

## **Competency test to measure the quality assurance in the teaching-learning process of Indonesian public health higher education institutions**

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### **Abstract**

This study aimed to see the correlation between the accreditation status of public health higher education institutions and the number of students who pass the competency test in public health. The competency test was conducted from December 2015 to March 2019 by the National Committee for Public Health Competency Test Indonesia. The result confirmed that Public Health higher education accreditation guaranteed the competency test-takers would pass the test. Furthermore, this study found that the better the institution's accreditation, the better their chance to pass the test. Therefore, this test could be a good indicator for the accreditation status of the Public Health institution that could be used to examine the quality of public health graduates.

### **Keywords**

Accreditation; competency test; health practitioner; public health; quality assurance.

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## **Introduction**

Since more than twenty years ago, quality assurance in higher education has been a credentialing or mandated program. There are two boards for monitoring quality assurance in Indonesia: the national board of accreditation and the independent board of accreditation for healthcare higher education. To implement the Internal Quality Assurance System in the institutions with a Public Health undergraduate program and to ensure the quality of the graduates and establish competent individuals for Public Health Service in society, the standardization of 'graduates' quality is required (e.g., certification) (Brower et al 2017). A high-quality competency test needs to be implemented as part of the learning evaluation process, which is integrated into the education system. A competency test measures knowledge, skills, and attitude of health workers as per professional standards. A study elucidated that the Indonesian government has issued a regulation through the Ministry of Health: Regulation No. 1796 of 2011 on the registration of health workers – that they must take the competency test to obtain a registration letter. The professional standard is used to ensure the safety of a patient or community (Calhoun et al 2005). In this context, the Indonesian Bachelor of Public Health Competency Test was developed and conducted in compliance with the Law of the Republic of Indonesia Number 12 of 2012 on Higher Education, the Ministerial Regulation of the Ministry of Education and Culture Number 83 of 2013 on the Certificate of Competency, and the Joint Regulation of the Ministry of Health and Ministry of Education and Culture Number 36 of 2013 and Number 1/IV/PB/2013 on the Competency Test for Healthcare Students of Higher Education Institution. Until July 8, 2021, the number of students in Public Health undergraduate programs was 81,706 students from 213 programs ([www.forlap.dikti.go.id](http://www.forlap.dikti.go.id)).

The National Education Standards for bachelor in public health have been developed by a professional organization, IAKMI (The Indonesian Public Health Association), and conjointly stipulated by IAKMI and APTKMI (Association of Indonesian Public Health Higher Education Institutions). The education curriculum of the Public Health undergraduate program is implemented using the SPICES (student-centered, problem-based, integrated, community-based, elective-oriented, and systematic) approach to conform to the aforementioned national education standards.

Therefore, the evaluation process on the learning outcome must meet the appropriate standards in terms of knowledge, attitude, and skills.

Meanwhile, The Health Personnel Assembly (Majelis Tenaga Kesehatan Indonesia/MTKI) developed the competence standards for human health resources. It aimed to conduct competency tests for health personnel, issue the certificates of competence and registration letters, and provide guidance, supervision, monitoring, and evaluation of the competency test system. As a result, the MTKI/MTKP issues a certificate of competence and a registration letter to all health workers, including public health experts, who pass the competency test per their field of study. This is done to ensure safe practice and to improve the quality of care. Furthermore, The Ministry of Health is responsible for establishing a qualification framework for human health resources (Mahendradhata et al 2017).

The purposes of implementing the competency test for the graduates of Public Health in higher education institutions are as follows: 1) ensure the graduates have national-level competency and serve the society to a high standard; 2) test the basic knowledge and skills of the graduates and encourage lifelong learning; 3) assess the competency of the graduates in effectively and efficiently managing Public Healthcare.

This competency test is a standard test to convince that the product of a public health higher education institution has met the requirements of the Ministry of Health as the user of this qualification. In the quality assurance system for assessing higher education institution management, the Indonesian government, through the Ministry of Education and Culture, has a regulation that each higher education institution must be accredited nationally. Although an institution has been assessed by the National Board of Accreditation or an independent board of accreditation for higher education in health, there are many factors influencing the quality of the students who graduated as health workers. 'That's why 'it's important to assess the students through a competency test. Taub et al. (2014) stated that quality assurance in healthcare higher education institutions occurs through credentialing at both the individual practice level (e.g., certification) and the professional preparation level (e.g., program accreditation). Moreover, three factors are affecting the education quality that must be considered in Indonesia; socio-economic change, technological change, and globalization (Taub et al 2014).

The accreditation instruments and the blueprint of the competency test have been developed. The accreditation assessment system for assessing the 'institution's

qualifications is used based on the status, and the result is valid for a certain period. Moreover, the competency test system is used to assess the quality and competency of the graduates. In the same way, it is also provided to address the nation's need, which is relevant to the scope of the study program (Cottrell et al 2009). However, the profession is responsible for the quality of health services, and this needs to be continuously evaluated. As a result, the quality of health services becomes an input for the improvement of the health education system in general and the competency and educational standards in particular.

The quality of educational institutions is achieved by ensuring the quality of the graduates, which is conducted by developing a certification system through the competency test to assess the Public Health graduates. There are seven standards for assessing higher education in the certification system: (1) standard 1: vision, mission, objective and targets, and achievement strategy; (2) standard 2: management, leadership, governance, and quality assurance; (3) standard 3: students and graduates; (4) standard 4: human resource; (5) standard 5: curriculum, learning process, and academic atmosphere; (6) standard 6: cost, infrastructure and facility, and information system; and (7) standard 7: research and community development and partnership. The purpose of the certification is to ensure that the health workers who graduated from a Public Health undergraduate program have a standardized competency. Conversely, a study indicated that through this certification system, a competency test provides a standard registry and license of practice to the graduates who intend to get involved in community health services (Djafri 2014). Therefore, health workers can competently perform health services based on their knowledge and skills.

The present study was conducted to describe and interpret the percentage of Public Health graduates who passed the competency test based on the accreditation status of their Public Health higher education institution. This study was expected to be a referential viewpoint in conducting a measured and objective accreditation in higher education institutions.

## **Materials and methods**

### **Study design**

The design of this study was a quantitative descriptive approach with ecological/correlational study. This study employed the result of the Competency Test

for students of Bachelor of Public Health and Public Health graduates conducted it six times from December 2015 to March 2019 by the Bachelor of Public Health Competency Test. The test takers fulfilled the following requirements:

1. Bachelors or active students of Public Health program who had completed a minimum of 110 credits based on their academic transcript;
2. The test takers were included in the Department of Public Health, as registered in [www.forlap.dikti.go.id](http://www.forlap.dikti.go.id);
3. The institution of the test-takers has been registered in the Database of Higher Education Institutions.

The competency test was conducted by the National Competency Test Committee, consisting of AIPTKMI and IAKMI. AIPTKMI had 143 members from 178 Public Health institutions in Indonesia. Meanwhile, the variables of this study were the number of test-takers, the number of test-takers who passed the test, the percentage of test-takers who passed in each competency, and the percentage of successful and unsuccessful test-takers based on the accreditation status of their respective institution.

### **Data and instrument of the study**

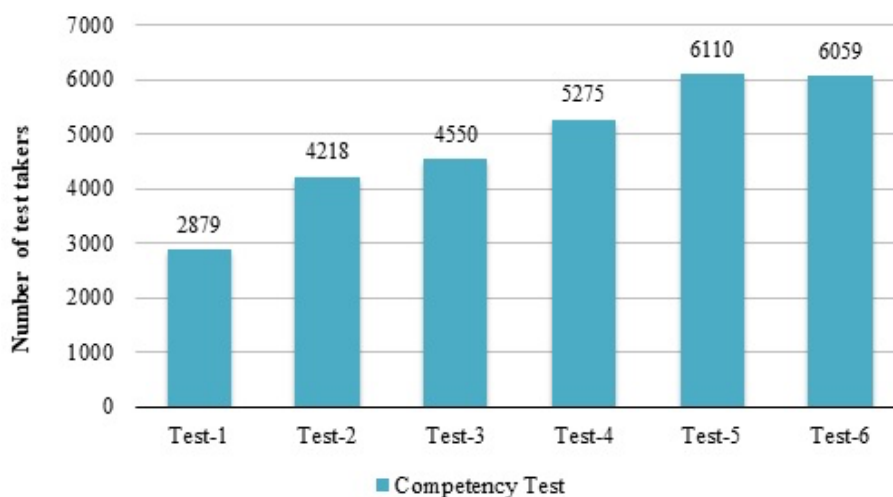
The instrument of this study was the test sheet used to note and write the point of the competency test and the accreditation status of the institution's test-takers. The competency test instrument is not a public domain but the instrument for assessing a program accreditation is a public domain as it can be accessed on [www.lamptkes.org](http://www.lamptkes.org). Since 2020 there have been nine criteria for assessing the quality of a higher education institution.

### **Data processing**

A descriptive technique was used in the analysis and visualized as a graph as necessary. The graph contained the absolute number/point of the test takers and the percentage of the competency test's mark and the category of the institution's accreditation status. Furthermore, the correlation value ( $\rho$ ) was calculated, and the Spearman test was used to check the significant correlation between the accreditation status and the number of successful test-takers.

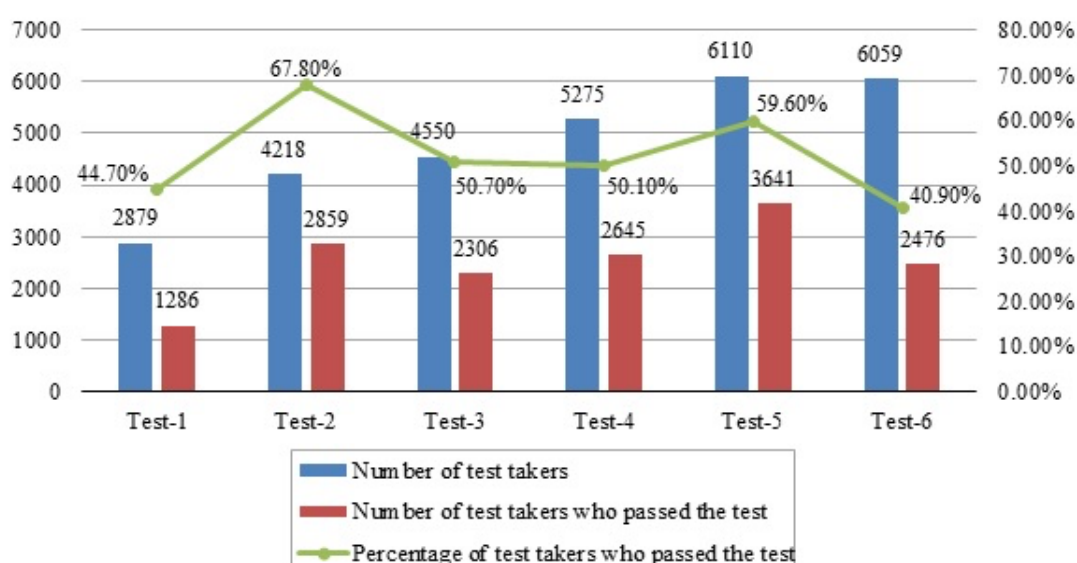
## Results

There were 2879 participants in the first part of the Public Health expert competency test in December 2015. In the sixth test conducted in 2018, the number of participants was increased by double (6059). The number of competency test-takers in each part continued to increase occasionally (Figure 1).



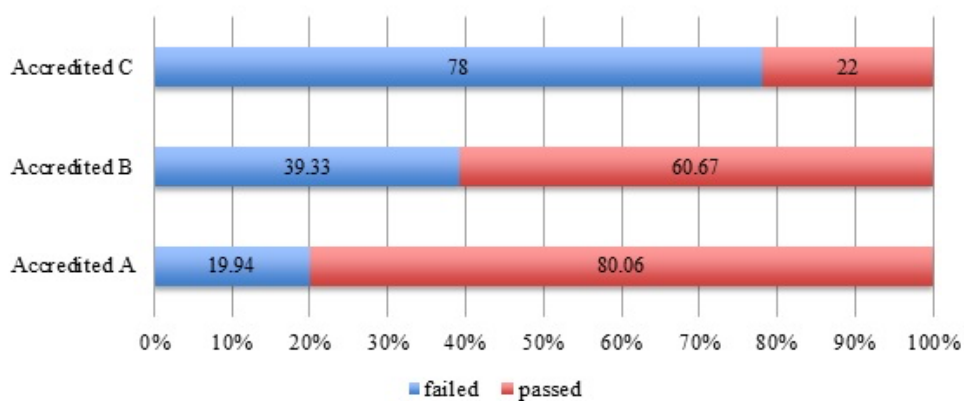
**Figure 1.** The number of competency test-takers in each test

However, the percentage of competency test takers who passed the test had fluctuated at around half of the test participants (40.9%–67.8%). The second and the last test had the highest (47.2%) and the lowest (34.5%) percentage of successful participants, respectively (Figure 2).



**Figure 2.** The number of participants who passed the competency test

Specifically, the competency test results revealed a correlation between the accreditation of the test-takers public health higher education institutions and the percentage of the test-takers passing the competency test with a correlation value ( $\rho$ ) of 0.302 ( $p$ -value = 0.000). The order of public health higher education accreditation ranges from A to C with A as the best and C as sufficient. The results of the competency test indicated that the better the institution's accreditation, the higher the percentage of test-takers passing the test, and vice versa. For example, the percentage of the competency test takers from A-accredited of higher education institutions was 80.06%, while B-accredited of those education institutions of had a 60.67% passing rate, and the rate in C-accredited of higher education institutions was only 22% (Figure 3).



**Figure 3.** The percentage of test-takers based on the accreditation status of their Institution ( $\rho = 0.302$ ,  $p = 0.000$ )

## Discussion

Quality assurance is crucial to ensuring service quality and acceptability by formulating quality control or by planning, directing, and coordinating programs and policies, systematically monitoring the different aspects of the provided services at the facility, encompassing the processes and procedures. Every related person working iteratively to produce measurable changes and make the health services more effective, safe, and people-centered is the goal of quality improvement. Meanwhile, an intervention in quality improvement is defined as a change in health systems, services, or suppliers to increase the likelihood of optimal quality that can be measured by the positive health outcomes for individuals and the population (Ernawati et Hilwati 2001).

Public Health Graduates are important in supporting the functioning of the healthcare system, which is the most complex system that serves humanity (Gunarmi 2018). Thus, competent and dedicated public health experts are needed and should be

distributed equally to optimally perform their roles and functions. Improving the quality of health personnel education is one of the strategic steps to increase the number of qualified health workers with relevant competencies to run the healthcare system.

This study indicated that the better the accreditation of the public health higher education institution of test-takers, the higher their chances of passing the competency test. This demonstrates the suitability of government efforts in ensuring the quality of public health graduates. In addition to organizing a quality assurance system in higher education with institutional accreditation, the government also conducts competency tests, as mandated by Law 12/2012 on Higher Education (Kusumastuti et al 2017). This test is expected to filter Indonesian public health experts who possess competency in providing efficient health services to the community, with patient safety as the main principle. The student competency assessment is important, especially for a public health professional who has the responsibility to improve the community's health. This competency test is also important for establishing professional competence and credibility and ensuring that the services provided by public health practitioners are of the highest quality. The objective of the competency test for public health students is to improve the public health profession and strengthen the practice of public health professionals by certifying them. Another benefit is that it can provide a reference in the development of educational programs and curriculum and the mechanisms and standards for the assessment of the knowledge, attitudes, and skills of students.

Accreditation is important to standardize the core elements of public health professional preparation and be certain that the current key competencies are being taught and imparted to students in professional preparation programs. For example, the health education profession in the US currently employs several systems of voluntary credentials to ensure the quality of the preparation of health education professionals. These systems include credentialing at the individual and institutional levels, and program-specific accreditation (World Health Organization 2018). The accreditation has a contribution to the competency test result of students and could demonstrate the institution's commitment to achieve and maintain their quality. Furthermore, it also provides an external evaluation that publicly attests to the quality of the program (Stadback 2016).

In addition, this study also revealed that institutional accreditation provides a greater opportunity for the competency test-takers to pass the test. A study by Kusumastuti et al. found a positive correlation between the rank of the 's institution's



accreditation and the competency test score on the midwifery program in July 2013 ( $p < 0.01$ ) (Ministry of Research, Technology and Higher Education of Indonesia 2016). This is due to the institutional accreditation that has seven assessment standards (Mosadeghrad 2014). The assessments using these standards are conducted by the Independent Higher Education Accreditation Institution or the National Accreditation Agency. It shows a positive correlation between the accreditation of higher education institutions and the percentage of students passing the competency test. This means that the assessments conducted on institutions using the seven standards have maintained the quality of teaching and learning process in public health higher education institutions. Moreover, the accreditation instrument is valid and reliable for assessing institutional accreditation.

One standard for assessing institutional accreditation is the quality of curriculum and learning. The curriculum is increasingly perceived as the foundation of educational reforms and aimed to achieve high-quality learning outcomes. The curriculum represents a cognition and systematic selection of knowledge, skills, and values. The method of teaching, learning, and assessment processes are monitored by a quality assurance team that shapes and addresses questions of what, why, when, and how the students should learn (Nababan et Saragih 2018).

The improvement of curriculum and learning methods can enhance and guarantee the quality of the teaching and learning processes, especially in the health sector. The reason is that learning in higher education should be directed to the targeted working space (National Accreditation Board for Higher Education of Indonesia 2009). Generally, the curriculum is also understood as a political and social agreement that reflects a common vision while considering the local, national, and global needs and expectations. In other words, a curriculum embodies a 'society's educational aims and purposes. However, the complexity of the curriculum development processes and the range of issues of "what" and "how" in teaching, learning, and assessments present major challenges to policymakers and curriculum developers (Nababan et Saragih 2018).

Based on the study results, it showed that the lowest status of institutional accreditation still has some students passing the competency test because Indonesia public health higher education institutions have a national curriculum developed by AIPTKMI (Association of Indonesian Public Health Higher Education Institutions), but

in other aspects, such as human resources, facilities, and the impact in research and publication, the accreditation standard is not fulfilled.

Furthermore, the most important thing is to sharpen competency relevance per the competency standards required in the health sector (competency-based education) (Pramana et al 2021). In some countries, particularly in developed ones, there has been an increasing interest in learning and competency-based systems in various fields of education, training, and professional development, especially in higher education<sup>13</sup>. Another important thing is the collaboration or partnerships among academics or institutions, the government, and private health practitioners in identifying and prioritizing what should be prepared in terms of educational aspects to face the current challenges in the field and the future challenges related to public health prospects.

## **Conclusion**

The better the accreditation of public health higher education institutions of the competency test-takers, the higher their chance of passing the test. The accreditation of the public health higher education institutions guarantees the competency test-takers will pass the test. This test is crucial for public health students or graduates to standardize their competence as public health experts. Furthermore, it convinces the institutes of the graduates that they have been verified as competent employees, proven by a legal certificate. Further studies are recommended to investigate the improvement of the competency test to prepare well-established and talented graduates for future challenges.

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