

Knowledge translation in pharmacy practice: an exploration of KT+ database

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Background

- The literature on Knowledge translation is large and complex, and publications on health interventions are mostly directed at physicians and nurses.
- To our knowledge, there is no literature review on knowledge translation and its impact in pharmacy.

Objectives

- To review the published literature about knowledge translation (KT) studies in pharmacy practice.
- To describe pharmaceutical interventions.

Methods

- This is a retrospective study and a literature review.
- A search strategy using the term "pharmacist" was conducted in **KT+ database from McMaster University Health Information Research Unit** from January 2010 until December 2016.
- KT+** provides access to the current evidence on the dissemination and application of research-derived knowledge in health care (e.g. research addressing the knowledge to practice gap), including published original articles and systematic reviews on health care quality improvement, continuing professional education, computerized clinical decision support, health services research and patient adherence. Its purpose is to inform those working in the knowledge translation area of current research as it is published.
- Articles describing pharmaceutical interventions with the perspective of knowledge translation were included.
- For each article, we extracted :
 - design
 - location of pharmacy practice
 - objectives
 - interventions
 - participants
 - targeted disease
 - main outcomes
 - main results
- Only descriptive statistics were performed.

Results

Table 1 - Profile of pharmaceutical interventions highlighting knowledge translation.

Study design	Randomized controlled study n	Prospective study n	Retrospective study n	Pre-post intervention study n	Total N (%)
Total number of studies (n)	45	13	21	10	89 (100%)
Places of Intervention					
Healthcare facility	31	12	16	7	66 (74%)
Community care network	14	1	5	3	23 (26%)
Knowledge producers or brokers					
Pharmacist	43	12	21	8	84 (94%)
Physician	12	4	1	3	20 (22%)
Physician + pharmacist	10	3	1	2	16 (18%)
Nurse	8	3	0	3	14 (16%)
Pharmacist + nurse	8	0	0	3	11 (12%)
Physician+ pharmacist + nurse	6	2	0	2	10 (11%)
Knowledge users					
Patient	40	6	17	3	66 (74%)
Pharmacist	7	3	3	4	17 (19%)
Physician	3	4	1	8	16 (18%)
Nurse	5	0	0	4	9 (10%)
Diseases					
Diabetes	8	0	8	1	17 (19%)
Hypertension	9	2	2	0	13 (15%)
Geriatrics	6	2	0	1	9 (10%)
Pediatrics	1	3	0	4	8 (9%)
Cardiovascular diseases	6	0	2	0	8 (9%)
Anticoagulation	3	0	2	0	5 (6%)
Antibiotherapy and immunisation	1	0	0	2	3 (3%)
Chronic renal failure	1	1	1	0	3 (3%)
HIV	0	0	2	0	2 (2%)
Depression	1	0	0	0	1 (1%)
Delirium	1	0	0	0	1 (1%)
Osteoporosis	1	0	0	0	1 (1%)
No precisely targeted disease	7	5	4	2	18 (20%)
Intervention categories/dimensions					
Work in interdisciplinarity	45	13	17	10	85 (96%)
Transfer knowledge to the patient and other stakeholders	45	13	17	10	85 (96%)
Establish a trusted relationship with the patient and other stakeholders	34	13	11	10	68 (76%)
Assess patient and healthcare team needs	34	11	16	7	68 (76%)
Evaluate pharmacotherapy and non-pharmacological measures	34	6	19	3	62 (70%)
Insure patient follow-up	34	5	17	2	58 (65%)
Stay competent	4	6	0	6	16 (18%)
Review drug therapy	2	3	1	1	7 (8%)
Manage and prepare medicines	3	1	0	0	4 (5%)
Primary outcomes					
Clinical status of the patient and / or compliance	33	3	16	1	53 (60%)
Drug orders	10	6	5	5	26 (29%)
Resources (hospitalization, costs)	15	4	5	1	25 (28%)
Level of knowledge of healthcare workers	1	3	0	4	8 (9%)
Compliance with guidelines	3	0	0	0	3 (3%)
Impact of intervention					
Positive	29	9	18	10	66 (74%)
Neutral	10	2	2	0	14 (16%)
Negative	6	2	1	0	9 (10%)

- A total of 114 articles were identified in the KT+ database :
 - systematic reviews (22%, n=25)
 - original studies (78%, n=89)
 - 69% of the original studies identified are included in at least one systematic review.
- The majority (74%) of pharmaceutical interventions related to KT were studied in healthcare facilities
- The pharmacist can be a knowledge producer/broker and/or a knowledge user.
- Reported pharmaceutical interventions targeted chronic diseases (e.g. diabetes (19%), hypertension (15%), other cardiovascular diseases (9%)), patient care programs (e.g. geriatrics (10%), pediatrics (9%)), or drugs (e.g. anticoagulants (6%), antibiotics and immunization (3%)).
- A majority of reported pharmaceutical interventions were related to the six of the nine proposed intervention categories/dimensions
- Our study shows that there are two main types of pharmaceutical interventions for knowledge translation. A first type is oriented towards the patient whereas a second type is oriented towards healthcare workers.
- Primary outcomes were related to patient clinical status/compliance (60%), drug orders (29%), resources (28%)
- Reported pharmaceutical interventions were associated to a positive impact in 74% of studies.
- A limited number of studies describing pharmaceutical interventions related to knowledge translation has been published and included in KT+ database ; while most pharmaceutical interventions may implicitly include knowledge translation actions, there is a need to better address the importance of knowledge translation in clinical practice.
- We believe concepts and applications of knowledge translation models should be included in pharmacy curriculum and in pharmacy practice ; it is suitable to identify in each hospital pharmacy department a designated pharmacist to invest and act in knowledge translation

Discussion / Conclusion

- This study explored knowledge translation interventions in pharmacy practice. KT encompasses all aspects of pharmacy practice. Pharmacists should be aware that they are KT actors in their daily