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# Study of Acceptance and Application of Calgary Cambridge Communication Guideline for Doctor-Patient Communication in Primary Health Care

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**ABSTRACT**

**Background**: Communication is a basic skill that must be acquired by every doctor just like all other clinical skills. One of communication guidelines for doctor-patient that is the most widely used in many countries is the Calgary-Cambridge Communication Guideline (CCCG). However, since CCCG is based on the Western style of communications, a further study is necessary to determine whether CCCG is acceptable and applicable in Indonesia. **Methods**: This research was an analytic descriptive study with a cross-sectional design. The research was conducted from December2016 until January 2017 in Yogyakarta with 58 primary care doctors. The data was collected using the CCCG-based questionnaire method with a cross-cultural adaptation. **Results**: The CCCG is well accepted although its application is not optimum. The acceptance rate was 4.03 (indicating highly acceptable), while the application rate was 3.74 (indicating occasionally implemented). There was a significant difference between the acceptance and application rates ($p$<0.01). There were no significant differences between the acceptance rates of *Puskesmas* (Community and Primary Health Care Center) and non-*Puskesmas* ($p$ = 0.115) facilities while the application was significantly different ($p$ = 0.001). The application levels of the *Puskesmas* were lower than those in non-*Puskesmas*. Additionally, there was no difference in the acceptance or application of CCCG for doctors who have and who have not attended communication training. **Conclusion**: There was no difference in the acceptance of CCCG, but there was a difference in its application. The application rate at *Puskesmas* was lower than non-*Puskesmas* facilities. The experience in communication training did not affect the acceptance and the application rates of CCCG.

***Keywords:*** *Acceptance, application, Calgary-Cambridge communication guidelines, Puskesmas, non-Puskesmas communication training*

## BACKGROUND

Communication is one of the most fundamental aspects doctors must master in their clinical practice. A good doctor should not only have skills in basic medical sciences, the ability to perform physical examinations, and the mastery in clinical problem solving, but also good communication skills. These four basic skills are absolutely imperative for a doctor to be able to perform optimally with good clinical ability[1]. Research has shown that good doctor-patient communication can affect patients' therapy outcomes[2,3]. Doctors who can effectively solicit information from patients will find it easier to identify health problems and diagnose more accurately since anamnesis is often contributing more information than any other examination. Oppositely, improper communication can lead to serious problems. The failure of a doctor to understand the patient's problems and the lack of patient understanding of the

therapy given by the doctor can trigger medical errors, resulting in patient dissatisfaction, ineffective treatment, conflicts, and even lead to legal action or even worse, death due to malpractice or misadministration of medicine[4].

As more medical practitioners understand the importance of doctor-patient communication, studies and guidelines in this field are growing. Among the communication guidelines are the Segue Framework, Kalamazoo Consensus, the Four Habits Model, The Comrade and Provider-Patient Orientation Scale[5,6,7,8,9]. These guidelines are used by different countries. The Calgary Cambridge Communication Guideline (CCCG) is the most popular guideline in the world and is widely recognized as a complete, systematic and positive-impact guideline in doctor-patient communication. The CCCG provides a very specific set of guidelines in the communication phases. These guidelines combine communication content and communication processes.

However, the existing doctor-patient communication guidelines are heavily influenced by the culture of Western countries which is dominated by equality in two- way interactive communication. Oppositely in Asia, especially in Indonesia, social hierarchy, non-verbal language, and individual autonomy are still factors that significantly influence the doctor-patient communications[10,11,12,13,14].

Primary care is an easily accessible, sustainable, and family-and- community-based health service managed by a competent clinician to meet most of the individual personal care needs[15]. The patient management strategy of doctors in primary health care has several principles. Some of these goals are first contact, patient- centered approach, maintaining relationship with patient from time to time through effective communication, solving patient's health problems holistically which covers physical, psychological, social and cultural aspects, and other shared concerns. This personalized strategy requires a good personal relationship and communication between the doctor and the patient.

The objective of this study was to determine the levels of acceptance and application of the CCCG by Indonesian doctors in community and primary health care centers (*Puskesmas*) in Yogyakarta. For comparison purposes, it is interesting to analyze the acceptance and application levels of a widely used and well-recognized communication guidance that is influenced by western culture among primary care doctors in Yogyakarta, who are very influenced by Asian culture. Acceptance (*aksep*) according to Bahasa Indonesia dictionary means acceptance or confirmation. It can be used to also refer to the general acceptance of a word meaning or understanding of related concepts that are generally accepted. Application, (*aplikasi*) means implementation with a specific purpose.

## METHODS

This research is an analytical-descriptive study with a cross sectional design. The study was conducted in a primary health care setting in Yogyakarta from December 2016 until January 2017. Inclusion criteria was doctor who works as clinician in Yogyakarta. The study used questionnaire instrument taken from Calgary Cambridge Communication Handbook which already underwent cross-cultural adaptation. Questionnaires were made with assessment measurements using Likert Scale (1-5). Participants completed the questionnaire independently. Data analysis was done using SPSS 16, with descriptive analytic, paired sample T-tests and independent sample T tests.

## RESULTS AND DISCUSSIONS

The study involved 60 participants, while only 58 participants met inclusion criteria as subjects. Female subjects were more than male, with most participants in age range 30-39 years old. Subjects work at *Puskesmas* (Community and Primary Health Care Center) and non-*Puskesmas*. More subjects work in *Puskesmas* rather than in non-*Puskesmas* facilities, and mostly already have communication training. Below are subjects' characteristics.

**Table 1. Subject characteristics**

| Variables | N | Frequency (%) |
|---|---|---|
| **Gender** | | |
| – Male | 10 | 17.24 |
| – Female | 48 | 82.76 |
| **Age range** | | |
| – 20 – 29 years old | 13 | 22.41 |
| – 30 – 39 years old | 27 | 46.55 |
| – 40 – 49 years old | 13 | 22.41 |
| – 50 – 59 years old | 5 | 8.6 |
| **Health Facility** | | |
| – *Puskesmas* | 36 | 60.06 |
| – Non-*Puskesmas* | 22 | 39.94 |
| **Communication Training** | | |
| – Trained | 31 | 53.45 |
| – Non-trained | 27 | 46.55 |

The acceptance level of the CCCG was with mean 4.03. This result shows that the guideline was well received by the subjects, while the application level was with mean 3.73, showing that most sections in the guideline are occasionally implemented. Most sections in the guideline have acceptance level above scale 4, or "highly received". Only 2 sections reached scale 3, showing good reception on both the "Explaining and Planning" and also the "Closing Session" sections. Meanwhile for application assessment, most communication guideline sections were above scale 3 (occasionally implemented), while only one section, the "Opening Session" section reached scale 4 (often done).

There were significant differences ($p$<0.05) between acceptance level with application of the CCCG. Mean difference was 0.30. Acceptance levels were higher compared with the application levels. If reviewed from each of the guideline sections, from 6 sections of acceptance and application, 5 sections showed differences between acceptance and application. Only one section showed no significant difference between acceptance and application, which was the "Opening Session" ($p$>0.05). From 5 sections with significant difference, the biggest difference was shown in the "Explaining and Planning" section (mean difference 0.41) while the smallest was in the "Building Relationship" section (mean difference 0.21). These results are shown in Table 2.

**Table 2. Calgary Cambridge communication guideline acceptance and application different level analysis**

| Variables | n | *Mean* | *Mean diff* | *p*-value | CI |
|---|---|---|---|---|---|
| Acceptance | 58 | 4.03 ± 0.58 | 0.30 | 0.000 | 0.15-0.44 |
| Application | 58 | 3.72 ± 0.47 | | | |
| **Opening Session** | 58 | | 0.07 | 0.34 | -0.08 – 0.22 |
| – Acceptance | | 4.17±0.61 | | | |
| – Application | | 4.09±0.49 | | | |
| **Gathering Information** | 58 | | 0.29 | 0.001 | 0.12 – 0.46 |
| – Acceptance | | 4.17±0.58 | | | |
| – Application | | 3.88±0.57 | | | |
| **Structured Consultation** | 58 | | 0.40 | 0.000 | 0.20 – 0.59 |
| – Acceptance | | 4.14±0.65 | | | |
| – Application | | 3.74±0.65 | | | |
| **Build Relationship** | 58 | | 0.21 | 0.006 | 0.06 – 0.36 |
| – Acceptance | | 4.19±0.55 | | | |
| – Application | | 3.97±0.49 | | | |
| **Explaining and Planning** | 58 | | 0.41 | 0.000 | 0.24 – 0.58 |
| – Acceptance | | 3.94±0.66 | | | |
| – Application | | 3.52±0.56 | | | |
| **Closing Session** | 58 | | 0.31 | 0.000 | 0.15 – 0.47 |
| – Acceptance | | 3.88±0.68 | | | |
| – Application | | 3.57±0.55 | | | |

There was no significant difference in acceptance level between *Puskesmas* and non- *Puskesmas*. However, there were significantly differences in application level between doctors in *Puskesmas* compared with doctors in non-*Puskesmas* ($p$<0.05). Application levels in *Puskesmas* were lower than in non-*Puskesmas* (Table 3).

**Table 3. Difference analysis of CCCG acceptance and application based on place of work**

| Variables | First level health facilities | n | *Mean* | *Mean diff.* | *p*-value | CI |
|---|---|---|---|---|---|---|
| **Acceptance** | *Puskesmas* | 36 | 3.93±0.57 | - 0.24 | 0.115 | -0.56 – 0.06 |
| | Non-*Puskesmas* | 22 | 4.19±0.58 | | | |
| **Application** | *Puskesmas* | 36 | 3.57±0.40 | -0.42 | 0.001 | -0.65 – (- 0.18) |
| | Non-*Puskesmas* | 22 | 3.99±0.44 | | | |

There was significant difference between contact times per patient in *Puskesmas* compared to non-*Puskesmas*. Contact time per patient in *Puskesmas* was around 6 minutes, while in non-*Puskesmas* facilities, it was around 19 minutes (Table 4).

There was no significant difference in the acceptance and application levels of the CCCG between subjects who already received communication training or had not (Table 5).

## DISCUSSION

### Acceptance and application of Calgary Cambridge guidance

This communication guideline was considered very acceptable by the primary care doctors of Yogyakarta City. Doctors assessed that the guideline items are good for doctor-patient communication. The CCCG as a popular reference is one of the most commonly accepted communication guidelines in many countries such as

**Table 4. Contact time gap per patients' analysis at health facilities**

| Variables | Faskes | n | Mean | Mean diff | *p*-value | CI |
|---|---|---|---|---|---|---|
| Contact time | *Puskesmas* | 36 | 6.73±3.28 | -12.48 | 0.001* | -19.32– (-5.64) |
| | Non-*Puskesmas* | 22 | 19.21±20.16 | | | |

**Table 5. Difference analysis of acceptance and application level based on communication training experience**

| Variables | Training | n | Mean | Mean diff | *p*-value | CI |
|---|---|---|---|---|---|---|
| Acceptance | Trained | 31 | 4.07±0.55 | 0.09 | 0.557 | -0.21 – 0.40 |
| | Non-trained | 27 | 3.98±0.62 | | | |
| Application | Trained | 31 | 3.72±0.47 | -0.007 | 0.950 | -0.25 – 0.24 |
| | Non-trained | 27 | 3.73±0.48 | | | |

Australia, Canada, Italy, Scandinavian' countries, South Africa, Spain, the United Kingdom and the United States. These communication guidelines are created as a guide for learning and evaluation of the doctor and patient communication process. The CCCG is widely selected because it is considered complete as well as practical and systematic[3].

Although we found the CCCG reached a level of very acceptable, this guideline was considered not yet applied to the maximum. The application level was still in the "sometimes" category, not "often" or "always". The CCCG items were only sometimes applied. The CCCG items for communication are quite extensive and detailed. The guidelines are indeed very complex and complete because the process of medical communication is a complex process. In a dynamic communication process, not all stages can always be done perfectly. Doctors as practitioners despite the limitations and constraints can apply these guidelines in accordance with the patient's needs and conditions. Still the authors of this guideline, Silverman and Kurtz, remind doctors not to simplify and ignore the stages of communication although not all can be done.

**Acceptance and application of Calgary Cambridge guidance per sub-point**

This guideline has 6 sections. Mostly, the sections show significant differences except in the "Opening Session" section. In the "Opening Session", there are specific activities to do. Doctors have to be ready before meeting with a patient, greeting the patient, and trying to listen to the patient's main concerns. This "Opening Session" guideline is very acceptable to doctors and is often done. This section has only a few items and it is easy to be applied by the doctor. Steps in this stage such as preparing (not doing other jobs when receiving patients), greeting the patient as well as the main operation is a procedure that must be done before entering the process of patient examination. This session doesn't take a long time, can be done easily and there is no cultural difference to be applied in Indonesia.

In this study, the lowest mean value was shown in the "Explaining and Planning" section, which can be caused by there being many points that need longer time to be applied. Time is the common hurdle that inhibits ideal communication between doctor and patient. Doctors' communication skills based on patient centered care is needed in this part; it is explained as gathering patient perspectives, patients' concerns and hopes, and patient involvement in treatment decision-making process. These points are implying equality in communication between the doctors and patients, while in Indonesia, hierarchy and paternalistic culture typically influence this type of communication[11].

In Indonesia, communication between doctor and patient is usually influenced by the paternalistic culture, where doctors will dominate the decision-making process with minimum patient contribution. This pattern is influenced by the hierarchical culture that is still very solid in Indonesia and South-East Asian countries[16]. The influence of social hierarchy is not only found in communication patterns between doctor and patient but many other relations as well. Respectful communication between parent and children, teacher and student, among others are still demanded in Indonesia, because a person in a higher position is considered as more knowledgeable than someone in the lower position. This respectful manner is reflected in the boundaries that cause people to be fearful of offending the other person, or be afraid of conflict and inconvenience (*takut 'kenapa-napa'*/afraid if something bad happens)[17,18]. This cultural context creates a different standard of equality in doctor-patient communication. Equality is interpreted as attention of doctor to the patient, and not as equal communication such as implemented in western countries. This hierarchical communication pattern is a common practice in Asia. In a study in Nepal, it is described that a doctor giving attention to a patient is more important than an informative doctor[19,20]. Another study in Japan also shown that the time used for consultation between doctors and patients is longer in America than in Japan. Japanese patients are described as more accustomed to non-verbal communication compared with American patients[21].

**Acceptance and application from different health care facilities**

There was no significant difference of CCCG acceptance levels between *Puskesmas* and non-*Puskesmas* facilities. However, there was significant difference in application level, *Puskesmas* has a lower mean value than non *Puskesmas* facilities (private practice or private clinics). This finding could be related to the time used in treating patients and the number of patients at that facility. Current data show there was significant differences in the length of time doctors interacted with patients in *Puskesmas* and non-*Puskesmas* facilities. The average time spent by doctors interacting with patients at *Puskesmas* was only around 6 minutes but at private healthcare it was 19 minutes. Time to interact per patient is calculated by comparing the whole time consumed by doctor to treat patients and the number of patients. Total time to interact with patients by doctor at *Puskesmas* is around 4-5 hours with number of patients around 30-50. While, in non-*Puskesmas*, they have 7-8 hours for 20-40 patients. For *Puskesmas* doctors, time used for patients is different than their working time. Total doctor working time at *Puskesmas* is 7 hours a day[22]. However, that time is used not only to

interact with patients but also for additional administrative work that relates to the *Puskesmas* information system and p-care BPJS applications, and other work outside their main duties related to *Puskesmas* management, accreditation, and preventive and promotive activities such as *Posyandu*, counseling, and others. According to the 4th clause of Kepmen PAN no. 139/2003 (Ministry of Health Regulation), the main duties of doctors are providing healthcare in healthcare facilities that combines promotion, prevention, curative, and rehabilitation efforts to improve the health of the society, while also building social initiatives to create greater health autonomy. The non- medical related work is usually done after lunch time and there are no patients waiting. The number of available doctors each day in *Puskesmas* is also influenced by delegation for meetings, trainings, and counseling, which can cause the workload for the un-delegated doctors to increase. Meanwhile in private practice or clinics (non-*Puskesmas*), they are more focused on treating thepatients. Extended time and workload by their nature willinfluence the performance of the doctor.

**Acceptance and application level from communication training experience**

This study shows there was no significant difference of application levels among doctors who have communication skill training experience and who had not. Claramita's study on residents and doctors with various specialties found that there are no communication skill difference between communications trained and untrained doctors[2]. This result could occur because of several reasons. One of the explanations is the communication training method. Since it is one of the important skills needed by doctors, communication skill should be taught with similar methods as medical skills. Good communication training is conducted by using role-plays among participants, role-playing with simulation patients or real patients with supervisors who are evaluating and giving feedback throughout the training session. According to Silverman, autodidact communication skill without supervision is not effective[3]. This skill should be practiced over and over again until learners demonstrate proficiency.

**Suggestions**

Local communication guidance is needed to be implemented in Indonesia, especially in primary care. Medical students and doctors should keep improving their communication skills by standardized and continuous training. A proper system that can arrange *Puskesmas* doctor to have more time to communicate with patients is also needed.

## CONCLUSION

The Calgary Cambridge Communication Guideline was highly accepted by primary doctors in Yogyakarta (mean 4.07 in scale 1-5). However, the application level was still in the "occasional implemented" category (mean 3.72 in scale 1-5). Overall, there were significant differences between acceptance and application levels of the Calgary Cambridge guidelines. Through further analysis, the differences were found in all points of the guideline, except in the "Opening Session" section. There was no difference in acceptance level among *Puskesmas* and non-*Puskesmas* facilities, however application level was better in non-*Puskesmas* facilities. Application level was also not significantly different among trained and untrained doctors.

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**Ethical Approval and Informed Consent**

This study was approved by The Medical and Health Research Ethics Committee (MHREC) of the Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta, Indonesia.

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**Availability of Data and Materials**

Please contact the author for the availability of data and materials through the corresponding author.

**Conflict of Interest**

None

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