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Implementation of infrared therapy at posbindu Padukuhan Gadingan

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ABSTRACT

Elderly (elderly) is very vulnerable to health. The elderly have physical problems and need more care. The number of elderly people continues to increase from year to year. Along with the increasing number of elderly people, the government has formulated various policies for elderly health services that aim to improve the health status and quality of health for the elderly in order to achieve a happy and useful old age in family life, society in accordance with their existence. Supplementary Feeding (PMT) is an activity of providing food to toddlers in the form of food that is safe, of good quality, and contains nutritional value according to the needs of children. POSBINDU and also PMT are routine activities held at Padukuhan Gadingan every month to monitor the health of the elderly and help support nutrition in children. The purpose of this community service is to introduce infrared light therapy devices and invite the elderly to try therapy with these tools, and also help provide supplementary food (PMT) for toddlers in Padukuhan Gadingan. The methods used include surveys, the preparation stage, and finally the activity implementation stage. The targets of this infrared ray therapy activity are residents of Gadingan Padukuhan in general, as well as the elderly in particular. The target of PMT activities are toddlers in Padukuhan Gadingan. Community service activities by providing infrared light therapy have a positive impact on residents, especially for the elderly. This can be seen from the testimonies of residents who have tried therapy, they say that the pain they felt before was reduced after they had therapy.

KEYWORDS
Gading Padukuhan;
POSBINDU;
Infrared Therapy;
Supplementary Meals

1. Introduction

Bearing in mind that community service is a manifestation of academics who are present in the community which involves the academic community such as students, lecturers, alumni, and other education staff. The need for a healthy life makes humans do various ways in order to overcome the illness they suffer. In certain diseases such as low back pain, asthma, bronchitis, and also osteoporosis are various examples of diseases that are not only treated by taking drugs, but also require a therapeutic process.

Currently there are various types of therapy such as therapy with light, water, ultrasonic, electricity, or gas. Therapy using light is also divided into various types, namely therapy with infrared light, ultra violet light, and also argon laser. Infrared light therapy is one of the most commonly used therapies by the public. This therapy is used to assist in overcoming various kinds of complaints related to pain and aches in the muscles.

Infrared therapy used for community service has been widely studied by previous researchers. Light therapy for radiation dermatitis: a summary of the WHAM evidence studied by Haesler [1]. Far-infrared therapy improves arteriovenous fistula patency and decreases asymmetric plasma dimethylarginine in patients with advanced diabetic kidney disease: a prospective randomized controlled trial studied by Chen

[2]. The role of far infrared therapy in the maturation of unassisted arterio-venous fistula in patients with chronic kidney disease was investigated by Anand [3].

The role of opsin and light- or heat-activated transient receptor potential ion channels in the mechanism of photobiomodulation and infrared therapy was investigated by Sharma [4]. Far Infrared Therapy Reduces Vasculopathy Orthotopic Allograft Transplant was investigated by Lin [5]. The Effect of Far Infrared Therapy on Foot Circulation in Hemodialysis Patients with Diabetes Mellitus was studied by Wang [6].

Photo-Induced Electron Transfer-Induced Structural Deformation Promotes Near-Infrared Photothermal Conversion for Tumor Therapy investigated by Pan [7]. Does Far Infrared Therapy Improve Peritoneal Function and Reduce Recurrent Peritonitis in Peritoneal Dialysis Patients? studied by Chang [8]. Far Infrared (FIT) Therapeutic Patch Technology, Protects from Inflammation, Oxidative Stress, and Increases Cellular Vitality was researched by Pastore [9].

Dopamine multivalent modified polyaspartic acid for MRI-guided near-infrared photothermal therapy was investigated by Du [10]. The efficacy of LED Photobiomodulation for Functional and Axonal Regeneration After Section-Suture of Facial Nerves was investigated by Er-Rouassi [11]. Implementation of Internet of Thing Technology for the Design of Infrared Therapy Devices was researched by Fauzi [12].

The effect of near-infrared laser treatment on improving erectile function in rats with diabetes mellitus was investigated by Yang [13]. Thread Implantation Acupuncture for Temporomandibular Disorders: Protocols for a Pilot Randomized Controlled Trial investigated by Kim [14]. Far Infrared Emission Properties and Thermogravimetric Analysis of Ceramic Embedded Polyurethane Films were investigated by Faisal [15].

Effect of cervical traction and infrared therapy on pain intensity and neck disability index in persons with cervical spondylosis: a cross-over cohort study investigated by Igwe [16]. Effect of Far Infrared Therapy on Peritoneal Expression of Glucose Degradation Products in Diabetic Patients on Peritoneal Dialysis was investigated by Chang [17]. Acute hemodynamic changes during far infrared treatment of arteriovenous fistula in hemodialysis patients was investigated by Hansen [18].

Insight into the Molecular Structure of Pterins Suitable for Biomedical Applications was investigated by Buglak [19]. Far Infrared Therapy Accelerates Diabetic Wound Healing through Tissue Angiogenesis Recruitment in a Full-Thickness Wound Healing Model in Rats studied by Chen [20]. Infrared light therapy relieves TLR-4-dependent hyper-inflammation of the type induced by COVID-19 studied by Aguida [21].

Molecular investigation and clinical management of Hepatozoon Canis infection in Indian wolves – case report investigated by Kolangath [22]. Effect of far infrared therapy on maturation, survival, and arteriovenous fistula stenosis in hemodialysis patients, randomized controlled clinical trial: IMAN in fistula trials studied by Lindhard [23]. Effect of Far Infrared Therapy on Peritoneal Membrane Transport Characteristics of Uremic Patients Undergoing Peritoneal Dialysis: An Open Prospect Proof-of-Concept Study investigated by Li [24].

The effect of far-infrared cloth on the proliferation and invasion of breast cancer cells was investigated by Mu [25]. Orofacial evaluation of individuals with temporomandibular disorders after LED therapy associated with or not with occlusal splints: a double-blind randomized controlled clinical study investigated by Costa [26]. A comparison of low-dose and far-infrared ultrasound therapy in patients with mechanical neck pain was investigated by Marwa Mohamed Hany Sedeek Abousenna [27].

A rare complication caused by thrombus detachment during arteriovenous fistula thrombolysis: a case report investigated by Liu [28]. The development of an Automatic Photo Biomodular Therapy Robot was researched by Umamaheswari [29]. Canine thoracolumbar intervertebral disc herniation and rehabilitation therapy after surgical decompression: A retrospective study investigated by Jeong [30].

Growth in children must be detected early through intensification of monitoring the growth and development of toddlers. Families are expected to be able to detect children's health conditions independently. Then health detection can also be carried out at posyandu, and followed by detection by village midwives or other health workers. Babies and toddlers really need adequate nutrition in their

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growth and development process. Foods that are rich in nutrients are needed to prevent disturbances in growth.

Gadingan Padukuhan is one of the Padukuhan which has a large number of elderly and toddlers. Many families tend not to pay much attention to the health of the elderly because they think it is not too important. Public awareness in growing the importance of carrying out routine self-examination which includes checking blood pressure, weight, uric acid, blood sugar, and cholesterol is still lacking, this causes the risk of getting various kinds of diseases easier so that therapy is needed to overcome them apart from taking drugs medicine. There are several toddlers with nutritional records that have not been fulfilled, this makes the PMT program continue to be held regularly to be able to overcome this problem because there are fears that it will continue to become malnourished.

Against this background, Muhammadiyah University Group 114 Real Work Lecture (KKN) students took the initiative to help the Padukuhan Gadingan by helping female cadres in the POSBINDU program by lending infrared therapy devices to be used for therapy for the elderly, and also assisting in the delivery program. supplementary food for toddlers.

The purpose of this community service activity is to introduce infrared therapy devices, increase residents' understanding of pain management by doing therapy on painful parts, and also try direct therapy with this infrared ray device for the elderly in particular and the Gadingan Padukuhan community in general. As well as helping to provide additional nutritious food for toddlers in Padukuhan Gadingan so that their nutrition is still fulfilled.

2. Method

Community service activities in the form of the POSBINDU and PMT programs were carried out at Padukuhan Gadingan, Argomulyo Village, Kapanewon Cangkringan, Sleman Regency. This activity consists of several stages, namely a preliminary survey in the form of an application for permission from Dukuh Gadingan, Posyandu cadres and providing an explanation regarding the purpose of the activity and the benefits that can be obtained. In addition, an explanation regarding the flow of activities was also conveyed so that the parties fully understood the flow of implementation of activities from start to finish. Next is the data collection stage - data related to the number of elderly and toddlers in Padukuhan Gadingan.

Materials and tools that support the implementation of activities at Padukuhan Gadingan are infrared light therapy devices for the POSBINDU program and fruits for PMT. The following is an explanation regarding the stages of community service at Padukuhan Gadingan:

1. Preliminary survey by visiting the hamlet residence to explain the aims and objectives of the activity, explaining the flow of the activity implementation, and explaining the benefits that can be obtained from the POSBINDU and PMT activities.
2. The preparation stage is by collecting supporting data in the POSBINDU and PMT program processes. The data obtained is in the form of the number of elderly and toddlers in Padukuhan Gadingan.
3. The second preparatory stage is providing information to the elderly and also mothers who have toddlers about the POSBINDU and PMT program activities that will be carried out by the KKN 114 community service group.
4. The third preparatory stage is by preparing an infrared ray therapy device to be used in the POSBINDU program, as well as preparing food and fruit for the PMT program.
5. The final stage is the implementation of POSBINDU and PMT activities. This activity was carried out at the Orchid Posyandu, Padukuhan Gadingan with the target of the elderly and toddlers. In this program, the elderly can try therapy using infrared light therapy devices for free, as well as giving PMT to Padukuhan Gadingan toddlers.

Participation of the parties in the implementation of this activity is assisting in collecting supporting data such as the number of elderly and toddler data, helping to disseminate information regarding the POSBINDU and PMT programs carried out at the Anggrek Posyandu, and also preparing for this activity so that the event can run smoothly.

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3. Results and Discussion

This community service activity was carried out on Monday 06 February 2023 at the Orchid Padukuhan Gadingan Posyandu, Argomulyo Village, Kapanewon Cangkringan, Sleman Regency.

Fig. 1. Infrared therapy in Posbindu activities

This activity consists of a series of events. Community service activities at Padukuhan Gadingan have successfully held the POSBINDU and PMT programs. This activity begins with measuring body weight, blood pressure, checking cholesterol, blood sugar, uric acid, and then continuing with therapy using infrared therapy devices for the elderly. Then also measured weight, height, head circumference, arm circumference, administration of vitamin A to toddlers, and PMT as an additional nutritious food. The fundamental contribution of this activity is to provide therapy using infrared rays for the elderly, where they really need medical therapy to stay healthy, and to treat the pain they are suffering from. And also so that toddlers get additional nutritious food that can support their needs in the growth stage.

Fig. 2. The process of infrared therapy in the elderly

Community service activities by providing infrared light therapy received a very positive response from the community, because most of them did not know about and had never tried therapy with this device. And also get a good program success rate. This can be seen from the testimonies of residents who have tried therapy, they say that the pain they felt before was reduced after they had therapy.

The implementation of therapy activities with an infrared ray device in Padukuhan Gadingan is shown in Figure 1. The figure shows that residents are busy arriving and lining up to try therapy with the device.

The process of therapy with an infrared ray device for the elderly is shown in Figure 2. The figure shows that residents who have tried the therapy say that after the therapy, the feeling of pain in the muscles and also the feeling of aches and pains is reduced.

4. Conclusion

Infrared light therapy is one of the most common forms of therapy used by the public. This therapy is used to assist in overcoming various kinds of complaints related to pain and aches in the muscles. Supplementary Feeding (PMT) is an activity of providing food to toddlers in the form of food that is safe, of good quality, and contains nutritional value according to the needs of children. With the POSBINDU and PMT activity programs, it is hoped that it can increase the awareness of residents in Padukuhan Gadingan regarding routine self-examination of the elderly and toddlers in particular. And it is hoped that the padukuhan can work together with health agencies that have infrared light therapy devices so that residents can continue to carry out routine therapy.

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Author Contribution

Activity plan in order to implement a solution to relieve soreness suffered by elderly people with infrared therapy.

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Conflict of Interest

The authors declare no conflict of interest.

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