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DEVELOPMENT OF RADIOGRAPHER PERFORMANCE ASSESSMENT INSTRUMENTS IN THE RADIOLOGY INSTALLATION OF DR. H. ABDUL MOELOEK LAMPUNG PROVINCE

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ABSTRACT

At Abdul Moeloek Regional General Hospital in Lampung Province, evaluating radiographers' performance is crucial for ensuring quality radiology services. The current assessment tools for ongoing professional practice and work behavior lack clear, objective indicators and targets. This research uses research and development (R&D) research methods with a quasi-experimental posttest-only non-equivalent control group design. Data were collected using observation, interviews, and FGD. Expert validation and design improvements are conducted, followed by a trial involving 20 radiographers. Validity is tested using corrected items to total correlation, and reliability is assessed using Cronbach's alpha. Next, expert validation tests and design improvements were carried out by 3 experts, and then a limited trial of 20 RSUDAM radiographers carried out a validity test using corrected items to total correlation. Meanwhile, the reliability test uses Cronbach's alpha. The developed instrument, based on indicators and targets, demonstrates valid and reliable measures of radiographer performance. Expert validation through FGD confirms the instrument's effectiveness. Validity test results indicate significance (> 0.05), and reliability tests show Cronbach's alpha values (> 0.60). Normality tests reveal non-distributed data (p-value < 0.05). The Wilcoxon test, comparing old and new instruments, yields a significant Asymp.sig value (0.000) for the discipline variable, indicating improved performance assessment.

Keywords: *Instruments, Performance assessment, Radiographer, Research and Development (R&D)*

INTRODUCTION

Radiographers are currently known as an important asset in the use of health services in hospitals, especially in radiology installations. Based on KEPMENKES RI No. HK.01.07 of 2020, radiographers are medical personnel whose functions, expertise, and obligations have been determined by the leadership and are permitted to carry out radiology service activities in the realm of medical services. To apply their competence, radiographers are more widely used to improve the quality of radiology services by using equipment or transmitting waves that can cause radiation that ionizes the material or tissue in its path and radiation that does not cause ionization (non-ionizing). In addition, Radiographers constitute an important part of medical professionals with specialist training and highly developed skills to provide expertise in follow-up radiographic techniques (Chevalier et al., 2022).

In contrast to other health workers, the radiographer profession is generally considered to be very helpful in operating new medical equipment (Adams & Smith, 2003). For example, Computerized Tomography Scan (CT-Scan), Magnetic Resonance Imaging (MRI), Ultrasonography (USG), Nuclear Medicine, Radiotherapy and other imaging equipment. Not only that, to reduce the possibility of equipment damage and return on investment within the

anticipated period, radiographers must work well and have the necessary clinical practice skills according to the radiographer's performance targets (Alvina, 2017).

An instrument is a tool used to measure an object or collect data from a variable. A measuring instrument is considered valid if it can measure exactly what it is designed to measure (Matondang, 2009). Furthermore, developing assessment instruments is an activity that aims to improve the quality of existing assessment instruments. Instruments are very significant in determining the quality of information in evaluation, instruments also translate a real situation that has been proven to be true from records of a collection of facts, so that if the research tools used are of good quality then the data obtained will be exactly correct (Fuadi, 2017).

Performance appraisal becomes a system that can be used at a certain time frame to evaluate overall personnel performance. Performance appraisal functions to identify, examine, assess, record, and see the qualities and deficiencies of personnel in carrying out work. A good performance assessment consists of an average framework or context that describes all functioning procedures at the final stage of overall performance (Simbolon et al., 2021).

Evaluation is research, namely an activity in collecting, reviewing, and providing useful reports for the object being assessed, then comparing the assessment parameters and the results of the assessment are used in determining conclusions about the object (Prof. Dr. H. M. Ma'ruf Abdullah, 2014). The main implication of the results of the performance assessment process is that the description of Radiographer skills can be used as information to evaluate the efficiency of HR management in Hospitals and encourage the human development process to become experts in their field. So, with a performance assessment, information can be provided as material for making important decisions in determining (1) employee career development such as promotions, transfers, rotations, performance allowances, (2) performance allowances, (3) awards (4) sanctions, by the employee's performance.

UPT Health RSUD Dr. H. Abdul Moeloek The Lampung regional government has designated it as a Class A Teaching Hospital with the highest referral rate. has been accredited at the "Plenary Level" to provide medical services of professional value by prioritizing the safety and security of sufferers, therefore guaranteeing the quality of employee work is necessary to support the achievement of the vision within the RSUDAM environment.

Based on the search for Radiographer performance assessment documents at the Lampung Regional Hospital, currently, 2 (two) performance assessment instruments for Radiographers have been used, namely first, the document work performance assessment instrument comes from the civil service applied to Civil Servant (PNS) Radiographers based on REPUBLIC OF INDONESIA REGULATION OF PAN RB MENTION No. 6 of 2022 and PERMENKES RI No. 1 of 2019 aims to guarantee the objectivity of civil servant development based on achievement systems and career systems (Permen PANRB No. 6 of 2022)(PERMENKES RI, 2019), both instruments for assessing the performance of Radiographers on going professional practice evaluation (OPPE) and aspects of work behavior The Key Behavior Area (KBA) which applies to all civil servant radiographers and honorary staff in radiology installations is based on the decision of the main director of RSUDAM No. 180 of 2018 (Lampung, 2018), which aims to be a basis for consideration in developing abilities and skills, as well as one of the determinants of employee education and training programs.

As a result of the observations made, assessing the performance of Radiographers from the 2 (two) instruments mentioned above, problems were found with the instruments in the Radiology Installation, whereas in the performance assessment instrument for the Radiographer Aspect of ongoing professional practice evaluation (OPPE) there were 4 (four) dimensions assessed, namely (1) ability to prepare and carry out inspections, (2) ability to interpret results, (3) quality assurance ability, (4) implementation of work safety, which is equipped with indicators from each dimension. Then, in the performance assessment process, it is carried out objectively, however, there are weaknesses in this aspect of the assessment which does not indicate that there are targets that must be achieved, which causes a lack of accuracy in measuring performance. Furthermore, for the Key Behavior Area (KBA) work behavior instrument, there are 5 (five) dimensions of the aspects assessed, namely (1) discipline, (2) service orientation, (3) commitment, (4) work initiative, (5) cooperation, an assessment carried out subjectively where the assessing officer finds it difficult to carry out an assessment to determine a radiographer's performance rating, because in this aspect there are no indicators from each assessment dimension, and there is no target that must be achieved, therefore the instrument is still general in nature.) and less precise in measuring performance.

The results of the observations carried out revealed that the assessment of the Radiographer's performance using the two instruments above indicated that there were problems with the instruments used in the Radiology Installation. In the performance assessment instrument through the Radiographer Aspect of ongoing professional practice evaluation (OPPE), there are four dimensions assessed, namely: (1) the ability to prepare and carry out examinations, (2) the ability to interpret results, (3) ability to maintain quality, and (4)) implementation of job security. Each dimension has been enriched with relevant indicators. However, in this performance assessment process, even though it is carried out objectively, there are weaknesses. The assessment aspect does not yet have targets that must be achieved, so performance measurement becomes less accurate.

Furthermore, the instrument for assessing work behavior through the Key Behavior Area (KBA) has five dimensions of the aspects assessed, namely: (1) discipline, (2) service orientation, (3) commitment, (4) work initiative, and (5) cooperation. However, the assessment was carried out subjectively by the raters, and they found it difficult to rank the radiographers' performance. This happens because this assessment aspect does not yet have clear indicators for each dimension, and there are no targets that must be achieved. Therefore, this instrument is still general and not precise enough to measure performance accurately.

Based on the background contained above, the author wants to create a design for developing a performance assessment instrument for the Radiographer's ongoing professional practice evaluation (OPPE) and Key Behavior Area (KBA) work behavior by combining them into one instrument that can assess both completely with indicators. which is clear from each dimension, and there is a performance target for each indicator assessed, so that it can be a better instrument for assessing radiographer performance and makes it easier for assessors to assess performance in a fair, transparent, and measurable manner.

METHOD

This research is a type of Research and Development (R&D) research that aims to produce a new instrument for assessing radiographer performance consisting of indicator and target-

based aspects of Key Behavior Area (KBA) work behavior, and target-based aspects of Radiographer ongoing professional practice evaluation (OPPE). This method can be used to account for the research process in developing a new product and improving existing products.

This research design uses the Quasy Experimental method with a posttest-only Non-equivalent Control Group Design. This design is used to analyze the effectiveness of developing radiographer performance assessment instruments (Aspers & Corte, 2019; Sugiyono, 2020).

Analysis of the research data carried out was expert validation testing and design improvement by 3 experts: performance assessment expert, instrument expert, and hahasa expert. Next, a limited trial of the instrument was carried out by 20 RSUDAM radiographers, and a statistical test was carried out using the SPSS 16.0 program, namely a validity test using corrected items to total correlation. This validity test used a criterion that was declared valid if it had a significant value > 0.05. Then test the reliability using Cronbach's Alpha technique > 0.60, so the questionnaire is declared reliable or consistent. The normality test uses the Shapiro-Wilk Wilk method because the number of samples in this study is less than 50 samples. If the significance value of the Shapiro-Wilk p-value is > 0.05 then the data is normally distributed. On the other hand, if it is not normally distributed, the test that will be carried out is a non-parametric test, namely using the Wilcoxon test.

RESULTS AND DISCUSSION

Indicators from each assessment dimension in the work behavior aspect of the Key Behavior Area (KBA) in the Radiology Installation at Dr. RSUD. H. Abdul Moeloek Lampung Province fairly and transparently

Development of indicators for each assessment dimension in the work behavior aspect of the Key Behavior Area (KBA) in the Radiology Installation at Dr. RSUD. H. Abdul Moeloek Lampung Province is implemented carefully so that it is fair and transparent. This development process uses a Research and Development (R&D) approach by applying the ADDIE development model developed by Dick, W. & Cary, L. This model adopts instrument development steps consisting of five core stages carried out in a shorter period and a more compact development cycle, aiming to shorten the time usually required in the development process.

The results of creating indicators through the observation method involve collecting information data from a committee of other health workers through the regulatory document of the Minister of Administrative and Bureaucratic Reform No. 08 of 2021 and the policy of the main Director of RSUDAM No. 180 of 2018 relating to the creation of performance instruments for other health workers, the results Observation has important implications in developing indicators for assessing Key Behavior Area (KBA) work behavior. Based on established guidelines and standards, it can increase the accuracy and relevance of these indicators.

Based on the results of in-depth interviews with each respondent selected based on their key role in the Radiology Installation, Key Behavior Area (KBA) work behavior assessment indicators were identified. Data from interviews were analyzed to identify similarities and variations in respondents' views.

The next stage is Focus Group Discussion (FGD), where the same respondents gather to discuss the results of the interview and reach a common understanding of the resulting indicators. In the FGD, respondents discussed and analyzed the indicators that had been identified from interviews and looked for points of similarity in their perceptions. This discussion helps in formulating the most relevant indicators and represents the Key Behavior Area (KBA) work behavior aspects.

The results of the instrument development process on indicators for each assessment dimension in the work behavior aspect of the Key Behavior Area (KBA) in the Radiology Installation at Dr. RSUD. H. Abdul Moeloek Lampung Province, with a total of 10 (ten) indicators, namely: Dimension (1) Discipline consists of 2 (two) indicators: (a) Timely attendance at work, (b) Complying with applicable regulations; (2) Service Orientation consists of 2 (two) indicators: (a) Understanding and providing good service according to standards. (b) Providing services above standards to ensure decisions of the parties served are by superiors' directions; (3) Commitment consists of 2 (two) indicators: (a) Understanding and recognizing basic behavior regarding organizational commitment, (b) Demonstrating commitment to interests greater than personal interests; (4) Work Initiative consists of 2 (two) indicators: (a) Understanding what must be done in response to a task or job, (b) Responding quickly when accepting a task or job by setting targets, looking for new ideas or showing a desire to contribute to tasks and deal with problems by contacting authorities/superiors; (5) Collaboration consists of 2 (two) indicators: (a) Understanding the role in the team and showing a positive attitude in the collaborative relationship, (b) Understanding the role in the team and showing a positive attitude in the collaborative relationship. This is in line with ASN performance policy guidelines (permeates regulations)

According to the researchers, the results of this study provide an in-depth view of the indicators for assessing work behavior in the Key Behavior Area (KBA) in the Radiology Installation at RSUD Dr. H. Abdul Moeloek, Lampung province. Through observation, interviews, and FGD approaches, this research succeeded in producing indicators that are fairer and more transparent.

Targets for each indicator in the work behavior aspect of the Key Behavior Area (KBA) in the Radiology Installation at RSUD Dr. H. Abdul Moeloek Lampung Province in a measurable manner

At this stage, the observation method is used to develop target results from indicators in the work behavior aspect of the Key Behavior Area (KBA). Observations are carried out by collecting information data from various related sources, such as log books, patient data documents, daily and weekly censuses per device, employee attendance reports (fingerprints), thermoluminescent dosimeter individual dose monitoring test results reports (TLD badges), quality assurance reports internal (PMI). From the data collected through observation, the next step is to identify specific and measurable target results for each indicator in the Key Behavior Area (KBA) work behavior aspect. These target results reflect the expected achievements and can be measured based on information obtained from observed sources.

The results of the interviews in the process were carried out with 3 (three) key respondents, namely the head of the radiology room, the head of other health workers, and the head of human resource development (HR). The interview aims to validate and clarify the target results that

have been identified through observation. Through interaction with respondents, the target results were changed or improved according to existing practices in the radiology installation at RSUD Dr. H. Abdul Moeloek, Lampung province.

The results of the Focus Group Discussion (FGD) involve respondents to ensure the same perception about the target results of indicators in the Key Behavior Area (KBA) work behavior aspect, then agreement on the target results is achieved through discussion and exchange of views between respondents (Safwatullah, 2021; Widyastuti, 2010).

The results of instrument development on targets for each indicator of the Key Behavior Area (KBA) work behavior aspects in the Radiology Installation at Dr. RSUD. H. Abdul Moeloek Lampung Province, with a total of 10 (10) targets with provisions for quantity or output, quality or quality, and an implementation period of 1 (one) working month in June, in the target description, namely: Dimensions (1) Discipline,; (2) Service Orientation, (3) Commitment; (4) Work Initiatives; (5) Cooperation, with respective targets for quantity or output (100), quality or quality (100).

Based on the results of this discussion, researchers along with instrument experts and radiographer performance assessment experts formulated targets for measuring results from indicators in the work behavior aspects of the Key Behavior Area (KBA). This target is the basis for measuring the achievement of radiographers' professional behavior in daily work practices.

Targets for each indicator in the Radiographer on Going Professional Practice Evaluation (OPPE) aspect at the Radiology Installation at RSUD Dr. H. Abdul Moeloek Lampung Province in a measurable manner

At this stage, the observation method is used to develop target results from indicators in the Radiographer's Going Professional Practice Evaluation (OPPE) aspect. Observations are carried out by collecting information data from various related sources, such as log books, patient data documents, daily and weekly censuses per device, employee attendance reports (fingerprints), thermoluminescent dosimeter individual dose monitoring test results reports (TLD badges), quality assurance reports internal (PMI). From the data collected through observation, the next step is to identify specific and measurable target results for each indicator in the Radiographer's Going Professional Practice Evaluation (OPPE) aspect. These target results reflect the expected achievements and can be measured based on information obtained from observed sources (Mulyani & Saputri, 2019).

The results of the interviews in the process were carried out with 3 (three) key respondents, namely the head of the radiology room, the head of other health workers, and the head of human resource development (HR). The interview aims to validate and clarify the target results that have been identified through observation. Through interaction with respondents, the target results were changed or improved according to existing practices in the radiology installation at RSUD Dr. H. Abdul Moeloek, Lampung province (Diniati et al., 2018).

The results of the Focus Group Discussion (FGD) involve respondents to ensure the same perception about the target results of the indicators in the Radiographer on Going Professional Practice Evaluation (OPPE) aspect, then agreement on the target results is achieved through discussion and exchange of views between respondents.

The results of instrument development on the targets of each aspect of the Radiographer on Going Professional Practice Evaluation (OPPE) indicators in the Radiology Installation at RSUD Dr. H. Abdul Moeloek Lampung Province, with a total of 13 (thirteen) targets with provisions for quantity or output, quality, and implementation period within 1 (one) working month in June, in the target description as follows: Dimensions (1) Ability to prepare and carry out examinations, in indicators (a) Ability to prepare before examination, target quantity or output, namely (100 patients), quality or quality, namely: (100); (b) Ability to carry out examinations according to the SPO target quantity or output, namely (100 patients), quality or quality, namely: (100); (c) Ability to process images, target quantity or output, namely (100 films), quality, namely: (100); (d) Ability to print images, target quantity or output, namely (100 films), quality or quality, namely: (100); (e) Reporting and validation of results, target quantity or output, namely (100 films), quality or quality, namely: (100); (2) Result Interpretation Ability, in indicators (a) Relationship between X-ray results, diagnosis, clinical and therapy information, target quantity or output, namely (100 films), quality or quality, namely: (100); (b) Combination of X-ray results with internal quality control criteria, quantity or output target, namely (100 films), quality or quality, namely: (100); (c) Investigation of unusual results, target quantity or output, namely (100 films), quality or quality, namely: (100); (3) Quality Assurance Capability, in indicators (a) Implementation, assessing the suitability of X-ray results and carrying out corrective actions for strengthening internal and external quality, target quantity or output, namely (100%), quality or quality, namely: (100%); (b) Identify types of errors in radiological examinations, target quantity or output, namely (100%), quality, namely: (100%); (c) Quality Control & Quality Assurance and ensuring equipment cleanliness, quantity or output target, namely (100%), quality or quality, namely: (100%); (4) Implementation of Work Safety, in indicators, (a) Use of APAR (Light Fire Extinguisher), quantity or output target, namely (100%), quality or quality, namely: (100%); (b) Implementation of radiation protection, quantity or output target, namely (100%), quality, namely: (100%).

Based on the results of this discussion, researchers along with instrument experts and radiographer performance assessment experts formulated targets for measuring results from indicators in the Radiographer's ongoing professional practice evaluation (OPPE) aspect. This target is the basis for measuring the achievement of radiographer performance assessment instruments in daily work practices (Armstrong et al., 2016).

Instruments that have good validity and reliability values for measuring the performance of Radiographers in the Radiology Installation at RSUD Dr. H. Abdul Moeloek Lampung Province.

Expert Validation Test

In the development stage of the radiographer performance assessment instrument, before testing the validity and reliability values, the instrument is validated by experts, where expert validation is an important stage to ensure the quality, accuracy, and relevance of the instrument. The expert validation test was carried out using the Focus Group Discussion (FGD) method involving three professional experts who have a deep understanding of the field of radiology and performance assessment. The three experts involved are a performance assessment expert

by the head of the radiology room, an instrument expert by the chairman of the committee for other health workers, and a language expert by the Indonesian language lecturer.

At this stage, the radiographer performance assessment instrument which had been developed through observation, interviews, and literature analysis, was presented to three experts through FGD. FGD was chosen as a method because it allows for direct interaction and in-depth discussion about the instruments being developed. This process aims to obtain input, comments, and suggestions from these experts.

The head of the radiology room acts as an expert performance assessor with in-depth field experience. The contribution of the head of the radiology room is very valuable in ensuring that the performance assessment instruments reflect the daily challenges and situations in the Radiology Installation at RSUD Dr. H. Abdul Moeloek. The head of the radiology room's input and views regarding the radiographer's performance practices in the context of the agency can help refine the instrument, and help ensure that the assessment instrument covers aspects that are relevant and applicable in the daily work environment.

Instrument experts from other health professional committees provided insight into the validity and accuracy of the assessment instruments. They can analyze the suitability of instruments with established professional standards and guidelines. Instrument experts provide critical analysis of instrument structure and content ensuring that each statement and indicator appropriately reflects the radiographer's capabilities and quality of performance. The involvement of instrument experts in the FGD assures that the instrument being developed meets aspects of validity and quality.

Linguists ensure that the statements in the instrument use clear language, or the language used is effective, structured, easy to understand, and written by EYD. Linguist experts help avoid ambiguity, the use of questionable words, or complicated sentences so that the instrument can be answered correctly by respondents, then ensure that the assessment instrument developed is of good quality, accurate, and valid (Kusno et al., 2022).

Based on the results of expert validation of the radiographer's performance assessment instrument by filling in the instrument validation form and continuing with a focus group discussion (FGD) with stages, namely: The researcher submits a form for developing a radiographer's performance assessment instrument along with a questionnaire sheet containing statements by the contents of the performance assessment instrument form. radiographer. Then, the validator fills in the validation sheet for the radiographer performance assessment development instrument provided by the researcher. After the validator fills in the instrument validation sheet, provides comments and suggestions in the form of comments and suggestions by an expert in the form of improvements to the writing, and usage, Adjust the writing of the Indonesian EYD that has been determined, and selects the language used is easy to understand. Next, the researcher made improvements according to the validator's comments and suggestions. Then, the validator conducted a focus group discussion (FGD) on the results of improvements to the radiographer performance assessment instrument development form by the researcher and obtained valid results. Based on these results, the validator approves and signs the validation sheet for the assessment instrument which has been declared valid.

Test the validity of the instrument

The results of testing the questionnaire were carried out using a validity test on 20 respondents at RSUD Dr. H. Abdul Moeloek, Lampung Province, it was obtained that the

recapitulation results for each item of the research variable instrument for the results of calculating the validity of the questionnaire all had a significant value of > 0.05.

a. The following are the results of the validity test for the ability to prepare and carry out the examination:

Table 1. Validity Tests for Ability to Prepare and Examination

Question Item	Statement	R_{counts}	Significant Value	Remarks
1	Ability to make preparations before the examination	0.925	0,005	Valid
2	Ability to carry out inspections according to SPO	0.925	0,005	Valid
3	Image processing ability	0.850	0,015	Valid
4	Image printing capability	0.850	0,015	Valid
5	Reporting and validation of results	0.696	0,014	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 5 statements submitted to respondents of 20 (twenty) radiographers regarding the ability to prepare and carry out examinations, all have a significant value of >0.05, so it can be concluded that the five the statement is valid.

b. The following are the results of the validity test regarding the ability to interpret the results:

Table 2. Validity Tests of Result Interpretation Ability

Question Item	Statement	R_{counts}	Significant Value	Remarks
1	Relationship between X-ray results, diagnosis, clinical information, and therapy	0.793	0,005	Valid
2	Combination of X-ray results with internal quality control criteria	0.937	0,015	Valid
3	Quality Control & Quality Assurance and ensuring equipment cleanliness	0.937	0,015	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 3 statements submitted to 20 (twenty) radiographer respondents regarding the ability to interpret the results, all have a significant value of >0.05, so it can be concluded that these three statements are valid.

c. The following are the results of the Validity test regarding quality assurance capabilities:

Table 3. Validity Tests of Quality Assurance Capabilities

Question Item	Statement	R_{counts}	Significant Value	Remarks

1	Implementation, assessing the suitability of X-ray results, and taking corrective action to strengthen internal and external quality	0.696	0,032	Valid
2	Identify types of errors in radiological examinations	0.846	0,005	Valid
3	Quality Control & Quality Assurance and ensuring equipment cleanliness	0.726	0,468	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 3 statements submitted to 20 (twenty) radiographer respondents regarding quality assurance capabilities, all have a significant value of >0.05, so it can be concluded that the three statements are valid.

d. The following are the results of the validity test regarding the implementation of work security:

Table 4. Validity Tests of Job Security Implementation

Question Item	Statement	R_{counts}	Significant Value	Remarks
1	Use of APAR (Light Fire Extinguisher)	0.546	0,025	Valid
2	Application of radiation protection	0.546	0,013	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 2 statements submitted to 20 (twenty) radiographer respondents regarding the implementation of work safety, all have a significant value of > 0.05, so it can be concluded that the two statements valid.

e. The following are the results of the validity test regarding discipline:

Table 5. Disciplinary Validity Tests

Question Item	Statement	R_{counts}	Significant Value	Remarks
1	Timely attendance at work	0.545	0,007	Valid
2	Comply with applicable regulations	0.545	0,000	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 2 statements submitted to 20 (twenty) radiographer respondents regarding discipline, all had a significant value of > 0.05, so it can be concluded that the two statements are valid.

f. The following are the results of the Validity test regarding Service Orientation:

Table 6. Validity Tests of Service Orientation

Question Item	Statement	R counts	Significant Value	Remarks
1	Understand and provide good service according to standards	0.577	0,015	Valid
2	Provide services above standards to ensure the decisions of the parties served are by superiors' directions.	0.577	0,014	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 2 statements submitted to 20 (twenty) radiographer respondents regarding service orientation, all have a significant value of > 0.05, so it can be concluded that the two statements are valid.

g. The following are the results of the Validity test regarding Commitment:

Table 7. Commitment Validity Tests

Question Item	Statement	R counts	Significant Value	Remarks
1	Understand and know basic behavior regarding organizational commitment	0.471	0,001	Valid
2	Demonstrate commitment to interests greater than personal interests	0.471	0,000	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 2 statements submitted to 20 (twenty) radiographer respondents regarding commitment, all had a significant value of > 0.05, so it can be concluded that the two statements are valid.

h. The following are the results of the validity test regarding work initiatives:

Table 8. Validity Tests of Work Initiatives

Question Item	Statement	R counts	Significant Value	Remarks
1	Understand what must be done in response to a task or job	1.000	0,005	Valid
2	Respond quickly when receiving assignments or work by setting targets, looking for new ideas or showing a desire to contribute to the task, and dealing with problems by contacting authorities/superiors	1.000	0,005	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 2 statements submitted to 20 respondents regarding work initiatives, all had a significant value of >0.05, so it can be concluded that both statements are valid.

i. The following are the results of the validity test regarding cooperation

Table 9. Collaboration Validity Tests

Question Item	Statement	R counts	Significant Value	Remarks
1	Understand the role in the team and show a positive attitude in collaborative relationships	0.793	0,005	Valid
2	Be transparent and open and respect group members	0.793	0,015	Valid

Based on the table above, the results of the validity test on each research instrument item, of the 2 statements submitted to 20 (twenty) radiographer respondents regarding cooperation, all had a significant value of > 0.05, so it can be concluded that the two statements are valid.

Reliability Test

After testing the validity, the next step is to test the reliability of each statement item. Instrument reliability testing was carried out using the SPSS 16.0 computer program. Then, this step is carried out to determine the extent to which the measurement results can be trusted or relied upon. The method used for this reliability test is the Cronbach's alpha method. The criteria for the reliability test are if the Cronbach's alpha value is > 0.60 then the instrument is reliable, and conversely if the value is less than that, it is considered unreliable. The results can be seen in Table 10 of the reliability test as follows:

Table 10. Reliability Tests

Variable	Cronbach's Alpha	Description
Ability to prepare and carry out examinations	0,901	Reliable
Results interpretation ability	0,846	Reliable
Quality assurance ability	0,674	Reliable
Implementation of job security	0,654	Reliable
Discipline	0,703	Reliable
Service orientation	0,702	Reliable
Commitment	0,637	Reliable
Work Initiative	1.000	Reliable
Collaboration	0,877	Reliable

Based on Table 4.16 above, the reliability test results show the results of the ability to prepare and carry out inspections with Cronbach's alpha (0.901), the ability to interpret results with Cronbach's alpha (0.846), the ability of quality assurance with Cronbach's alpha (0.674), the implementation of job security with Cronbach's alpha (0.654), Discipline with Cronbach's alpha (0.703), Service orientation with Cronbach's alpha (0.702), Commitment with

Cronbach's alpha (0.637), Work initiative with Cronbach's alpha (1.000), Cooperation with Cronbach's alpha (0.877). So from the results above it is stated that all statement variables that have been tested for instrument reliability are declared reliable with a Cronbach's alpha value > 0.60, the largest being the work initiative variable with Cronbach's alpha (1,000).

Researchers agree with the increase in the work initiative variable because a radiographer who has chosen his profession will have the responsibility and desire for strong work initiative, whereas a radiographer will be able to consciously and wholeheartedly understand every task, action, and work step that will be carried out. done well and correctly. This is in line with research by Armayudi, et al. (2023) in a quote (Syam et al., 2023) that the results of measurements on work initiative indicators show that 33 (thirty-three) people, namely 65% of respondents, agreed that health workers show initiative in their work.

Normality Test

The Shapiro-Wilk normality test that has been carried out above, shows the normality test results for each variable. Ability to prepare and carry out examinations (P-value 0.000), Ability to interpret results (P-value 0.000, Ability to guarantee quality (P-value 0.000), Implementation job security (P-value 0.000), Discipline (P-value 0.000), Service orientation (P-value 0.000), Commitment (P-value 0.000), work initiative (P-value 0.000), cooperation (P-value 0.000). The results of the normality test can be seen in table 11 of the normality test as follows:

Table 11. of the normality test

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Ability to prepare and carry out examinations	.509	20	.000	.433	20	.000
Results interpretation ability	.509	20	.000	.433	20	.000
Quality assurance ability	.527	20	.000	.351	20	.000
Implementation of job security	.527	20	.000	.351	20	.000
Discipline	.463	20	.000	.544	20	.000
Service orientation	.509	20	.000	.433	20	.000
Commitment	.527	20	.000	.351	20	.000
Work Initiative	.527	20	.000	.351	20	.000
Collaboration	.463	20	.000	.544	20	.000

*Shapiro-Wilk

Table 11. above, it shows the results of the normality test that the significance value of the Shapiro-Wilk p-value is <0.05 so the data is not normally distributed, so the test that will be carried out is non-parametric, namely using the Wilcoxon test.

Test the Effectiveness of Radiographer Performance Assessment Instruments

The Wilcoxson non-parametric test results can be seen in Table 12 as follows:

Rank					
		N	**Mean Rank**	**Sum Of Rank**	**Asymp Sig.**
Ability to prepare and carry out Post.Test-Pre Test examinations	Negative Rank	0	.00	.00	0,027
	Positive Rank	6	3.50	21.00	
	Ties	14			
	Total	20			
Ability to interpret posts.Test-Pre.Test results	Negative Rank	0	.00	.00	0,020
	Positive Rank	6	3.50	21.00	
	Ties	14			
	Total	20			
Quality assurance capability Post.Test-Pre.Test	Negative Rank	0	.00	.00	0,014
	Positive Rank	7	4.00	28.00	
	Ties	14			
	Total	20			
Implementation of job security Post.Test-Pre.Test	Negative Rank	0	.00	.00	0.000
	Positive Rank	20	10.15	210.00	
	Ties	0			
	Total	20			
Discipline Post.Test-Pre.Test	Negative Rank	0	.00	.00	0,000
	Positive Rank	20	10.50	210.00	
	Ties	0			
	Total	20			

Rank					
		N	**Mean Rank**	**Sum Of Rank**	**Asymp Sig.**
Service orientation Post.Test-Pre.Test	Negative Rank	0	.00	.00	0,011
	Positive Rank	7	4.00	28.00	
	Ties	13			
	Total	20			
Commitment Post.Test-Pre.Test	Negative Rank	0	.00	.00	0,005
	Positive Rank	8	4.50	36.00	
	Ties	12			
	Total	20			
Work initiative Post.Test-Pre.Test	Negative Rank	0	.00	.00	0,005
	Positive Rank	8	4.50	36.00	
	Ties	12			
	Total	20			
Collaboration Post.Test-Pre.Test	Negative Rank	0	.00	.00	0,000
	Positive Rank	15	8.00	120.00	
	Ties	5			
	Total	20			

The research results show that each variable has an Asymp.sig value <0.05 before and after the application of the radiographer performance assessment instrument. This shows that there is an increase in the old instrument over the new instrument with the highest Asymp.sig value of 0.000 in the discipline variable with a mean rank of 10.50 and a sum Rank of 210,000.

The results of this research imply that it is proven that the effectiveness of the radiographer performance assessment instrument can be used as a transformation of the process of developing a radiographer performance assessment instrument from the KBA aspect which has not yet shown the existence of indicators, targets and Radiographer Aspects (OPPE), has not

shown the existence of a target into an instrument that is equipped with indicators and targets in each dimension in a fair, transparent and measurable manner. So, it can be applied in the process of assessing the performance of radiographers in the radiology installation at RSUD Dr. H. Abdul Moeloek Lampung Province.

CONCLUSION

Based on the results of the research, it can be concluded that the development of radiographer performance assessment instruments in the Radiology Installation at RSUD Dr. H. Abdul Moeloek Lampung Province as follows: This research provides a significant contribution in developing a Key Behavior Area (KBA) work behavior assessment instrument in the Radiology Installation of Dr. RSUD. H. Abdul Moeloek Lampung Province. By applying the Research and Development (R&D) method, this research succeeded in producing indicators that are fairer, more transparent, and measurable by minimum service standards for radiology installations. It is hoped that this can help improve the quality of radiographer performance assessment instruments in services at Radiology Installations, as well as provide better guidance in evaluating radiographers' work behavior.

The results of this research produce target measurement results from indicators of the Key Behavior Area (KBA) work behavior aspects. This target can be a reference for measuring the achievement of radiographers' work behavior in their daily work routines. By using the Research and Development (R&D) method, this development process has produced an instrument that is accurate and useful in evaluating and improving the quality of radiographer performance assessment instruments in the radiology installation environment. This research succeeded in formulating measurable target results from the Radiographer's Going Professional Practice Evaluation (OPPE) indicators. This target will be a guide in measuring radiographer' performance assessment instruments in their daily work routine. By using the Research and Development (R&D) method, this development process has produced an instrument that is accurate and useful in evaluating and improving the quality of radiographers' work behavior in the radiology installation environment.

Results of the instrument that has been developed in this research to measure the performance assessment instrument for radiographers in the Radiology Installation at RSUD Dr. H. Abdul Moeloek Lampung Province. The results of the validity test using the Corrected Item-Total Correlation method, the instrument show that all statements have a significant value of >0.05. Then the results of the reliability test using the Cronbach's alpha method show that all instrument statement variables have a Cronbach's alpha value > 0.60. Thus it has good validity and reliability values. It is hoped that this instrument can be used as an effective tool to measure and evaluate radiographers' performance assessments. The research results of the normality test show that the p-value is <0.05 so the data is not normally distributed. Furthermore, tested using the Wilcoxon method, this shows that there is an increase in the old instrument over the new instrument with the highest Asymp.sig value of 0.000 in the discipline variable with a mean rank of 10.50 and Sum Of Rank 210,000.

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