The Effectiveness of Nursing Interventions Based on King’s Theory: A Systematic Review

Leila Rouhi Balasi 1, Nasrin Elahi 2,*, Samira Beiranvand 3, Pouran Tavakoli 4, Reyhaneh Rouhi Balasi 5

1 Assistant Professor, Cardiovascular Diseases Research Center, Department of Cardiology, Heshmat Hospital, School of Medicine, Guilan University of Medical Sciences, Rasht, Iran
2 Associated Professor, Nursing Care Research Center in Chronic Diseases, Faculty of Nursing & Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
3 PhD in Nursing, Student Research Committee, Department of Nursing, Faculty of Nursing and Midwifery, Nursing Care Research Center in Chronic Diseases, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
4 PhD Candidate of Nursing, Student Research Committee, Department of Nursing, Faculty of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
5 MS in Nursing, Guilan University of Medical Sciences, Rasht, Iran

*Corresponding author: Nasrin Elahi, Associated Professor, Nursing Care Research Center in Chronic Diseases, Faculty of Nursing & Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran. E-mail: elahi-n@ajums.ac.ir

DOI: 10.29252/anm-32579

Submitted: 15 Mar 2020
Accepted: 23 Jun 2020
Published: 15 Jul 2020

Abstract

Introduction: King’s Conceptual Model and Goal Attainment Theory can applicate as an effective framework in all fields of nursing such practice, education, management and research. The purpose of this study was to evaluate effectiveness of nursing interventions based King’s theory.

Methods: In this systematic review, the databases as Scopus, Web of Sciences, Pub Med and search engine of Google Scholar have been searched. Then the review has been done in terms of the study criteria, and merely 10 articles have met the criteria.

Results: Our findings indicate, the common form of theory that has been applied in articles was goal attainment theory, except in one case. In 40% of the articles, the theory was used in educational fields and 60% were related to the clinical area.

Conclusions: According to this systematic review, King’s Conceptual System and Theory of Goal Attainment has the potential to give an effective approach for nursing practice and it is recommended that this framework can be used in different clinical situations to attract the patients to better compliance, leading to an improvement in quality of life and reduce complications in patients.

INTRODUCTION

Imogene M. King is Known for nurses as an international pioneer, researcher, educator and theorist in nursing [1]. King takes into account the nursing as a profession that "offers some services to meet social needs. These services are provided to promoting, maintaining, and restoration of health, care of the sick and injured clients, and care of end of life patients" [2].

According to this view, King proposed a conceptual model for nursing profession by the use of four concepts: social systems, health, perception, and interpersonal relationships; in 1971 [3]. And later in 1981, Theory of Goal Attainment was purposed by King. It was a middle-range theory that has been derived from conceptual system [4]. The theory focuses...
specifically on perceptions, communications, interactions, and transactions between nurses and clients as part of the process of mutual goal-setting to achieve a state of health [4-6]. Thus, based on this theory, transactions and mutual goal setting are obtained from the perceptions and communication between the nurse and client [7]. As a result, this theory is an appropriate theoretical framework to consider the right of patients to participate in healthcare activities [8].

Moreover, the Theory of Goal Attainment is accordance with the nursing process includes: assessment, diagnosis, planning, implementation, and evaluation. In her mind, goal-setting and goal-attainment are obtained from nurse-client interactions based on nursing process. Also King believed that goal-setting and goal-attainment is considered as the core of the nurse-patient relationship [9]. In general, the purpose of the theory is to create a structure for nursing professional interactions through the definition of mutual goals and means and identify how to achieve them [8, 9].

King’s theory applied and effective in various nursing fields like education, practice, administration, and research in many countries [1, 2, 10, 11]. Considering the application of the model in various fields of nursing, including nursing assessment, planning, intervention, and evaluation, it seems that it is necessary to study the effectiveness of providing care based on this model in various studies and using its results in the providing of nursing care. Then Regarding this issue that the role of nursing theories is important, namely King’s theory, for nursing knowledge development and their key role in nursing practice, we conducted a systematic review with the purpose of review articles related to nursing interventions based King's theory.

METHODS

In the present systematic review as the study goal indicates, the researchers have conducted a thorough computer-assisted publication search in September 2017 with the databases as PubMed, Web of Sciences, Scopus and search engine of Google Scholar and through Persian texts in Magiran and SID. In addition, manual reviews of the reference lists of studies identified during electronic searches were done. Also, other related electronic links were checked. The literature search was also provided by a handy review of ‘grey literature’; conference presentations, project reports, government and health-care organizational reports.

The keywords used for the review included "king theory", "king conceptual system", "goal attainment theory", "nursing" and "intervention" which were used alone and in combination with used of Boolean (And, Or, Not) in the search process. The full search strategy in the PubMed database was attached. All clinical trial studies investigating nursing interventions based on King’s theory were eligible for initial inclusion. We extracted full texts or abstracts of the papers, documents, reports and other evidence found by advanced search. Two review author screened titles and abstracts of the papers identified from the search to eliminate duplicate and irrelevant publications.

The inclusion criteria were: 1) clinical trial studies, 2) the studies published during 2000-2017, 3) full text access, 4) related to nursing interventions based on King’s theory and 5) the keywords in the title or abstracts of articles and 6) English or Persian language published studies. The risk of publication bias was reduced by interviewing some experts and staff of the research centers to provide probable unpublished papers. Finally, another researcher randomly evaluated this study and found that all relevant studies had been collected in the search.

The quality of the articles was evaluated based on the PRISMA statement (the Preferred Reporting Items for Systematic Reviews and Meta-Analyze). This checklist was designed to avoid any individual bias influences on the quality score. The PRISMA statement has a 27-item checklist and for each item there are 3 options: not applicable, not reported and reported; in which asked about the title, abstract, methods, results, discussion and funding of the study. If the PRISMA criteria in the article are not clear, reading the ambiguous parts of the article would be repeated several times to get an accurate understanding of the report. The obtained data were analyzed and reported using descriptive statistics in the stage of evaluating the quality of articles.

RESULTS

In the current research, the literature related to nursing interventions based on King’s theory has been reviewed. In the initial search 911 articles were found, of which only 6 articles from the PubMed database, 39 articles from the Scopus database, 23 articles from the Web of Sciences database and 23 articles from the Google scholar were related to the aim of the study. As a result, as the search strategies denote, 10 papers have been employed for the final review. In this study, the overall compliance of the reviewed articles with the PRISMA statement criteria was estimated at 73%. Among these, the theory of goal attainment has been the dominant framework used by all of them [12-21]. Only the study of Khowaja et al. was used King’s conceptual framework [17]. In this study, 40% of the articles (4 articles) were
related to the application of this theory in the field of education and 60% of them (6 articles) were related to the clinical field and providing clinical interventions based on this theory. Regarding location, 90% of studies have been conducted in Asian countries (including China, Korea, India and Pakistan). In addition, in the interventions, the target population has been this way:

- patients suffering of chronic diseases in the majority of studies (6 articles),
- students in 2 articles,
- nurses in 1 article and
- the other treatment team (like doctors, nurses, pharmacists, nutritionists, and physiotherapists) in 1 article.

The main results and the features of the selected studies are presented in Table 1.

**Table 1. Summary of Studies on Nursing Interventions Based on King’s Theory**

<table>
<thead>
<tr>
<th>First Author, Location and Year of Study</th>
<th>Study Design</th>
<th>Samples</th>
<th>Purpose of the Study</th>
<th>The Evaluated Outcomes</th>
<th>The Intervention Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xia Bai, China, 2016</td>
<td>RCT</td>
<td>40 patients</td>
<td>Investigating the effect of the nursing path on postoperative complications after endoscopic Submucosal dissection (ESD)</td>
<td>Occurrence of postoperative complications (Bleeding, perforation, infection and anxiety)</td>
<td>The incidence of infection and anxiety was lower in the intervention group. However, there was no significant difference between the two groups regarding the incidence of hemorrhage and perforation.</td>
</tr>
<tr>
<td>Shirsha Bhandari, Bengaluru, 2016</td>
<td>True experimental pretest-posttest design with control group</td>
<td>130 students</td>
<td>To determine the effectiveness of a structured teaching program on knowledge and attitude regarding nursing profession among pre university course students</td>
<td>Knowledge and attitude regarding nursing profession</td>
<td>The mean score of knowledge and attitude of individuals before and after intervention was significant, so that people received higher post-test scores. Also, the results showed that the intervention group received higher post-test scores than the control group.</td>
</tr>
<tr>
<td>Juby Mary Chacko, Belgaum, 2013</td>
<td>Single-blind randomized control trial</td>
<td>120 patients</td>
<td>To assess the intensity of pain experienced by postnatal mother’s due to episiotomy wound before and after infrared lamp therapy and to evaluate the effectiveness of use of infrared lamp on reducing pain and inflammation</td>
<td>Intensity of pain (VAS) and episiotomy wound healing (REEDA)</td>
<td>The results showed that infrared lamp therapy is effective in reducing the pain and inflammation of the wound.</td>
</tr>
<tr>
<td>Mi-Kyoung Cho, Korea, 2013</td>
<td>Randomized controlled trial</td>
<td>44 patients</td>
<td>Investigating the Effect of Health Contract Intervention Based on Theory of goal attainment on Self-care Behaviors and Self-care behavior, self-care logs, and physiological indices (P, K, mean weight gain)</td>
<td></td>
<td>The results showed that the mean scores of self-care behaviors in the two groups were significantly different after the intervention, so that the scores of the intervention group were</td>
</tr>
<tr>
<td>Study Title</td>
<td>Design</td>
<td>Population</td>
<td>Setting</td>
<td>Interventions</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------</td>
<td>----------------------------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Physiological Indices in Dialysis Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dey Domino, South India, 2015</td>
<td>Quasi-experimental pre-test, post-test design</td>
<td>60 patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To assess the effectiveness of breathing exercises in the reduction of dyspnea among patients with COPD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dyspnea level in response to an intervention (BODE index)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Comparison of post-test dyspnea scores between two groups showed a significant difference, so that breathing exercises were effective in reducing the level of dyspnea in patients with COPD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tina Joseph Karad Taluka, (India), 2014</td>
<td>Pre-experimental one group pretest post design</td>
<td>100 mothers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To Assess the Effectiveness of Health Education on Knowledge with Reference to Prevention and Home Management of Diarrhea Among Mothers of Under Five Children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Knowledge of mothers about Prevention and Home Management of Diarrhea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The results showed that health education is an effective way to improve the knowledge of mothers about prevention and home management of diarrhea.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khurshid Khowaja, Pakistan, 2006</td>
<td>Quasi-experimental, non-equivalent control group study design</td>
<td>200 patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To investigate the effectiveness of implementing clinical pathways for patients undergoing transurethral resection of prostate (TURP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-Physician and Nursing related variances -Discharge related variances - Postoperative problems -The incidence of post-operative complication - Financial variances - Patient and staff satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The results showed that the intervention significantly increased the quality of care provided by nurses and Physicians and the satisfaction of staff and patients. Also, the postoperative problems in the intervention group were significantly lower than the control group, but there was no significant difference in the incidence of postoperative complications between the two groups.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barbara G. Kruse, Florida, 2008</td>
<td>3-group experimental design</td>
<td>81 nurses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To test the best method for changing acute nurse’s perceptions about end-of-life care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Perceptions on End-of-Life Care</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>There was no significant difference between the 3 groups.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moonkyoung Park, Korea, 2017</td>
<td>A randomized experimental study with three measurement time points</td>
<td>64 patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To assess the effects of a nurse-led theory-based education program in individuals with a first episode of acute myocardial infarction on cardiovascular risks, health behaviors, and quality of life over 6 months.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cardiovascular disease risks, Cardiac health behavior scale, Quality of life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Based on the results both groups showed significant positive changes in relation to cardiovascular risks, health behaviors and quality of life during 6 months. Also, the performance and maintenance of health behaviors and the mental quality of life were significantly better in the intervention group than in the control group. However, there was a significant difference in 2-year risk of cardiovascular disease between the two groups.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honey Rose Thomas, Belgaum, 2013</td>
<td>Pre-experimental evaluative one group pretest posttest design</td>
<td>40 students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to assess the effectiveness of a planned demonstration program using in improving the knowledge and skill of nursing students regarding newborn reflexes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knowledge and skill of nursing students regarding newborn reflexes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The results showed a significant increase in the post-test scores of knowledge and skill through the planned demonstration program.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: The full search strategy in the PubMed database

<table>
<thead>
<tr>
<th>Search Number, Query, Sort By, Filters, Search Details, Results, Time</th>
</tr>
</thead>
</table>
According to this systematic review, King’s Conceptual System and Theory of Goal Attainment is an effective approach for nursing practice in different situations like education and practice. As perceived, these theories focus on interaction with the client, his/her active participation, the setting of mutual goals and the extent to which they are achievable. This theory is also fascinating for nurses advocating patient rights [2]. According to the present evaluation, the studies based on king framework also have more concentrated on the nurse-patient relationship and establishing the mutual goals according to patient’s need and mutual engagement to determine ways to achieve goals.

As King pointed out, "Mutual goal setting [between a nurse and a client] refers to (a) nurses assessing the problems, concerns, and disturbances of a client in health; b) the perceptions of the nurses and clients of the interference; and (c) their information sharing by which each contributes to lend a hand to the client to achieve the goals set forth. By the way, when clients cannot verbally participate in the goal setting, the nurses come into interaction with family members" [4]. The advantages can be named as decreasing the risks related to communication defect, reducing of stress in care, the more purposeful relations between nursing professionals and users through promoting the nursing goals’ achievement, also facilitating the patients compliance with discharge plans and nursing care into an educational event, whereby the users have the chance to recognize their body better and how it functions in terms of time and space [8].

Overall, the experts in most nursing specialty areas have applied King’s Theory of Goal Attainment concepts in nursing practice. There is a vivid association between this and practice since the main role of nurses function is through interactions with the individuals and groups [4]. In this way, Cho and colleagues investigated the effect of health contract intervention (HCI) on the basis of theory of goal attainment on self-care behaviors and physiological indices of dialysis patients and the results indicated that the evaluation’s outcome got improved. HCI was consisting of some stages by focusing on an educational event, whereby the users have the chance to recognize their body better and how it functions in terms of time and space [8].

According to this systematic review, King’s Conceptual System and Theory of Goal Attainment is an effective approach for nursing practice in different situations like education and practice. As perceived, these theories focus on interaction with the client, his/her active participation, the setting of mutual goals and the extent to which they are achievable. This theory is also fascinating for nurses advocating patient rights [2]. According to the present evaluation, the studies based on king framework also have more concentrated on the nurse-patient relationship and establishing the mutual goals according to patient’s need and mutual engagement to determine ways to achieve goals.

As King pointed out, "Mutual goal setting [between a nurse and a client] refers to (a) nurses assessing the problems, concerns, and disturbances of a client in health; b) the perceptions of the nurses and clients of the interference; and (c) their information sharing by which each contributes to lend a hand to the client to achieve the goals set forth. By the way, when clients cannot verbally participate in the goal setting, the nurses come into interaction with family members" [4]. The advantages can be named as decreasing the risks related to communication defect, reducing of stress in care, the more purposeful relations between nursing professionals and users through promoting the nursing goals’ achievement, also facilitating the patients compliance with discharge plans and nursing care into an educational event, whereby the users have the chance to recognize their body better and how it functions in terms of time and space [8].

Overall, the experts in most nursing specialty areas have applied King’s Theory of Goal Attainment concepts in nursing practice. There is a vivid association between this and practice since the main role of nurses function is through interactions with the individuals and groups [4]. In this way, Cho and colleagues investigated the effect of health contract intervention (HCI) on the basis of theory of goal attainment on self-care behaviors and physiological indices of dialysis patients and the results indicated that the evaluation’s outcome got improved. HCI was consisting of some stages by focusing on an educational event, whereby the users have the chance to recognize their body better and how it functions in terms of time and space [8].
Bai and etal adjusted a suitable nursing path after endoscopic submucosal dissection (ESD) based on King's theory, that revealed the nursing efficiency and clinical practice's merits in their department [12]. What have resulted from the clinical pathways is the opportunities of interaction and transaction among the health team. Indeed clinical pathways are considered as a novel approach for planning, implementing and documenting nursing care [17]. As understood from this nursing path, the nurses' task can be more efficient and structured, the patients, on the other hand, might agree with nursing plan or goals and then it will come by their active participation in the recovery process. A patient-centered care model is provided by the clinical nursing path ,presenting a more standard care system and guaranteeing the patients compliance with the therapeutic regimen [12]. Also Khowaja and etal used King's theory of goal attainment to investigate the clinical pathways run effectiveness for patients undergoing transurethral resection of prostate (TURP) and Their findings showed that successful implementation of integrated clinical pathways can help health professionals and administrators to meet one of their biggest challenges in making optimal use of limited resources while delivering high quality care [17].

Domini and etal study was about the effectiveness of breathing exercises in the reduction of dyspnea among COPD suffering patients ,showing reduction of dyspnea in these patients after receiving an exercise based on the theory of goal attainment [15]. However, one critique of some these articles are the lack of sufficient explanation for the intervention based on King's theory. So it seems that a comprehensive review of the King's theory can provide a framework for nursing practice that can be implemented in various clinical situations and the patients with diverse diseases. Moreover, King's conceptual system and theory are used globally for nursing education [4]. The first step behind planning an educational program is to select a training model. Training effectiveness relies on employing the most matching theories and strategies for a certain event [22]. The review of the other studies showed they used of an educational strategy based on the theory of goal attainment in their research and as the derived results exhibited the effectiveness of these interventions expect that of the research by Kruse et al. [13, 16, 18-21]. In all of these study the goal-oriented education program has been applied to the participants. However, none of the study explained steps and the framework of the training completely.

Generally, the mentioned studies depended on the mutual goal setting, which is a nursing intervention with the outcomes favorable for both the patient and the health care provider. According to King's theory of goal attainment, the perceptions and communication of the nurse and client will result in transactions and mutual goal setting. These transactions have to occur between the nurse and the patient so that they gain the mutual goal setting and attainment. [7, 9] And this framework indicates that the underlying fact behind transaction process in all nursing situations is perception. Since perception effects judgment, action, reaction, interaction, and transaction between the nurse and patient [18]. Besides, the patient actively participating in treatment discussions and care processes during hospitalization is taken as a key strategy in order to optimize the treatment outcomes [19].

Actually the ultimate purpose of King's Conceptual System based research is to outline the effects of mutual goal setting and implementation of the nursing interventions related to goals on goal attainment [2]. Since as stated goal attainment has the potential to promote or maintain health, control the disease , or bring about a comfortable death [17].

CONCLUSIONS

According to this study, it seems that King's conceptual system and theory of goal attainment can provide a useful approach to the nursing action that help them when facing complex healthcare situations in their organization. The Theory of Goal Attainment is an appropriate theoretical framework to guide professional nursing actions advocating the users, respecting and encouraging their citizenship and ensuring their right to health and participation in healthcare actions. In general, the theory of goal attainment is a framework supporting the patient participation's right in health care decision making, and thus it can lead to patient collaboration and compliance with treatment recommendations. In fact, participation in decision making and the mutual goals setting based on this theory results in the patient's commitment to treatment.

Therefore, regarding the increasing chronic diseases incidence in the community that requires long-term follow-up of the patient's therapeutic recommendations, it is recommended that this framework be applied in different clinical situations to attract the patient to better compliance, bringing about improved quality of life and reducing complications in the patients.

In the interpretation of the study findings, some limitations should be considered. First, the review used a retrospective method and it was based on data on previous studies. Also, Meta-analysis was not conducted.

Acknowledgement

We would like to thank the Ahvaz Jundishapur University of Medical Science and Faculty of Nursing and Midwifery for supporting us.
Author Contribution
L.R.B: Concepts, Design, Literature search, Data acquisition, Data analysis, Manuscript preparation, Manuscript editing, Manuscript review
N.E: Concepts, Data analysis, Statistical analysis, Manuscript editing, Manuscript review
S.B: Concepts, Design, Literature search, Data acquisition, Data analysis, Manuscript preparation, Manuscript editing, Manuscript review
P.T: Literature search, Data acquisition, Data analysis, Manuscript preparation, Manuscript editing
R.R.B: Literature search, Data acquisition, Data analysis, Manuscript preparation, Manuscript editing

Funding
The author received no financial support for the research, authorship, and/or publication of this editorial.

Conflicts of Interest
The author declared no conflicts of interest.

Ethical Consideration
Ethical approval was not obtained. This study was a review research.

REFERENCES