

# Clinical reasoning of community pharmacists for self-care recommendations

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## Introduction

- Pharmacist's clinical reasoning is a complex process that integrates and applies accumulated knowledge, evaluates all available arguments, and reflects upon the process to arrive to a clinical therapeutic decision.<sup>1</sup>
- Forward-chaining is a type of analytical approach that collects data and cues to generate a hypothesis. Hypothetico-deductive analytical approach, starts with a hypothesis on preliminary cues obtained, which is continuously modified as new information is encountered.<sup>2</sup> If a decision is based on a single criteria or a particular condition, this is categorized as if/then analytical approach.<sup>3,4</sup>

## Aims

To investigate and compare clinical reasoning processes adopted by community pharmacists in two countries in Europe and Southeast Asia when responding to patient requests regarding acute minor ailments.

## Setting

Community pharmacists in Malta (MT): N=5

Community pharmacists in Metro Manila, Philippines (PH): N=10

Inclusion criteria: 3 years experience in community pharmacy

Acknowledging organizations, pharmacy owners, and pharmacist participants who made this research possible.

## Method

A comparative qualitative ethn methodology study design using retrospective think aloud technique was implemented to examine the patterns of clinical reasoning and decision-making processes of community pharmacists. Community pharmacists in Malta and in the Philippines participating in this study were observed in the community pharmacy workplace setting as they responded to requests related to minor symptoms. Each participant was subsequently interviewed to reflect on process followed. All verbal reports were audio-video recorded, transcribed and analyzed using protocol analysis. The study had Research Ethics Approval from the relevant boards in Manila and Malta.

## Results

- Community pharmacists demographics: Average years of experience for community pharmacists: 38 years (PH), 29 years (MT); gender female 80% (PH and MT)
- 46 cases of responding to minor ailments were observed and were classified into: seeking specific medicine (33) or requesting advice about symptoms (13)
- Five predominant cognitive strategies when conducting clinical reasoning were identified: collect, assume, infer, act, and explain.
- When patients seek specific medicines, the pharmacists conducted reasoning in 36% (Philippines) mostly through the if/then approach and 63% (Malta) of the cases mostly through the hypothetico-deductive approach.
- When patients sought for advice, pharmacists reasoned 100% of the time in which Filipino pharmacist utilized if/then approach (85%), whereas Maltese pharmacists tend to assess and decide medications by forward-chaining (50%).

Table 1. Cases observed during observation

| Cases observed                            | PH         | MT         |
|---|------------|------------|
| Total cases recorded                      | 30         | 16         |
| No. of patients seeking specific medicine | 25 (83%)   | 8 (50%)    |
| No. of patients seeking advice            | 5 (16%)    | 8 (50%)    |
| Intervention by Pharmacist:               |            |            |
| Patients seeking specific medicine        | 9/25 (36%) | 5/8 (63%)  |
| Patients seeking advice                   | 5/5 (100%) | 8/8 (100%) |

Table 2. Clinical reasoning approach used by pharmacists in Philippines and Malta

| Clinical reasoning approach                   | PH       |         | MT        |         |
|---|----------|---------|-----------|---------|
|   | MEDICINE | ADVICE  | MEDICINE  | ADVICE  |
| Intuitive                                     |          |         |           |         |
| Pattern Recognition                           | 1 (4%)   | -       | -         | 1 (10%) |
| Analytical                                    |          |         |           |         |
| Hypothetico-deductive                         | 2 (8%)   | 1 (15%) | 5 (62.5%) | 1 (10%) |
| Forward chaining                              | 1 (4%)   | -       | -         | 5 (50%) |
| If/Then                                       | 5 (19%)  | 5 (85%) | -         | 3 (30%) |
| No observable clinical reasoning demonstrated | 16 (65%) |         | 3 (37.5%) | -       |

## Conclusion

Pharmacist's clinical reasoning approach mostly followed the analytical decision-making pattern, which varied according to patient's request. Dynamic clinical reasoning during patient care was demonstrated, although there were instances of simplistic conditional approach or a total lack of reasoning that may potentially compromise patient safety. Ensuring that pharmacy decisions are made by considering important objective and contextual-related knowledge during clinical reasoning will result in the highest quality of care.

## References

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