

Manuscript received May 5, 2022; revised May 18, 2022; accepted May 28, 2022; date of publication June 20, 2022;

Digital Object Identifier (DOI): <https://doi.org/10.35882/ficse.v1i2.12>

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# Community Empowerment During the Covid 19 Pandemic for Disaster Management in Indonesia: Preparedness And Mitigation Through Interprofessional Collaboration/ Interprofessional Education Approach For Vulnerable

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**ABSTRACT** This community empowerment activity is carried out in the form of mentoring for the people of Bedagung Village, Panekan District, Magetan Regency, East Java. The people of Bedagung Village, Panekan District, Magetan Regency, are very anxious and afraid of the ferocity of the Covid-19 Non-Natural Disaster. Besides they face natural disasters of landslides and cyclones every year, they are currently facing the ferocity of the Covid 19 pandemic. Bedagung village is located on the slopes of a mountain so it is very prone to natural disasters, landslides. Based on these problems, the role of academics is needed to improve preparedness and Disaster Risk Reduction, through community empowerment. Community empowerment is very much needed through the assistance of Interprofession Collaboration (IPC) and Interprofession Education (IPE) approaches with Disaster Mitigation And Training (DMT). The purpose of empowering community assistance is to realize a Healthy Village through preparedness and disaster risk reduction in dealing with the threat of natural disasters and non-natural disasters (Covid-19). Methods to achieve the goal with the Golden Triangle, namely: 1) apply research and expertise; 2) build university cooperation; 3) apply IPC and IPE from 5 (five) professions, namely the profession of Midwife, Nurse, Electromedical Engineering, Environmental Health and management science. Parties involved in this activity: 1) Magetan Regency Government; 2) Bedagung Village Government; 3) Community health center; 4) Disaster Preparedness Village Team; and 5) Regional Disaster Management Agency. Activities carried out to achieve the objectives include: 1) classical material; 2) field practice; 3) follow-up implementation. The time for empowerment activities is 6 months. Outputs: 1) Journal publications; 2) publication through mass media; 3) Intellectual Property Rights; 4) update the Village Disaster Risk map; 5) the establishment of a Destanasif Task Force (Comprehensive Disaster Resilient Village); 6) have a Volunteer certificate and a trainer certificate; 7) training module with ISBN. Conclusion: with the implementation of this community service, the following results and implications for the community: 1) having one team, namely the Covid 19 corpse management task force, which is equipped with knowledge and skills so that it can be empowered; 2) having a disaster-resilient school task force team, all schools in one village; 3) improve understanding in breaking the chain of transmission of covid 19.

**INDEX TERMS** Mentoring, IPC, IPE, Disaster Mitigation.

## I. INTRODUCTION

The people of Bedagung Village in 2020 face the threat of disasters from 2 sides, namely natural disasters and non-natural disasters (covid-19). This of course causes tremendous fear and anxiety. In addition to routinely facing the dangers of natural disasters, in the form of landslides and tornadoes because they are located on the slopes of Mount Lawu, they are currently facing the threat of non-natural disasters, namely covid-19 [1]. The natural disaster in Bedagung has also caused invaluable property and even life losses. This has been going on for years. They have developed themselves through various independent efforts of community members. The value of mutual cooperation and togetherness in the Bedagung Village Community is still very strong. The mountain community culture that is tenacious, hardworking, honest, and sincere is still a capital that needs to be preserved [2].

Non-Natural Disasters (Covid-19) which caused many deaths have caused deep anxiety throughout the world [3]. The potential for the spread of Covid-19 to the people of Bedagung Village is very high. Many villagers work in the city, as construction laborers, carpenters, stone masons, civil servants, market workers, etc. They will very easily bring the corona virus back to their village. Potential Partners: 1) have a covid 19 task force team that comes from various elements of society; 2) have rural community members who are still friendly, harmonious, and easy to understand; 3) have a very good road, irrigation, and natural infrastructure.

Based on these problems, efforts have been made to increase community empowerment, to improve preparedness and Disaster Risk Reduction, through Community Assistance [4]. Empowerment activities in the form of mentoring are carried out using the Interprofessional Collaboration (IPC) and Interprofessional Education (IPE) approaches. Assistance and training for Communities Vulnerable to Natural and Non-Natural Disasters (Covid 19) are carried out in the form of Disaster Mitigation And Training. The shortcomings of the previous activities are: 1) the village disaster management task force has not been trained, in the management of the corpses of covid 19 patients; 2) not yet have a disaster-resilient school task force; 3) the whole potential of the community has not been utilized in breaking the chain of transmission of covid 19.

The implementation of this Mentoring is fully supported by the Magetan Regency Government, Bedagung Village Government, Magetan Regency Regional Disaster Management Agency, Disaster Resilient Village Facilitators and Village Disaster Organizations. This assistance is designed using the Golden Triangel method, namely 1) as a research application; 2) IPE/IPC approach and 3) involving 3 universities. The three universities involved are Poltekkes Surakarta, Poltekkes Malang and Poltekkes Surabaya. This assistance also involves at least 5 disciplines/professions, namely: nursing professions, midwives, electrical engineering, environmental health and management.

This assistance is carried out by applying several previous research results, including: disaster risk instruments for children under five, Vulnerability and Capacity as

Determinants of Disaster Risk Mapping in Families Experiencing Maternal and Child Health Problems [5]. An application of the instrument in the Development of Instruments to Detect Disaster Risk in Children Under Five research was also carried out [6]. An application of the research results Development of instruments to measure disaster preparedness in the Poltekkes was carried out [7]. *Trauma healing during the earthquake disaster emergency response phase in Lombok, Indonesia* [8].

The theme in this assistance is the Development of Healthy Villages in Potentially Disaster Communities Through Disaster Mitigation And Training (DMT), which prioritizes community empowerment in dealing with disasters. This assistance has been carried out in Bedagung Village, Panekan District, Magetan Regency, it is proven that the community has good community participation in terms of disaster management participation, and has a Disaster Alert Village team.

Through this assistance, various things will be designed, namely the preparation of technology based on local wisdom, involving at least 5 professional disciplines. The goal is to protect, improve and defend the community from the risks of natural and non-natural disasters. It is necessary to carry out detection for residents who go in and out of the village so that the potential for social distancing is maintained properly. Because if the design is not carried out properly, it can result in damage and loss of material, mental disorders, and casualties in the community

Disasters can come from natural and non-natural, namely humans themselves. A disaster is an event or series of events that threaten and disrupt people's lives and livelihoods caused, both by natural factors and/or non-natural factors as well as human factors, resulting in human casualties, environmental damage, property losses, and psychological impacts [9]

Disasters consist of natural and non-natural disasters [10]. There are natural disasters that can be predicted or occur suddenly, such as landslides, flash landslides, hurricanes [8]. Non-natural disasters are caused by social inequality, economics, disease outbreaks and differences in understanding between humans [11], for example the outbreak of avian flu virus, brawls between students, wars and so on [1], [12].

To deal with potential disasters, it is necessary to increase community resilience in reducing disaster risk. Community empowerment in an effort to reduce disaster risk in Indonesia is important to do. The current disaster management paradigm emphasizes community empowerment so that it allows the community to become the subject of helpers, not objects that need help [13], [14].

Based on these interests, community service is needed as an effort to empower the community in the form of assistance and training for communities prone to natural disasters and prone to non-natural disasters (covid-19) through Disaster Mitigation And Training (DMT). This activity is in the form of empowerment, assistance and the formation of community organizations related to disaster mitigation [15].

This activity technically refers to the establishment of a Disaster Resilient Village, as developed by the government [4]. The aims of this community service activity are: 1) a village disaster management task force, which has the knowledge and skills in handling the bodies of covid 19; 2) the establishment of a disaster-resilient school task force, in all schools in the village; 3) take advantage of all the potential that exists in the community in breaking the chain of transmission of covid 19.

## II. METHODS

The method used is the *Golden Triangle*, namely 1) Research Applications; 2) IPE/IPC and 3) Higher Education Cooperation [8]. The method of implementation to achieve the goal is done by: 1) providing material in classical theory; 2) practical learning in community laboratories; 3) direct practice of dealing with problems in the community; 4) assistance is carried out for 4 months. In its implementation, this method is carried out through 3 stages, namely: 1) Classical segmentation training; 2) Field practice/simulation; 3) Follow-up plan in the form of assistance. What is meant by segmentation is that training is carried out on groups of 4 basic groups, namely schoolchildren, mothers, parents, health cadres, village officials and community leaders. This is done considering their different roles during a disaster.

As a research application, the implementation of this assistance is based on previous research, namely research on: a) Disaster Risk Reduction; b) Environmental health sanitation; c) Utilization of electromedical technology; d) Early detection of Toddler Development Growth; e) Nursing care for children/toddlers; f) Care for pregnant, childbirth and postpartum women in the community.

As an IPE/IPC approach, this means that this mentoring activity involves at least 5 disciplines and health professions, namely: a) the Nursing Profession; b) Midwives; c) Association of Environmental Health Experts; d) Electromedical Engineering Association; e) Health Management. Thus, it can be said that this assistance is an application of expertise according to the scientific field of academics. This activity also involves the collaboration of universities, namely Surabaya Health Polytechnic, Malang Health Polytechnic and Surakarta Health Polytechnic.

The tools and equipment used include: 1) classical learning materials including learning modules, LCD sets, information technology equipment, room building equipment, etc.; 2) practicum materials include: set health protocols; funeral services for covid sets, tents, hearses, mannequins, etc.); 3) room disinfection facilities (sprays, disinfectants, banners, leaflets, etc.) [16]

## III. RESULTS

### 1. Competencies that have been generated

The competencies designed from the Community Empowerment Assistance are expected to increase community empowerment efforts in assisting government programs for disaster risk reduction. Cooperation with the

Regional Disaster Management Agency is expected to increase cooperation between stakeholders including lecturers, facilitators, students, and all parties benefit from increasing their respective competencies [17].

Beneficial for volunteers, local government, disaster organizations in the community and other groups who care.

Through mentoring activities, training has proven to be able to increase community capacity, so that they have preparedness and resilience in facing the risks of natural disasters and COVID-19 [18].

Increased capacity of community institutions in resource management and maintenance of local wisdom for disaster risk reduction [12]. This community empowerment assistance is also a vehicle for lecturers and universities in carrying out the duties of the Tri Dharma of Higher Education [19].

### 2. Targets that have been achieved

1. Have an understanding of social/personal distancing, self-isolation
2. Have an understanding of communal isolation and partial isolation
3. Have a good understanding of partial/total lockdown
4. There is an updated Village Disaster Risk map
5. Establishment of a Disaster Resilient Village Working Group.
6. Possession of Village Disaster Management Plan Documents
7. Certificate for Disaster Volunteers is available for people who have been trained to become Disaster volunteers.
8. Possession of maps and disaster evacuation routes for the community.
9. Conducting disaster mitigation training in accordance with competency standards

### 3. Control of Covid-19

To break the chain of transmission, it is carried out with the following policies:

- a. The entire head of the Micro Task Force team and the head of the Neighborhood Association, the head of the hamlet have reported any home comers.  
Result: there are 3 travelers from Jakarta due to work. but they go home regularly every month, because they work in Jakarta.

The conclusion of Eid homecoming control has been well controlled Holiday gathering, limited to a maximum area of one RT only.

1. The consideration: conducting a halal bi halal relationship with neighbors is very important for people in rural areas.
2. The conclusion of the relationship has been done well and can be controlled properly.
3. The community can carry out good relations with neighbors in one RT
- b. The new skills acquired include:
  1. the ability to carry out school sterilization;
  2. skills to sterilize houses affected by covid;

3. skills as funeral lords;
4. Community organizing skills in breaking the chain of transmission of covid 19

Task Force Training "Comprehensive disaster resilient village".

The Training and Declaration of Comprehensive Disaster Resilient Village (DESTANASIF) was carried out in Bedagung Village, Panekan District.

TABLE 1

Structure of Training Materials and Presenters

NO	SOURCE	PRESENTER
1	Covid 19 Health Protocol in the Community..	Public Health Office
2	Concepts and initiations of COVID-19 safe schools..	Education Office
3	The concept of a resilient village (PPKM Mikro).	Magetan Police.
4	Potential Disaster-Resilient Villages in Magetan Regency	Magetan Regency Covid 19 Task Force
5	Simulations of the Covid 19 Disaster in the community	Regional Disaster Management Agency, Magetan Regency
6	Main Speakers	Magetan Regent

From TABLE 1, it can be seen that the resource persons are in accordance with their competencies. So that it was hoped that the empowerment assistance participants have competence as a comprehensive disaster resilient Village Task Force team.

TABLE 1

Participants involved in mentoring training Structu

No	Element	Quantity
1.	Micro Community Activity Restriction Task Force (PPKM)	12
2.	Village Apparatus	8
3.	Village Advisory Officer (Babinsa)	1
4.	Bhayangkara Supervisor of Public Order and Security (Bhabinkamtibmas)	1
5.	KSB Team (Disaster Alert Village)	10
6.	Village Midwife	1
7.	Principal of SD Bedagung 1,2 and 3	3
8.	School teachers	3
9.	School Committee	3
10.	PAUD teacher	2
11.	Community/Religious Leader	6
	Total	51

Table 2 shows that the participants are cadres who come from various elements in society. so that it is hoped that it can represent and disseminate knowledge about preventing this covid 19 to the entire community.

From TABLE 3, it can be seen that the knowledge of the task force team increased by an average of 31%. The average pre-test score was 60, while the average post-test score was 88. There was a significant increase in the knowledge of the Task Force team

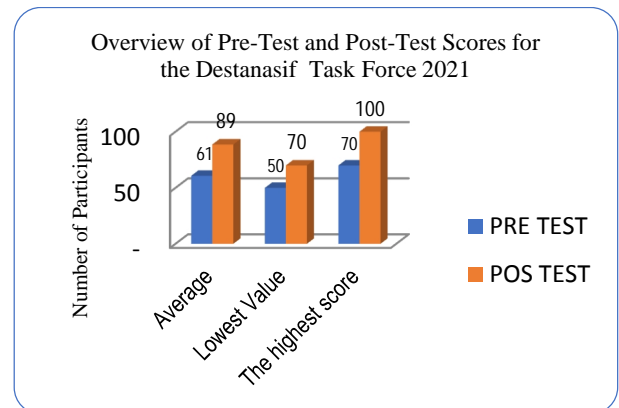


FIGURE 1. The Result of Pre-Test and Post-Test Scores

From FIGURE 1., it can be seen that the knowledge of the task force team increased by an average of 31%. The average pre-test score was 60, while the average post-test score was 88. There was a significant increase in the knowledge of the Task Force team

#### IV. DISCUSSION

##### Factors That Support the Success Of Increasing Public Knowledge Include:

1. Support from the Ministry of Health of the Republic of Indonesia (Health PPSDM Agency)  
It provides funding for this activity, through the "Healthy Village Community Service" program at the Health Polytechnic Ministry of Health in Surabaya, Health Polytechnic Ministry of Health in Malang and Health Polytechnic Ministry of Health in Surakarta, as part of an extension of the government.
2. Commitment and sincerity of all parties involved.  
There was support from school principals in the village, so that eventually these schools become "model disaster resilient schools".
3. There was synergy with the activities of the police, sub-districts, health centers and education offices [20].  
There was a need for the community, which at that time was experiencing a sharp increase in the number of COVID-19 cases, which caused a high death rate.
4. There is cooperation with the Magetan Regional Disaster Management Agency, so that the "covid 19" management task force has been empowered when the Covid death rate soared sharply
5. This mentoring activity in an effort to empower the community has proven to be able to increase the knowledge, skills and attitudes of the community, through the COVID-19 response task force that has been trained.

Knowledge increased significantly, it was proven that the mean of pre- and post-test knowledge increased by 31%.

The new skills acquired include: 1. the ability to carry out school sterilization; 2. skills to sterilize houses affected by covid; 3. skills as funeral lords; 4. Community organizing skills in breaking the chain of transmission of covid 19 [21].



### 1. *School sterilization*

Simulations in Schools and Kindergartens, which are part of the Declaration of a Comprehensive Disaster Resilient Village, have a meaningful strategy in breaking the chain of transmission of covid 19. School children are the best media in transmitting covid 19 [22]. As well as being an indicator of still transmission in the community. considering that children do not yet have a good understanding of carrying out health protocols. they are taught how to wear masks, keep their distance, avoid crowds, stay at home and reduce contact [17].

The simulation in this school, [FIGURE 2](#). is also an implementation of the theory that has been given. This activity is also a preparatory step for schools before face-to-face learning (offline) during the Covid 19 pandemic. Teachers and staff are also very important in implementing health protocols and school sterilization [23].



**FIGURE 2.** Elementary school children have practiced classroom sterilization, which was done before and after they learned. Teachers who have been trained by the Poltekkes Kemenkes Surabaya, Malang and Surakarta teams teach class sterilization to students

### 2. *Sterilization of houses affected by covid.*

This activity is a large part of the objectives of the Declaration of a Comprehensive Disaster Resilient Village. Activities carried out by simulating the handling of covid in the village. Activities started from reporting, coordination between stakeholders to the relocation of corpses [24]. The village-level simulation is carried out for several days until the community can really apply it well in the village.



**FIGURE 3.** Training participants, conducting a practical simulation of the management of residents exposed to COVID-19,

[FIGURE 3](#). shows the training participants, conducting a practical simulation of the management of residents exposed

to COVID-19, this family is in self-isolation. They help each other by providing counseling to residents, providing food and meeting the logistical needs of the whole family, while doing self-isolation

### 3. *The funeral of the corpse*

In the formation of the village task force, training was also carried out for conducting a practicum simulation of funeral prayer in [FIGURE 4](#)., and the burial of corpses in [FIGURE 5](#), they are expected to be able to carry out their own burial of bodies infected with covid 19 [25]. Hopefully they can do it well and avoid local transmission. they are not infected with covid 19. the community is very enthusiastic in participating in this training. Along with the explosion of the Covid-19 death toll in June-July 2021, the funeral team was seconded at the district level. they are partners of the District Disaster Management Agency. The community is very enthusiastic in carrying out this new task [26].



**FIGURE 4.** Training participants, conducting a practicum simulation of funeral prayer for residents who died due to exposure to covid 19



**FIGURE 5.** The involvement of the task force team, during the process of burying covid 19 patients with health protocols, in Panekan District, 2 weeks after they were trained by the Poltekkes Community Service team.

#### 4. Organizing the community in breaking the chain of transmission of covid 19

This activity is carried out in the form of: empowering the business of making hand sanitizer (based on roses), distributing free masks, trauma healing sports activities, namely soccer tournaments with health protocols, making video tutorials, and so on.

The community is very happy with these activities. they hope that in the future similar activities can be carried out again



FIGURE 5. A volleyball match with health protocols

Figure 5 shows an activity during trauma healing in the form of a volleyball match with health protocols, in collaboration with Youth Organizations and the Youth Reproductive Health and Information Center Group (PIK-R)

Weaknesses of activities include: the process of implementing the training cannot be carried out optimally, because of the health protocol. This training by the Ministry of Health's Poltekkes team was carried out in June 2021, at which time the Covid-19 death rate exploded very high, so the entire activity process was carried out in a short time and carried out with great care. All in order to implement health protocols.

This training has also been carried out according to the recommendations and under the supervision of the Magetan Regency Covid 19 Handling Task Force. Some of the training participants were initially worried about being involved in training activities, but in the end they were happy because they had good knowledge and skills in preventing and terminating the transmission of covid 19. This is useful to share with their families and neighbors.

#### I. CONCLUSION

The training activities have proven to be very beneficial for the community, to produce several things, including: 1) having a disaster management task force in the community; 2) having a Covid 19 corpse management team, equipped with good knowledge and skills; 3) each school has a disaster-resilient school task force team; 4) the use of this disaster-resilient village management task force to be involved in handling the outbreak of COVID-19 cases.

Various internalization efforts have been carried out so that the public understands better that breaking the chain of transmission of COVID-19 is a shared task. There is an Opportunity Effect from this activity, which has a very large impact on institutions as a reference for education and disasters, thereby increasing the role of universities in society [19].

For service providers, there are several important activities as a result of this activity, including: talk shows, speakers on radio, etc [27]. Empowerment of the Destanasif Task Force by the Regional Disaster Management Agency, as part of the recovery of the bodies of COVID-19 patients. The implementation of training activities is a manifestation of the role of universities in the community.

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