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FINAL VALIDITY OF A TOOL FOR RATING SIGNIFICANCE OF PHARMACISTS' CLINICAL CONTRIBUTIONS IN HOSPITAL

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Background

There are few validated instruments for rating clinical significance of pharmacy contributions to care with no accepted gold standard.[1] We sought to finalise validation of the IMPACCTS (InstruMent for PhArmacy Clinical Contributions To care Significance) tool which consists of:

- 5 ordered levels
- Each level underpinned by descriptive statements (45 in total)
- A 6th level (level 0) denoting a contribution deemed inappropriate or potentially harmful

A robust process to ensure simplicity and clarity of the instrument has previously been reported.[2,3]

Aims and Objectives

To finalise validation of IMPACCTS by:

- Demonstrating comprehensiveness of the instrument. Aiming for 100% of scenarios to be assigned a statement using IMPACCTS
- Quantifying interrater reliability

IMPACCTS – InstruMent for rating PhArmacy Clinical Contributions To care Significance

- IMPACCTS is a pharmacy clinical contributions severity rating scale for potential patient outcome
- The tool has six clinical significance **levels** (0 to 5)
- Under each significance level there are a number of **statements** which describe different types of clinical pharmacy contributions

Level 0 – **Leads or could lead, to an undesirable outcome/pharmacist's actions were inappropriate.**

Level 1 – **Good practice leading to no harm or clinical benefit to the patient.**
- Substituting a drug to comply with formulary.
  Note: If there is a clinical reason for change, it should be graded higher

Etc…

Level 2 – **Minor benefit to patient OR made treatment easier OR prevented minimal harm OR an error/incident which could have required non invasive monitoring.**
- Action taken to avoid dosing error where the risk of harm OR likelihood of benefit is not significant.

Etc…

Level 3 – **Level 3 contributions are those which will provide significant benefit to patient OR prevented an incident of significant harm OR without which would have required additional treatment or invasive intervention.**
- Any action including medicines rationalisation to prevent noticeable discomfort or provide significant benefit.

Etc…

Level 4 – **Prevented an incident that could have potentially led to reversible organ failure, major reversible harm or increased level of care (i.e. *readmission into hospital, or from L1 to L2, or L2 to L3)**
**Re-admission – If you consider readmission to be the most likely outcome, the minimum level to assign is level 4, however you may wish to assign a higher level, depending on your judgement of the severity of the impact on the patient.*
- Action taken to resolve the problem of a dose of a drug which would result in serum drug levels in the toxic range, where patient is at risk of reversible organ damage.

Etc…

Level 5 – **Prevented an incident that could have resulted in a life or death situation, permanent organ damage or severe harm, OR an error which could have potentially caused major permanent harm.**
- Action taken to change the dose of a potentially lifesaving drug (i.e. any drug which could prevent or treat a life-threatening condition) which is too low for the patient.

Etc…

Method

Comprehensiveness

450 clinical scenarios randomly selected → Scenarios randomly divided into 10 sets of 45 → 20 pharmacists paired to review 45 scenarios each → Each set of 45 scenarios reviewed by 2 pharmacists → Pharmacists asked to find a corresponding statement or level

Interrater Reliability

Detailed descriptions of 15 randomly selected clinical scenarios provided → All 20 pharmacists asked to review the same 15 scenarios and use IMPACCTS to rate the clinical significance of each → Intraclass correlation (two-way, random effects, absolute agreement, individual) calculated using Stata v14

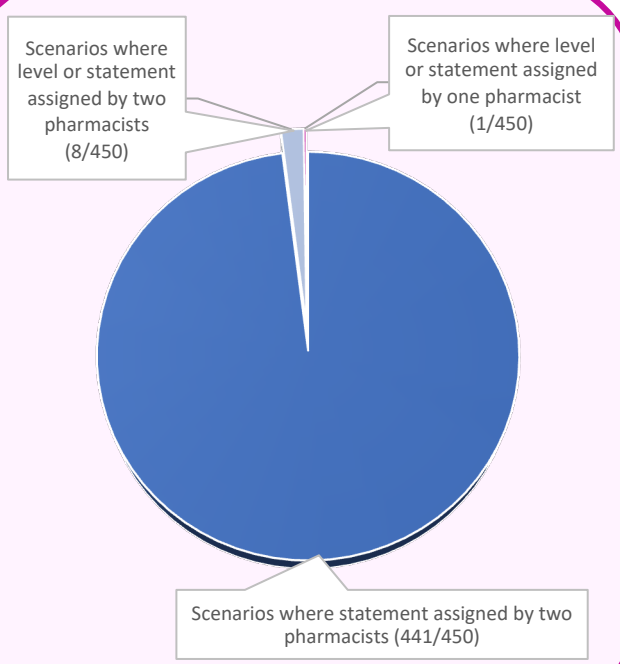
Results

Comprehensiveness

- For all scenarios, at least one person found a statement.
- A statement and/or level could be assigned for 99.8% of scenarios by two pharmacists.

Interrater Reliability

- Intraclass correlation was 0.71 (95% CI = 0.55, 0.86), equalling moderate to good pharmacist agreement.[4,5]



Breakdown of comprehensiveness results (n = 450)

Conclusion

- Excellent comprehensiveness and moderate to good interrater reliability of IMPACCTS has been demonstrated.
- The instrument is ready for widespread adoption in both research and practice to assess the clinical severity of pharmacy contributions.
- IMPACCTS is only validated for use in UK hospitals at this time.
- Repeat studies would be needed to confirm appropriateness for use in other pharmacy settings.

References
[1]Vo TH *et al. Drug Safety* (2016);39(2): 131-46.
[2]Ali F et al. *United Kingdom Clinical Pharmacy Association Symposium Proceedings;* 2021.
[3]Mehta R and Onatade R. *United Kingdom Clinical Pharmacy Association Symposium Proceedings;* 2016.
[4]Koo, T. K., & Li, M. Y. *Journal of chiropractic medicine* (2016); 15(2), 155-163

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