

MeSH

:

The Study on Subject Words of Korean Medical Informatics by Expanded MeSH : Based on Journal of Korean Society of Medical Informatics

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Abstract

In order to maintain a uniformity and consistency in terminology for constructing and searching a literature database, controlled vocabularies should be used as key words in the journal. While most of medical academic societies have recommended MeSH be used as key words, only 23 societies published terminology or index books. We reviewed 172 journals of JKOSMI published during the period from 1995 to 2000, using MeSH browser. Only 11.72% of key words were completely consistent with MeSH terminology and 25.56% were partially consistent. Purposes of this study are to examine a current status of using MeSH in the Journal of Korean Society of Medical Informatics(JKOSMI) and to develop a Korean terminology book on medical informatics. (*Journal of Korean Society of Medical Informatics 8-4,91~98, 2002*)

Keyword : MeSH, Terminology, Classification, Hierarchically Controlled Structure, Medical Informatics, JKOSMI

MeSH

I.
 (Medical Subject Headings, MeSH)
 (National Library of Medicine
 NLM)
 (hierarchically controled)
 MeSH
 19,000 80,000 additional
 heading(chemical)
 가 가 ^{1,2)}
 가 가
 가 가

가
 1995 2000
 (Journal of Korean Society of Medical
 Informatics, JKOSMI)
 (random sampling)
 (bias) 가
 (keywords) MeSH
 JKOSMI 가
 가 MeSH 15

II.

가
 (evidence based medicine)
 가 ³⁾
 가
 MEDLINE MeSH
 가
 MeSH ^{4,5)}
 가
 MeSH MeSH
 MeSH ⁶⁾
 가
 (1998) 1992 1997 가
 가 () 60
 가 가 2 가
 가
 17.9% ⁷⁾

1.
 JKOSMI 1995 (1 1) 2000 (6
 4) 172
 JKOSMI MeSH
 2.
 MeSH
 JKOSMI
 (http://
 www.richis.org, RICH)
 2002 MeSH PubMed(http://www.
 ncbi.nlm.nih.gov/PubMed/)
 3.

JKOSMI
 , 1995 () 2000 6
 JKOSMI 가
 가 MeSH
 MeSH browser
 MeSH
 1
 2

가
 3 JKOSMI
 , 1995 7
 가 1999 46 , 2000 42
 , 1995
 가 1
 2000 가 1
 153 546 , 3.57 가
 3.25 5.00

Table 1. Description of consistency code

	1	
	2-1	1 Entry term
	2-2	2 /
	2-3	4 Subheadings
	2-4	4 ()
	2-5	5
	3	()

Table 2. Comparison of author keywords and MeSH term

	MeSH						Y	N
		2-1	2-2	2-3	2-4	2-5		
Web	Internet							
Internet	Internet	Y						N
Laboratory Information System	Clinical Laboratory Information Systems		Y					N
Hospital Information System	Hospital Information Systems			Y				N

가
 MEDLINE
 MeSH 10 가

Table 3. The number of papers and author keywords in JKOSMI by year

1995	1	1	7	1	6	5	5.00
1996	2	1	8	8	0	26	3.25
1996	2	2	7	5	2	17	3.40
1997	3	1	8	7	1	22	3.14
1997	3	2	18	16	2	56	3.50
1998	4	1	16	16	0	60	3.75
1998	4	2	20	20	0	65	3.25
1999	5	1	15	15	0	55	3.67
1999	5	2	10	7	3	23	3.29
1999	5	3	21	17	4	61	3.59
2000	6	1	7	7	0	25	3.57
2000	6	2	8	8	0	32	4.00
2000	6	3	10	10	0	35	3.50
2000	6	4	17	16	1	64	4.00
			172	153	19	546	3.57

III.

1. JKOSMI

JKOSMI 1995 (1 1) 2000
 (6 4) 172
 153 가 19

2. MeSH

4

MeSH

가 MeSH
 11.72%
 , / (4.03%), entry term

(10.07%), (0.73%)
 25.56% Subheading 가
 가
 JKOSMI subheading
 5

Table 4. Frequency of consistency between author keywords and MeSH term in JKOSMI

			%	
	1	64	11.72	
	2-1	55	10.07	1 Entry term
	2-2	22	4.03	2 /
	2-3	168	30.77	4 ()
	2-5	4	0.73	5
		249	45.60	
	3	233	42.67	
	-	546	100.00	

Table 5. The type of consistency and subheadings used in JKOSMI

Subheading			
classification	2-3	()	1
classification	3		3
diagnosis	1		1
drug therapy	2-2	/	1
education	1		1
methods	3		1
nursing	2-3	()	2
rehabilitation	2-3	()	1
			11

6 JKOSMI (4)
 가
 “ Internet ” 2.28%
 “ Hospital
 Information System ”, “ Medical Record ”
 MeSH JKOSMI
 “ Standardization ”
 MeSH
 MeSH “ Reference Standards ”

entry term
 Neural Network, Neural
 Network MeSH entry term
 MeSH Neural Network -
 (Computer) 가
 MeSH (entry term) Data
 Mining, Security, Health Information
 JKOSMI MeSH

MeSH
 MeSH browser
 가
 7 JKOSMI 가 MeSH
 (5) MeSH 가
 “ Internet ”
 가 가
 가 67 (12.27%)
 MeSH 5 가 188
 (34.43%) 가
 MeSH
 가

Table 6. Frequency of selected keywords in JKOSMI over 4 times

		%	%	MeSH
Internet	13	2.28	2.28	Yes
Hospital Information System	8	1.47	3.85	Entry Term
Neural Network	7	1.28	5.13	
Standardization	7	1.28	6.41	Entry Term
Telemedicine	6	1.10	7.51	Yes
Multimedia	5	0.92	8.42	Yes
Data Mining	5	0.92	9.34	
Medical Record	4	0.73	10.07	Entry Term
Security	4	0.73	10.81	
Health Information	4	0.73	11.54	
Nursing Diagnosis	4	0.73	12.27	Yes
	67	12.27	24.54	
All others(4)	479	87.73	16.07	

Table 7. List of MeSH term appeared in JKOSMI over 5 times

MeSH		%	%
Internet	23	4.21	0.77
Reference Standards	19	3.48	4.25
Hospital Information Systems	12	2.20	6.45
Computer Communication Networks	12	2.20	8.65
Databases	11	2.01	10.66
Equipment and Supplies	11	2.01	12.68
Medical Informatics	11	2.01	14.69
Neural Networks (Computer)	9	1.65	16.34
Computer-Assisted Instruction	8	1.47	17.80
Multimedia	8	1.47	19.27
Hospital Communication Systems	7	1.28	20.55
Information Systems	7	1.28	21.83
Telemedicine	7	1.28	23.12
Nursing Diagnosis	6	1.10	24.21
Nursing Records	6	1.10	25.31
Information Storage and Retrieval	6	1.10	26.41
Medical Records Systems, Computerized	5	0.92	27.33
Diagnostic Imaging	5	0.92	28.24
Mining	5	0.92	29.16
Computer Security	5	0.92	30.08
Automatic Data Processing	5	0.92	30.99
	188	34.43	65.42
All others(5)	358	65.57	65.57

Table 8. Distribution of MeSH term used in JKOSMI with MeSH category

MeSH 15			
1	A. Anatomy	10	9
2	B. Organisms	4	14
3	C. Diseases	22	8
4	D. Chemicals and Drugs	9	10
5	E. Analytical, Diagnostic and Therapeutic Techniques and Equipment	114	3
6	F. Psychiatry and Psychology	39	6
7	G. Biological Sciences	85	4
8	H. Physical Sciences	67	5
9	I. Anthropology, Education, Sociology and Social Phenomena	37	7
10	J. Technology and Food and Beverages	9	11
11	K. Humanities	7	13
12	L. Information Science	267	1
13	M. Persons	6	12
14	N. Health Care	265	2
15	Z Geographical Locations	1	15
		942	

3

(1) JKOSMI MeSH

8 JKOSMI MeSH 가 MeSH 15

L.Information Science가 267 , 28.34% 가

N.Health Care 265 , 28.13% L.Information Science 가

E.Analytical, Diagnostic and Therapeutic Techniques and Equipment 114 , 12.10%

8

MeSH

MeSH

(2) MeSH L. Information Science

9 MeSH L.Information Science

MeSH

8 JKOSMI 가

MeSH NHealth Care가

가 E. Analytical, Diagnostic and Therapeutic Techniques and Equipment

9

MeSH

(hierarchically controlled tree structure) (explosion)

가

‘ Complete consistency ’

가 가 25

Table 9. List of possible MeSH headings that were not included in 'Information Science' category

Complete consistency		Narrower			Broader								
MeSH Heading	Tree Number	MeSH Heading	Tree Number		MeSH Heading	Tree Number							
National Health Planning Information Center	101.409.275.300.650.790.525	Government	101.409	30	Social Sciences	101	376						
Access to Information	101.880.604.473.352.500.500	Sociology	101.880	201									
Informed Consent	101.880.604.473.650.718												
Informed Consent	101.880.604.583.427												
Drug Information Services	N02.421.668.320	Health Services	N02.421	228	Health Care Facilities, Manpower, and Services	N02	433						
Clinical Pharmacy Information Systems	N02.421.668.320.200												
National Health Planning Information Center	N03.540.427.300.650.790.525	Organizations	N03.540	74	Health Care Economics and Organizations	N03	345						
Informed Consent	N03.706.437.650.312	Social Control, Formal	N03.706	82									
Informed Consent	N03.706.535.489												
Hospital Information Systems	N04.452.442.452	Organization and Administration	N04.452	221	Health Services Administration	N04	297						
Clinical Pharmacy Information Systems	N04.452.442.452.200												
Operating Room Information Systems	N04.452.442.452.600												
Radiology Information Systems	N04.452.442.452.760												
Management Information Systems	N04.452.515												
Ambulatory Care Information Systems	N04.452.515.050												
Clinical Laboratory Information Systems	N04.452.515.080												
Clinical Pharmacy Information Systems	N04.452.515.095												
Hospital Information Systems	N04.452.515.360												
Ambulatory Care Information Systems	N04.452.515.360.050												
Clinical Laboratory Information Systems	N04.452.515.360.110												
Clinical Pharmacy Information Systems	N04.452.515.360.250												
Operating Room Information Systems	N04.452.515.360.555												
Radiology Information Systems	N04.452.515.360.750												
Personnel Staffing and Scheduling Information Systems	N04.452.515.800												
Radiology Information Systems	N04.452.515.825												
	25								836		1,451		

‘ Narrower ’ (Tree Number : N02.421)
 ‘ Broader ’ (Tree Number : N02)

(3) MeSH

L.Information Science MeSH
 가 (precision)
 (recall) 가
 9 L.Information Science Inform
 MeSH ‘ (complete consistency) ’
 MeSH Broader
 Narrower 25 21 N.Health Care 4
 I.Anthropology, Education, Sociology and Social Phenomena
 8 N.Health Care
 JKOSMI MeSH 1
 MeSH 28.13%(2) 3.57
 L Information Science 가
 I.Anthropology, Education, Sociology and Social Phenomena 3.9%(7)
 N.Health Care
 I.Anthropology, Education, Sociology and Social Phenomena
 (explosion)
 (N.Health Care) ‘ Broader ’
 (I.Anthropology, Education, Sociology and Social Phenomena) ‘ Narrower ’

(2002 MeSH).
 15 MeSH “ L.Information Science ”
 “ L.Information Science ”
 MeSH 370 , entry term 1,921
 , MeSH L.Information Science

JKOSMI MeSH
 가 MeSH 1,306 , entry term
 7,892
 가 MeSH
 가

IV.

JKOSMI 1995 (1 1) 2000
 (6 4) 172

가 MeSH
 2002 MeSH “
 ”
 JKOSMI 1995 7
 가 1999 46 , 2000 42
 6
 1995 1 가
 2000 가
 1
 가 3.57
 MeSH 10 MEDLINE
 가
 MeSH browser MeSH
 가 MeSH
 11.72%

25.56% JKOSMI
 MeSH

가
 MeSH
 MeSH
 JKOSMI MeSH

MeSH

11,489

DB

가

MeSH

23

MeSH

가

MeSH

가

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