

Trend Analysis of the Grading System

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Background

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When the clinicians or healthcare professionals are to **make decisions** in developing CPGs, they may have to judge the **quality of evidence** and **reliability of recommendations**.

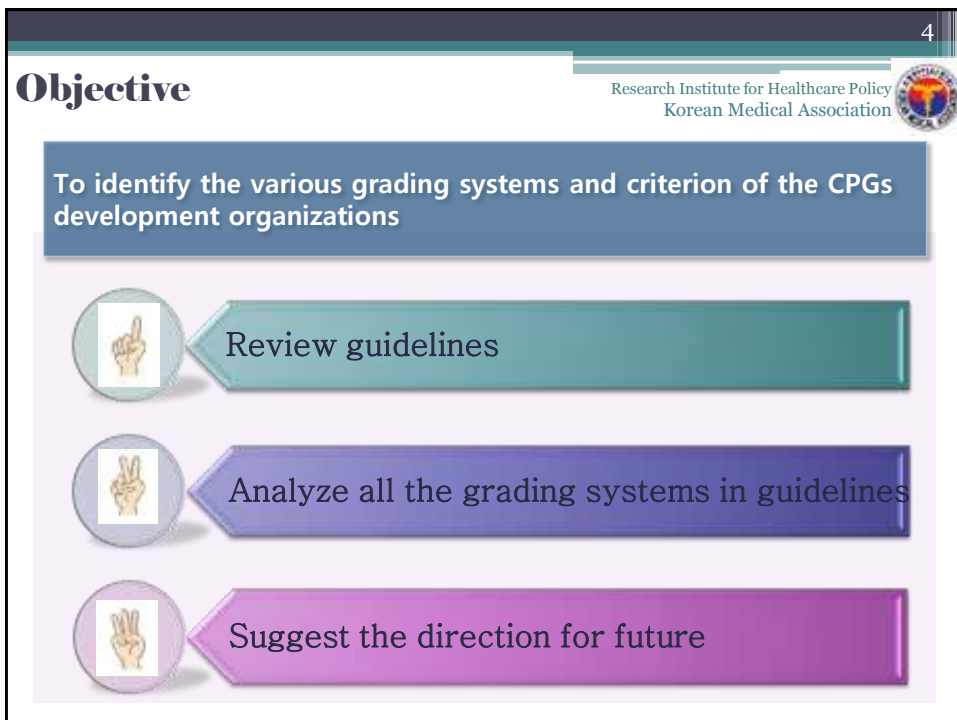
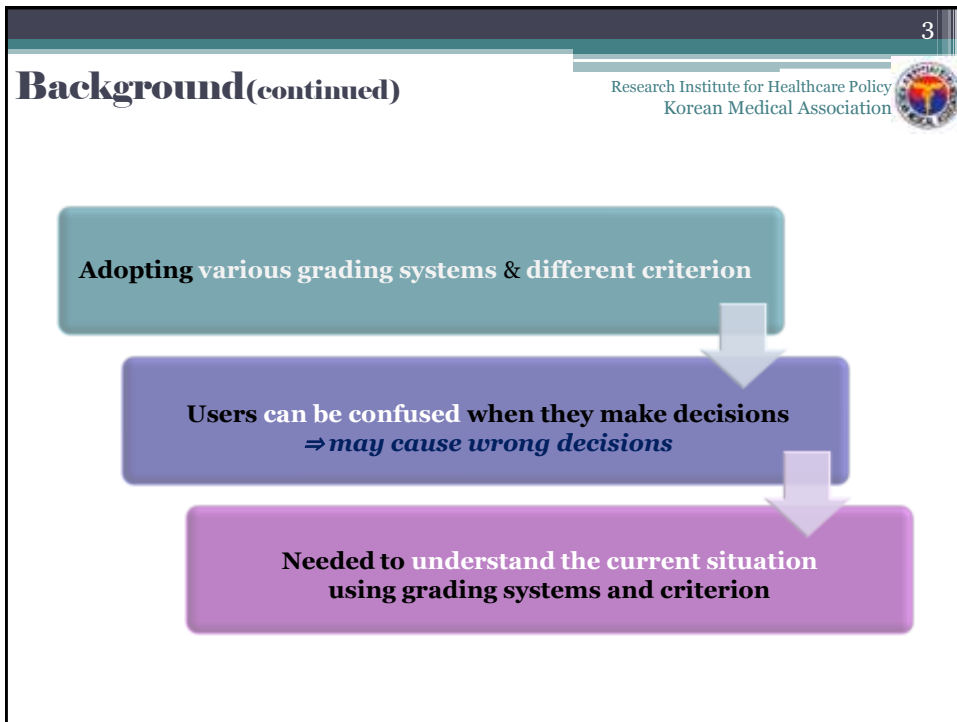
In this point, 'Level of evidence' and 'Grade of recommendation' may play a key role

[Definition]

- Level of evidence
 - extent to which one can be confident that an estimate of effect is correct
- Grade of recommendation
 - extent to which one can be confident that adherence to the recommendation will do more good than harm

Reference : Guyatt GH, Oxman AD, Kunz R, Falck-Ytter Y, Vist GE, Liberati A, Schünemann HJ; GRADE Working Group. Going from evidence to recommendations. *BMJ* 2008;336:1049-1051.

The step of **grading evidence and recommendation** is **very important**
in development of Clinical Practice Guidelines(CPGs)

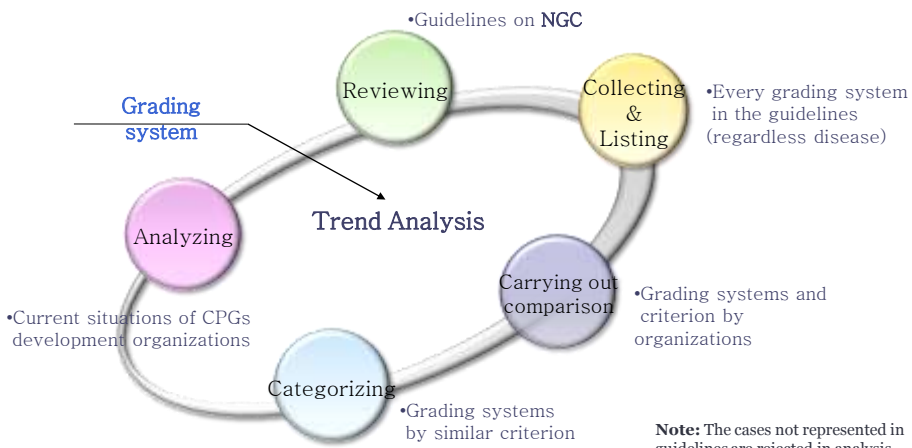


Method

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Using guidelines in NGC, each grading system and criterion were analyzed by organizations



Method(continued)

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•NGC(National Guideline Clearinghouse) : www.guideline.gov
 - guideline database that are running by US AHRQ
 *AHRQ(Agency of Healthcare Research and Quality)



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Method(continued)

- Search DB : NGC(National Guideline Clearinghouse)
- Search Time : Feb, 21 2011

The screenshot shows the National Guideline Clearinghouse search results for 'Diagnosis and Assessment of Alzheimer's Disease and Related Dementias'. The page lists three guidelines being compared: 1. European Federation of Neurologic Societies (EPNS), 2. Scottish Intercollegiate Guidelines Network (SIGN), and 3. Singapore Ministry of Health (SMOH). A red box highlights the 'Strength of Evidence and Recommendation Grading Schemes' tab.

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Result

101 guidelines are collected

Level of evidence

- 66 guidelines have evidence grading systems
- Criterion : study design, study quality, limitations, strength of evidence etc.

Grade of recommendation

- 57 guidelines have recommendation grading systems
- Criterion : level/quality of evidence, strength of recommendations, study quality, balance between benefit and harm etc.

Categorizing Analyzing

Grading systems were classified into **4 Types** each

Result(continued)

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➤ Classification of Level of evidence : 66guidelines, 32organizations

	Type I	Type II	Type III	Type IV
Criteria	•Study design •Study quality	•Study design	•Study design •Limitation	•Strength of study design
Guidelines(%)	23(34.8)	30(45.5)	10(15.2)	3(4.5)
Organizations(%)	11(34.4)	12(37.5)	7(21.9)	2(6.2)
	<ul style="list-style-type: none"> •SIGN •NCCC/NICE •NCCPC/NICE •NCCWCH/NICE •SMOH •ANC/NZGG •AAOS •MDPH •HFSA •PHS •ACP 	<ul style="list-style-type: none"> •BASHH •RCOG •RNAO •HIGN •NCCMH/NICE •VA/DoD •SOGC •UMHS •ACOG •EFNS •ESC •WOCN 	<ul style="list-style-type: none"> •AAP •GOLD •ACCP •ASGA •Am Diabetes Assoc •ACCP/AACVPR •AAACE 	<ul style="list-style-type: none"> •ADA •ACR

Note : All the name of organizations in every table are abbreviations. Details are in AHRQ/NGC. <http://www.guideline.gov/>

Result(continued)

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➤ Comparison of the level of evidence grading system : Type I

Criteria	High quality RCT	Well conducted RCT	RCT with high risk of bias	High quality case-control/cohort study	Low quality RCT or cohort study	Outcomes research (ecological studies)	Systematic review of case-control study	Well conducted case-control/cohort study	Case-control/cohort study with high risk of bias	Non-analytic studies (case series/ case report)	Expert opinion
Organizations											
SIGN	1++	1+	1-	2++				2+	2-	3	4
NCCC/NICE	1++	1+	1-	2++				2+	2-	3	4
NCCPC/NICE	1++	1+	1-	2++				2+	2-	3	4
NCCWCH/NICE	1++	1+	1-	2++				2+	2-	3	4
SMOH	1++	1+	1-	2++				2+	2-	3	4
ACN/NZGG	I	II	III-1	III-2				III-3		IV	
AAOS	Level I	Level II		Level III						Level IV	Level V
MDPH	Category A			Category B						Category C	Category D
HFSA	A			B							C
PHS	A		B								C
ACP	1a	1b	1c	2a	2b	2c	3a	3b		4	5

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➤ Comparison of the level of evidence grading system : Type II

Criteria	Meta-analysis of RCT	At least one RCT	At least one controlled study without randomisation	Quasi-experimental study	Non-experimental descriptive study (case-control study)	Expert committee reports/opinion
BASHH	Ia	Ib	IIa	IIb	III	IV
RCOG	Ia	Ib	IIa	IIb	III	IV
RNAO	Level Ia	Level Ib	Level IIa	Level IIb	Level III	Level IV
HIGN	Level I	Level II	Level III	Level IV	Level V	Level VI
NCCMHNICE	I		IIa	IIb	III	IV
VA/DoD	I		II-1	II-2	II-3	III
SOGC	I		II-1	II-2	II-3	III
UMHS	A		B	C		D
ACOG	I	II-1			II-2	III
EFNS	Class I	Class II				Class III
ESC	A	B				C
WOCN	Level A		Level B			Level C

Result(continued)

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➤ Comparison of the level of evidence grading system : Type III

Criteria	Well-designed RCT	RCT with minor limitation (inconsistent results/methodological flaws)	Overwhelming evidence from observational study/RCT with serious flaws	Observational study (case-control/cohort study)	Expert opinion/case reports	Exceptional situations (validating studies cannot be performed)
AAP	A	B		C	D	X
GOLD	A	B		C	D	
ACCP	A	B	C			
ASGE	A	B	C+	C	D	
Am Diabetes Assoc	A	B	C		E	
ACCP/AACVPR	High (A)	Moderate (B)		Low (C)		
AACE	1	2		3	4	

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Result(continued)

➤ Comparison of the level of evidence grading system : Type IV

Criteria	Studies of strong design	Studies of strong design with minor methodological concerns	Studies of weak design	No reliable evidence/ expert opinion	No evidence
Organizations					
ADA	Grade I	Grade II	Grade III	Grade IV	Grade V
ACR	Category 1	Category 2	Category 3	Category 4	

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Result(continued)

➤ Classification of Grade of recommendation : 57 guidelines, 27 organizations

	Type I	Type II	Type III	Type IV
Criteria	<ul style="list-style-type: none"> •Study design/quality •Level of evidence 	<ul style="list-style-type: none"> •Level of evidence •Strength of recommendations 	<ul style="list-style-type: none"> •Level of evidence 	<ul style="list-style-type: none"> •Level of evidence •Balance between benefit and harm
Guidelines(%)	23(40.4)	15(26.3)	11(19.3)	8(14.0)
Organizations(%)	9(33.4)	8(29.6)	6(22.2)	4(6.2)
	<ul style="list-style-type: none"> •SIGN •NCCWCH/NICE •NCCMH/NICE •SMOH •ANC/NZGG •EFNS •BASHH •MDPH •AACE 	<ul style="list-style-type: none"> •ADA •KPCMI •AAP •VA/DoD •ASGE •HFSA •UMHS •APA 	<ul style="list-style-type: none"> •AAOS •RNAO •SOGC •ACOG •NHFA/CCANZ •TES 	<ul style="list-style-type: none"> •USPSTF •AGA •ESC •CAPO/BSC

Note : All the name of organizations in every table are abbreviations. Details are in AHRQ/NGC. <http://www.guideline.gov/>

Result(continued)

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➤ Comparison of the grade of recommendation grading system : Type I

Organizations	Criteria Evidence from level 1a, directly applicable, consistency results	Evidence from level 2a, directly applicable, consistency results	Evidence from level of 2a, directly applicable, consistency results	Evidence level 3 or 4	Good practice points based on clinical experience	No conclusive level of evidence category
SIGN	Grade A	Grade B	Grade C	Grade D	GPP	
SMOH	A	B	C	D	GPP	
NCCWCHNICE	A	B	C	D	GPP	
ACNMZGG	A	B	C	D	GPP	
NCCMHNICE	A	B		C	GPP	
EFNS	Level A rating	Level B rating	Level C rating		GPP	
MDPH	Category A	Category B	Category C	Category D		
BASHH	A		B	C		
AACE	A	B		C		D

Result(continued)

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➤ Comparison of the grade of recommendation grading system : Type II

Organizations	Criteria Strongly recommended, good evidence	Strongly recommended, can apply to most clinical settings	Strongly recommended, fair evidence	Intermediate strength, may change in stronger evidence	Intermediate strength, may differ depending on circumstances	Weakly recommended, approaches in better circumstances
ADA	Strong A evidence based		Fair B evidence based			Weak
KPCMI	Strong recommendation		Recommendation			
AAP	A	1B	B	1C	C	2B
VADoD	1A		1C+		2A	
ASGE	Recommended		Should be considered		May be considered	
HFSA	I		II		III	
UMHS						
APA						

Organizations	Criteria Very weak recommended, likely retroactive approaches in better circumstances	Weakly recommended, likely to change as data becomes available	No recommended	Recommend against routine prevention setting	Insufficient evidence	Based on Expert opinion
ADA					Insufficient evidence	Consensus
KPCMI			C evidence based		D (evidence based)	Consensus based
AAP		Option	No recommendation		I	
VADoD			C	D	I	
ASGE	2C	3	Not recommended			
HFSA						
UMHS			III			
APA						

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Result(continued)


➤ Comparison of the grade of recommendation grading system : Type III

Criteria	Good evidence to recommend the clinical action	Fair evidence to recommend the clinical action	Existing evidence is conflicting	Fair evidence to recommend against clinical action	Good evidence to recommend against clinical action	Inefficient evidence
Organizations						
AAOS	A	B		C		I
RNAO	A	B	C	D	E	I
SOGC	A	B	C	D	E	I
ACOG	Level A		Level B	Level C		
NHFA/CSANZ	A	B		C		D
TES	++++	+++0	++00	+000		

➤ Comparison of the grade of recommendation grading system : Type IV

Criteria	Net benefit is substantial	Net benefit is moderate	Net benefit is small	No net benefit or harms outweigh the benefit	Insufficient evidence
Organizations					
USPSTF	A	B	C	D	I statement
AGA	Grade A	Grade B	Grade C	Grade D	Grade Insuff
ESC	Class I	Class II	Class IIa	Class IIb	Class III
CAPO/BSC	Class I	Class II	Class IIa	Class IIb	

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Conclusion

Tried to find a way to apply common criterion in Korea grading system

- Understand how many organizations have various grading systems
- Figure out the current situation of using different grading system in CPGs development organizations


Formal grading system based on consistent and clear approaches is needed

- The process of grading work can be subjective when CPGs developers are making decisions
- It is necessary to have common criterion that can judge the grade of evidence and recommendations objectively in development CPGs

Hope that this empirical data will be fundamental information of discussion about grading system.

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Limitation & Strength

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Limitation


- Too broad or too specific ?
- No consensus to be generalized
- Not all guidelines are included in this analysis(only in NGC)

Strength

- Good chance to think of various grading systems
- Can be fundamental information
- Just beginning of work to standardization

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Reference

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Questions or Comments

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