Analysis of nursing research studies submitted to Spain's health research fund and the resulting scientific output

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Journal of Research in Nursing ©2009 SAGE PUBLICATIONS Los Angeles, London, New Delhi and Singapore VOL 14 (2) 153–166 DOI: 10.1177/ 1744987108102006

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Abstract A descriptive observational study was conducted to ascertain and analyse the scientific status of nursing in Spain, based on nursing research studies submitted to the Health Research Fund (*Fondo de Investigación Sanitaria*-FIS) for public funding and their ensuing scientific output. The study selection criteria required the following: the

Multiple authors: Investén-isciii group. This project has been developed in coordination and cooperation with different members of the Coordination and Development of Nursing Research Group, members as follows: María Teresa Moreno-Casbas, Pilar Comet-Cortés, Carmen Fuentelsaz-Gallego, María Concepción Martín Arribas, María Isabel Orts-Cortés, Eva Abad-Corpa, Elena Altarribas-Bolsa, Carlos Calderón-Gómez, Esther González-María, Dolores Izquierdo-Mora, Susana Navalpotro-Pascual, Enrique Oltra-Rodríguez, Manuel Rich-Ruíz and Clara Vidal-Thomas.

principal researcher to be a nurse; and the terms, 'nursing', 'self-care', 'care', 'ulcer' and/or 'home care' included in title or key words. For analysis of bibliographic output, a bibliographic search was made of national and international databases. During the study period (1996–2004), 673 nursing studies were submitted for public funding, with 28% being funded as a result. Of these, 37% addressed research topics focused on clinical practice. Most relied on quantitative methodology, with a descriptive design (48%). Of the studies funded from 1996 to 2002 (86), only 58% resulted in publications; of the total of 73 publications so yielded, only five were published in international journals. The main grounds for rejection of studies were also reviewed. Although nursing research is progressively increasing, it is essential to continue striving to enhance the quality and dissemination of such research.

Key words bibliometric analysis; funding; nursing methodology research; nursing research; research; research design

Introduction

Although nursing research in Spain has evolved in the last 10 years, it is still an area in the process of development. As in other countries (Traynor and Rafferty, 1999), the growth of a critical mass capable of lending impetus to nursing care research has been reinforced by improvements in academic training and the offer of resources by funding agencies (Cabrero García and Richart Martínez, 1991).

In 1977, nursing education acquired university status in Spain. However, candidates completing the course are not eligible for postgraduate studies (González Gil, et al., 2006) but only qualify for advanced training in research methodology (Díaz Benavente, et al., 2004). As a consequence of the present syllabus, approximately 57 nurses have obtained their doctorates in disciplines other than nursing (Nursing Research Report, 2005). The incorporation of nursing into the European Higher Education Area study programme will allow for the development of a nursing-research career course in Spain.

Furthermore, since 1987, Spain's Health Research Fund (HRF) (Fondo de Investigación Sanitaria-FIS), the public health research funding body coming under the Ministry of Health & Consumer Affairs, has granted scholarships at national and international centres and enabled nurses to seek funding as principal researchers (PRs) of studies and sit on assessment committees. In recent years, other local public bodies and financial institutions have participated in these initiatives.

Within the nursing-care research support policy designed by the HRF, attention should be drawn to the setting-up of a nursing research working group, the INVESTEN group (now known as Unidad Investén-isciii), which has been pursuing activities targeted at stimulating and developing the integration of nursing research in the National Health System since 1996 (REUNI, 1996), (Fuentelsaz Gallego, et al., 1999; Moreno-Casbas, et al., 2001).

After 10 years of work, the Unidad Investen-isciii proposes to assess the progress of nursing research in this period, that is, the level of scientific activity, the difficulties in and problems of access to funding and the educational needs in research methodology.

One of the most common strategies for assessing scientific output in terms of quantity and quality has been the use of bibliometric studies (Pardo, *et al.*, 2001; Rafferty and Lewison, 2001; Richart Martínez, 1999, 2000), as well as analysis of research studies, their characteristics and funding sources (Cueto Espinar, *et al.*, 1996; Prieto Carles, *et al.*, 2000; Gálvez Toro, *et al.*, 2001). This study adopted a

Martín-Arribas et al. Analysis of nursing research studies and the scientific output

mixed approach to examine the research studies submitted to the HRF over the period 1996–2004 and their characteristics.

The study

Aims

- 1) Principal objective
 - To ascertain and analyse scientific nursing output, based on nursing research studies submitted to the HRF for funding in the period 1996–2004 and the publications generated by such studies.
- 2) Specific objectives
 - To analyse the methodological characteristics of the studies that were funded.
 - To identify the characteristics of the PRs of these studies.
 - To review the grounds for rejecting study applications.
 - To explore the bibliographic output generated by research studies funded by the HRF during the period 1996–2002.

Methods

An observational descriptive study design was used.

Data source and sample

Data were sourced from nursing research dossiers submitted in the period 1996–2004 in response to official calls from the HRF for study grant applications.

Nursing studies were selected using the following search criteria, which required the PR to be a nurse and the title and/or key words to contain the terms 'nurse', 'nursing', 'self-care', 'care', 'ulcer' and/or 'home care'.

We searched bibliographic databases, both national (CUIDEN, CUIDATGE, BDIE and the DOYMA publishing house's search engine) and international (ISI web of science, PUBMED and CINAHL). The search strategy focused on the PR's name and surname(s), along with the institution and subject (topic, field of study or key words obtainable from the title).

Data collection

An in-house purpose-designed form was used for methodological assessment of studies. It was modelled on a form originally drawn up by Gómez de la Cámara (1997), and envisaged assessment of the following points: 1) identification of the problem to be targeted for research and the study premises; 2) identification of objectives and postulation of hypothesis; 3) study design and subjects; 4) definition of variables and description of data-handling and 5) analysis, plan of action and implications (Table 1).

Table I Items featured on the methodological assessment form

Identification of the problem targeted for research
Problem to be targeted for research clearly defined
Pertinence of the study stated
Feasibility of the problem stated
Interest attaching to the problem stated
Presence of another answer to the problem mentioned
Study premises
Theoretical working framework outlined
Reasons given for the approach chosen in the study
Appropriate literature review
Reasoning and objectives
Conceptual hypothesis stated
Operational hypothesis stated
Study objective stated
Existence of principal and secondary objectives
Objectives are specific measurable and include the study variables
Study strategy
Study design described
Existence of comparison group
Inclusion/exclusion criteria defined
Allocation procedure explained
Anocation procedure explained
Study subjects
Solartian procedure defined
Selection procedure defined
Sample size explained
Handling of losses or withdrawais described
Ethical rules described
Variables and measurement procedure
Study variables defined
Measuring instruments described
Measurement procedure described
Quality-control procedure for measurements in place
Data-handling and – control
Data-handling procedure described
Data quality-control procedure described
Data analysis
Plan of analysis outlined
Statement of statistical techniques to be used
Calculation of the precision of the results considered
Presence of biases considered
Expected primary outcome identified
Action plan
Plan of action described
Breakdown of main study activities
Chronogram included
Functions of researchers described
Mention of institutions involved
Clear budget breakdown
Implications
Generalisation of expected results considered
Applicability to the field of health stated

In addition, general study data (year of submission, dossier number, title, duration of study, field of study and funding) and sociodemographic data relating to the PRs were included.

Data were collected for the period 2002–2004. Methodological characteristics and bibliographic output were only analysed in respect of studies funded from 1996 to 2002. In the case of studies that were not funded, data concerning the grounds for rejection were drawn from reports issued by the study assessors.

Ethical considerations

The study received official authorisation from the director of the HRF. Data were kept confidential throughout: the research team was only given access to personal details in the dossiers on the undertaking to keep all such information secret. HRF reserves the right to use data of the studies funded to publish reports or develop assessment research of his activity.

Data analysis

A descriptive analysis of the study variables was conducted by calculating frequencies and percentages for qualitative variables, and means and standard deviation for continuous variables. Differences between groups were analysed using the Student's t-test for continuous variables and the Chi-squared test for categorical variables. All analyses were performed using the SPSS Statistics System computer software programme, version 12.00.

Results

Trend in the number of studies submitted and funded in the period 1996–2004

A total of 673 nursing studies were submitted during the period 1996–2004, and of these 188 were funded (28%).

The trend in the number of studies submitted by the nursing sector during the study period is depicted in Figure 1. After the peak in 1998, there was a gradual decline, followed by a levelling-off in the last two years.

Characteristics of studies funded in the period 1996–2002: topic areas of research and methodological analysis

In this period, 520 studies were submitted, 22 of which (19 rejected and 3 funded) were excluded from this part of the study for lacking all the requisite data. Finally, 498 dossiers were reviewed, comprising 148 funded and 350 rejected studies.

Funded studies were classified into the following four topic areas: clinical practice (37%); health promotion and disease prevention (27%); professional development (24%) and service-management-related matters (17%).

Most of the studies adopted a quantitative methodology. Only 8% were qualitative studies, 4% of which opted for triangulation of both methodologies. In terms of design, the studies were principally descriptive (49%), followed by clinical trials (17%).



Figure I Trend in the number of nursing studies submitted to the HRF from 1996 to 2004.

Study duration was two years in most cases (61%); only 30% of studies with an experimental design had duration of three years.

Identification of the problem to be researched and the study premises were addressed in 80% of studies. The highest percentages of assessed items corresponded to explanation of the interest attaching to the problem targeted for research (98%) and the pertinence of the study (87%). Only 45% of studies gave reasons for the study approach or design chosen and 45% mentioned the presence of other responses or approaches to the designated research problem.

Assessment of the review of the literature (presence or absence of bibliographic references, number and current status of citations) was acceptable in 93% of cases. Of the total of dossiers that should have addressed the postulation of a conceptual hypothesis (n = 100), 81% did so appropriately. Where an operational hypothesis was postulated (n = 68), this was defined in practically 100% of cases. Principal objectives were defined in 98% and secondary objectives in only 45% of studies. In more than 70% of studies, objectives were set that were specific, measurable and included the study variables.

In 90% of studies, the study design was outlined. Of the 37 studies whose design called for the inclusion of a comparison group, 81% mentioned this expressly in the description of the design.

The definition of study subjects was present in 95% of studies and the process whereby participants were selected was clearly defined in 66%. However, an explanation of sample size and the way losses were to be handled appeared in the lowest percentages of cases. Only 32% of studies set forth the ethical-legal considerations.

In general, the percentage of studies containing a definition of the study variables and the measuring instruments was very high. In all, 43% reported on measurement of quality control and close on 50% made express mention of the data-control and handling procedure. In 69 studies, scales or questionnaires were used for datacollection purposes, with only 10% of these being classifiable as specific to nursing.

With reference to the techniques used to analyse the results, 80% of studies described the plan of analysis and around 45% considered the calculation of the precision of the results and the presence of biases. Generalisation of the results and their applicability to the field of health was considered in approximately 70% and 90% of cases, respectively.

Characteristics of studies rejected in the period 1996-2004

Listed in Table 2 are the grounds for refusal of funding. Attention should be drawn, at a conceptual level, to incorrect drafting of the hypothesis in 23% of cases and, at a methodological level, to the unsuitability of the design to respond to the research topic in 68%. Another ground warranting mention here was the research team's lack of experience (41%).

Funds

The average financing amount of the 110 projects conceded was of $9.407, 19\varepsilon$. The projects applying for the highest budget are the assigned for accomplishing systematic reviews (Table 3).

Of the total of financed projects, 11 were granted with scholarship holders. It is striking that of the total of the 18 projects with clinical trial design, none had scholarship holders.

Reason for refusal	N (%)
Unsuitable design	237 (68)
Weakness of research team	143 (41)
Excessive budget	91 (26)
Vague hypothesis	79 (23)
Numerous difficulties	72 (21)
Not relevant	52 (15)
Inappropriate sample size	46 (33)
Not novel	45 (13)
Inappropriate plan	44 (13)
Substandard analysis	27 (8)
Lack of budget allocation	16 (5)
Dubious ethics	(3)
Cancelled	

Table 2 Grounds for refusal of funding

Cancelled, cancelled studies refer to those which, owing to the lack of some last-minute bureaucratic formality, were never assessed.

Table 3	Funds	conceded	(mean	and SD)) per	study	design	type
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Funds conceded (€)				
Design	Mean	SD	Frequency	
Case-control	6.146,55	4.038,43	7	
Qualitative	7.572,27	4.772,16	8	
Quasi-experimental	11.971,96	10.801,89	10	
Descriptive	17.449,19	9.212,48	54	
Clinical trial	10.758,41	9.387,08	18	
Systematic review	29.299,34	22.926,76	3	
Scale validation	6.259,54	415.786	6	
Quasi-quantitative	15.069,57	7.017,95	4	
Total	9.407,19	8.738,89	110	

Characteristics of the PRs of studies submitted in the period 1996–2004

Of the 498 PRs, 437 (88%) were registered nurses holding a university nursing diploma (diplomatura universitaria de enfermería - DUE) as their first qualification, followed by 12% who were medical graduates.

There were 358 women (72%), mean age 41 years (SD: 6.63, range: 25–58). Of the 437 university nursing-diploma holders, 88 had a second university qualification or official specialisation, and of these, 13 had completed their doctoral studies. With respect to the PRs' scope of work, 38.9% were engaged in practical nursing care, followed by those occupying management posts (Table 4).

Bibliographic output of studies funded in the period 1996-2000

At the conclusion of our study (2004), none of the studies funded in 2001 and 2002 had produced publications. Studies funded from 2001 onwards would be assumed to end in 2003 or thereafter, which might justify the absence of publication of results.

We reviewed the presence of publications generated by the 86 studies funded from 1996 to 2000. Of these, 50 (58%) had published their results, with a total of 73 publications. Table 5 shows the distribution of funded studies by topic area and number of papers published. It should be noted that studies addressing topics related to professional development areas (n = 16) published a larger number of papers (total = 19) than those related to other areas. Of the total of studies that focused on health promotion, only 15 (54%) had published results, with a total of 24 papers.

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		Total N = 498	Accepted $n = 148$	Rejected $n = 350$	Statistical significance
Age	Mean (SD)	41 (6.63)	41 (6.45)	41 (6.72)	F = 0.742 P = 0.732
		N (%)	n (%)	n (%)	
Sex	Male	140 (28)	30 (20)	110 (31)	$\chi^2 = 6.408$
	Female	358 (72)	118 (80)	224 (69)	P = 0.011
Principal researcher's	University nursing diploma	437 (88)	135 (91)	302 (86)	$\chi^2 = 3.508$ P = 0.173
qualification	Physician	53 (10)	10 (7)	43 (12)	
	Other	8 (2)	3 (2)	5(1)	
Principal	Yes	118 (23)	32 (22)	86 (25)	$\chi^2 = 0.501$
researcher with second qualification	No	380 (76)	116 (78)	264 (75)́	P = 0.564
Work post	Management ^a	148 (30)	46 (31)	102 (29)	
	Teaching ^a	79 (16)	29 (20)	50 (14)	
	Clinical care ^a	193 (39)	50 (34)	143 (41)	
	Research ^a	26 (5)	16 (II)	10 (3)	
	Medical practitioner	48 (10)	7 (4)	41 (12)	
	Other	2 (0.5)		2(1)	

 Table 4
 Chart summarising the characteristics of the principal study researcher

^aNursing in Management, Teaching, Clinical care and Research.

Martín-Arribas et al. Analysis of nursing research studies and the scientific output

Topic area	Studies funded (1009–2000)	Studies that yielded publications (until 2002)	No. of publications
Management	16	9	11
Clinical practice	26	13	19
Professional development	16	13	19
Health promotion	28	15	24
Total	86	50	73

Table 5 Distribution of studies funded in the period 1996-2000, which yielded publications

Table 6 gives a breakdown of the distribution of publications by journal and author (discipline). Of the 73 articles, 48 (66%) had been published in nursing and 25 (34%) in multidisciplinary journals. The first-mentioned author was a nursing professional in 96% of articles published in nursing journals vs 68% in the case of articles published in multidisciplinary journals. Five articles had been published in English-language journals, two of these in nursing journals with a nurse as the first author, and three in multidisciplinary journals, with a physician as the first author in two cases. In all, 12% of articles had been published in journals not indexed on international databases.

Discussion

Research output in nursing, in terms of studies submitted to the HRF, has been slowly growing, which represents a positive response to the efforts made to boost research and reflects the growing interest among nurses in developing research in their field of competence.

This increase in the number of studies submitted has not, as yet, translated as a significant increase in the number of studies funded. Possibly, this phenomenon may be the reflection of the incorporation of young researchers and weakness in the curricula of the teams applying for study grants, which constitutes one of the main grounds for refusal of funding. As mentioned above, the development of a mass of nurse researchers is still very much in the initial stages; the incorporation of nursing into doctoral programmes directly pertaining to the discipline is expected to increase the number and quality of research studies (Pardo, et al., 2001; Traynor and Rafferty, 1999; Smith, 2007).

The number of studies submitted for funding has been quite homogeneous along this period, except for the peak time in 1998. Probably, one of the reasons of this peak was due to the delay of the call for proposals of that year. That also could justify the low number of projects in 1999. On the other hand, after 2 years INVESTEN identified new researchers, which presented their projects for funding.

Despite these limitations, it is important to note that 87% of PRs hold university nursing diplomas, and only 10% of studies are led by medical graduates or other professionals.

As regards the topic areas that were funded, there has been an important qualitative change in the last 10 years. Despite the difficulties entailed in comparing the results to those of previous studies (Estrada Lorenzo, et al., 2000) (in view of differences in classification of topic areas), the number of studies funded in the field of clinical and health-promotion (64% of funded studies) increased notably as against those in the professional development and management field. This topic

Journals	Total	Nurses	Other disciplines	Spanish impact factor ^a
Nursing journals	Ν	n (%)	n (%)	
Bol Inf Asoc Andaluza Matronas	I	l I		
Enfermería Clínica	19	19		0.208
Enfermería Intensiva	3	3		0.173
Enfermería Científica	5	5		0.147
Enfermería Nefrológica	I	I		
Index de Enfermería	2	2		0.279
International journal of nursing	I	I.		
terminologies and classifications ^b				
Journal of advanced nursing ^b	I	I.		
Metas de Enfermería	5	4	I	
Revista Rol de Enfermería	10	9	9	0.141
Subtotal (%)	48	46 (96)	2 (4)	
Multidisciplinary journals	Ν	n	n	
Atención Primaria	11	11		
Calidad Asistencial	2	2		
Centro de Salud	I	0	I	
Cuidado y Salud	I	l.		
EDTNA/ERCA journal ^b	I	I.		
El profesional de la Información	I		I	
European journal of psychiatry ^b	I		I	
Gaceta Sanitaria	2		2	
Medicina Clínica	I		I	
Rev Española de Salud Pública	I		I	
Salud Pública	I	l.		
Support care cancer ^b	I		I	
Trabajo Social y Salud	I	I		
Subtotal (%)	25	17 (68)	8 (32)	
Total (%)	73 (100)	63 (86)	10 (14)	

Table 6	Distribution of publications according to journal title and principal author and/or
researche	r

^aSource: Instituto de Historia de la Ciencia y Documentación López Piñeiro (López Piñeiro Institute of History of Science and Documentation).

^bPublication in English.

preference is in line with the commitment to clinical research displayed by the HRF's funding criteria (Cabrero García and Richart Martínez, 2003), and is, moreover, reflected in the professional dedication of PRs, i.e., 44% work in the field of nursing care, and of these, almost 50% do so in primary care. We feel that this trend in the direction of clinical research marks an advance towards the goal of catering better to the population's health needs, though without sacrificing endogenous research, as envisaged by Traynor and Rafferty (1999).

Insofar as methodological analysis of the studies is concerned, it has to be said that there was little foundation for choosing the model used to address the hypotheses and a weak presence of theoretical frameworks specific to nursing. The designs used were mainly descriptive, results that can be assumed to be in line with other studies (Gómez de la Cámara, 1997, Aibar Remón, et al., 1999) and that could be justified by the traditionally scant scientific output in this discipline. Descriptive studies are a strategy for in-depth examination of the reality of nursing care and ought to give rise to hypotheses that stimulate the creation of new research topics. Other reasons would have to be sought in the level of training of nursing researchers (Cueto Espinar, et al., 1996).

A further notable feature is the incorporation of qualitative designs from 1999, with an increase in 2002, indicating the mounting interest in this methodology.

Nowadays, there is not enough information about funding for the nursing research to a regional level or by public or private institutions. A national database for nursing research does not exist. In general, as principal investigator, it is required to hold an MSc degree, to apply for funds. However, the academic requirement for applying for funds to the Ministry of Health and Consumer Affairs and to the Health Research Funding Agency (HRF) is a BSc degree. At the specific field of nursing research, HRF has followed the strategy designed by the Ministry of Health, which started a series of initiatives to incorporate nurses into health research in 1987. Project funding is awarded through open competition after a peer review evaluation by the HRF. The Ministry of Health and Consumer Affairs budget for nursing research projects for the period 1996–2002 was $\in 1.2$ m.

During the analyzed period, the projects on nursing research represent a 4, 7% of the total projects applying for financial to the HRF. However, the financing amount is lower than the assigned to other health research professionals. If we take as reference the year 2000, the average cost for financed project for HRF was 39.491, but the average budget for nursing research projects was of 6.693.

Since 2002, each region has complete authority on health issues. Big differences in budgets and research funding could be seen among regions, since responsibility for health was devolved. For instance, the Basque Foundation for Health Innovation and Research Applications for funding research from the Basque Government Health Department are invited as nursing professionals, but no specific sums of money are assigned for nursing research. In Catalonia, the Strategy and Co-ordination Directorate's funds for nursing research amounts roughly to 430,000 per year. Holding an MSc degree is an essential requirement in order to be qualified for research funding in five of the 17 Spanish regions. In the other 12 regions, principal Investigators are required to hold a BSc.

Nursing Research in Europe Scoping Report (2005) shows that the huge variation in policies on funding of nursing research and that research on nursing issues and the development of nurse researchers remains the domain of relatively few European countries. The report identifies a range of problems that nurse researchers are encountering across Europe. The problems affect European nurses at different levels and in different ways depending on the research traditions within individual countries. The efforts made by the European Federation of Nursing, the Workgroup of European Nurse Researchers, Carlos III Institute of Health Carlos III and other government initiatives to develop the nursing research are producing results (Smith, et al., 2004).

With respect to the repercussions had by funded research in the form of publications, only 58% of studies published their results within at least 2 years of having ended.

Despite the fact that there was no increase in the funding of studies in the field of professional development, the number of publications was nevertheless proportionately higher than in other fields, which goes to confirm the trend in previous studies (REUNI, 1996). This can be explained by a greater presence of nursing teachers as PRs and may be highlighting the fact that nurses involved in clinical practice encounter greater difficulties (training, availability of resources, etc.), when it comes to publishing their results.

Dissemination takes place in journals of little impact and there are few publications in English-language journals. Consequently, scientific nursing output is high invisible (Gálvez Toro, et al., 2005). Nonetheless, dissemination in Spain and in the ambit of Spanish-speaking countries is widespread, as is indeed shown by the studies conducted in terms of number of citations and calculation of the Spanish impact index (Instituto de Historia de la Ciencia and Documentación López Piñero, 2007).

Moreover, there are growing interests for the promotion of evidence-based nursing and the development of clinical guidelines based on it. This is one of the current themes of the Investen-Unit, supported by the Ministry of Health through the collaboration with the Joanna Briggs Institute.

Limitations

This study affords a partial insight into real nursing research in Spain since it disregards other coexisting funding sources (Autonomous Regional Authorities, pharmaceutical laboratories, professional journals and associations) (Cabrero García and Richart Martínez, 2003), as well as unfunded or self-funded studies, whose characteristics must also be explored.

Mention should be made of the difficulties posed by the HRF's proposed topic area classifications when it comes to making searches of nursing studies. This is a generalised problem when one endeavours to index nursing-care research proposals within the topic-area classifications defined by funding agencies.

Conclusions

Studies, such as ours, are useful for monitoring trends in scientific output.

The results of the study undertaken here have enabled us to detect needs and put forward proposals for improvement, which can be summarised in the following points:

- the need to continue teaching research methodology in advanced designs;
- the advisability of setting up nursing research networks made up of solid research teams that incorporate young researchers and
- the allocation of resources to improve dissemination of research results.

All this will serve to achieving the ultimate goal, namely, that of generating evidence which can be incorporated into nursing practice.

Key points

- This study analyses scientific nursing output based on research proposals submitted to the HRF for public funding and the publications that ensued.
- It identifies the need to continue with efforts aimed at training in research methodology and laying the foundations for research within a nursing context.

• It identifies limitations in the dissemination of research results. The number of articles must be increased and an effort made to publish in journals indexed in international databases.

References

Aibar Remón, C, Rabanaque, MJ, Alvarez-Dardet, C, Nolasco, A, Moncho, J, Gascón, E (1999) Evolución de los diseños epidemiológicos de la investigación clínica en España (1975–1994). Rev Esp Salud Pública 73: 445– 453.

Cabrero García, J, Richart Martínez, M (1991) Necesidad de la formación en metodología de la investigación en Enfermería, en el currículo de la diplomatura universitaria (1^a parte). Enferm Cient **116**: 44–48.

Cabrero García, J, Richart Martínez, M (2003) Esbozo histórico de la investigación en enfermería internacional. In: Investigar en Enfermería. Concepto y Estado Actual de la Investigación en Enfermería. Universidad de Alicante. Servicio de Publicaciones, pp. 33–48.

Cueto Espinar, A, Álvarez Solar, M, López González, ML (1996) Análisis temático de la investigación en atención primaria (1988–1992). Aten Primaria 18: 297–303.

Díaz Benavente, M, Martín Leal, C, Jiménez Aguado, JM, Maya Rincón, B (2004) Producción científica de los profesionales de enfermería en un hospital de tercer nivel. Enferm Clín 14: 263–268.

Estrada Lorenzo, JM, Blanco Pérez, A, Amescua Martínez, M, Moreno Casbas, MT, Mariño Gutiérrez, L, Grupo, BDIE (2000) Investigación sobre enfermería financiada por el Fondo de Investigación Sanitaria (1990–2000). Segunda Reunión sobre Investigación Cualitativa en Salud. Granada.

Fuentelsaz Gallego, C, Ramalle Gomara, E ; Grupo Investen-isciii (1999) Promoción de la investigación en enfermería desde el Instituto de Salud Carlos III: grupo INVESTEN-ISCIII. Enferm Clín 9: 29–33.

Gálvez Toro, A, López Medina, IM, Sánchez Criado, V, Poyatos Huertas, E (2001) Evaluación de la Actividad Científica de la Enfermería Española. Impacto y aislamiento en el año 2000. Index Enferm (Gran) **34**: 54– 64.

Gálvez Toro, A, Amescua, M, Hueso Montero, C (2005) CUIDEN Citación y valoración de las publicaciones científicas enfermeras. Index Enferm. Available at: http://www.index-f.com/index-enfermeria/51/7090. php (accessed 28.04.06).

Gómez de la Cámara, A (1997) Análisis de la estructura metodológica de las propuestas de investigación presentadas al Fondo de Investigación Sanitaria. Mel Clín 109: 445–449.

González Gil, T, Martínez Gimeno, L, Luengo González, R (2006) Antropología de los cuidados en el ámbito académico de la enfermería en España. Texto Contexto Enferm 15: 155–161. Instituto de Historia de la Ciencia y Documentación López Piñeiro (2007) Factor de Impacto potencial de las revistas médicas españolas. Available at: http://ime.uv. es/imecitas/factor_impacto.shtml (accessed 15.01.07).

Moreno-Casbas, T, Martín-Arribas, C, Orts-Cortés, I, Comet-Cortés, P (2001) Identification of priorities for nursing research in Spain: a Delphi study. J Adv Nurs 35: 857–863.

Nursing Research in Europe Scoping Report (2005) Unidad de coordinación y desarrollo de la Investigación en Enfermería (Investén-ISCIII). Instituto de Salud Carlos III. Madrid. Available at: http://www.isciii.es/htdocs/ pdf/investen_NursingResearchInEurope.pdf (accessed 5.06.06).

Pardo, C, Reolid, M, Delicado, M-V, Mallebrera, E, García-Meseguer, M-J (2001) Nursing research in Spain: bibliometrics of references of research papers in the decade 1985–1994. J Adv Nurs 35: 933–943.

Prieto Carles, C, Gómez-Gerique, J, Gutiérrez Millet, V, Veiga de Cabo, J, Sanz Martul, F, Mendoza Hernández, JL (2000) Análisis del proceso evaluador de los proyectos de investigación en el Fondo de Investigación Sanitaria. Med Clín 115: 418–422.

Rafferty, AM, Lewison, G (2001) Measuring the outputs of nursing R&D: a third working paper. London: Centre for Policy in Nursing Research, London School of Hygiene & Tropical Medicine.

REUNI (seminario) (1996) Investigación clínica de enfermería en la red de unidades de investigación Ministerio de Sanidad y Consumo. Albacete 1996. Libro de Ponencias. Investigación clínica de enfermería. Madrid: Instituto de Salud Carlos III, pp. 125–146.

Richart Martínez, M (1999) Estado de la producción científica de la Enfermería Española (I). Index Enferm (Gran) 27: 19–24.

Richart Martínez, M (2000) Estado de la producción científica de la Enfermería Española (II). Index Enferm (Gran) 28–29: 15–18.

Smith, LN (2007) Nursing research in Europe: a progress report. J Res Nurs 12: 293–300.

Smith, LN, Ehrenfeld, M, Pelkonen, M, Fagermoen, MS, Wagner, L (2004) EU funding and the Work Group of European Nurse Researchers (WENR): Lessons Learned. Nurs Times Res 9: 219–221.

Traynor, M, Rafferty, AM (1999) Nursing and the research assessment exercise: past, present and future. J Adv Nurs 30: 186–192.

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