



**ANALYSIS OF BTCLS SKILL ASSESSMENT  
DIII NURSING STUDENTS AT BINA SEHAT PPNI  
UNIVERSITY MOJOKERTO**

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<b>ABSTRACT</b>	<b>Keywords</b>
<p>DIII Nursing Study Programme students as prospective nurses must have good knowledge and skills in performing Basic Trauma Cardiac Life Support (BTCLS) actions, this is very important because BTCLS actions are carried out to help victims with cardiac arrest both at the hospital and outside the hospital. This study aims to determine the description of the evaluation of the value of knowledge and skills of BTCLS by students when attending training and post-training duration. The research method used was descriptive. Instruments with questionnaires to assess knowledge and observation sheets to see the value of skills. The sample in this study consisted of 58 respondents who were taken in each batch, namely batches 2021, 2022 and 2023. The results of this study were obtained from the evaluation of the value of BTCLS knowledge and skills which increased after training. The existence of a significant effect on the difference in treatment given to each variable is indicated by a significance value of <math>0.042 &lt; 0.005</math> in the 2021 results, and a significant value of <math>0.000 &lt; 0.005</math> in 2022, while in 2023 the significant results show <math>0.000 &lt; 0.005</math>. Based on the results it can be concluded that there is an increase in knowledge and BLS skills. This study shows that the BTCLS training that has been carried out affective has a significant impact on participants.</p>	<p><i>BTCLS Skill Assessment</i></p>

**INTRODUCTION**

Diploma Nursing (DIII) Study Programme students as prospective nurses must have good knowledge and skills in performing Basic Trauma Cardiac Life Support (BTCLS) actions, this is very important because BTCLS actions are carried out to help victims with cardiac arrest both at the hospital and outside the hospital. Cardiac arrest or respiratory arrest is one of the life-threatening problems and can result in death if it takes too long to help (National Heart, 2022). The incidence of

cardiac arrest is about 10 out of 100,000 normal people under the age of 35 and annually reaches about 300,000-350,000 events Cardiac arrest in the last 10 years is part of the 10 causes of death with 253 cases and ranks fourth (Ibrahim, 2023). Most cases of cardiac arrest occur outside the hospital. According to data from the American Heart Association, there are approximately 359,400 Out-of-Hospital Cardiac Arrest (OHCA) cases and approximately 209,000 In-Hospital Cardiac Arrest (IHCA) cases from 2013 data. The level of help in these

cases was recorded, only 40.1% of OHCA cases received basic life support and appropriate help. Cardiac arrest cases can occur anywhere, in the community, outside the hospital or inside the hospital. (Tsao, 2023). The likelihood of survival in out-of-hospital or pre-hospital cardiac arrest patients decreases by 7-10% every minute from the start of cardiac arrest of the number of cardiac arrests that occur outside the hospital only half are resuscitated or can be said to be 50-55% performed (National Heart, 2022).

First aid in the event of cardiac arrest is very important and must be done quickly because survival is higher when the victim receives Cardiopulmonary Resuscitation (CPR). Emergency call and immediate CPR can increase the number of people with a chance of survival. In most cases, it takes a long time from the onset of cardiac arrest and respiratory arrest to arrival at the emergency services. In addition to the distance travelled, the patient's prognosis is also affected by the initial management of cardiopulmonary resuscitation (Agustin, 2023). Basic Trauma Cardiac Life Support (BTCLS) is one of the basic training for nurses in handling emergency problems due to trauma and cardiovascular disorders. Handling these problems is intended to provide basic life support so as to save lives and minimise organ damage and disability. Nurses as the front line in emergency services must be able to handle problems caused by accidents quickly and accurately. With a nursing care approach that includes bio-psycho-socio-cultural and spiritual aspects. Therefore, nursing students are required to have competence in dealing with emergency problems due to trauma and cardiovascular disorders.

One of the efforts in improving competence is through training. Based on Yul Afni's research (2020), it describes the level of student knowledge of emergency assistance after students take part in BTCLS training. Shows that the number of students who have good knowledge in preaching emergency help is 29 or 94%. Meanwhile, the results of research by HN Zahra (2018) explain the Basic Trauma and Cardiac Life Support (BTCLS) training participants held

by the 118 PERSI DIY team (PUSBANKES) with a sample of 141 participants. The majority of participants were female. Most respondents fell into the moderate category (51-74%) during skills training (66.0%), namely 93 respondents. Meanwhile, during the skills evaluation, the majority fell into the high category (more than 75%), namely 131 respondents (92.9%). Research that has been conducted regarding the description of nursing students' skills in carrying out wound dressing procedures in BTCLS training results in the conclusion that the wound dressing skills of respondents have a high skill category (more than 75%). Given the importance of proper handling of cardiac arrest, this study focuses on the handling of cardiac arrest. This condition is because the low knowledge and inability of the community to provide cardiac arrest treatment can cause high mortality in cardiac arrest. The first handling done in handling cardiac arrest cases is by providing cardiopulmonary resuscitation measures. It aims to increase the chance of survival from cardiac arrest, although the factors that influence CPR vary, depending on the knowledge and skills of the helper, the victim and the resources available (Travers, et al., 2010).

Success in helping cardiac arrest patients requires knowledge and skills about Basic life support (BLS). Learning about Basic life support can be obtained through training, learning conventional methods and other efforts. So that it can increase knowledge and be able to add new understandings, especially about providing cardiopulmonary resuscitation. Based on the description of these problems, the research problem can be formulated is how the description of the BTCLS Skill of Diploma Nursing (DIII) Study Program Students at Bina Sehat PPNI University Mojokerto.

## METHOD

This research design uses Experimental Design with One group Pretest - Post test design. The population is all DIII Nursing Study Program students at Bina

Sehat PPNI University Mojokerto who participated in BTCLS training totalling 58 participants in 2021, 2022 and 2023. The data analysis in this study used a paired t-test approach.

## RESULTS

**Table 1 Results of pre-post test of BTCLS skills of Diploma Nursing (DIII) students**

	Pre-test 2021	Post-test 2021	Pre-test 2022	Post-test 2022	Pre-test 2023	Post-test 2023
Valid	58	58	58	58	58	58
N Missin g	0	0	0	0	0	0
Mean	44,17	73,7 4	78,9 7	87,0 5	86,9 7	93,7 4
Median	44,00	71,0 0	78,5 0	89,0 0	89,0 0	94,5 0
Std. Deviation	12,07	8,62	6,92	7,35	7,76	5,85
Minimum	18	60	70	70	70	70
Maximum	80	92	92	100	98	100

Based on the results of the pre-test and post-test in table 1, it shows that of the 58 participants in 2021-2023, the lowest mean value is 44.17 and the highest is 93.74. Meanwhile, the lowest median value is 44.00 and the highest is 94.50. For Std. The lowest deviation is 6.921 and the highest is 12.072.

**Table 2 Analysis results of t-paired test on BTCLS skills of Diploma Nursing (DIII) students before and after BTCLS training**

	N	Correlation	Sig.
Pair 1 Pre-test 2021 & Post-test 2021	58	,268	,042
Pair 2 Pre-test 2022 & Post-test 2022	58	,634	,000
Pair 3 Pre-test 2023 & Post-test 2023	58	,623	,000

*\*Paired Samples Correlations*

The t-paired test shows that there is a significant difference between the initial variable (pretest) and the final variable (posttest). The existence of a significant effect on the difference in treatment given to each variable is indicated by a significance value of  $0.042 < 0.005$  in the 2021 results, and a significant value of  $0.000 < 0.005$  in 2022, while in 2023 the significant results show  $0.000 < 0.005$ .

## DISCUSSION

### 1. Identification of BTCLS skills of Diploma Nursing (DIII) students before and after training in the last three years

Based on the results of the pre test and post test, it shows that out of 58 participants in 2021 the minimum pre post test score has increased by 42 points. In 2022 and 2023 the minimum pre post test score was fixed. Meanwhile, the maximum pre post test score in 2021 has increased by 12 points, in 2022 it has decreased by 30 points, in 2023 it is fixed. The mean in 2021 increased by 28.92 points, in 2022 it increased by 0.84 points, in 2023 it increased by 1.33 points. The median in 2021 increased by 27 points, in 2022 it increased by 3.50 points, and in 2023 it increased by 1.50 points. Based on the description above, it shows that the cognitive value of the pre-post test on the BTCLS skills of DIII Nursing students at Bina Sehat PPNI Mojokerto University in the last three years has increased.

In accordance with research conducted by Fitriyah et al., (2022); Palele et al., (2022); Razak et al., (2022) It is believed that the increased level of knowledge possessed by nurses is able to improve nursing care services better. This better service is possible because nurses who have better knowledge of emergency management will be able to act better when these conditions occur, even in undesirable situations. The nurses' understanding of emergency conditions that occur will be directly

perceived by patients as swift handling. Thus, indirectly the public perception of nurses working at the agency will also be better. The data from the cognitive aspect research above also shows that the BTCLS training carried out on DIII Nursing students at Bina Sehat PPNI Mojokerto University in the last three years shows that the trainees have devoted their full attention to the material taught, so that the understanding of emergency conditions is well understood. The above results also show that the training has provided additional knowledge, methods, and techniques that were not previously understood by the participants before attending the BTCLS training. The achievement of the above scores also proves that DIII Nursing students who take part in this BTCLS training are considered to have sufficient knowledge / considered competent so that later they can be implemented in activities when working later.

With the results of student nurses' competence in handling emergencies better, it is hoped that emergency cases that cause death experienced by patients will continue to decrease due to competent nurses. This is certainly in accordance with the mandate of Law No.36 of 2014 concerning the competence of health workers regulated by the government in order to provide better services in the health sector to all Indonesian citizens, (Duanta et al., 2022; Honifa et al., 2022; Hermawati et al., 2022; Kurniasih, 2022; Situmorang & Muflihatin, 2022). The results of this previously conducted research resulted in findings that the training, be it Basic Life Support (BLS) training, BTCLS training or other training has significantly improved the ability of the trainees. With the results of this study, training should not only fulfil regulatory obligations, but must be continuously carried out to strengthen the ability of students as prospective nurses who work so that they can serve the community better.

## 2. Analysis of BTCLS skills of Diploma Nursing (DIII) students at Bina Sehat PPNI Mojokerto University in the last three years

The t-paired test shows that there is a significant difference between the initial variable (pretest) and the final variable (posttest). The existence of a significant effect on the difference in treatment given to each variable is indicated by a significance value of  $0.042 < 0.005$  in the 2021 results, and a significant value of  $0.000 < 0.005$  in 2022, while in 2023 the significant results show  $0.000 < 0.005$ . This study shows that the BTCLS training that has been carried out affective has a significant impact on participants. With the results of this study, it actually means that the BTCLS training carried out on Diploma Nursing (DIII) students at Bina Sehat PPNI Mojokerto University has been successfully implemented and has an impact on training participants.

## CONCLUSIONS

This study shows that the BTCLS training that has been carried out affective has a significant impact on participants. This is evidenced by the t-paired test which shows that there is a significant difference between the initial variable (pretest) and the final variable (posttest). The existence of a significant effect on the difference in treatment given to each variable is indicated by a significance value of  $0.042 < 0.005$  in the 2021 results, and a significant value of  $0.000 < 0.005$  in 2022, while in 2023 the significant results show  $0.000 < 0.005$ . Based on these results it can be suggested:

1. To better determine the magnitude of the effect of training, especially on BTCLS training, the object of research must be reproduced, not only in 1 study programme, but can be compared with other study programmes in the Bina Sehat PPNI Mojokerto University environment. This comparison will provide a wider range of research results.

2. Participants or respondents in the study are required to take part in BTCLS training because it does have an influence on the behaviour of students as prospective nurses who work in emergency situations so that its implementation is not only for fulfilling competency needs, but becomes a routine activity that will have an impact on the ability of nursing care and better public services.

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