

Indonesian Medical Students' Perceptions of Computer Based Test (CBT) Questions on Public Health Competency Test: An Evaluation Study

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ABSTRACT

Background: The Indonesian Medical Competency Standards (SKDI) are the educational standards for doctors in Indonesia. To prove that students have met the competency requirements, a competency test is necessary. Research results show that CBT of Public Health questions fall into the moderate-difficult category. This means that institutions must have a specific strategy to guide students.

Subjects and Method: This qualitative study conducted in-depth interviews with Indonesian medical students who had passed or failed the Indonesian Medical Competency Test. The interviews were conducted online using Zoom. Informants were selected from various regions in Indonesia.

Results: The study identified five themes. The five themes are: 1) varying perceptions of the difficulty level of public health questions, 2) lack of focus, 3) question patterns and reference books, 4) sources and methods of learning for the public health question, and 5) examinees' expectations.

Conclusion: Students' perceptions of the difficulty level vary. This is also related to the students' own preparedness. Students have specific expectations regarding certain questions, such as those related to Indonesian national health insurance (BPJS), epidemiology, and others.

Keywords: competency exam, doctors, Indonesia, public health, student perceptions

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BACKGROUND

The Indonesian Medical Competency Standards (SKDI) are the standards for medical education in Indonesia. These standards serve as a reference for medical education competencies in Indonesia (Khadafianto, 2020). Competency tests are required to prove that students have met these competencies.

As a prerequisite for obtaining a medical degree, students who have completed their clinical internship must take the Medical Professional Education Student Competency Test (UKMPPD). Students must pass the UKMPPD to obtain a registration certificate. This certificate serves as a license for medical practitioners (Wati et al., 2022). The results of the

UKMPPD are also important for institutions, as they are one of the criteria in accreditation and influence the quota for admitting new students (Nazriati, 2022).

The UKMPPD includes an Objective Structured Clinical Examination (OSCE) and a Computer Based Test (CBT). To date, the pass rate for the CBT has been lower than that for the OSCE. Some of the UKMPPD re-takers are retaking the CBT exam (Nazriati, 2022).

Several studies have been conducted to identify factors that influence competency test achievement. These factors include participant characteristics, educational institutions, examiners, and test questions (Tubarad et al., 2022). The difficulty of questions in the UKMPPD also varies across fields.

Based on available data, CBT pass rates are always lower than OSCE pass rates. For example, in November 2019, the national CBT pass rate was only 59%, while the OSCE pass rate was 93% (Wati et al., 2022). In addition, UKMPPD related to CBT can also be viewed per review.

According to data from one medical institution in Indonesia, when viewed from review 5, namely the body system review, the lowest value is in the non-system category. According to the same data, when viewed from review 6, the score related to health promotion is also the lowest compared to other categories (Akhbar et al., 2023). When viewed from review 5, the public health CBT questions fall into the non-system category. Similarly, when viewed from review 6, the public health CBT questions fall into the health promotion category. The results of Ichsan et al.'s (2023) study, conducted at a private medical institution in Indonesia, indicate that public health CBT questions fall into the moderate-difficult category. This necessitates the institution to have a special strategy to guide

students so they do not encounter difficulties in answering such public health questions.

Based on these findings, the researchers intend to expand the scope of the study. This study aims to analyze and evaluate qualitatively the perceptions of medical students in Indonesia regarding the UKMPPD public health exam. It is hoped that the results of this study will provide input to various parties. The results of the study are expected to improve the quality of the UKMPPD CBT exam, particularly in the field of public health. The results of the study are also expected to be useful for institutions in guiding their students, particularly in the field of public health.

SUBJECTS AND METHOD

1. Research Design

This research design is qualitative phenomenology. Data collection was conducted using in-depth interviews. The research was conducted from April to July 2025.

2. Research Informants

The research subjects were Indonesian medical students, both graduates and non-graduates, who had taken the Indonesian medical student competency test.

3. Research Variables

The research variable was the evaluation of the public health CBT UKMPPD exam for Indonesian medical students.

4. Operational Definition of Variables

The evaluation of the public health CBT UKMPPD exam for Indonesian medical students is an effort to observe and analyze the conduct of the exam. In this case, the analysis focuses on students' perceptions, such as the difficulty of the questions, obstacles encountered, and so on.

5. Research Instruments

The research instruments used in this study are open-ended questionnaires. The questions include perceptions regarding the

difficulty of the public health CBT UKMPPD exam, experiences related to answering the questions, experiences related to learning resources, and so on.

6. Data Analysis

Data analysis in this study uses content analysis. Content analysis is an analytical

strategy that begins with coding transcripts, followed by synthesis 1, and then synthesis 2. The application used is Open Code 4.03.

7. Research Results

The informants in this study were 18 medical students from various regions in Indonesia.

Table 1. Informan characteristics

Informants Characteristic	Total	Percentage
Sex		
Male	7	38.89
Female	11	61.11
Age		
21-25 years	9	50.00
26-30 years	8	44.44
30-35 years	1	5.56
Status		
First taker (passed)	6	33.33
Retaker (passed)	8	44.44
Retaker (not passed yet)	4	22.22
Province of living		
Java	4	22.22
Kalimantan	2	11.11
Sumatera	4	22.22
Nusa Tenggara	1	5.56
Maluku	2	22.22
Sulawesi	2	22.22
Papua	3	16.67

Table 1 shows that the most common age range of informants is 21-25 years old, accounting for 50%. The most common gender is female (61.11%). The most common graduate status is retaker who has already graduated (44.44%). The institutions of origin are evenly distributed across various regions in Indonesia.

This study identified five themes: 1) varying perceptions of the difficulty level of public health questions, 2) lack of focus, 3) question patterns and reference books, 4) sources and methods of learning CBT public health UKMPPD, and 5) examinees' expectations. The following will explain each theme and its sub-themes.

a. Perceptions of the Level of Difficulty of UKMPPD Public Health CBT Questions Vary

This study found that informants' perceptions of the level of difficulty of UKMPPD public health CBT questions varied greatly.

b. Perceptions of the difficulty level of public health questions vary

In general, the difficulty level of public health questions varies greatly. The following are examples of informants' statements that illustrate this. "Compared to internal medicine or ophthalmology, public health questions tend to be easier" (Mr. G, 25 years old). Meanwhile, another informant, Ms. P (23 years old), stated, "In my opinion, public health questions are more difficult because

questions about clinics are often encountered in daily life.”

c. Perceptions of the difficulty level of questions related to *BPJS* vary

For questions related to *BPJS*, the study also showed variation. Some informants said they were easy, moderate, or difficult. Mr. MR (23 years old) said, “In my opinion, *BPJS* questions are easy because they are theoretical questions that are easy to memorize.” Another informant said, “Questions related to *BPJS* are very difficult. This is because the material is very broad and there are many changes in regulations” (Ms. EB, 25 years old).

d. Perceptions of the difficulty level of biostatistics-related questions vary.

One informant said, “In my opinion, biostatistics questions are easy because they are often reviewed” (Ms. JPR, 34 years old). Another informant said the opposite, “Biostatistics questions tend to be difficult because they make us doubt ourselves” (Ms. V, 25 years old).

e. Lack of Focus

This theme of lack of focus has two sub-themes: lack of focus on learning public health science and, during the professional phase, students only think about passing the internship.

f. Lack of Focus on Learning Public Health Science

There is a tendency for students to lack focus on learning public health science. One informant stated, “We prioritize practicing questions on surgery, internal medicine, and similar subjects. We haven’t practiced many public health questions” (Mr. IR, 29 years old). Another informant stated, “I’m lazy to open public health materials because the subject matter is broad and there’s a lot to remember” (Mr. MR, 23 years old).

g. The professional phase is focused on passing the internship

To prepare for exams, including CBT questions on public health, students could start well in advance of the exam date, such as during the professional phase. However, this study found that students think pragmatically. They only go through the professional phase to pass each internship. This is one of the statements made by the following informant: “Usually, we think that tomorrow we will present and report on cases” (Ms. CA, 24 years old). Another informant emphasized the following: “We really study for the *UKMPPD* exam after the professional phase is over” (Mr. I, 26 years old).

h. Question Patterns and Reference Books

This theme explains the research findings that the CBT public health *UKMPPD* question patterns are the same for each batch. The research findings also show that students are unaware of the public health books used as references.

i. The public health question patterns that appear per batch are generally the same

This information was obtained from informants who took the exam more than once. One informant stated, “I am one of the participants who took the exam more than once. The questions that appear in the competency exam sometimes remain the same. And that aligns with what we have studied” (Ms. EB, 25 years old). Another informant mentioned, “The questions are repetitive, and the topics are similar” (Ms. N, 27 years old).

j. Lack of knowledge about public health books that can be used as references

This finding is interesting because textbooks or teaching books, which are usually relied upon for learning, become a problem when studying for the doctor competency exam, particularly in the context of public health.

Ms. EB (25 years old) stated, "I don't know which book to use for studying public health. If something is confusing, we rely on Google searches." Another informant (Mr. B, 29 years old) stated that he does not have a public health science textbook.

k. Sources and methods of learning CBT public health UKMPPD

The purpose of this finding is related to the sources used for learning materials. This finding is also related to the learning methods employed. Some sub-themes included in this finding are: feeling that the sources for learning the public health competency exam are clear, there are various learning sources, participating in tutoring both on and off campus, personal readiness is very important, and one of the learning tips is to practice many questions.

l. Feeling that the sources for learning for the public health competency exam are clear

An informant stated, "The learning sources for public health are all clear" (Mr. AS, 26 years old). Another informant said, "The learning resources for public health are clear, but it takes a lot of time to understand them" (Mr. IR, 29 years old).

m. There are various learning resources

The purpose of this finding is that to learn competency tests, especially in the field of public health, various media are used. The most frequently used media are practice questions. One informant said, "We participate in online tutoring to find a collection of questions" (Ms. P, 23 years old). Another informant stated, "My learning materials come from tutoring sessions and Google" (Mr. SS, 26 years old). Another informant mentioned, "One of my learning resources is the handout from the public health internship" (Mr. JPR, 34 years old). Another informant added, "I review the PowerPoint presentations taught by

professors during my undergraduate studies" (Mr. G, 25 years old).

n. Attending tutoring sessions both on and off campus

Most students participate in tutoring both on and off campus. One informant said, "We are guided by professors and then divided into small groups to be guided by newly graduated doctors" (Ms. AD, 25 years old). Another informant stated, "I participate in online tutoring and tutoring from the campus" (Mr. MW, 29 years old).

o. Personal readiness is crucial

One notable finding in this study is that students' perceptions of the public health competency exam questions vary. Some describe them as easy, moderate, or difficult. Another finding explains this. It turns out that personal preparation is crucial. In other words, whether it is easy or not also depends on one's personal readiness. One retaker who has passed shared the following: "The first thing to prepare is ourselves. Before tutoring, we should already have studied so we have a foundation. We just need to align our understanding with the doctor during tutoring. Additionally, we can ask about things that are still unclear" (Ms. CA, 24 years old).

p. One study tip is to practice many questions

A tip widely applied by students is to diligently study practice questions. "We set a target with friends to practice 500 questions a day. In reality, the number of questions we can complete in a day is around 150 or 300. If we have plenty of free time, the target of 500 questions can be achieved" (Ms. P, 23 years old). Another informant stated, "When we practice many questions, it greatly helps our understanding" (Ms. I, 26).

q. Examinees' Expectations

This theme is interesting because it relates to what students expect. Sub-themes include: hoping for fewer calculation

questions, the need for improved guidance on *BPJS*, and the need for additional time for guidance on public health.

r. Hope for fewer calculation-based questions

Informants mentioned difficulties in answering calculation-based questions. They hope that such questions do not appear frequently: "The difficult questions are in the epidemiology section, especially those involving calculations. Calculation-based questions are challenging because they take a lot of time. If possible, there should be fewer calculation-based questions" (Ms. JPR, 34 years old). Another informant stated, "In the past, there were some questions that required calculations. We didn't use calculators, so it was difficult and time-consuming" (Ms. V, 25 years old). Another informant stated, "I had difficulty with the epidemiology questions that involved calculations. Even though I memorized the formulas, when the numbers weren't round, it became difficult" (Ms. AD, 25 years old). "I hope that the number of calculation-based questions can be reduced further" (Ms. EB, 26 years old).

s. The need for improved guidance on *BPJS*

One of the students' hopes is for improved guidance on *BPJS*. "For public health questions, *BPJS* questions are the most difficult. For campus guidance related to *BPJS*, it needs to be further explored" (Ms. P, 23 years old). Another informant stated, "*BPJS* questions are very difficult because the material is extensive and there are many changes in regulations" (Ms. EB, 26 years old).

t. The need for additional time for community health guidance

Students hope for additional time for community health guidance. One informant stated, "The guidance provided by the campus is already good. I suggest that the

time for public health guidance be increased" (Ms. FJ, 23 years old). "I hope that the discussion on epidemiology, especially the calculations, can be further explored" (Ms. J, 34 years old).

DISCUSSION

The findings of this study enrich the information on Indonesian medical students' perceptions of CBT questions on public health in the medical professional competency test (*UKMPPD*). The essence of these findings is that students' perceptions of competency test questions, especially those on public health, vary greatly. Some describe them as easy, moderate, or difficult. Other findings suggest that these perceptions are also related to the students' own preparedness. There are also interesting findings related to specific questions in biostatistics, *BPJS*, and questions involving calculations. Another finding pertains to the sources and methods of learning used by students to prepare for the competency exam, particularly in the field of public health. There have not been many similar studies conducted in Indonesia. Some studies related to the evaluation of Indonesian doctors' competency tests are as follows.

A similar study was conducted by Ichsan et al (2023), but this study covered a broader area. This study covers various regions of Indonesia, including western, central, and eastern areas, making it more methodologically representative. Ichsan et al. (2023) found that students' perceptions of CBT questions in public health were categorized as moderate to difficult, while this study found that students' perceptions ranged from difficult to moderate to easy. This study also found many more detailed aspects related to perceptions, learning methods, learning resources, and others.

Andriaty et al (2016) conducted a study to evaluate the causes of failure in the

competency test for medical students at the Faculty of Medicine, Abulyatama University. The results of the study are as follows. After analyzing the data using a thematic approach, the factors influencing the competency test of FK Unaya students were identified as follows:

1. Factors that potentially influence the success of the competency test from an educational process perspective include academic factors (characteristics of adult learners, learning materials, teaching and learning methods, resources, and evaluation of results) and non-academic factors (motivation).
2. Factors potentially influencing competency exams during the exam process include academic factors (learning methods, exam content not mastered, case-based question formats) and non-academic factors (internal: adult learner characteristics, motivation, concentration, health; external: Computer-Based Test methods, learning environment). Despite the many challenges in the educational process, some students passed the competency test. The potential factors determining the success of students who passed the competency test are that they possess adult learner characteristics and have motivation to pass the competency test. This study also uses a qualitative approach but analyzes student failures for all types of questions in medicine.

Firmansyah et al. (2015) conducted research to examine the impact of competency tests on medical students' learning in Indonesia. The research results are as follows. The qualitative analysis indicates that competency tests have an impact on students' learning. The learning impacts observed are related to two aspects. The first is related to the quality of students' learning, and the second is related to students' metacognitive regulation. The quality of

learning among students in preparing for competency tests is generally low, with students primarily relying on memorization. Regarding metacognitive regulation, this pertains to the allocation, quantity, and distribution of learning, selection of learning materials, choice of learning sources, selection of learning locations, learning strategies, maintaining consistency in learning, and monitoring the learning process and its improvements. Firmansyah et al.'s (2015) study also examined competency tests in general, while this study focuses on a more specific field.

Limitations of this study include some students perceiving ethics as part of public health, whereas it should be categorized under bioethics. A strength of this study is that informants were drawn from various regions of Indonesia, including western, central, and eastern Indonesia. The findings of this study can be utilized by faculties and relevant parties to further enhance the quality of guidance and competency assessment questions, particularly in the field of public health.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

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