

# Online Socialization *Self-Directed Learning Video* of Cardio Pulmonary Resuscitation (CPR) to Knowledge Attitudes and Stress Levels of Learning at PMR SMAN 1 Singosari

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## Abstract

**Introduction:** Out of Hospital Cardiac Arrest (OHCA) is a cardiac arrest that happened outside the hospital. Incidence comparison OHCA two times more than the IHCA (Intra Hospital Cardiac Arrest), so efforts to increase the number and capacity of by stabder CPR must be increased.

**Materials and Method:** This study used a quasi-experimental design with a pretest-post test design with a control group. Responden is divided into two groups, the treatment group and the control group. The treatment group was given CPR training using the Self-Directed Learning Video (SDLV) method with google form media while the control group was given lecture method training.

**Results:** The study stated that the respondent's knowledge before the intervention 41.96 ( $\pm$  SD 2.368 CI = 40.96 - 42.96) increased up to 4.83 points. Attitudes before intervention 42.79 ( $\pm$  SD 4.579 CI = 40.96 - 42.96) increased up to 7.42 points. Meanwhile, the score of learning stressor at home before the intervention 19.79( $\pm$ SD4.344CI=17.72-21.67)increase up to 4.68 points.

**Conclusion:** The results of the study showed that Self-Directed Learning method with video that integrated into the google form media, effectively increased the knowledge and attitudes of respondents. While the stress level of learning at homes ho wed increasing. However, CPR socialization that given is not the main cause of the stress.

**Keywords:** *Self-Directed Learning Video, google form, CPR, The level of stress learning at home, knowledge, attitude.*

## Introduction

Out of Hospital Cardiac Arrest (OHCA) is condition of the cardiac that stop pumping properly based on a patient with or non-cardiac suffer<sup>1</sup>. The exact number of OHCA still unknown. The majority of cases are not handled by emergency medical services<sup>2</sup>. Than, the survival after OHCA is still low. This corelate to an initial assesment by an emergency medical services providing early cardiopulmonary resuscitation, automatic external defibrillator and delivering patients to hospital nearby<sup>3</sup>.

Cardiac arrest is the leading cause of death in Indonesia. The Indoneisia Cardiovascular Specialist Association finds that the average cardiac arrest incidence

is 300,000-350,000 cases annually. In addition OHCA in Indonesia can occur almost 30 times a day, which means nearly 2 people have a heart attack every hour<sup>4</sup>.

Efforts to increase public understanding of OHCA are required. Combination of CPR training with technological sophistication can improve CPR understanding<sup>5</sup>. Wang *et al* explained that the provision of CPR training in the community can add to the RJP by standers in the community. However, RJP training is still constrained by the lack of coach resources, mentors or even major facilities that are unavailable<sup>6</sup>. Efforts to increase the number of bystanders can be performed by maximizing the role of the educated group<sup>7</sup>.

Special group play-roles in the implementation

of first aid cases OHCA, especially students. Students easily mingle with the community, hopefully they can give high chance to be the First Responder in OHCA case. Students who become Palang Merah Remaja (PMR) member can be role- models or initiators to give first aid on OHCA cases<sup>8</sup>.

Self-Directed Learning Video (SDLV) generally provides a positive impact on learning. Majority of teenagers looking for video tutorials to accomplish their tasks. This activity is done due to individual motivation and initiative. They get additional knowledge by watching videos<sup>9</sup>.

Google Forms is an app to create web-based questionnaire. Google Forms can be used to collect data. This application is used according to the needs of its users, one of its functions is for survey questionnaire. Google Forms is useful and can be accessed by students. This application is often used by students for task completion or other professionals in accordance with the purpose of its use. Google form also provides files uploaded in the form of video format. The video can be watched before filling out the questionnaire as the pretest of socialization provided by researchers<sup>10</sup>.

## Method

**Study Design:** This study uses an observational research design with cross sectional design.

**Setting and Respondents:** This research was conducted in March to April 2020 at senior high school SMA Negeri 1 Malang, Malang regency and East Java Province, Indonesia.

**Sample:** This research was conducted on 48 students about CPR training on cardiac arrest in SMA Negeri 1 Singosari Malang, East Java, Indonesia. Respondents in the study were divided into two groups: SDLV group

and the lecture group. The groups consisted of 24 respondents on each group.

Implementation of CPR socialization with Google form to provide socialization at the same time. The overall number of Respondents in this study is as much as 48 respondents. The sampling techniques in this study used purposive sampling, i.e. sample selection based on the criteria of inclusion and exclusion set by researchers.

**Instrument and Measurement:** This study uses Self-Directed Learning Video method combined with Google form media for socialization media and answering questions. The control group uses lecture method and answers to pretests and post test using manual media of paper and bolpoint

**Data Analysis:** Analysis of research data using SPSS version 18.0.

## Result

**Knowledge:** Average knowledge score respondents before SDLV with a Google form media that is 41.96, with interval estimation about 40.96 to 42.96 and increase up to 46.79 after intervention with an estimate interval (95%) between 45.77 to 47.801 with  $p$  value of = 0,000 ( $P < 0.05$ ). These results indicate that there was an average score increase after health education through the Google form media. While on control group shows that average knowledge score respondent before socialization using lecture method is 12.46, with interval estimation (95%) of knowledge scores of respondents between 11.46 and 13.58. Then, the knowledge of respondents after after socialization is 21.13 with interval estimation (95%) of respondents knowledge scores between 20.04 and 22.25 with value  $P = 0.000$  ( $P < 0.05$ ). These results indicate that there was an increase in knowledge after intervention in the control group of 8.7.

**Table 1 Changes In Knowledge level of SDLV group**

Konowledge	N	Mean $\pm$ SD	95% CI	P Value
Before	24	41,96 $\pm$ 2,368	40,96-42,96	0,000
After	24	46,79 $\pm$ 2,413	45,77-47,81	

*Paired t-test : before and after = 0,000 (P value < 0,05) Source: primary data 2020*

**Table 2 Changes in Knowledge level of Control Group**

Knowledge	N	Mean ± SD	95% CI	P Value
Before	24	12,46 ± 2,813	11,46-13,58	0,000
After	24	21,13 ± 2,787	20,04-22,25	

*Paired t-test* : Before and After = 0,000 (*P value* < 0,05) Source : primery data 2020

**Table 3 Differences in knowledge improvement change**

Knowledge	N	Mean ± SD	95% CI	P Value
<b>Before</b>				
SDLV	24	10,79 ± 4,118	9,15-12,39	0,109
Lectur Method	24	12,46 ± 2,929	11,24-1355	
<b>After</b>				
SDLV	24	20,00 ± 2,828	18,96-21,17	
Lecture Method	24	20,38 ± 3,499	19,00-21,71	0,685

*Independent t-test* : SDLV vs Lecture Method = 0,685 (*P value* > 0,05) Source: primery data 2020

**Attitude:** Average of the respondent's attitude score before being given health education through the manual keisioner is 42.79, with interval estimation (95%) of knowledge scores of respondents between 40.86 and 44.72 and increase up to 47.46 with interval estimation (95%)46.37 to 48.55 with *p value* = 0.000(*P* < 0.05). This shows that there was an increase in the average attitude score after the intervention. While on control

group shows that the rate of respondents attitude score before CPR socialization using lecture method through the media Questionnaire manual obtained a value of 32 to 48, with an estimated interval, believed 95%. The attitude score of respondents between 34.00 to 41.75. Than attitudes core after obtaining the CPR socialization is 42 up to 52 points, with inrterval estimation of 44.25 to 51.00 with *p value* = 0.000 (*P* < 0.05).

**Table 4 Changes In Attitude Improvement on SDLV Group**

Attitude	N	Mean ± SD	95% CI	P Value
Before	24	42,79 ± 4,578	40,96-42,96	0,000
After	24	47,46 ± 2,578	46,37-48,55	

*Paired t-test* : Before and After = 0,000 (*P value* < 0,05) Source: primery data 2020

**Table 5 Changes in Attitude Improvement on Control Group**

Attitude	N	Min-Max	Median	95% CI	P Value
Before	24	32-48	37,88	34,00-41,75	0,000
After	24	42-52	47,42	44,25-51,00	

*Uji Wicoxon*: Before and After = 0,000 (*P value* < 0,05) Source : primery data 2020

**Table 6 Difference in attitude improvement change**

Attitude	N	Mean ± SD	95% CI	P Value
<b>Before</b>				
SDLV	24	39,83 ± 5,247	37,63-41,94	0,180
Lecture Method	24	37,88 ± 4,693	36,14-39,82	
<b>After</b>				
SDLV	24	47,25 ± 3,404	45,85-48,59	
Lecture Method	24	47,42 ± 3,387	46,05-48,68	0,866
<i>Independent t-test : SDLV vs Lecture Method 0,866 (p value &gt; 0,05) Sumber: primery data 2020</i>				

**Stress Level for Learning at Home:** Averages stress level learning at homes cores before given the socialization of CPR is 19.79 with an estimated interval (95%) 17.72 to 21.67 and increase up to 25.54 with an

estimated interval of 24.32 to 27.02 with  $p$  value = 0,000 ( $P < 0.05$ ). This indicates that there is a change in the average stress level learning after socialization. While the stress level of the control group were not recorded.

**Table 7 Improved learning stress level changes**

Stres Level	N	Mean ± SD	95% CI	P Value
Before	24	19,79 ± 4,344	17,72-21,67	0,000
After	24	25,54 ± 3,599	24,32-27,02	
<i>Paired t-test : Before and After= 0,000 (P value &lt; 0,05) Source: primery data 2020</i>				

## Discussion

The results of the study gained that the average knowledge score in the treatment group before given the SDLV health education is 41.96 points. After being given health education through SDLV, the average score knowledge of respondents increased to 46.79. This results showed that there was an increase in the average score after the SDLV Socialization with Google form media with a value of 4.83.

The answer that changes significantly is at the depth of the CPR, duration of ventilation and evaluation of administration of CPR. The pretests results received an improper response of respondents. But after SDLV socialization through Google form media, the posttest results are found to have changed the answer to this type of problem.

*Self-Directed Video* (SDLV) increase the knowledge and attitude of CPR. However, it does not directly affect the respondents' self-esteem and cognitive abilities. This because the cognitive ability requires direct action, such as mannequin or from clinical experience<sup>11</sup>. The socialization of CPR can be provided with Google

form media without gathering people on specified place. Google form links created online so be able to shared with respondents directly<sup>12</sup>. The use of Google forms can be accessed more easily, especially for high school students where they are familiar with the use of technology. CPR socialization in the form of video can be inserted into the form and it allows socialization can be done directly without having to present a mentor. However, the content in the video has secured an official license from the person who has certification.

Tivener dan Gloe stated that there was a significant change in the respondent's knowledge of CPR on cardiac arrest events outside the hospital after socialization<sup>14</sup>. Knowledge enhancement happens typically fast enough after the socialization of the treatment group. Therefore, in order to improve the ability of respondents' skills, training of CPR is required.

The results showed that the average attitude of the respondent before being given the SDLV socialization was 39.83 and increased to 47.25. This shows that there was an increase in the average attitude score after the intervention of 7.42. The answer to experiencing

a significant change is on the willingness to provide CPR on cardiac arrest cases outside the hospital. Results of pretests respondents showed many who answered disagree. However, after the first Peetolongan Socialization was given on a cardiac arrest case outside the hospital using the SDLV resulted in the majority of changes of the statement by the respondent with a statement agreeing in the first pertolonga of the cardiac arrest case outside the hospital.

The statistical analysis results also show the value of P value 0.000 ( $p < 0.05$ ). That is, there is a significant increase in the attitude score of respondents after the dissemination of CPR in the case of cardiac arrest by using SDLV through Google formmedia.

Will *et al.*, stated that almost 80% of respondents agreed that SDLV (self- designed learning tools) provides a more effective learning experience. They feel more motivated and excited to follow the activities given by the researchers compared to the previous conditions. Other studies have also explained that SDLV has a 60% impact on changing attitudes to respondents using the method<sup>15</sup>.

The results of the study were said that the stress-learning score of respondents before given the socialization of CPR on cardiac arrest cases outside the hospital with the SDLV method through the Google form media is with the score obtained is 20.42. Having given the socialization of CPR in the cardiac arrest case outside the hospital with the SDLV method and Google form media increased to 24.92. This indicates that there is a change in the average stress level of learning respondents after being given a socialization of 4.68. The answer that is experiencing many changes is on the statement that reveals the ease of activity that respondents had in the previous month.

The statistical analysis results also show the value of P value 0.000( $p < 0.05$ ). This means that there is a difference in the level of learnings tress levels in the home after being given a socialization of CPR in a cardiac arrest case outside the hospital.

Statistical Data from previous research results on the level of learnings tress at home did not specifically discuss it. Stress- Learning at home is a must-have and properly planned speculation for its handling. However, this discussion will be the current topic of pandemic where the school closes access to the school and replaces it by learning from home. A large number of tasks are

diverted to a home task of considerable amount and this could potentially cause an impact on the stress experienced by the student<sup>16</sup>.

## Conclusion

Self-Directed Learning Video is an effective method used to provide the socialization of CPR. Looking at the object of this research is the teenagers then the use of the Google form application can be a solution. Google form media can be used for socialization media by inserting video files into it. The effectiveness of this media depends on time and environment conditions. In times of pandemic that is not possible to conclude human beings this application can be used very effectively. However, there are constraints that complicate and Bahkwan provide bias on the results of the study. In this study also took into account other factors that have to dot here search process such as the level of learning stress in the home that is experienced by students.

**Ethical Clearance:** This research has obtained the approval of the Health Research Ethics commission of Medical Faculty of Brawijaya University with number 68/EC/KEPK-S2/03/2020

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**Conflict of Interest:** Nil

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