

Scientific production of the journal *Investigación y Educación en Enfermería* during its 30 editing years

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Scientific production of the journal *Investigación y Educación en Enfermería* during its 30 editing years

Abstract

Objective. This study sought to characterize the scientific production of the journal *Investigación y Educación en Enfermería* (IEE) during its 30 years of editing. **Methodology.** Documentary type longitudinal study, which analyzed all the articles published in IEE from 1983 to 2012; a total of 656. Each article was manually revised and an instrument was used containing the variables of author and article characteristics. **Results.** A total of 47% of the articles have a sole author and only one institution of affiliation. According to their type, those with the most contributions were original articles (42%) and theme reviews (25%). Regarding the characteristics of the first authors, nurses predominate (74%); with graduate formation (71%); with academic affiliation (88%); and country of origin being Colombia (70%). The principal themes dealt with are: nursing care (24%), nursing education and formation (14%), nursing practice (6%), and nursing history (5%). The most frequent populations objects of study are nurses (25%) and nursing students (8%). A total of 15% deal with vulnerable populations (elderly, children, pregnant women, the handicapped, and individuals from rural areas, among others). Additionally, the following tendencies were noted: authors have improved in their levels of formation, and regarding the increased number of original articles and balance per type of research paradigm. **Conclusion.** Author's characteristics and thematic preferences, along with populations object of the articles show that progress has been produced in divulging knowledge generated and of the experiences in their implementation in nursing practice, thus, contributing to the discipline's development.

Key words: bibliometric indicators; periodicals as topic; journal article; nursing.

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Producción científica de la revista *Investigación y Educación en Enfermería* en sus 30 años de edición

■ Resumen ■

Objetivo. Caracterizar la producción científica de la revista *Investigación y Educación en Enfermería* (IEE) en sus 30 años de edición. **Metodología.** Estudio longitudinal de tipo documental en el que se analizaron todos los artículos publicados en IEE de 1983-2012; en total 656. Se revisó manualmente cada artículo y se utilizó un instrumento que contenía las variables de las características de los autores y de los artículos. **Resultados.** El 47% de ellos tiene un solo autor y una sola institución de afiliación. Según su tipo, los que más aportan al total son los originales (42%) y las revisiones de tema (25%). Características de los primeros autores: predominan los enfermeros (74%), con formación de posgrado (71%), con afiliación académica (88%) y el país de origen es Colombia (70%). Los principales temas tratados son el cuidado de enfermería (24%), la educación y formación en enfermería (14%), su práctica (6%) y su historia (5%). Las poblaciones objeto de estudio más frecuentes son los enfermeros (25%) y los de estudiantes de enfermería (8%). Un 15% versan sobre poblaciones vulnerables (adultos mayores, niños, las gestantes, discapacitados y las personas de áreas rurales, entre otros). Por otra parte, se observaron las siguientes tendencias: los autores han mejorado en su nivel de formación, en cuanto al aumento en el número de artículos originales y equilibrio por tipo de paradigma de investigación. **Conclusión.** Las características de los autores y las preferencias temáticas y las poblaciones objeto de los artículos muestran que se han producido avances en divulgación del conocimiento generado y de las experiencias en su implementación en la práctica de la enfermería, contribuyendo de esta forma al desarrollo de la disciplina.

Palabras clave: indicadores bibliométricos; publicaciones periódicas como asunto; artículo de revista; enfermeras.

Produção científica da revista *Investigação e Educação em Enfermagem* nos seus 30 anos de edição

■ Resumo ■

Objetivo. Caracterizar a produção científica da revista *Investigação e Educação em Enfermagem* (IEE) em seus 30 anos de edição. **Metodologia.** Estudo longitudinal de tipo documental no que se analisaram todos os artigos publicados em IEE de 1983-2012; ao todo 656. Revisou-se manualmente cada artigo e se utilizou um instrumento que continha as variáveis das características dos autores e dos artigos. **Resultados.** 47% deles tem um só autor e uma só instituição de afiliação. Segundo seu tipo, os que mais contribuem ao total são os originais (42%) e as revisões de tema (25%). Características dos primeiros autores: predominam os enfermeiros (74%), com formação de pós-graduação (71%), com afiliação acadêmica (88%) e o país de origem sendo a Colômbia (70%). Os principais temas tratados são o cuidado de enfermagem (24%), a educação e formação em enfermagem (14%), sua prática (6%) e sua história (5%). As populações objeto de estudo mais frequentes são os enfermeiros (25%) e os de estudantes de enfermagem (8%). Um 15% versam sobre populações vulneráveis (adultos maiores, meninos, as gestantes, descapacitados e as pessoas de áreas rurais, entre outros). Por outra parte, observaram-se as seguintes tendências: os autores melhoraram em seu nível de formação, quanto ao aumento no número de artigos originais e equilíbrio por tipo de paradigma de investigação. **Conclusão.** As características dos autores e as preferências temáticas e as populações objeto dos artigos mostram que se produziram avanços em divulgação do conhecimento gerado e das experiências em sua implementação na prática da enfermagem, contribuindo desta forma ao desenvolvimento da disciplina.

Palavras chave: indicadores bibliométricos; publicações periódicas como assunto; artigo de revista; enfermeiras.

Introduction

The diversity of nursing scientific production and its constant evolution over time permit defining the body of pertinent knowledge that give the discipline greater strength and notoriety.¹ For Nursing, the dissemination and use of knowledge in practice are necessary for growth in this profession.² To comply with said purposes, it is necessary for said knowledge to be divulged through its publication in scientific journals,³ which are an effective medium to communicate progress reached in the different fields of the discipline.^{2,4,5}

With information globalization, dissemination of knowledge has increased notably through articles published in scientific journals, which has improved understanding of the perspectives of care in the world.⁵ The increased number of nursing journals has been so high⁶ that in the most specialized database in the discipline, Cumulative Index to Nursing and Allied Health (CINAHL), we could consult 5089 journals in April 2013.⁷ However, Nursing, as the young science it is, requires evaluating what is being published⁸ to identify what are the study phenomena of interest for nursing professionals, in what populations are the greatest research efforts being concentrated, and from what scientific paradigms are these addressed.²

Because of this, it is necessary to study the written production in journals to characterize and identify the tendencies in publications in Nursing, besides exploring its relationship with the disciplinary development. In Iberian America, Spain^{2,9-11} and Brazil^{4,6,12} are the countries with the highest interest for these types of evaluations, which is noted in the number of articles published on this theme in recent years. On the contrary, Colombia has very low diffusion – the bibliographic search only identified one article reviewing the research production published between 2002 and 2007 in the journal *Avances de Enfermería* and in the Latin American journal by *Enfermagem*.¹³ Other articles jointly analyzed journals, research reports, and theses work,^{14,15} or the visibility of

nursing journals regarding the availability and functionality of their web page.¹⁶

The journal object of this study, *Investigación y Educación en Enfermería* (IEE), is a publication from the Faculty of Nursing at Universidad de Antioquia whose mission is the publication of progress in research and education that contributes to the development of the discipline. This journal was created in 1983 due to the need to have a written medium in which to publish results of research carried out by nursing personnel.¹⁷

Over time, IEE accommodated itself to increasingly higher demands dictated to serial scientific publications to acknowledge their quality, and from national and international organisms, leading to its indexing in COLCIENCIAS' IBN-Pubindex since 1996, currently assigned an A2 classification. Other bibliographic bases in which this journal is integrated are: SciELO, EMCare by Elsevier, Latindex, Academic Source by EBSCO, REDALYC, CUIDEN, LILACS-BIREME, DIALNET, IMBIOMED, DOAJ, CIBERE, and Copernicus Index.¹⁸

Globalization, with its tendencies of universalizing scientific communication, also required modifications in IEE editing and publication concepts. Having a web page since 2010 for consultation of abstracts and for the possibility of reading and freely downloading articles in complete text, increased its visibility, while offering the availability of tools for on-line editorial management for submission, referee evaluation, and author follow up of articles. This is how by 2012 the journal reached the historical figure of 121 manuscripts submitted, which were subjected to the editorial process for approval study.

From 1983 to December 2012, 63 numbers were edited with 656 articles compiled. Although the IEE journal has been published without interruption for 30 years, a study had not been conducted on

the characteristics of the manuscripts published therein, which is why this research will contribute with this description. Additionally, information will be available on the tendencies over time, the particularities of their authors, and on the type, themes, and population of study of the articles published. The aforementioned justified the need to conduct the work with the aim of characterizing the scientific production published by the IEE journal during its 30 years of editing.

Methodology

Ours was a documentary-type, descriptive, quantitative, longitudinal, and retrospective study. All the articles published in the IEE journal, since its first number in 1983 until the third number in 2012, were the target population.

An information collection instrument was used containing: a) identification variables: title, volume, number, and starting page; b) characteristics of authors: number of authors, number of participating institutions, besides some data from the first author: profession, level of education – undergraduate, specialist, master's and doctorate; type of institution –academic or care-provider-, and country; and: c) characteristics of the article: (i) type of article: original, editorial, essay, theme review, Nursing history, and others; (ii) general theme; (iii) population of study; (iv) number of references; original articles also described: (v) type of study: qualitative, quantitative, and mixed; (vi) method of the quantitative study: descriptive, cross-section, cases and controls, cohorts, controlled clinical trial, ecological, quasi-experimental, validation, and other; (vii) method of the qualitative study: ethnographic, phenomenological, critical incident, case study, structured surveys, other.

To gather information, a manual revision was conducted of all the articles by the researchers. The data gathered were digitized onto a database designed in the SPSS program (version 21). Statistical analysis was performed in the same program, consisting in: a) univariate analysis:

for variables at rate level average and standard deviation were estimated; for variables measured at nominal and ordinal levels absolute and relative frequencies were calculated; b) bivariate analysis: explored some relations among variables of interest by applying the following tests: Pearson correlation, χ^2 , Snedecor's F , and Student's t ; in all instances statistical significance was assumed if the probability value was below 0.05.

This study maintained the confidentiality of the information, given that the data were only taken for joint analysis and value judgment was not sought on the scientific quality of the articles published in IEE. Research for this article was approved by the Ethics Committee of the Faculty of Nursing.

Results

During the 30 years of editing of the IEE journal, 656 articles have been published, for a yearly average of 21.8 ± 10.7 . This indicator has had a significant tendency to increase over time (Pearson correlation coefficient = 0.74, $p < 0.001$), with an important increase during period from 2008 to 2012, when articles published practically doubled with respect to the previous period from 2003 to 2007. Table 1 shows the general characteristics of the articles per five-year period and total, which could be summarized thus: 46.8% has only one author, the average of authors per article has increased over time from two to almost three ($F = 5.2$, $p < 0.001$), while the number of institutions has remained at one.

Information of the average number of months transpired between reception and approval of the article is available since the last 10 years. This indicator shows that said time has diminished from 11 to 8 months from one five-year period to another, with this difference being statistically significant ($t = 3.2$, $p = 0.001$).

According to the type of article, the greatest contributions to the total are original articles (42%) and theme reviews (25%). A pattern was observed per decade: during the first, theme

reviews predominates; essays during the second and original articles during the third. Regarding the number of references per article, the tendency

indicates that their average number practically doubled from the first to the sixth five-year period ($F = 25.8, p = 0.001$).

Table 1. General characteristics of 656 articles published in the journal *Investigación Educación en Enfermería* per five-year period and total

Characteristic \ Period	1983-1987	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012	Total
Number of articles	69	90	77	99	114	207	656
Average of articles per period	13.8±3.5	18.0±3.7	15.4±2.8	19.8±1.6	22.8±2.3	41.4±12.2	21.8±10.6
Average of authors	1.9±1.3	1.73±1.4	2.2±1.9	2.2±1.9	2.5±1.7	2.7±1.7	2.3±1.8
Average of institutions	1.1±0.3	1.4±0.4	1.4±1.1	1.2±0.6	1.3±0.5	1.4±0.7	1.2±0.6
Average of months for approval	-	-	-	-	10.7±5.9	8.0±3.9	8.9±4.5
Type of article (%)							
Original	20.3	23.3	20.8	33.3	47.4	66.2	41.9
Editorial	13.0	11.1	13.0	11.1	8.8	7.2	9.9
Essay	13.0	16.7	63.6	46.5	29.8	12.5	27.3
Theme review	36.2	28.9	2.6	1.0	6.1	9.2	12.2
Nursing history	2.9	1.1	0.0	0.0	0.0	1.4	0.9
Good nursing practices	0.0	5.6	0.0	0.0	0.0	0.5	0.9
Situation de nursing	0.0	0.0	0.0	1.0	0.9	0.0	0.3
Other	14.5	13.3	0.0	7.0	6.1	2.9	6.5
Without data	0.0	0.0	0.0	0.0	0.9	0.0	0.2
Average of references	14.6±13.7	12.3±11.2	14.3±12.1	11.6±11.0	23.9±17.4	25.4±15.5	18.2±6.1

Regarding the characteristics of the first authors in articles published, it can be noted in Table 2 that 73.5% of the total are nurses, followed by physicians, nursing students and nutritionists (6.1, 3.5, and 2.0%, respectively). Per five-year period no important changes were appreciated.

During the history of the IEE journal, seven of every 10 of the first authors of the articles have had graduate formation, especially master's degree with 39.3% and doctorate with 21.2%. The degree of education has increased over time (χ^2 with the Yates correction = 136.14, $p < 0.001$). This relationship can be specially observed in the

doctorate with an increase from 1.4% during the first five-year period to 39.1% during the sixth five-year period. Per type of affiliation of the first author, the most frequent have been academic (87.7%) and care provider (7.5%).

With respect to the country of origin of the first author, Colombia has published seven of every 10 articles, followed by Brazil and Mexico (10.5 and 5.0%, respectively). A statistically significant tendency has been noted of increased number of articles from countries other than Colombia ($\chi^2 = 58.1, p < 0.001$).

Table 2. Characteristics of the first author of the 656 articles published in the journal *Investigación y Educación en Enfermería* per period of time and total

Characteristic	Period	1983-1987	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012	Total
Profession (%)								
Nurse		73.9	66.7	68.8	75.8	70.2	78.7	73.5
Physician		11.9	10.0	3.9	6.1	6.1	3.4	6.1
Nutritionist		2.9	4.4	0.0	0.0	1.8	1.4	2.0
Dentist		1.4	2.2	0.0	1.0	1.8	0.5	1.1
Nursing student		2.9	2.2	0.0	3.0	6.1	1.4	3.5
Other		5.7	12.2	14.3	11.0	14.0	4.1	11.1
Without data		1.4	2.2	13.0	3.0	0.0	0.5	2.7
Level of education (%)								
Undergraduate		53.3	0.0	0.0	2.6	2.6	5.8	17.2
Specialization		11.1	11.7	15.2	10.5	10.5	12.6	10.2
Masters		24.4	26.0	48.5	51.8	51.8	42.0	39.3
Doctorate		3.3	9.1	16.2	27.2	26.3	39.1	21.2
Without data		7.8	53.2	20.2	7.9	7.9	0.5	12.0
Type of institution of the first author (%)								
Academic		83.3	71.4	85.9	95.6	91.8	83.3	87.7
Care provider		13.3	10.4	10.1	1.8	5.3	13.3	7.5
Other		3.3	0.0	1.0	1.8	2.4	3.3	1.8
Without data		0.0	18.2	3.0	0.9	0.5	0.0	3.0
Country of origin of first author (%)								
Brazil		2.9	0.0	3.9	2.0	14.9	21.7	10.5
Colombia		89.9	85.6	72.7	81.8	56.1	56.5	69.7
Spain		1.4	1.1	0.0	1.0	2.6	5.3	2.6
Nicaragua		1.4	0.0	0.0	0.0	0.0	0.0	0.2
Without data		0.0	2.2	10.4	1.0	0.0	0.5	1.8
Others		5.8	11.1	13.0	14.2	26.4	16.0	15.2

The main themes dealt with in the articles published during the study period can be seen in Table 3. One in every four of the manuscript contents speaks of nursing care, a theme with increasing tendency from the first to the fifth five-year period, given that during the sixth the percentage dropped, explained by the increase to 13.9% of the percentage of articles on nursing formation ($\chi^2=15.6$, $p<0.008$). Other topics of interest in the publication have been research as theme (8.2%), nursing practice (5.8%),

and nursing history (5.0%). Articles on nursing theories were merely 0.5%.

Among the articles grouped in the area of public health, the most common themes were: promotion and prevention (7.2%), mental health (5.2%), and evaluation of healthcare services (5.3%). It must be noted that the topic of public health has had a tendency to reduce in the proportion of articles published per five-year period ($\chi^2=29.6$, $p<0.001$).

Table 3. Proportional distribution per 100 of the main themes of 656 articles published in the journal *Investigación y Educación en Enfermería* per period of time and total

Theme	Period	1983-1987	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012	Total
Nursing care								
On adults		7.2	2.2	20.8	21.2	20.2	4.3	11.6
Maternal and infant		7.2	2.2	0.0	1.0	4.4	4.3	3.4
In general		7.2	5.6	6.5	4.0	7.9	13.5	8.5
Subtotal		21.6	10.0	27.3	26.2	32.5	22.1	23.5
Nursing management		0.0	1.1	5.2	7.1	0.9	1.4	2.4
Ethics		4.3	1.1	5.2	3.0	6.1	1.4	3.2
History of nursing		1.4	1.1	7.8	10.1	7.0	3.4	5.0
Theories of nursing		0.0	0.0	0.0	3.0	0.0	0.0	0.5
Nursing practice		13.0	13.3	0.0	1.0	7.0	3.9	5.8
Education and formation in nursing		18.8	17.8	9.1	2.0	8.8	20.8	13.9
Research as theme		14.5	10.0	0.0	0.0	6.1	13.5	8.2
Public health								
Situation of health		5.8	1.1	3.9	3.0	2.6	4.8	3.7
Promotion and prevention		0.0	10.0	9.1	11.1	4.4	7.2	7.2
Community health		0.0	10.0	1.3	1.0	5.3	3.9	3.8
Mental health		1.4	4.4	14.3	6.1	5.3	2.9	5.2
Evaluation of quality		1.4	2.2	0.0	0.0	0.0	2.9	1.4
Evaluation of healthcare services		1.4	10.0	1.3	11.1	4.4	3.9	5.3
Decentralized care		0.0	5.6	3.9	1.0	0.9	0.0	1.5
Intrafamily violence		0.0	0.0	1.3	1.0	0.0	0.0	0.3
Community participation and human development		0.0	0.0	1.3	3.0	0.0	0.0	0.6
Subtotal		10.0	43.3	36.4	37.3	22.9	25.6	29.0
Other		15.9	2.2	9.1	10.1	8.8	7.7	8.5
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

The target population in articles published in IEE in these 30 years can be reviewed in Table 4. In one out of every four articles (25.2%) the population is of nurses and another 8.2% of nursing students. At least 15% of the total of

the manuscripts published were on vulnerable populations (elderly, children, pregnant women, the handicapped, and individuals from rural areas, among others).

Table 4. Proportional distribution per 100 of the populations of 656 articles published in the journal *Investigación y Educación en Enfermería* per period of time and total

Population	Period	1983-1987	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012	Total
Professionals								
Nursing professionals		34.8	25.6	23.4	20.2	18.4	29.0	25.2
Healthcare professionals		21.6	28.9	29.9	28.3	8.8	8.7	18.6
Professionals from other disciplines		0.0	1.1	0.0	2.0	1.8	2.9	1.4
Subtotal		56.4	55.6	53.3	50.5	29.0	40.6	45.2
Students								
Nursing		2.9	6.7	5.2	8.1	10.5	11.1	8.4
Students healthcare areas		0.0	0.0	9.1	7.1	4.4	1.0	3.2
Other disciplines		0.0	0.0	0.0	3.0	0.9	2.9	1.1
Subtotal		2.9	6.7	14.3	18.2	15.8	15.0	12.7
Population groups								
Adolescents		0.0	0.0	2.6	0.0	4.4	2.4	2.1
Adults		0.0	0.0	5.2	0.0	6.1	2.9	3.0
Elderly		10.1	1.1	0.0	0.0	8.8	1.9	3.4
Caretakers		0.0	0.0	0.0	2.0	2.6	4.3	2.0
Patients at home		1.4	1.1	0.0	0.0	0.9	3.4	1.5
Patients in hospitals		2.9	6.7	9.1	6.1	3.5	9.7	6.9
Pregnant women		5.8	1.1	0.0	0.0	0.0	2.4	1.5
Children		7.2	5.6	5.2	0.0	5.3	3.4	4.9
Handicapped individuals		0.0	0.0	0.0	0.0	0.9	0.0	0.2
Healthy individuals		0.0	0.0	0.0	3.0	5.3	1.0	0.3
General population		8.7	15.6	0.0	0.0	6.1	7.2	6.4
Rural population		0.0	3.3	5.2	8.1	2.6	0.0	7.3
Subtotal		8.7	18.9	5.2	11.1	14.0	8.2	14.0
Other		4.3	3.3	5.2	12.1	8.8	5.8	2.6
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

Of the total 289 articles in which it was possible to identify that they were the product of research, 275 were original. The tendency over time has been a constant increase, going from 14 to 135 articles from the first to the sixth five-year period ($\chi^2=94.6, p<0.001$). Table 5 shows that 47.4% of the investigations used quantitative methodology, 38.1% used qualitative methodology, and 10.0% used mixed methodology. Through time, significant change has been seen in the proportions of quantitative and qualitative studies (χ^2 with Yates' correction=18.82, $p=0.002$),

given that the first decreased until the fourth five-year period to then during the last two five-year periods have an almost 1:1 ratio.

According to the methodology of the quantitative studies, descriptive studies predominated, noting a tendency to the increase of analytical studies during the last two five-year periods. Regarding qualitative studies, the most frequent methodologies have the ethnographic (21.6%) and descriptive studies (17.2%).

Table 5. Information of the 275 original articles published in the journal *Investigación y Educación en Enfermería* according to time and total

Characteristic	Period	1983-1987	1988-1992	1993-1997	1998-2002	2003-2007	2008-2012	Total
Number of articles		14	21	16	33	54	137	275
Financing (%)		0.0	1.1	6.5	0.0	33.3	67.1	17.1
Type of study								
Qualitative		7.1	17.4	6.3	36.8	48.3	44.2	38.1
Quantitative		85.7	73.9	68.8	21.1	40.0	54.3	47.4
Mixed		0.0	0.0	0.0	28.9	5.0	0.7	10.0
Without data		7.1	8.7	25.0	13.2	6.7	0.7	4.5
Methodology of quantitative studies (n=135)								
Descriptive		58.3	82.4	75.0	55.0	57.1	36.4	47.6
Cross-sectional		16.7	17.6	0.0	0.0	10.7	35.1	21.1
Cases and controls		8.3	0.0	0.0	0.0	0.0	2.6	1.8
Controlled clinical trial		0.0	0.0	0.0	0.0	3.6	3.9	2.4
Quasi-experimental		0.0	0.0	0.0	0.0	3.6	2.6	1.8
Validation		0.0	0.0	0.0	0.0	0.0	1.3	0.6
Documentary		0.0	0.0	0.0	0.0	7.1	13.0	8.4
Other		16.7	0.0	0.0	5.0	3.6	5.2	3.6
Without data		0.0	0.0	25.0	40.0	14.3	0.0	12.7
Methodology of qualitative studies (n=110)								
Ethnographic		0.0	75.0	7.1	4.0	20.7	29.5	21.6
Phenomenological		100.0	25.0	7.1	12.0	6.9	13.1	11.9
Case studies		0.0	0.0	0.0	80.0	3.4	6.6	3.7
Descriptive		0.0	0.0	0.0	0.0	17.2	29.5	17.2
Other		0.0	0.0	14.2	0.0	13.7	21.3	26.1
Without data		0.0	0.0	71.4	4.0	37.9	0.0	19.4

Discussion

In this study of 656 articles printed in 30 years of editing the IEE journal, a significant tendency was observed toward the increase of manuscripts published annually, especially of original articles, which agrees with other authors^{10,19} who state that knowledge in nursing has had exponential growth in recent years. The increased number of articles published in this journal is also due to three reasons: three numbers are edited per year since 2010, a platform is available on the web

page for submittal and follow-up of manuscripts, and – further – since 2012 the journal is published entirely in English, which promotes receiving articles from any part of the world.

Per country of origin of the first author, 70% of the articles published in IEE are from Colombia, followed by Brazil (11%), Mexico (5%), Chile (4%), and Spain (3%). During the sixth five-year period, collaborations were received from

12 countries, which in part agrees with Alarcón and Astudillo²⁰ who reported, in an analysis of 151 articles published between 2002 and 2005 in Latin American nursing journals, Cuba as the first country of origin (55%), followed by Chile (27%) and Colombia (19%); and with Jeréz and Montoya,²¹ in a study of 37 nursing journals from Iberian America, conducted in 2008, who stated that Brazil is the country with the most publications. In terms of time transpired between article reception and approval, although IEE this has been reduced in the last 10 years from 11 to eight months, this indicator, considered a criterion of quality of the editorial process in scientific journals, must be reduced.

Moving on to the typology, the original article is one of the most important because it accounts to society of research results so that the application of its findings leads to improving the health conditions of the target population of its study. In our journal, 42% of the production during its 30 years was of original articles, a higher proportion than that reported by Serrano *et al.*,¹⁰ in a similar study of a Spanish journal where these articles reached 22%.

During the development of the IEE journal, a pattern was noticed per decade: during the first, theme reviews predominated; during the second, essays; and during the third, original articles. This is explained by the change in global tendencies in production and publication of knowledge in the last half century,^{3,22} which are priorities related to the components of innovation and development for which it is essential to conduct research.

Regarding the number of references, in our journal we observed an increasing tendency over time, which is related to that exposed by Gálvez²³ when referring to the legitimacy of the value of scientific production being based on its consumption and that a direct relationship exists between consuming scientific production and citing such; thus, it would guarantee greater and faster circulation of knowledge and less aging.

Per type of affiliation of the first author, in our study academic affiliation was more frequent than

care provider, a situation that is similar to that reported by an article comparing the production of a Brazilian journal to that of another Colombian journal,¹³ which commented that nurses offering direct care could not be sufficiently motivated to do research. Other authors^{10,24} state that it is the result of the pressure of universities on their faculty staff to publish research results. It is also a fact that most nursing journals come from academic institutions and few are from hospital entities. Although many healthcare institutions have teaching-care provider agreements with universities, these rarely have institutional policies for research,¹⁶ which explains why the increase of nursing scientific production is due mainly to formation institutions.²⁵ Other authors^{8,13} remark on the need to involve care providing nurses in research processes, given that they are the ones who are frequently in contact with the users, thereby, they should not waste their valuable contributions and experience on the practice of care.

With respect to the average number of authors per article, it was found that almost half of those published in IEE had one author, observing over time the tendency to increasing from two to three. The aforementioned has also been reported in studies in journals from Spain,⁹⁻¹¹ Italy,²⁴ and Colombia and Brazil;¹³ which Harande²⁶ has interpreted as a possible direct relationship with the greater financing received to conduct the research that leads to articles and which Serrano¹⁰ has associated to the increased complexity of research.

Revising the academic level of the authors in the articles, seven of every 10 of the first authors of articles in the IEE journal have had graduate formation (39% masters and 21% doctorate), a similar finding to that reported by García *et al.*,⁸ who also stated publications by nurses with master's degree is higher because those with PhD degrees are still a minority. Díaz *et al.*,¹³ state that this difference may be because many of the authors are professors who are required higher academic formation to work in universities and, as already expressed, they have the greatest commitment to divulge research results.

Nursing students were the first authors in almost 4% of the articles published in the IEE journal, a participation that, according to García *et al.*,⁸ is quite limited and could be a consequence of low commitment in the promotion of new generations of researchers.

Upon revising the themes of the articles, our journal revealed that out of every four articles one dealt with nursing care and another with public health. The aforementioned is similar to data reported in articles on journals from Spain,^{2,10} Italy,²⁴ England,¹⁹ and two Latin American journals.¹³

Prado *et al.*,²⁷ found, in a study conducted with Brazilian and Spanish publications, that the most-addressed themes were those related to education in nursing and teaching methodologies, a finding that was similar in our study. A theme of emerging interest, like that of theories of nursing, has been classified with reduced presence by Díaz *et al.*,¹³ a situation that could also be assumed in our study where only 0.5% of the articles had this topic.

Nurses were the most-frequent target population of the article (25%), followed by nursing students (8%). Several authors^{2,19,20} have also reported that the volume of articles is important in which the target population of study are these professionals, revealing that it is the nursing profession is the self-reference of what is published. Díaz *et al.*,¹³ found that healthcare personnel was one of the most-researched groups with 6%, a proportion far below the results from our study with 23% of the total original articles.

In an article from Italy,²⁴ and in another two from Spain^{2,11} it was reported that in nursing journals there is progressive increase on the interest for themes related to vulnerable populations, a statement that could not be substantiated in our study, and which Nyamathi *et al.*,²⁸ have related to the profession's global commitment to improve health conditions of these populations and for

the development of theoretical models to study vulnerability.

Care providers, in spite of their importance, are a population with a notable deficit of articles published in nursing journals;²⁹ this situation was also observed in our research, which found that only 2% of the total number of articles were dedicated to this group.

This study observed that in original articles quantitative-type articles predominate; a progressive increase of qualitative-type articles was also noticed, which could lead to a greater balance between both paradigms. This agrees with articles on the production of nursing journals in Italy,²⁴ Spain,² England,¹⁹ Colombia, and Brazil,¹³ which would indicate the interest by nursing to approach the object of knowledge with the perspectives offered by diverse methodologies. Similar to other authors,^{2,19,24} our study found that in quantitative articles analytical methodologies are not frequent, requiring strategies to promote these types of investigations in nursing; among them, the development of these types of studies as a degree requirement in doctoral formation,¹³ and the requirement of professors with PhD degrees in the execution of research with these designs that better approach the search for causal relationships. Regarding the qualitative paradigm, ethnographic designs were the most frequent, coinciding with results from other similar articles.^{2,13}

The results obtained in this study permitted describing the scientific production of the IEE journal in its 30 years of editing, identifying in this publication medium the tendencies in the characteristics of the authors and preferences in the themes and target population of articles. It is necessary to continue the analysis of this production, both in the country and the region, to account for the efforts and progress in divulging knowledge generated and of the experiences in its implementation in nursing practice, thus, contributing to the development of the discipline.

References

1. Urra M. Avances de la ciencia de la enfermería y su relación con la disciplina. *Cien Enferm.* 2009; 15(2):9-18.
2. Juve M, Pastor L, Estrem M, Blanco C, Verge JM, Coiduras A, et al. ¿De qué se ocupan las enfermeras? *Nursing.* 2008; 29(10):56-9.
3. Consejo Internacional de Enfermeras. Investigación de enfermería [Internet]. 2007 [cited 16 Feb 2013]. Available from: http://www.enfermeriaencardiologia.com/profesion/politica/posiciones_cie.htm.
4. Marziale MH. Scientific production in Brazilian nursing: the search for international impact. *Rev Lat Am Enfermagem.* 2005; 13(3):287-8.
5. Dougherty MC, Lin SY, McKenna HP, Seers K. International content of high-ranking nursing journals in the year 2000. *J Nurs Scholarship.* 2004; 36(2):173-9.
6. Martini J. Producción científica de la enfermería. *Rev Bras Enferm.* 2009; 62(6):809.
7. Cinalh. Full Text for Top Nursing and Allied Health Literature, Plus Additional Resources. [Internet]. EBSCO; [cited 16 Feb 2013] 2007. Available from: <http://www.ebscohost.com/academic/cinalh-plus-with-full-text/>.
8. García-Meseguer M, Reolid-Colado M, M. D-U. Características de la producción científica en enfermería en la década de 1985-1994. *Enferm Clin.* 2000; 11(2):21-8.
9. Gálvez A. Producción Científica de la Enfermería Española en Atención Primaria. *Metas Enferm.* 2001; 4(34):24-30.
10. Serrano P, Giménez AM, Arroyo MP. Análisis de la producción científica publicada en la revista *Metas de Enfermería*. *Index Enferm (Gran).* 2005; (48-49):78-82.
11. Lorente A, Chaín C, Flores A. Análisis bibliométrico de la revista *Rol de Enfermería*. *Doc Cienc Inf.* 2008; 31(17):17-43.
12. Dyniewicz AM. Análise das publicações dos enfermeiros assistenciais em periódicos nacionais. *Rev Bras Enferm.* 2010; 63(6):1046-51.
13. Díaz LP, Bueno LE, Mejía ME, López E. Investigación de enfermería: una caracterización en dos publicaciones latinoamericanas. *Av Enferm.* 2011; 29(2):285-93.
14. Jiménez MA. Producción investigativa en educación en enfermería en Colombia. *Invest Educ Enferm.* 2010; 38(3):309-22.
15. Gómez GE. Producción científica de enfermeras egresadas de la Universidad de Antioquia. *Relaciones salud y sociedad. Colombia.* 1980-1990. *Invest Educ Enferm.* 1996; 14(1):63-98.
16. Mesa L, Galindo S. Caracterización de las publicaciones periódicas de la enfermería en Colombia visibles en Internet. *Av enferm.* 2011; 29(1):159-68.
17. Castrillón-Agudelo MC. Período 1983-1987. El despegue. *Invest Educ Enferm.* 2008; 26(2):17-20.
18. Rodríguez-Gázquez MA. Thirty years divulging Nursing Research and Education. *Invest Educ Enferm.* 2012; 30(2):175-7.
19. Traynor M, Rafferty A, Lewison G. Endogenous and exogenous research? Findings from a bibliometric study of UK nursing research. *J Adv Nurs.* 2001; 34(2):212-22.
20. Alarcón A, Astudillo P. La investigación en enfermería en revistas latinoamericanas. *Cienc enferm.* 2007; 13(2):25-31.
21. Martínez N. Las investigaciones en sistemas y servicios de salud por enfermería en las revistas científicas. *Rev Cuba Enferm.* 2011; 27(3):228-38.
22. Burns N, Grove S. *Investigación en enfermería.* Barcelona: Elsevier; 2004.
23. Murrain E. Tendencias de la investigación en enfermería. *Repert Med Cir.* 2009; 18(2):90-6.
24. Messina L, Saiani L. Research studies published in *Assistenza Infermieristica e Ricerca* from 1991 to 2011. *Assist Inferm Ric.* 2012; 31(1):26-33.
25. Consejo Internacional de Enfermeras. La investigación en enfermería: instrumento de acción [Internet]. Ginebra: CIE; 2009 [cited 16 May 2013]; Available from: http://www.icn.ch/images/stories/documents/publications/fact_sheets/18a_FS-Investigacion_enfermeria-Sp.pdf.

26. Harande YI. Author Productivity and Collaboration: An Investigation of the Relationship Using the Literature of Technology. Libri. 2007;51(2).
27. Romero M, Vaquero M, Molina G. La investigación en enfermería en nuestro medio: cómo impulsar una función esencial entre nuestros profesionales. Rev Esp Sanid Penit. 2000;2(3):130-7.
28. Nyamathi A, Koniak-Griffin D, Greengold BA. Development of nursing theory and science in vulnerable populations research. Annu Rev Nurs Res. 2007;25:3-25.
29. Fawcett J. Family-centred care: what works and what does not work. J Adv Nurs 2011; 67(5):95.