

NATIONWIDE UTILIZATION OF CLINICAL PRACTICE GUIDELINES (CPG) AMONG MULTI-DISCIPLINARY PHYSICIANS: IDENTIFYING BARRIERS AND ENABLERS

1. Research Background

Clinical practice guidelines (CPG) are a set of recommendations based on scientific evidence to assist healthcare providers to address specific clinical conditions in the most appropriate and standardized manner. Evidence have shown that implementation of the recommendations of the CPG often improves the quality of the diagnostic or therapeutic skills of the healthcare professionals hence bringing a positive effect on the quality of care provided.

Most CPGs are often recommended to be based on systematic reviews and meta-analyses (1). The work process of collecting, appraising and transferring each research evidence into practice in health care settings is indeed a great challenge, but it is important to the provision of effective, safe and equitable health care. In addition, many societies produce guidelines which may add another layer of intricacy and could contribute as a barrier to guideline adherence.

The principles and methods for developing guidelines have evolved since the 1990s, moves coherently by the advancement in evidence-based medicine (EBM) (2). As such, the guidelines are now being developed at international, national and local levels (3). The Cochrane Collaboration and the National Institute for Health and Care Excellence (NICE) are few examples of organizations that have a long experience in developing clinical practice guidelines.

There are many factors that act as barriers to the adherence of the CPG. One systematic review by Cabana et al. outlined factors such as lack of awareness, unfamiliarity, and

disagreement with recommendations, while some guidelines have been found to have limited applicability to general practice settings (4). Other barriers might be related to the physician himself such as the lack of confidence with specific guidelines as well as lack of motivation (5). There exists a gap in the understanding of the barriers and facilitators related to guideline adherence. This understanding is critical for development of effective and targeted guideline implementation strategies.

1.1 Rationale

Hence this study is aimed to identify and explore the factors that may have acted as general barriers or facilitators on the adherence of the CPGs among the primary health clinics and hospital physicians.

The outcome of this study could help early identification of these potential barriers to guideline implementation and factors that may increase physician's adherence to guidelines thus improving quality of care.

2.0 Objectives

2.1 General Objective

To conduct a cross-sectional study among multidisciplinary physicians both at the primary health clinics (klinik kesihatan) and hospitals with specialist nationwide, mainly addressing adherence to the MOH CPGs

2.2 Specific Objectives

- i) To determine the barriers to clinical practice guideline adherence.
- ii) To determine the general attitude towards clinical practice guideline
- iii) To determine factors that could improve adherence to clinical practice guideline
- iv) To determine the association between barriers towards guidelines and guideline adherence

3.0 Proposed methodology

3.1 Quantitative Study

3.1.1 Study Design

This is a cross-sectional study design.

3.1.2 Study Area

Nationwide online survey both to primary care and tertiary care physicians including specialist, medical officers and training residents of a multidisciplinary unit.

3.1.3 Study population

The study population includes multidisciplinary government-based physicians including specialist, medical officers, and training residents from both

primary health clinics (klinik kesihatan) and hospitals with specialists within the Ministry of Health (MOH).

3.1.3.1 Inclusion criteria

i) All physicians practicing at their respective field for more than 2 years including;

- specialist in their respective fields,
- medical officers, and
- training residents

ii) Multi-disciplinary encompasses field of;

- Medicine
- Surgery
- Pediatrics
- Women Health
- Psychiatry & Mental Health
- Orthopaedics

3.1.3.2 Exclusion Criteria

- Nurses, assistant medical officers and other allied health professionals
- Physicians who are unaware of the availability of the CPG
- Private Healthcare Physicians

3.1.4 Sampling Procedure, data collection and sample size calculations.

Physician based nationwide online survey where a purposive sampling method will be used to select participants who met the following inclusion criteria. Each participant: is a physician had more than 2 years' experience working in a MOH primary health clinic (klinik kesihatan) and hospitals with specialist. The email containing a link to the survey will be sent to individual participants. The link will be individualized to the email address to prevent response duplication. First email will be sent out and weekly reminders will be sent out for 4 weeks. Participants will be informed that clicking on the survey link will serve as informed consent. Ethical clearance will be obtained from the Medical Research and Ethics Committee (MREC) of the MOH prior to commencing this survey.

Sample size calculation using Epi Info; the required sample size is as shown below:

Sample Size for Frequency in a Population

Population size(for finite population correction factor or fpc)(*N*): 56192
Hypothesized % frequency of outcome factor in the population (*p*): 50%+/-5
Confidence limits as % of 100(absolute +/- %)(*d*): 5%
Design effect (for cluster surveys-*DEFF*): 1

Sample Size(*n*) for Various Confidence Levels

ConfidenceLevel(%)	Sample Size
95%	382
80%	164
90%	270
97%	468
99%	656
99.9%	1063
99.99%	1475

Equation

Sample size $n = [DEFF * Np(1-p)] / [(d^2 / Z^2_{1-\alpha/2} * (N-1) + p*(1-p)]$

Results from OpenEpi, Version 3, open source calculator--SSPropor
Print from the browser with ctrl-P
or select text to copy and paste to other programs.

Based on the MOH Human Resource data the total number of registered practitioners with Annual Practicing Certificate is 56,192, after factoring in this population of registered practitioners and to achieve a 80% power and 95 % Confidence level, a sample of 382 is required.

3.1.5 Study instruments

This validated survey tool measuring CPG perceived barriers to implementation of the guidelines as well as adherence was developed by a team of gastroenterologists with expertise in guideline development and survey methodology (6) which is adapted for the use of this study. The first section of the survey will ask

about basic physician demographics including specialty, type of practice, and years in practice. The second section will ask physicians about attitudes toward practice guidelines and perceived barriers to implementation of the guidelines in their daily practice. The 9-question validated survey tool will be distributed online to physicians in various specialties at primary health clinics and hospitals. Adherence to CPG is rated (on a scale ranging from 1 [low adherence] to 5 [very high adherence]: guideline adherence includes awareness familiarity and agreement to perform CPG recommendations. Answers are based on a 5-point Likert scale ([Appendix 1](#))

3.1.6 Data processing dan Data Analysis

All outcomes were reported on a 5-point Likert scale. Statistical analysis was performed on SAS 9.4. 60% will be taken as a threshold to infer strong association between physician responses and category of interest. This is defined a priori and meant that if $\geq 60\%$ of physicians chose agree or strongly agree, strong association will be inferred.

A priori analyses is planned to assess the differences in responses between types of specialties. Proportions in each category will be reported. When comparing two groups, relative risk (RR), and 95% confidence intervals (CI). P-value <0.05 will be used for statistical significance and reported accordingly

References

1. Wani S, Sultan S, Qumseya B, Michalek J, Dewitt J, Edmundowicz SA, Woods KL. The ASGE'S vision for developing clinical practice guidelines: the path forward. *Gastrointestinal endoscopy*. 2018 Apr 1;87(4):932-3.
2. Grimshaw JM, Thomas RE, MacLennan G, Fraser CR, Ramsay CR, Vale LE, Whitty P, Eccles MP, Matowe L, Shirran L, Wensing M. Effectiveness and efficiency of guideline dissemination and implementation strategies. *International Journal of Technology Assessment in Health Care*. 2005 Jan;21(1):149-.
3. Sackett DL, Rosenberg WM, Gray JM, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *Bmj*. 1996 Jan 13;312(7023):71-2.
4. Turner T, Misso M, Harris C, Green S. Development of evidence-based clinical practice guidelines (CPGs): comparing approaches. *Implementation science*. 2008 Dec;3(1):1-8.
5. Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PA, Rubin HR. Why don't physicians follow clinical practice guidelines?: A framework for improvement. *Jama*. 1999 Oct 20;282(15):1458-65
6. Qumseya B, Goddard A, Qumseya A, Estores D, Draganov PV, Forsmark C. Barriers to clinical practice guideline implementation among physicians: a physician survey. *International Journal of General Medicine*. 2021;14:7591.

Appendix 1- SURVEY TOOL

1. **My current place of practice is:** ☐ Primary Health Clinic ☐ Hospital employed

2. **My Speciality includes:**

<input type="checkbox"/> Medicine	<input type="checkbox"/> Surgery	<input type="checkbox"/> Pediatrics	<input type="checkbox"/> Women Health	<input type="checkbox"/> Psychiatry& Mental Health	<input type="checkbox"/> Orthopedics
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3. **I have been in practice in my speciality for:** ☐ Still in training ☐ 1-2 years ☐ 2 – 5 years ☐ 5 -10 years ☐ >10 years

4. **I have been involved in clinical guideline development?** ☐ Yes ☐ No

5. **During my training/practice, I feel/felt that I am/was adequately trained accessing and applying guidelines in my daily practice**

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
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6. **I would rate my adherence to clinical practice guidelines as:**

<input type="checkbox"/> Very high	<input type="checkbox"/> High	<input type="checkbox"/> Average	<input type="checkbox"/> Low	<input type="checkbox"/> Very low
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7. **With regards to guidelines within my specialty, I feel that:**

a. I have sufficient input on the content of guidelines	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
b. I understand the process of guidelines development	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
c. I have easy access to guidelines within my practice	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
d. Current guidelines are evidence-based	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
e. Guideline documents are easy to read and understand	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
f. My knowledge of clinical practice guidelines is up-to-date	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
g. Guidelines may already be out of date by the time of publication	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
h. Other:					

8. **In my opinion, the following factors are barriers to using clinical practice guidelines?**

a. Lack of access/ difficulty in access to guidelines	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
b. Length or complexity of guidelines documents	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
c. Time constraints due to clinical responsibilities	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
d. Lack of physician involvement in guideline development	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
e. Conflicting guidelines on the same topic	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
f. High number of conditional or weak recommendations	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
g. Concerns that guidelines do not apply to a single patient	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
h. Patient refusal to comply with guidelines	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
i. Physician apathy to abide by guidelines	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
j. Lack of insurance coverage to certain guidelines	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
k. Lack of consideration of cost of some recommendations	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

9. In my opinion, the following factors can help increase awareness of and adherence to clinical practice guidelines?

a. Improved focus on guidelines during training	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
b. Access to relevant guidelines at the point of care (EMR)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
c. Linking payment incentives to guideline adherence	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
d. Having more input on topic and content on guidelines	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
e. More transparency on physician commercial affiliation	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree

Gantt Chart

TIME LINE OF STUDY																			
No.	ACTIVITY / TIME	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18
	July 2022 - December 2024	Jul	Aug	Sep	Okt	Nov	Dec	Jan	Feb	Mac	Apr	May	Jun	Jul	Aug	Sep	Okt	Nov	Dec
1	Prepare and Submit Study Proposal	Planned	Actual																
2	Proposal approval and ethics clearance		Planned	Planned															
3	Data Collection				Planned	Planned	Planned	Planned	Planned										
4	Data Analysis						Planned	Planned	Planned										
5	Write up							Planned	Planned	Planned	Planned								
6	Review of Draft										Planned								
7	Approval and Submission											Planned	Planned	Planned					

Planned	
Actual	

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