

Improving early detection of reproductive health through empowering cadres in Kepuharjo village, Cangkringan, Sleman

Sumarni,^{1,*} Shinta Prawitasari,² Adi Heru Sutomo,³ Ika Putri,⁴ and Santi Yuliani¹

¹Department of Psychiatry, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

²Department of Obstetrics and Gynecology, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

³Department of Family, Community Medicine, and Bioethics, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia

⁴Magister Program of Midwifery, Guna Bangsa College of Health Science, Yogyakarta, Indonesia

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ABSTRACT After the catastrophic eruption of Merapi, which was very traumatic, some people had to move to a new neighborhood which also was a stressor and further might cause mental disorders, especially women's psychiatric disorders. Prolonged stress will suppress the immune system which affect reproductive health, such as menstrual disorders, vaginal discharge, and urinary tract infections. One of the efforts to deal this problem is to provide assistance related to early detection and overcoming reproductive health disorders for PKK cadres. The purpose of this study was to evaluate the PKK cadre's skills in early detection and control of reproductive health disorders and to evaluate the decrease of women's reproductive health disorders in Kepuharjo Village. The target of this study consisted of 40 PKK cadres and 60 women in Kepuharjo Village, Sleman. The early detection module, reproductive health disorder prevention module and early detection skills, reproductive health disorder prevention module, and urine and pap smear laboratory tests were used in the research. The data was presented in quantitative descriptive, using secondary data from community service in June-October 2017. The results of this study were (1) Increasing the average value of early detection skills for reproductive health disorders: stress increased from 39.83 to 57.5; menstrual disorders increased from 29.65 to 57.5; UTI disorders increased from 29.52 to 53.75; vaginal discharge disorders increased from 26.25 to 56.25; breast cancer increased from 16.25 to 51.25. (2) Increasing the average value of reproductive health disorders prevention skills: humor games increased from 41.25 to 82.5 and social support increased from 27.25 to 62.5. (3) Decreased tendency of women's reproductive health disorders: stress decreased from 39 people (65%) to 21 people (35%); menstrual disorders fell from 51 people (85%) to 31 people (17.67%); UTI disorders decreased from 25 people (41.67%) to 16 people (26.67%); and vaginal discharge decreased from 34 people (56.67%) to 19 people (31.67%). It can be concluded that empowering cadres can improve PKK cadre's skills in early detection of reproductive health disorders and overcoming reproductive health disorders.

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1. Introduction

The Merapi eruption that occurred in October-November 2010, was a devastating eruption that caused hundreds of deaths and caused tremendous destruction. The 2010 Merapi eruption was the

biggest eruption in the last 100 years. Several villages in Cangkringan District were destroyed by hot clouds (locally known as *wedhus gembel*).¹ The targeted locations in this service were Petung Village and Pagerjurang Village. This location suffered very severe damage. Thus, the majority of its citizens must move to Pagerjurang permanent residence that usually people called Huntap.

The large-scale natural disasters that cause

*Correspondence: bu_sumarnidw@yahoo.com

Department of Psychiatry, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Jl. Farmako, Sekip Utara, Yogyakarta 55281, Indonesia.

physical damage and destruction will affect psychiatric disorders.² Psychiatric disorders can be prolonged, it can take up to 10 years to come and will even occur after the trauma of a period of up to 30 years.³ Post-traumatic stress disorder is worse for women than for men, with a woman's risk compared to men is 2: 1. Forty percent of women experience post-traumatic stress disorder after natural disasters. Post-traumatic women in Sleman Regency were 22.5% who had mild depression, 52.5% had moderate depression, and 25% had severe depression that needed the help of a psychologist and psychiatrist.⁴

For women, various post-disaster stressors, for instance socio-economic changes, changes in work, and changes in the work environment, changes in residence can have an impact on husband and wife conflict, increased domestic violence, and also decreased intimacy between husband and wife. All of these conditions can increase stress events. Prolonged stress will suppress the immune system that will affect reproductive health, such as vaginal discharge, urinary tract infections, and menstrual disorders.^{5,6}

Based on the explanation above, early detection and prevention of reproductive health disorders is important to reduce morbidity and mortality. Therefore, researchers want to know the escalation in health cadre's skills in early detection and control of reproductive health disorders and decrease in women's reproductive health disorders in Kepuharjo Village, Sleman.

2. Method

The training was held from June to October 2017, the target consisted of 40 *PKK* cadres and 60 women in Kepuharjo Village. This research had received permission from the head of Kepuharjo Village, Sleman. The tools that were used including modules to increase the capacity of *PKK* cadres in handle reproductive health disorders, early detection skills and prevention of reproductive health disorders, laboratory tests of urine and pap smears and reproductive questionnaires for menstrual disorders, urinary tract infections, vaginal discharge, and breast cancer risk. The data were presented with quantitative descriptive. The implementation of

activities was divided into 3 stages: pretest, training and posttest.

2.1 Pretest Stage

First of all, the team measured the skills of *PKK* cadres about early detection of women's depression and reproductive health disorders and prevention in Kepuharjo before training. It followed with giving lectures and training on early detection of reproductive health disorders to *PKK* cadres in Kepuharjo in 3 meetings a week with an allocation of time for each meeting was 2 hours. After the cadre was trained, they conducted pap smear and urine examination on women in Kepuharjo Village. Urine samples were taken in the Kepuharjo Village area which was then taken to the Forensic Laboratory in Sardjito Hospital to be examined while the sample of pap smears examination was carried out by the midwife of Cangkringan Health Center, then it was sent to the Waskitha Pathology Laboratory in Yogyakarta.

2.2 Training Stage

On training stage, the researcher provide a training on reproductive health disorders prevention with social support and games of local cultural wisdom that held 3 meetings a week with an allocation 2 hours for each meeting,

2.3 Posttest Stage

After the training stage was done, it was continued for measuring the knowledge and skills of *PKK* cadres about early detection of women's reproductive health disorders and prevention in Kepuharjo Village. The *PKK* cadres would implement the early detection activities of reproductive health disorders and their handling 4 meetings a week. Lastly, the responded was measured for their reproductive health disorders changes.

3. Result

3.1 Characteristics of *PKK* Cadres in Kepuharjo Village

Forty *PKK* cadres in Kepuharjo Village was women aged 26-65 years, dominated by cadres aged 36-45 years, with total 21 people (52.5). Most of them were housewives, 14 people (35%). The cadres work in the

Table 1. Characteristics of PKK cadres in Kepuharjo Village (n= 40)

Characteristics of respondents	n (%)
Age	
26-35	14 (35.0)
36-45	21 (52.5)
46-55	3 (7.5)
56-65	2 (5)
Occupation	
Housewife	14 (35.0)
Civil servant	1 (2.5)
private employees	2 (5)
Breeder	6 (15)
Farmer	11 (27.5)
Labor	6 (15)
Marital status	
Married	39 (97.5)
Widow	1 (2.5)
Education	
Junior high school	18 (45.0)
Senior high school	19 (47.5)
University	3 (7.5)
Income	
<500.000	0
500.000-1.000.000	27 (67.5)
>1.000.000	13 (32.5)

village around Cangkringan as farmers (11 people), breeders (6 people), sand mining workers (6 people) and only 1 who works as a civil servant (Table 1).

3.2 The Characteristics of Women in Kepuharjo Village

Women other than the cadres in Kepuharjo Village who being targeted in training as many as 60 people with married status are 58 people (96.67%) and the widows are 2 people (3.33%). The female age range in the Kepuharjo Village starts from 26 to 65 years. Most (46.67%) are between 36 and 45 years old (Table 2).

3.3 The increasing average value of PKK cadre at Kepuharjo Village in the early detection of health reproduction disorders.

From table 3, we can see that the average value of cadre skills increased. In the stress variable, the value occurs an increase of 17.67; menstrual disorders variable increased from 29.65 to 57.7; urinary tract infections variable increased by 24.23;

Table 2. Characteristics of women in Kepuharjo Village (n= 60)

Characteristics of respondents	n(%)
Age	
26-35	14 (23.33)
36-45	28 (46.67)
46-55	13 (21.67)
56-65	5 (8.33)
Job	
Housewife	16 (26.67)
Civil servant	1 (1.67)
Private employee	3 (5.00)
Breeder	15 (25.00)
Farmer	12 (20.00)
Labor	3 (5.00)
Married Status	
Married	58 (96.67)
Widow	2 (3.33)
Education	
Junior high school	24 (40.00)
Senior high school	34 (56.67)
University	2 (3.33)
Income	
<500.000	8 (13.33)
500.000-1.000.000	34 (56.67)
>1.000.000	18 (30.00)

the leucorrhoea variable increased to 56.25 and the breast cancer variable increased from the previous one, which only 16.25 to 51.25.

3.4 The increasing average value of PKK cadre in Kepuharjo Village in the management of reproduction health disorders.

After being given the early detection training, stress relief, and reproductive health disorders, given counseling from doctors and midwives about the problems experienced by the respondent, by being given the stress management training with relaxation and support of social and religious, and given stress countermeasures with the humor game of local culture wisdom (figure 1), the average value of skills in the response of depression and reproductive health disorders of respondents have increased. In the social support variable, the average value increases from 27.25 to 62.5 and on the game's variable humor, the average value increases from 41.25 to 82.5.

Table 3. The increasing average value of PKK cadre at Kepuharjo Village in the early detection of health reproduction disorders.

Health reproduction disorders	Average value		The change
	Before	After	
Stress	39.83	57.50	17.67
Menstrual disorders	29.65	57.50	27.85
Urinary tract infections	29.52	53.75	24.23
Leucorrhoea	26.25	56.25	30.00
Breast cancer	16.25	51.25	35.00

Table 4. The increasing average value of PKK cadre in Kepuharjo Village in the management of reproduction health disorders.

Management	Average value		The change
	Before	After	
Social support	27,25	62,5	35,25
Humor Games	41,25	82,5	41,25



Figure 1. Humor game as a form of social support

3.5 The Decreased of reproductive health problems in women in the Kepuharjo Village after being given the training

After the introduction of early detection and reproductive health, there was a decline in the stress and the reproductive health disorder tendency in women in the village of Kepuharjo, Cangkringan, Sleman Regency. Respondents who suffered stress tendencies reduced from 39 people (65%) before training, to 21 people (35%) after training or decreased by 46.15%. From 51 people (85%) Respondents who experienced a tendency to menstrual disorders before training, decreased to 31 people (17.67%) or reduced by 39.21%. The decline

also occurs in the number of respondents who have a tendency to urinary tract infections (UTI), which is from 25 people (41.67%) before training became only 16 people (26.67%) after training. Similarly, the number of respondents who suffered the tendency of leucorrhoea decreased to 44.12%, i.e. from 34 people (56.67%) Before training to 19 people (31.67%) after training.

4. Discussion

The decreased of stress tendencies after training, due to the early detection which can improve the knowledge on how to perform early detection of stress tendencies, and their appearance. By doing relaxation, positive thinking, and practicing to be patient, sincere, and giving each other's assistance will influence the decline of the stress.⁷ Social counseling support from coaches, midwives, physicians, and from friend cadres will affect the sense of security, peace, and will lower stress⁵. A humor game of local wisdom that puts on a funny and happy way can increase endorphin hormones, cortisol, and immunity, which will lower stress. A sense of delight and a loose laugh in the game will affect HPA work control,⁸ increased production of endorphine,⁴ lowering the stress.⁹

The decreased tendency to reproductive health disorders after training due to early detection and prevention of reproductive health can improve the behavior of clean and healthy life. Social support from coaches and cadres will improve healthy behaviors. Social support from cadres and friends will provide a sense of security and feel in the same boat so they dare to do a UTI examination and Pap smear will decrease reproduction health issue. The results were supported by women who argued for fear, who were worried about being found out who have problems with pap smear and UTI examination, became unafraid because there was togetherness, safe and secure the same fate at the process and waiting for the results. Direct social assistance gives benefit for one's health and well-being under stressful and non-stressful conditions. Social support can also help a person from severe negative stress.⁷ Social support can increase immunity, thereby reducing reproductive health disorders. Humor games of local

Table 5. The Decreased of reproductive health problems in women in the Kepuharjo Village after being given the training

Health reproduction disorders	After		Before		The change	
	n	%	n	%	n	%
Stress	39	65,00	21	35,00	18	46,15
Menstrual Disorders	51	85,00	31	17,67	20	39,21
Urinary Tract Infections	25	41,67	16	26,67	9	36,00
Leucorrhoea	34	56,67	19	31,67	15	44,12

Source: Primary data (2017)

cultural wisdom (dancing and singing) performed in groups will increase the sense of pleasure. Fun play causes physiological changes in several systems in the body,¹⁰⁻¹² and cause changes the system of catecholamine and cortisol levels,^{11,12} thus affecting the immune system, and will reduce the tendency of menstrual disorders, vaginal discharge, and UTI.⁵

Informational support and treatment directly from midwives during Pap smear examination if suspected or having risk for infection will cause a sense of security and calm.¹³ Informational support from trainers and cadres for those with a risk for UTI was advised to drink lots of water and to not hold urine and how to clean properly after defecation and urination. To make women who have urine test results urinary tract infections feels safe and calm, it is advisable to see the doctor.¹⁴ Training for Informational support from trainers, midwives, cadres about the results of Pap smear made a sense of calm, relief, so they were healthy and didn't experience a tendency for cervical cancer.¹³ At the end, improving knowledge are recommended based on the health belief model with emphasis on reducing barriers and increasing awareness to improve behavior.¹⁵

5. Conclusion

In conclusion, the skills of PKK cadres in Kepuharjo Village in early detection and overcoming of reproductive health disorders increased after training while social support and humorous play on local cultural wisdom also improved after training. Those made the trend of reproductive health disorders in women in Kepuharjo Village declined.

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Conflict of interest

There is no conflict of interest

References

1. National Disaster Management Authority (BNPB). 2010. [Internet] cited 10 October 2019. Available at: <https://news.detik.com/berita/1496723/bnpb-jumlah-korban-tewas-merapi-275-orang>. Diakses 1 November 2018.
2. Ursano RJ, Fullerton CS, Norwood AE. (Eds.), *Terrorism and Disaster. Individual and Community Mental Health Interventions*. 2003:1–20. Cambridge University Press, Cambridge, UK.
3. Kaplan HI, Sadock BJ, Grebb JA. *Comprehensive textbook of Pshychiatry*, 10th Edition. 2007. London: Lippocont William and Walkins.
4. McDaniel ND. 2011. *Touching Makes You Healthier*. Health Magazine. [Internet]. Cited 5 October 2019. Available at: <http://edition.cnn.com/2011/HEALTH/01/05/touching.makes.you.healthier.health/index.htm>>
5. Sarafino EP. *Health Psychology: Biopsychosocial Interaction*. 3rd edition. 1998. John Wiley & Sons, New York.
6. Marga AD, Sumarni DW, Dasuki D. Hubungan antara stressor psikososial dengan gangguan menstruasi pada remaja SMP pasca erupsi Merapi

- di Kecamatan Cangkringan, Sleman, Yogyakarta. *J Kesehatan Reproduksi*. 2015;2(3):171-181
7. Soewadi. *Sistomatologi Dalam Psikiatri*, 1999. Kodik Bagian Ilmu Kedokteran Jiwa, Fakultas Kedokteran UGM.
 8. Schussler P, Uhr M, Ising M, Weikel JC, Schmid DA, Held K, et al. Nocturnal ghrelin, acth, gh, and cortisol secretion after sleep deprivation in humans. *Psychoneuroendocrinology*. 2006;31(8):915-23.
 9. Smet B. *Psikologi Kesehatan*. 1994. Grasindo, Jakarta.
 10. Sumarni DW. The influence of psychosocial stressors on depression and reproductive health problems in female workers in the textile industry in Central Java. 2005. Research Report. Faculty of Medicine, Public Health, and Nursing. Universitas Gadjah Mada.
 11. Sumarni DW. The effect of post-eruption stressors on depression and reproductive health problems and their treatment in women in temporary residential areas, Cangkringan District, Sleman Regency. 2017. Research Report. Faculty of Medicine, Public Health, and Nursing. Universitas Gadjah Mada.
 12. Fry WF. The biology of human. *Int J Hum*. 1994;7(2):111-26.
 13. Ashtarian H PhD, Mirzabeigi E Bs, Mahmoodi E Bs, Khezeli M PhD. Knowledge about Cervical Cancer and Pap Smear and the Factors Influencing the Pap test Screening among Women. *Int J Community Based Nurs Midwifery*. 2017;5(2):188-195.
 14. Urology Care Foundation. Urinary tract infections-learn how to spot and treat them. [Internet] cited 11 October 2019. Available at: <https://www.urologyhealth.org/healthy-living/urologyhealth-extra/magazine-archives/summer-2014/urinary-tract-infections-learn-how-to-spot-and-treat-them>
 15. Namdar A, Bigizadeh S, Naghizadeh MM. *Measuring Health Belief Model components in adopting preventive behaviors of cervical cancer*. *J Fasa Univ Med Sci*. 2012;2(1):34-44.