

## Digitalization and Creative Health to Empower Posyandu Cadres in Yogyakarta City's Effort to Zero Case Stunting

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### Abstract

The stunting problem in Umbulharjo, Yogyakarta City, ranks second among 18 other regions, with 118 children under five. Because posyandu plays a crucial role in speeding the elimination of stunting, the capacity of cadres must be considered. The goal is to enhance health independence and food security by creating an anti-stunting sustainable food yard (P2L) and a digital-based information system, with a target of 23 posyandu cadres. Asset Based Community Development (ABCD) employs a method that covers requirements analysis, design, mentorship, and implementation and evaluation stages. Results: The cadres' knowledge of vegetable gardening went from 16% to 75%, their skills increased from 7% to 70%, and their motivation to plant vegetables increased from 55% to 90%. Similarly, cadres' average understanding of the processing of diverse local food ingredients improved from 30% to 75%, and their educational ability increased from 5% to 70%. Empowering posyandu cadres to achieve zero stunting in Yogyakarta through digital and creative health has expanded natural and human resource capacity in Umbulharjo Village, Yogyakarta City.

**Keywords:** SIKYandu; Agriculture City; Smart Posyandu

### Abstrak

Permasalahan stunting di Umbulharjo Kota Yogyakarta menempati urutan tertinggi kedua diantara 18 wilayah lainnya yang ada di Kota Yogyakarta yaitu sebanyak 118 balita. Keberadaan posyandu memiliki peran strategis dalam percepatan penurunan stunting, sehingga kapasitas kader sangat penting untuk diperhatikan Tujuan : meningkatkan kemandirian kesehatan & ketahanan pangan dengan luaran produk terbentuknya pekarangan pangan lestari (P2L) anti stunting dan sistem informasi berbasis digital dengan jumlah sasaran 23 kader posyandu. Metode : yang digunakan Asset Based Community Development (ABCD) meliputi tahap analisis kebutuhan, perancangan, pendampingan, dan implementasi serta evaluasi. Hasil : pengetahuan kader terkait budidaya sayur meningkat 16% menjadi 75%, keterampilan dari 7% menjadi 70%, dan motivasi penanaman sayur juga meningkat dari 55% menjadi 90%. Begitupula dengan rata-rata pengetahuan kader tentang pengolahan berbagai bahan pangan lokal meningkat dari 30% menjadi 75% dan kemampuan edukasi yang semula 5% meningkat menjadi 70%. Pemberdayaan kader posyandu menuju zero stunting kota Yogyakarta berbasis digital dan creative health berhasil meningkatkan kapasitas SDA dan SDM Kelurahan Umbulharjo Kota Yogyakarta

**Kata kunci:** SIKYandu; Perkebunan Kota; Posyandu Pintar

## INTRODUCTION

### GENERAL DESCRIPTION OF THE COMMUNITY, PROBLEMS AND TARGET SOLUTIONS

#### General description

The problem of stunting is a problem that is still a national priority program based on Presidential Regulation Number 72 of 2021 (President, 2021) because stunting can inhibit physical and mental development, affect children's intelligence, and increase the risk of non-communicable diseases such as diabetes mellitus, cancer, and coronary heart disease in adulthood (Hoddinott et al., 2011). According to Bappenas RI in 2022, Yogyakarta City is one of 514 regencies/cities in Indonesia that are the focus locations (Locus) for stunting reduction to achieve a golden Indonesia in 2045 (Bappenas RI, 2022). According to the 2022 Yogyakarta City Health Office Government Agency (LKIP) performance report, the stunting reduction target in Yogyakarta City has not been achieved, which is 10.8% of the target that should be 12% (Dinkes Kota Yogyakarta, 2023). Meanwhile, through the Mayor Regulation on Regional Action Plans, the Yogyakarta City Government has a target of Zero Case stunting by 2024. Umbulharjo I District as one of the stunting loci is not without reason because the health condition of children in the sub-district is quite concerning. According to the Profile of the Yogyakarta City Health Office in 2023, it is known that Umbulharjo I District has the second highest stunting prevalence among 18 other villages, namely 118 toddlers (Dinas Kesehatan Kota Yogyakarta, 2023). Based on the results of a preliminary study through focus group discussions with village stakeholders, posyandu cadres, and health workers at the Umbulharjo I Health Center and equipped with data from interviews and direct observations in the field, multifactor information was obtained that caused the problem of stunting in Umbulharjo, Yogyakarta City, one of which was the lack of optimal counseling at table 4 posyandu due to the limited ability of cadres and also there were still many feeding patterns in the Children with unbalanced nutritional composition due to the fulfillment of basic needs that rely on the market. Population density and limited land in Yogyakarta City, especially in the Pandeyan Umbulharjo sub-district, are particular problems, as well as challenges for people living in urban areas, where these conditions can cause various negative impacts including human imbalance with nature, increased pollution, disruption of eating patterns to ready-to-eat ingredients, inequality The level of food affordability, food diversity, and nutritional balance, is primarily determined by socioeconomic background so that it can increase the risk of families with malnutrition or malnutrition and even stunting (Jan Gehl, 2010). Based on the problems faced by partners, the service activity with the theme "Empowerment of digital-based posyandu cadres & creative health" is the right solution because it has several goals that can increase health independence and improve food security, including Improving the skills of cadres in providing counseling related to parenting and eating patterns using a website-based posyandu information & communication system that is easily accessible, Increase the participation of posyandu cadres and PKK cadres in participating in creating food independence by creating anti-stunting sustainable food yards (P2L). According to relevant research, posyandu programs that are integrated with community empowerment programs and support from the government and non-government institutions can make a positive contribution to reducing stunting rates and improving children's nutritional status (Nita Dwi Astikasari and Sumardiyon, 2023). This is in line

with the results of research by Lestari et al., which states that the posyandu program significantly reduces stunting rates and improves children's nutritional status (Suparto *et al.*, 2022).

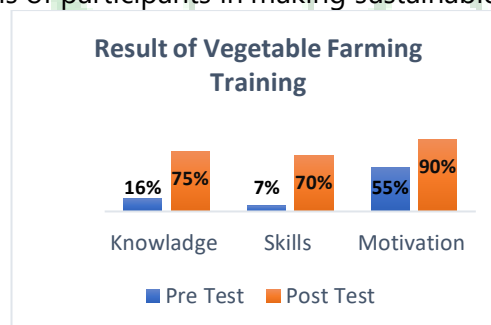
## METHOD

This community service method uses an Asset Based Community Development (ABCD) approach (Leavy P, 2017), The implementation of service activities is based on utilizing assets owned by partners, both HR assets (Posyandu & PKK cadres) and natural resource assets (local foodstuffs). The stages carried out include the needs analysis stage, the design, mentoring, and implementation stages, as well as the recommended evaluation stage as a solution in solving the problems faced by partners. The targets of this service were posyandu cadre mothers and PKK mothers, totaling 23 people selected based on objectives or purposive sampling.

## RESULTS AND DISCUSSION

### Physical activity on the creation sustainable food garden program (P2L)

The creation of sustainable food yards began on August 1, 2023, by bringing in resource persons to provide training. The number of participants was ten mothers of posyandu cadres. Before the training, a pre-test was carried out to measure the participants' knowledge, skills, and motivation, for the cultivation model applied, namely the polybag and viticulture model. The selection of cultivation models is based on the urban area and the type of commodities to be preserved (RAB Kusumo, 2020). The activity of making sustainable food yards is one of the alternative solutions to solve the problem of stunting and answer the challenges of urban areas that are vulnerable to food security problems so that it can have an impact on the variants of food and nutritional intake consumed by the community, especially toddlers. According to the results of relevant studies, feeding patterns in children are one of the most significant predictors of stunting and poor linear growth in children under two years old (Aguayo *et al.*, 2016). Stunting prevention efforts are essential through a nutritional approach sensitive to the social and economic context, including food diversification. According to the results of research by Ruel et al. in 2013, the impact of nutrition programs in the agricultural sector through women's empowerment is one way to increase access to various diets among people with low incomes so that it can be a solution to nutrition-specific interventions by creating an environment that can stimulate children to grow and develop optimally (Ruel and Alderman, 2013). The vegetable planting training activities are presented in the following picture: Sustainable food yards are not only valid as a source of household food. However, they can also create beautiful and calm urban areas to make them more comfortable facing climate change through the agricultural sector (Balafoutis *et al.*, 2017). Based on the results of data analysis, information on changes in knowledge, attitudes, and skills of participants in making sustainable food yards was obtained.



#### Bar chart 1. Level of knowledge, performance, and motivation

Based on the diagram above, it was found that respondents' knowledge in the high category before training amounted to 16%, increased to 75%, cadres' skills before training 7% increased to 70%, and vegetable planting motivation also increased from 55% to 90% after training. The knowledge measured in this service includes technical knowledge about land processing, selection of superior seeds, fertilization, care, and control of pests and plant diseases. The seed commodities planted in this activity are high-iron vegetables for anti-stunting food, including red spinach, Brazilian spinach, green spinach, tomatoes, sweet potatoes, corn, and kale, which are grown vertically using fence walls and houses. In addition to training on planting various vegetables, posyandu cadres are equipped with catfish farming materials using buckets to implement them at home. Catfish is one source of animal protein high in omega-3 and DHA, so it is suitable for optimizing children's growth and development; this is in line with the BKKBN program, which recommends this food as a source of children's food. Cadres with high enthusiasm attended the vegetable planting training, so skills and motivation experienced a significant increase between before and after the intervention; the process of planting and maintaining vegetables, until they were ready to harvest took  $\pm 40$  days, so during the training on making various variants of additional food some of the ingredients were harvested from this yard and received appreciation from the Umbulharjo Pandeyan Subdistrict of Yogyakarta City.

#### Training of digital used for counseling

The development of the posyandu information and communication system (SIKYandu) is based on consideration of the needs of partners (posyandu cadres and Umbulharjo I Health Center based on the results of the FGD between the service team and stakeholders in Pandeyan village, and based on the results of in-depth interviews between service teams with posyandu cadres and between service teams with surveillance of the Umbulharjo health center in Yogyakarta City 2 times so that an effective and efficient system is formed following the partner needs and integrated with related health workers, here is the view of SIKYandu that has been developed:

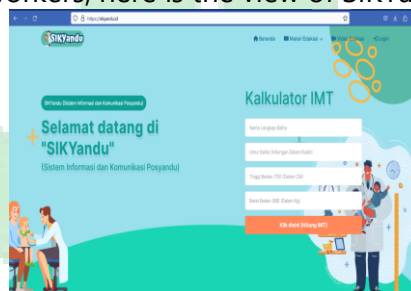
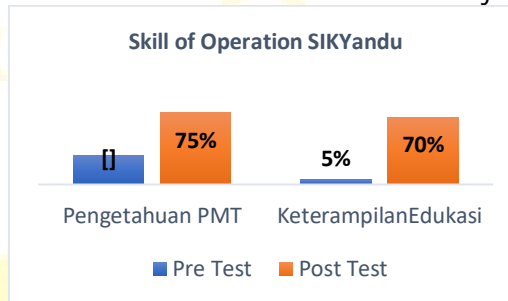


Figure 5. SIKYandu homepage

The counseling process that finds questions unanswered by cadres can be consulted with counselors on the desired platform, including via WhatsApp, Instagram, Social media, and Facebook. The use of technology in health promotion efforts is a strategic step in increasing knowledge and changing people's attitudes, especially mothers of toddlers in the millennial age range. According to Worldometers data as of August 2023, smartphone users in Indonesia are 73 users out of a total population of 277 million, meaning that 26.4% of Indonesia's population already uses smartphones. The high ownership of smartphones in Indonesia makes Indonesia the sixth highest smartphone user country in the world, and users are dominated by productive age, namely the age of 15-35 years or the so-called millennial generation (Mela Syaharani, 2023) Based on observations of data on the characteristics of mothers under five in the working area of Posyandu Key 5 Kebrokan Pandeyan, most of them are in the productive age range. Hence, health

promotion through technology is right on target to be implemented. According to research by Cahtiya et al. in 2014, health promotion through Facebook has proven effective in increasing people's consumption of fruits and vegetables. According to research by Cahtiya et al. in 2014, health promotion through Facebook has proven effective in increasing people's consumption of fruits and vegetables (Cahtiya, Marlina, and Rany, 2022). The system that has been developed is socialized to posyandu cadres and umbulharjo I puskesmas survey lens to be used in extension activities. SIKYandu socialization was conducted at Balai RW 05 Kebrokan Pandeyan on August 1, 2023, attended by 22 Posyandu cadres from 13 RWs in Umbulharjo Village, Yogyakarta City.



Bar Chart 2.9. Knowledge and performance of cadres

Based on the diagram above, the results were obtained in the form of a significant increase in skills between before and, namely, the average knowledge of cadres about processing various local food ingredients before the socialization of SIKYandu in the high category as much as 30% increased to 75% after training, this is also in line with the increase in cadre skills in education which was initially 5% or most cadres were not skilled in conducting education increased to 70% after training.

## CONCLUSIONS AND SUGGESTIONS

This community service activity provides solutions to increase health independence and food security to accelerate stunting reduction. Digitalization innovation and the establishment of sustainable food yards are tangible manifestations of innovation that can increase the knowledge and skills of posyandu cadres and are expected to increase cadre creativity in carrying out their roles.

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