



How Do Nephrologists Accept Pharmacists' Recommendations on Geriatric Patients' Drug Therapy? A Brief Review

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ABSTRACT

Geriatric patients are at greater risk of drug related problems due to increased prevalence of chronic diseases and drug consumption. But at the same time, an important issue in the collaboration of pharmacists and physicians, is the acceptance of the pharmacist's recommendations by other specialties. The present review summarizes the acceptance rate of nephrologists towards pharmacist recommendations. PubMed and google scholar were searched from 1979 to 2016. The key terms were: physician-pharmacist, physician acceptance, pharmacist intervention, elderly patients, nephrology, renal disorder, pharmacist assessment, geriatrics, physician pharmacist collaboration. The search for key terms in English and Persian resulted in 13 relevant literatures from 2011-2018. All of the studies demonstrated the positive effect of pharmacist interventions. The acceptance rate of nephrologists is over 60% (and sometimes as high as 84%) in different regions. This topic is relatively young and the specific collaboration of nephrologists and pharmacists has not been studied prior to 2011.

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Introduction

Geriatric patients are at greater risk of drug related problems due to increased prevalence of chronic diseases and drug consumption (1). This age group population is rising in Iran and it's predicted that there will be more than 25 million elderly people in Iran by 2050 (2, 3).

Geriatric patients consume an average of 7 drugs with 46% of them having at least one drug-drug interaction (DDIs) (4). Polypharmacy, potentially inappropriate medications and unnecessary drug duplications are also significant in geriatric patients (5-7). These issues have a great impact on the higher risk of adverse drug reactions (ADR) in elderly (8).

Pharmacists are a part of healthcare system that could effectively improve geriatric patients' drug therapy. In a systematic review in the United States in 2013, to determine the role of pharmaceutical care led by pharmacists in

elderly patients, the positive effect of pharmacists' evolving role was discussed (9).

A randomized controlled study in Sweden on patients 80 years or older showed that, the presence of a pharmacist in a team-based care system, decreased the rate of mortality, hospitalization and drug-related readmissions (10).

DRP (drug related problems) can be minimized when pharmacists are involved in management of geriatric patients and give patient education. But at the same time, an important issue in the collaboration of pharmacists and physicians, is the acceptance of the pharmacist's recommendations by other specialties. According to a study in Belgium, which examined the rate of physician's acceptance and clinical relevance of pharmacist suggestion for elderly patients' drug therapy, there were times that the acceptance was at a low rate. Different reasons were

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mentioned for this finding (11,12). Consistently on data in Australian journal of primary health pharmacists, suggestions were made by medical-doctor and pharmacist team for aged population (13).

Due to increased renal disorders in adults aged 70 years and older, the rate of mortality in this population is higher than other age groups (3). Kidney function affects the elimination of many drugs and dose adjustments are often needed in geriatrics. End stage renal disease caused by untreated CKD in older patients will increase fatality. The elderly with chronic or acute kidney disease could particularly benefit from pharmacist interventions (14). Therefore the present review was conducted to summarize the acceptance of nephrologists towards pharmacist recommendations.

Methods

Searches of PubMed and google scholar search engines were conducted to denominate literature from 2000 to 2016. The databases were searched for articles which studied the physician-pharmacists collaboration in geriatric patients with renal failure.

The following key terms were used: physician-pharmacist, physician acceptance, pharmacist intervention, elderly patients, nephrology, renal disorder, pharmacist assessment,

geriatrics, physician pharmacist collaboration.

Articles were then assessed to identify the related studies. This review focuses on physicians' acceptance of pharmacists' suggestions in geriatric population with renal disorder as their primary problem.

Results

The search for key terms in English and Persian resulted in 13 relevant literatures from 2011-2018. The study designs were cross-sectional, prospective interventional, retrospective, randomized and interventional.

The healthcare setting of the studies were: 11 studies in hospitals and three studies were conducted in clinics and one in both a hospital and a nursing home.

The sample sizes ranged from 50 to 9096 patients. In all but one of the literatures, the patients were aged ≥ 65 years.

All of the studies demonstrated the positive effect of pharmacist interventions. In nine studies p values of ≤ 0.05 were reported and in 4 other researches, pharmacist interventions showed a positive impact. The physician acceptance rate ranged from 84-62.8%. Table 1 summarizes these studies.

Table 1. Characteristics of the literatures of the present review

Year of Publication	Health care setting	Aim	Design	Sample size	Results
2014 (22)	Hospital	Role of clinical pharmacist in the therapeutic optimization in geriatrics	Prospective Interventional study	67 patients	A total of 91 interventions made by pharmacists with a positive impact P<0.05
2016 (23)	Hospital	Pharmacist comprehensive geriatrics assessment(PCGA)	Prospective observational study	539 patients	Rate of physician acceptance: 62.8% P<0.05
2014 (24)	University hospital	Performance of a clinical decision support of clinical pharmacists on a geriatric ward	Prospective single-center, cohort study	50 patients	Rate of physician acceptance: 81.2%
2017 (12)	Hospital Nursing home	Pharmacist intervention at different rent levels of geriatrics healthcare	Prospective interventional	Nursing home: 8828 patients Hospital: 268 patients	Rate of physician acceptance in nursing home:84% in hospital:72% P<0.001
2014 (15)	Hospital	to demonstrate that the intervention of a pharmacist intervention improves the outcome of renal action	Cross sectional	330	Rate of physician acceptance: 74% P<0.05
2015 (25)	Hypertension clinics	The effectiveness of physician-pharmacists collaborative care in improving blood pressure control (PPCC)	prospective	2232 patients	Rate of physician acceptance:62.7% P≤0.05

Table 1. Continued.

Year of Publication	Health care setting	Aim	Design	Sample size	Results
2013 (21)	Nephrology unit hospital	Cost-saving effect by clinical pharmacist intervention	retrospective	>200 patients	A total of 824 interventions were made in 2012 and 1977 in 2013 with a positive impact P<0.01
2011 (26)	Medication therapy management (MTM) clinics	Physicians preferences and barriers to communicating with pharmacist the regarding MTM	Cross-sectional prospective	123 patients	52.8% of physicians preferred MTM communication with pharmacists
2016 (27)	University hospital	Role of pharmacists to improving the level of blood pressure in dialysis patients	Randomized control study	60 patients	46% of the patients achieved target BP in interventional group versus 14% in control group P<0.05
2014 (20)	Hospital	Clinician response to pharmacist intervention on high risk medication regimens	Pilot intervention	797 patients	Rate of physician acceptance: 78%
2016 (28)	Hospital	describe the characteristics of pharmaceutical interventions in geriatric wards	prospective	20307 interventions	Most of pharmacist interventions were effective P<0.05
2017 (29)	Medicine clinics	Evaluation the effect of pharmacist intervention use of high-risk medication and drug disease interactions in elderly patients	Retrospective cohort study	258 patients	Most of pharmacist interventions were effective P=0.001
2018 (30)	University hospital	Effects of Pharmacists' Interventions on Inappropriate Drug In elderly with dementia	Randomized control study	460 patients	Pharmacist intervention decreased inappropriate drug in geriatrics P<0.05

Discussion

The present data suggest that pharmacist interventions can have a positive impact on the patients' outcomes and decrease their drug related problems (15, 16). Several North American trials have shown the benefits of reviewing orders of physicians in community practice by pharmacists, these studies show that qualified pharmacists can guide clinical medication reviews for geriatrics. The pharmacist's assessment also caused lower medication related costs (17). Lower level of GFR in geriatric is because of their frailty or renal failure and there is a relevant relation between decreasing the GFR and hospitalization (18), since the function of kidney decrease in old patients nephrologists should consider the renal toxicity of drugs before prescription. Using different estimates except serum creatinine show better result than considering it as final indicator factor without others (19).

Physician-pharmacists collaborative actions in patients with renal disorder particularly for dose adjustment of drugs could influence the health condition. This monitoring programs and physician-pharmacists team works is more necessary advanced stage of CKD (15).

In an interventional study in 2014 on 797 aged patients,

78% of pharmacist's recommendation accepted (20).in a nephrology unit of hospital ,pharmacist actions showed cost-saving result (21).

In conclusion, pharmacists, especially newly graduated, might be concerned of the physicians' acceptance towards their recommendations. They might be conservative or ignore contacting the physicians regarding DRPs. But the present review shows that the acceptance rate of nephrologists is over 60% (and sometimes as high as 84%) in different regions. This topic is relatively young and the specific collaboration of nephrologists and pharmacists has not been studied prior to 2011.

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