors will contribute to the sustainable promotion of safe and rational drug use within communities.

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