Theory of rational action and its characteristics in nursing research

Teoria da ação racional e suas características em pesquisas na enfermagem

Teoría de la acción racional y sus características en investigaciones en la enfermería

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http://dx.doi.org/10.6018/eglobal.17.3.305911

Received: 09/10/2017
Accepted: 10/11/2017

ABSTRACT:
Objective: To identify the scientific production related to the use of Rational Action Theory in nursing research.
Method: This is a bibliometric study, carried out with 22 articles published in the period 2006-2016, selected in the CINAHL and Scopus databases.
Results: The year with the highest number of publications (18.2%) was 2006. The United States of America stood out in the largest amount of research (36.3%), and the International Journal of Nursing Studies had the highest impact factor, 3,561. The results demonstrate hegemony of publications in international journals, demonstrating the global use of the theoretical model in different contexts.
Conclusions: It is expected to use this theoretical reference in the scientific production of the area, as well as in the diffusion of its applicability in predicting intentions and behavior in the context of health, being able to be an adjuvant in the promotion of health promotion, and therapeutic adherence related to chronic diseases.

Keywords: Social Theory; Behavior; Attitude; Social Norms; Nursing; Bibliometry.

RESUMO:
Objetivo: Identificar a produção científica relacionada ao uso da Teoria da Ação Racional em pesquisas da área de Enfermagem.
Método: Estudo bibliométrico, realizado com 22 artigos publicados no período de 2006-2016, selecionados nas bases de dados CINAHL e Scopus.
Resultados: O ano de 2006 foi o que apresentou maior número de publicações (18,2%). Os Estados Unidos da América destacou-se em maior quantitativo de pesquisas (36,3%), e o periódico International Journal of Nursing Studies apresentou o maior fator de impacto, 3.561. Os resultados demonstram hegemonia das publicações em periódicos internacionais, demostrando a utilização global do modelo teórico em diversos contextos.

Conclusões: Espera-se o uso deste referencial teórico nas produções científicas da área, assim como na difusão da sua aplicabilidade em prever as intenções e o comportamento no contexto da saúde, podendo constituir-se adjuvante no favorecimento da promoção da saúde, prevenção de agravos e adesão terapêutica relacionadas às doenças crônicas.

Palavras clave: Teoria Social; Comportamento; Atitude; Normas sociais; Enfermagem; Bibliometria

RESUMEN:
Objetivo: Identificar una producción científica relacionada con el uso de la Teoría de la Acción Racional en las investigaciones del área de Enfermería.

Método: Estudio bibliométrico, realizado con 22 artículos publicados en el periodo 2006-2016, seleccionados en bases de datos CINAHL y Scopus.

Resultados: Año 2006 para el que mayor número de publicaciones (18,2%). Los Estados Unidos de América se destacaron en el mayor cuantitativo de las investigaciones (36,3%), y en el periódico internacional de estudios de enfermería presentó el mayor factor de impacto, 3.561. Los resultados demostraron hegemonía de las publicaciones en los periódicos internacionales, mostrando una aplicación global del modelo teórico en diversos contextos.

Conclusiones: Se espera el uso de este referencial teórico en las producciones científicas del área, así como en la difusión de su aplicabilidad en el predecir las intenciones y el comportamiento en el contexto de la salud, ayudando a favorecer la promoción de la salud, la prevención de problemas y adhesión terapéutica relacionados con las enfermedades crónicas.

Palabras clave: Teoría Social; Conducta; Actitud; Normas Sociales; Enfermería; Bibliometría.

INTRODUCCIÓN

Theoretical models have contributed as references for structuring care, adapted to the needs/specificities of people in diverse social and environmental contexts. The theoretical-methodological references offer support for the construction of knowledge and professional practice, since they help in the development of the triad, theory, research, and practice, presenting the complexity and multiplicity of the phenomena present in the health area, with the purpose of describing, explaining, predicting or prescribing human behavior(1).

This study focuses on the Theory of Reasoned Action (TRA), originating in social psychology and presented in 1975 by Ajzen and Fishbein, American teachers and researchers. This theoretical model is based on the human being as a rational species, which uses the available information systematically, implicitly or explicitly, whether complete, true or not, to form the behavioral intention. In this way, human behavior is under personal control and the individual could change his behavior by reasoning about what causes him to act in a certain way(2,3).

TRA has been applied to predict the behavior of the individual in a given situation, as well as to identify the factors that determine it. The behavioral intention of the individual is a function of two basic determinants: one of a personal nature (attitude) and one of social influence (subjective norm). The TRA model uses five constructs in predicting behavior: behavioral beliefs, attitude, normative beliefs, subjective norm, and behavioral intention(2-4).

Attitude is a function of what the individual believes will happen in performing the behavior (behavioral beliefs) and of the positive or negative evaluations he makes.
about the consequences of performing that behavior. The subjective norm corresponds to the perception that the individual possesses through social pressures on him to perform or not determined behavior (normative beliefs), as well as the motivation to respond to such pressures\textsuperscript{2,4,5}. Behavioral intentions are direct predictors of behavior\textsuperscript{4}.

Since TRA is a theoretical reference whose focus is to understand and predict human behavior, its application can take place in several areas of knowledge, including health. In the meantime, nursing is a field of knowledge in which the knowledge generated reverts to the care of people. Therefore, the profession needs to conduct research that reveals factors and causes of certain behaviors to elaborate intervention strategies subsidized by consistent theoretical models that favor therapeutic adherence in health.

A challenge for nursing care is the attempt to modify unhealthy behaviors for the individual to experience health free of damages related to chronic diseases. Thus, the relevance of the study is based on the importance of knowing how Nursing can use theoretical-methodological references of other areas of knowledge, enriching its corpus of knowledge, with the purpose of encouraging the development of care-oriented care technologies health, disease prevention and reduction of illness.

Considering the relevance of theoretical-methodological models for the direction of Nursing care in the area of teaching, research and care, as well as the need to understand health behavior in its different contexts, this research has as a guided question: What are the characteristics of the productions in Nursing that used the Theory of Rational Action as a theoretical-methodological reference? Thus, the objective was to identify the scientific production related to the use of Rational Action Theory in nursing research.

METHODS

This is a descriptive study, of the bibliometric type with a quantitative approach. Bibliometrics is a method used in several areas of knowledge, with the purpose of grouping and synthesizing research results on a delimited topic or a guiding question, in a systematic and orderly way, which contributes to the construction and improvement of knowledge of the area investigated\textsuperscript{6}.

A search was made in the electronic databases CINAHL (Cumulative Index to Nursing & Allied Health Literature) and Scopus, in January 2017. The own name of the theory, Theory of Reasoned Action, and the controlled descriptor of the medical vocabulary Medical Subject Heading (MeSH), Nursing was used as a descriptor to obtain studies developed in the field of Nursing with interposition of the boolean operator AND. Thus, it was sought to remove the largest number of studies that did not fit the subject matter investigated. It was decided to establish limits regarding the year of publication of the investigations, adopting temporal cut of 2006-2016 to identify the literature of the last decade.

The inclusion criteria were articles from primary studies using TRA as a theoretical-methodological reference, published in English, Spanish or Portuguese within the established time frame. Case reports, review articles, book chapters, monographs, dissertations or theses, news newspaper articles, editorials and non-scientific texts were excluded.
The studies were read in full by pairs to fulfill the data collection instrument. The information collected underwent a double spreadsheet process of the Microsoft Excel® program to identify inconsistencies and minimize the risk of errors. After that, the data passed through the judgment of three doctoral students of the Graduate Program in Nursing, obtaining unanimity regarding the results obtained, enabling a better quality of the review.

Articles that did not use the Theory of Rational Action in data analysis were excluded. After the careful reading and refinement of the search, there were 22 articles selected that composed the sample (Figure 1).

**Figure 1: Flowchart of the selection process of scientific productions in the nursing area. João Pessoa, PB, Brazil, 2017.**

![Flowchart](image)

Source: Data of the research, 2017

After the reading, the bibliometric data were inserted in a synoptic table elaborated by the authors, containing the following items: database, title of the publication, title of the authors, year, journal, language, Qualis/Capes/Brazil, objectives, methodological outline and the area of study interest. The study data were analyzed through descriptive statistics. The obtained results are presented by absolute and relative frequencies, shown in the table, figures, and conceptual map. The map was developed through the free Cmap Tools program, version 6.01.01.

**RESULTS**

Considering the bibliometric indicators quantified in the 22 articles selected, there were 15 (68.2%) available in CINAHL and seven (31.8%) in Scopus. Regarding the language, all studies were presented in the English.

Among the countries that used TRA in studies in the Nursing area, there was a higher prevalence of production in the United States, eight (36.4%), followed by Israel five (22.7%) and Taiwan four (18.2%). There was only one (4.5%) study in Australia, Brazil, Scotland, Spain, and Ireland.
All the studies were linked to higher education institutions, with the first author with the following academic qualifications: 12 (54.6%) doctors, two (9%) masters, and one (4.6%) specialist; seven (31.8%) studies did not specify the titration of the authors, hindering to classify them.

The distribution of studies per year revealed that 2006 concentrated the largest number of publications (Figure 2).

![Figure 2: Distribution of studies on TRA and Nursing, regarding the year of publication, from 2006 to 2016. João Pessoa, PB, Brazil, 2017](image)

Source: Data of the research, 2017

Regarding the distribution of scientific journals, it was verified that all there articles were international, especially the International Journal of Nursing Practice. The other journals presented only one study. As for Qualis/Capes/Brazil, more than half of the journals presented this stratification, being classified in Stratum A1. The greatest impact factor was attributed to the International Journal of Nursing Studies (Table 1).

Table 1: Distribution of journals with publications of Nursing studies with the use of TRA, according to Qualis/Capes/Brazil and Impact factor. João Pessoa, PB, Brazil, 2017.

<table>
<thead>
<tr>
<th>Journal</th>
<th>n</th>
<th>Qualis</th>
<th>Impact factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Journal of Nursing Practice</td>
<td>2</td>
<td>A1</td>
<td>0.98</td>
</tr>
<tr>
<td>Journal of Research in Nursing</td>
<td>1</td>
<td>*</td>
<td>1.638</td>
</tr>
<tr>
<td>Perspectives in Psychiatric Care</td>
<td>1</td>
<td>*</td>
<td>1.0</td>
</tr>
<tr>
<td>International Nursing Review</td>
<td>1</td>
<td>A1</td>
<td>1.073</td>
</tr>
<tr>
<td>Western Journal of Nursing Research</td>
<td>1</td>
<td>*</td>
<td>1.090</td>
</tr>
<tr>
<td>Journal of Obstetric, Gynecologic and Neonatal Nursing</td>
<td>1</td>
<td>A1</td>
<td>1.024</td>
</tr>
<tr>
<td>Journal of Advanced Nursing</td>
<td>1</td>
<td>A1</td>
<td>1.917</td>
</tr>
<tr>
<td>Journal of Nursing Research</td>
<td>1</td>
<td>*</td>
<td>0.955</td>
</tr>
<tr>
<td>Nursing in Critical Care</td>
<td>1</td>
<td>A1</td>
<td>1.113</td>
</tr>
<tr>
<td>Journal of Professional Nursing</td>
<td>1</td>
<td>*</td>
<td>1.096</td>
</tr>
<tr>
<td>Asian Nursing Research</td>
<td>1</td>
<td>*</td>
<td>0.849</td>
</tr>
<tr>
<td>The Gerontologist</td>
<td>1</td>
<td>*</td>
<td>3.231</td>
</tr>
<tr>
<td>Journal of Transcultural Nursing</td>
<td>1</td>
<td>A1</td>
<td>1.111</td>
</tr>
<tr>
<td>Revista Latino-americana de Enfermagem</td>
<td>1</td>
<td>A1</td>
<td>0.623</td>
</tr>
<tr>
<td>The Nursing Clinics of North America</td>
<td>1</td>
<td>A1</td>
<td>0.54</td>
</tr>
</tbody>
</table>
Regarding the methodological approaches used in the investigations, those with a quantitative approach prevailed with 19 articles (86.3%). The qualitative was applied in two (9.1%) and the hybrid in one (4.6%) production. Regarding the objectives, 13 (59%) were descriptive, four (18.2%) were correlative studies, three (13.6%) were quasi-experimental and two (9.2%) were methodological studies. Regarding the procedures for data collection, it was verified that in 18 (82%) surveys there were questionnaires used. Regarding the collection technique, four (18.2%) studies conducted interviews, two (9.1%) used online research technologies and one (4.5%) followed the observation technique.

Regarding the level of health care, nine (41%) works were performed in primary care, two (9%) in the secondary and seven (32%) in the tertiary. In four (18%) studies, it was not possible to identify the level of care. Next, the characteristics of the productions with the applicability of TRA in the Nursing area, the practice scenario and the target audience of the investigations can be observed (Figure 3).
DISCUSSION

The study identified 22 articles disseminating the application of TRA in scientific research in the field of Nursing over 10 years. It was noted that the largest number of publications was concentrated in 2006\(^7\) to 2010\(^9\). Of them, the only study conducted in Brazil was conducted by Pinto et al.\(^{10}\), whose objective was to identify the normative beliefs and attitudes that contribute to the formation of the behavioral intention of the nurse in performing the hemodynamic study through the pulmonary artery catheter.

Although studies in the Nursing area use other references or theoretical transdisciplinary models, it is important to reflect on the need to include the descriptor "nursing" in productions developed by researchers in this area. This strategy can increase the chances of identifying a greater number of publications with the theme, which strengthens the category and provokes greater visibility and recognition as a profession and science based on methodological rigor.

The publications of international publications were responsible for the dissemination of articles, especially the International Journal of Nursing Practice, accounting for 9.1% of all journals. It is a journal responsible for the publication of original works that seek to advance and understand the international development of nursing and midwifery as an academic discipline and sub-area, not excluding other areas of interest\(^{11}\).

The publications selected in this journal described the application of TRA in nursing care to adult\(^{12}\) and elderly\(^{13}\) patients, both studies conducted in Israel and by the same team of researchers. As for Qualis/CAPES/Brazil, the journal presents the classification stratum A1, considered the best classification of the system.
The Qualis/CAPES/Brazil System expresses the result of a set of procedures used by the Coordination of Improvement of Higher Level Personnel - CAPES, for stratification of the quality of the productions from the Stricto Sensu Brazilian Postgraduate Programs. The intellectual productions of researchers, teachers, students, and professionals are evaluated, as well as helping to identify the articles with greater scientific rigor. The evaluation criteria adopt the classification into seven quality indicative layers ranging from A1 to A2, B1 to B5, and C, with A1 and C being the highest and lowest weight attributes, respectively\(^{(14)}\).

When observing the Qualis/CAPES of the selected journals, it is verified that the vehicles that present this classification are in the stratum of higher quality, considering the attributes of greater weight (A1). This classification points towards studies of greater scientific rigor, as well as of greater visibility in the productions of the Graduate Programs of Brazil.

As regards the impact factor (IF), it was found that the International Journal of Nursing Studies presented the largest of the journals investigated with 3,561. The IF is one of the existing bibliometric instruments and aims to measure the authors' scientific output, the quality of the publications and presumptively classify the scientific journals included in the Journal Citations Reports (JCR) of the Institute for Scientific Information (ISI)\(^{(15)}\).

The IF of a scientific journal consists of the average citation equation of the scientific articles published in a given journal indexed in a database, that is, the visibility of the journal is proportional to the number of citations of a particular article. Probably the study serves as a scientific reference to other research in the same area\(^{(15)}\).

The International Journal of Nursing Studies has been featured in the international health community since 1963, with editorial studies aimed at evaluating and understanding complex interventions and health policies through methodological work that introduces or elaborates analytical techniques, measures and research methods\(^{(16)}\).

From the descriptors used, it is seen that the USA was the country that produced the most articles in nursing, with reference to TRA, corresponding to 36.4%, with the greater representativeness of the origin and headquarters of the published journals. It can be inferred that this derives from the origin of TRA since it had been developed by American psychologists and professors. Also, it is highlighted the hegemony of the English language in the publications researched, which shows the importance of this language in the dissemination of the knowledge produced.

Regarding the authors' qualifications, doctors predominated, which allows adding reliability and relevance to the study of phenomena in the area of health and nursing, in face of the degree of scientific support, constituting the last level of academic titling and maturity. The originality of a study determines the advance in scientific knowledge by unpublished publication of research results that improve understanding about a given event and context.

Regarding the characteristics of the use of TRA in the selected studies, the following aspects of analysis were observed: health care level, health subareas, research scenario, the approach used, objectives and procedure/instrument of data collection.
It was verified that the level of primary assistance preponderated to the others. The following topics were highlighted in the research listed: smoking prevention\(^{(17)}\), maternal and child care\(^{(18)}\), attention to antidepressant behaviors against unplanned pregnancy\(^{(19)}\), sexual health education\(^{(20-22)}\), decision to restrict the mobility of elderly people due to the risk of falls\(^{(13)}\), maltreatment\(^{(23)}\) and elderly people care strategies\(^{(24)}\). Regarding the prevalent themes, it was highlighted the education in sexual health and care for the elderly person.

Regarding the use of TRA in nursing studies, the approaches referred to behavioral intention in sexual health\(^{(22)}\), HIV infection among men who have sex with men\(^{(21)}\), and behavior of nurses on sex education directed at school adolescents\(^{(20)}\). The subareas of health care that predominated in the studies were: women's health\(^{(22,25-26)}\), in which the following subjects were addressed: behavioral intention in sexual health\(^{(22)}\), psychometric measures to evaluate subjective attitudes and norms regarding use of oral contraceptives\(^{(25)}\) and health care for pregnant HIV-positive women\(^{(26)}\); and health of the elderly person\(^{(13, 23-24)}\). In this subarea, the central themes were: nursing care given to the elderly person\(^{(13,23)}\) and the relationship between senility and dementia in long-term care institutions\(^{(24)}\).

In the mental health area\(^{(19,27-28)}\), the studies emphasized the behavioral intention of antidepressive therapeutic adoption among adolescent mothers\(^{(19)}\), online education for nurses to encourage cessation of smoking among people with mental suffering\(^{(27)}\) and intention of nurses in the creation of therapeutic groups in psychiatric settings\(^{(28)}\). The importance of the use of TRA in these studies is emphasized since the understanding of behavioral intentions related to contexts of social vulnerability in psychiatry and chemical dependence points to strategies for behavior change.

The hospital area was highlighted in most studies\(^{(7-10, 12, 25,28-30)}\), with emphasis on the intensive care unit sector\(^{(8-10)}\). In these studies, the focus was on obtaining information about nurses’ behavioral beliefs and intentions in performing certain procedures/actions, such as: adherence to hand hygiene as a tool to control hospital infection\(^{(6)}\), an open visit policy as a strategy for humanization of health care in nursing\(^{(9)}\) and the accomplishment of the hemodynamic study by nurses\(^{(10)}\).

The aforementioned studies are relevant to nursing because they focus on implementing actions with lesser and greater complexity in the hospital routine. The scientific evidence can allow the modification of weakened beliefs, constituting as progress to the category, improving the functioning of the service and raising the quality of care offered to the patient.

Eleven studies involved nurses as research subjects, where it was sought to evaluate: beliefs and attitudes\(^{(9,10,27)}\), attitudes\(^{(25,29)}\), behavioral intentions\(^{(13,23,28,30,31)}\) and behavior\(^{(20)}\). This makes clear the range of options that researchers can use from the theoretical model, either fragmented or in its entirety. The results are based on constructs that reflect reliability and scientific consistency related to TRA.

Regarding the methodological aspects of the researches, a prevalence of descriptive studies\(^{(7-10,13,17-24,28,31,32)}\) was observed, with a quantitative approach \((8-9,12,18-22,25-32)\), using questionnaires \((8-9,12-13,17-21,23,25-26,28-32)\). Regarding the elaboration of the instruments, the majority used psychometrics using Likert scales \((7,9,12-13,17,19,20,22,23,27-32)\).
Quantitative research has its roots in positivist thinking, emphasizing deductive reasoning, the rules of logic, and the measurable attributes of human experience. Thus, the descriptive study aims to understand the variables of the model, from the application of quantitative questionnaires that allow better operationalization and greater generalization of the results obtained.

Regarding the statistical tests used, the most notable were: Pearson test, Spearman's coefficient, Student's t-test, Paired t-test, Kruskal Wallis, Mann Whitney, Chi-Square, Regression tests, Wilks Lambda, and Cronbach's Alpha were used to evaluate the reliability of the instruments. In this context, the methodological robustness and the statistical rigor used in the analysis of the results are mentioned, attesting the reliability of the constructs proposed by the TRA.

**CONCLUSIONS**

From the bibliometric indicators analyzed, a hegemony of publications in international journals was identified, demonstrating the global use of the theoretical model in several contexts. It is expected that the results found favor the use of this theoretical reference in the scientific productions of the Nursing area, as well as in the diffusion of its applicability in predicting the intentions and the behavior in the health context, constituting as an adjuvant strategy in favor of the promotion health, disease prevention and treatment adherence related to chronic diseases.

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