

Assessment and diagnostic performance in community pharmacy patient consultations - a systematic review

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Background

- ▶ Rising health-care costs have led to the promotion of self-care
- ▶ More patients visit community pharmacies for self-care advice

Background

- ▶ Pharmacists' time constraints mean a lot of consultations are conducted by counter staff
- ▶ Counter staff lack the experience and knowledge pharmacists have

Background

- ▶ Protocols, guidelines and mnemonic acronyms have been developed to help pharmacy staff in their role
- ▶ Clinical reasoning is a method used for decision-making and diagnosing in medicine and nursing

Aims of the review

1. Summarise how authors assess pharmacy staff's diagnostic performance
2. To what degree do they conform with a clinical reasoning or mnemonic framework
3. To characterise staff performance based on the authors comments of their results

Inclusion/exclusion criteria

- ▶ Inclusion criteria
 - ▶ Description of diagnostic performance
 - ▶ Diagnostic scenario in the form of simulated patients (SPs) or vignettes
 - ▶ Peer-reviewed, published in English, any date or study design
- ▶ Exclusion criteria
 - ▶ No assessment of the diagnostic performance
 - ▶ Study only looked at staff's opinions of their performance
 - ▶ Staff had to follow specific screening methods that would not allow for critical thinking

Study selection process

- ▶ MEDLINE, EMBASE and Web of Science were used
- ▶ Initial scoping
- ▶ Search algorithm
- ▶ Two rounds of searches -second round included manual search
- ▶ Abstract screening
- ▶ Full-text screening
- ▶ Data extraction
- ▶ Two authors performed the screening and another acted as arbitrator

Data extracted

- ▶ *study characteristics*: : year, country, type of study, participant characteristics, quantitative or qualitative
- ▶ *quality characteristics*: study piloting, SP training, method data was captured
- ▶ *methodology characteristics*: SPs or vignettes, number of SPs, number of scenarios, type of scenarios (symptom presentation or product request), SP role (presenting for themselves or someone else)
- ▶ *assessment characteristics*: how assessment criteria were derived, general assessment or specific condition, medical conditions used for the scenarios, was staff knowledge assessed, comparison of community pharmacists' performance with other pharmacy staff

Scoring system

- ▶ Did studies use clinical reasoning or mnemonics/guidelines as a framework for their assessment?
- ▶ A scoring system was devised
 - ▶ 4 qualities assigned to each framework
 - ▶ A value of one was assigned to each characteristic

Clinical reasoning framework

1. The authors assessed staff against **questions that are relevant to the scenario condition** (e.g. for an emergency contraception scenario staff were expected to ask the question “when was your last menstrual cycle”)
2. The authors have mentioned the **purpose of the questions** they assessed staff against (e.g. for a sleeplessness scenario, patients’ were asked about their medication because it might be causing or contributing to the patient’s sleeplessness)

Clinical reasoning framework

3. The authors have reflected on **how staff use the gathered information** during the decision-making process (e.g. in a dyspepsia scenario, a response to the question about pain location led the pharmacist to consider indigestion as a possibility)
4. The authors considered whether there is a **connection between the information gathered and the final decision taken by staff**

Mnemonic framework

1. The authors have assessed staff against **asking questions** regardless of whether they're relevant to the condition or not (e.g. in a common cold scenario staff were expected to ask the patient's age)
2. The authors have assessed staff against a **checklist** of questions they were expected to ask (e.g. • Check symptoms • Check length of symptoms • Check other medication • Check other health condition • Refer if needed • Provide information)

Mnemonic framework

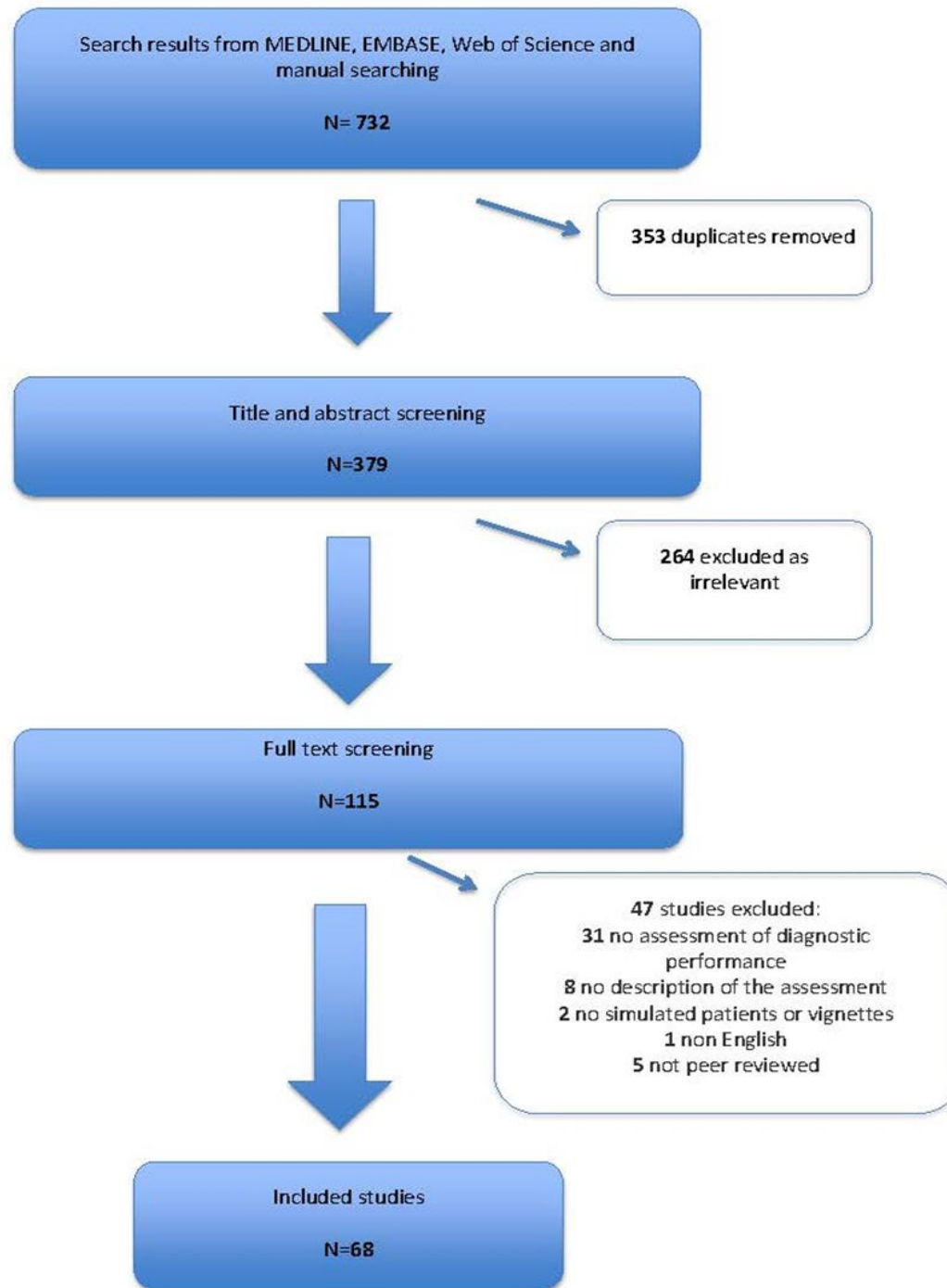
3. The authors have explicitly mentioned they used a known **mnemonic method, guidelines or recommendations** to assess performance (e.g. WWHAM, WHO guidelines, Australian practice recommendations)
4. The authors have reported the **final decision** staff took, irrespective of whether it was connected to the information gathering or not (e.g. “In 90% of the scenarios not appropriate for self- medication, a recommendation was made for the customer to see a physician/GP, but in only 30% of those referrals was there sufficient urgency”)

Outlook on performance

- ▶ Each study was also coded for passages that indicated whether the **authors' outlook** on the diagnostic performance of the staff assessed in their studies was **positive, negative or mixed**.

Results

68 included studies



Study characteristics

- ▶ Published between 1989 and 2017
- ▶ 41 studies from developed economic nations - 27 from developing
- ▶ Sample sizes varied widely (10-2700 staff tested)
- ▶ Majority of studies (n=43) studied a mix of pharmacy staff
- ▶ Vast majority of studies (n=67) used quantitative methods

Quality characteristics

- ▶ Piloting in 20/68 studies
- ▶ 44/62 studies reported training their SPs
- ▶ 57/68 studies used data collection forms
- ▶ 18/68 used audio or video recording

Methodology characteristics

- ▶ Vast majority of studies used SPs (n=62) instead of vignettes (n=5)
- ▶ SP numbers varied, most studies used 1-2
- ▶ Same with number of scenarios
- ▶ 38 studies looked at both symptom presentation/product request, 20 only at symptom presentation, 6 only at product request
- ▶ In 39 studies SPs presented for themselves, in 19 for someone else, in 9 both approaches were used

Assessment characteristics

- ▶ 29 studies used published guidelines
- ▶ 18 derived their own criteria
- ▶ 16 studies used a scoring system
- ▶ 10 studies based their assessment criteria on other published papers
- ▶ 10 used 'expert panels'
- ▶ 8 studies explicitly used mnemonic acronyms

Assessment characteristics

- ▶ 46 studies assessed diagnostic performance of specific conditions
- ▶ 22 studies aimed to assess diagnostic performance in general
- ▶ Developed economies tended to concentrate on women's health, such as emergency contraception, and central nervous system conditions such as insomnia and headache.
- ▶ Developing economies concentrated on conditions such as diarrhoea and sexually transmitted diseases

Assessment framework ratings

- ▶ Average mnemonic rating was 2.71/4
- ▶ Modal value was 3

- ▶ Average clinical reasoning rating was 0.96/4
- ▶ Modal value was 0

Clinical reasoning rating per characteristic

1. 53% assessed performance based on questions with relevance to the condition at hand
2. 12% reported purposes for the questions asked
3. 7% reflected on how the gathered information was used
4. 24% considered a connection between the information gathering process and the decision-making outcome

Mnemonic rating per characteristic

1. 69% of studies assessed performance based on asked questions
2. 85% used checklists
3. 43% used named mnemonics or guidelines
4. 74% mentioned final decision

Outlook on diagnostic performance

- ▶ 13% studies described pharmacy staff's performance in **positive** terms
- ▶ 12% described them in **mixed** terms
- ▶ 75% used **negative** terms to describe their results of pharmacy staff's performance

Comparisons

- ▶ In 8 studies that compared actual to theoretical performance (questionnaire scores) 7 found actual performance worse and 1 found them similar
- ▶ In 13 studies that compared pharmacists to other staff, 9 found pharmacists performed better and 4 found they performed similarly

Discussion

- ▶ Quality of the studies can be improved
- ▶ Authors relied on mnemonic criteria to assess pharmacy staff's diagnostic performance rather than a clinical reasoning approach
- ▶ Performance of pharmacy staff was overwhelmingly reported in negative terms by study authors

Discussion

- ▶ Many aspects of the decision-making process are potentially left unexplored
- ▶ New tools need to be developed, more aligned with a clinical reasoning approach, which would allow for the assessment of all parts of the decision-making process
- ▶ As these concepts are difficult to describe in quantitative terms, more qualitative research should be employed by researchers

Discussion

- ▶ Results showing pharmacists performing better than staff, even though based in small numbers, suggest pharmacists should be more proactive and visible in consultations
- ▶ Differences in actual vs theoretical performance show pharmacists have knowledge but struggle to use it in practice and better training is needed

Strengths/limitations

- ▶ Global perspective
- ▶ Real-life approximations
- ▶ Variety of data sources

- ▶ Not a meta-analysis
- ▶ Limited to studies in English

Thank you!