Effectiveness of *Pandang Dengar Orang Dengan HIV* Campaign in Reducing HIV Stigma among Youth in Pati Regency, Indonesia

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Abstract

Background: Recently, there has been a significant increase in new HIV infections in several regions in Indonesia, one of which is Pati Regency, Central Java. The considerable barrier in preventing HIV/AIDS is the widespread stigma against people living with HIV (PLHIV). Innovative interventions are required to eliminate HIV stigma, particularly among young people. This study evaluated the effectiveness of the *Pandang Dengar Orang Dengan HIV* (ODHIV) campaign in reducing HIV stigma among youth in Pati Regency, Indonesia.

Methods: This was an experimental study with a pretest-posttest control group design with randomization. The residents of Pati Regency aged 15 to 29 years who were active users of Instagram and WhatsApp were involved. The *Pandang Dengar ODHIV* campaign was conducted using Instagram Reels four times a week for three weeks in the intervention group. The instruments used were the Global Stigma and Discrimination Indicator Working Group (GSDIWG) and the Strive research consortium. The T-test was used to analyze the data with a significance level of 95%.

Results: The results revealed a decrease in HIV stigma in both the intervention and control groups (p=0.001). After the intervention, the mean stigma score in the intervention group was lower than the mean in the control group (mean difference of 0.044), however, was not statistically significant (p-value=0.961).

Conclusions: The Pandang Dengar ODHIV campaign is effective in reducing HIV stigma among youth in Pati Regency, Indonesia. Further research is needed to demonstrate the effectiveness of campaign in wider audiences and other areas.

Keywords: HIV stigma, Instagram, *Pandang Dengar ODHIV,* people living with HIV campaign

Introduction

Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) has become a global issue and continues to spread.[1] The COVID-19 pandemic has prompted the government to place greater emphasis on efforts to stop the spread of the SARS-Cov-2 virus, thereby increasing new HIV/AIDS infections in certain regions in Indonesia.[2] The cumulative number of HIV cases reported in Indonesia until March 2021 was 427,201 cases. In 2021, the Directorate General of Disease Prevention and Control reported that the Central Java Province had the highest cumulative number of HIV/AIDS cases from January to March, with a total of 1,432 cases. Based on this data, 71.3% of HIV-positive people were between the ages of 25 and 49 years, or of productive age.[3] Pati Regency is a district in Central Java, Indonesia with 166 new cases of HIV/AIDS infections spread across 21 subdistricts from January to August 2021. Margorejo, Pati, Juwana, Jakenan,

and Batangan sub-districts are among the five sub-districts that are in the red zone or have more than 10 new cases of HIV.[4]

The greatest challenge in fighting HIV/AIDS in our society is stigma and discrimination against people living with HIV (PLHIV). In 2017, the United Nations Program on HIV/AIDS ranked Indonesia as the country with the greatest prevalence of stigma in the Asia-Pacific region, namely 62.8%.[5] In 2018, data from National Institute of Health Research and Development indicated a similar thing. Nearly 60% of respondents indicated that there was stigma towards PLHIV.[6] The government implemented group education strategies, provided facilities, and implemented screening measures to minimize the prevalent stigma.[7] The majority of efforts to decrease stigma in Indonesia focus on community education about HIV transmission.[8]

A previous study shows key population-led interventions to organize public awareness campaign regarding HIV stigma can effectively reduce stigma.[9] A randomized controlled trial involving people with mental problems and a website-based intervention of 30 minutes of video exposure in social contact had a long-term impact on reducing stigma.[10] Various intervention approaches employing digital technology affect health programs including HIV/AIDS prevention programs.[11] Another previous study has showed the effectiveness of using eHealth interventions to increase HIV testing and care uptake.[12] Social media-based interventions focused on reducing stigma aimed at young people are relatively uncommon. Nevertheless, adolescents are typically early adopters of new technology. Among young people, Instagram is a social networking platform that encourages significant user engagement and is a popular virtual environment with a usage rate of 88%, followed by Facebook at 80.6% and Twitter at 51.1%.[13,14] The data illustrates the possibility of conducting campaigns on Instagram.

Based on gaps in previous studies, this study implemented an innovation in the form of a campaign aimed at the younger generation named the *Pandang Dengar ODHIV* Campaign to minimize HIV-related stigma. Campaign activities were carried out through social media, consisting of exposure to PLHIV's social contacts and education focusing on prevention and treatment. This study aimed to explore the effectiveness of the *Pandang Dengar ODHIV* Campaign against HIV stigma among youth in Pati Regency, Indonesia.

Methods

This study employed a randomized controlled trial, pretest-posttest control group design, conducted in Pati Regency, Indonesia between June and September 2022. This study obtained approval from the Health Research Ethics Committee, Faculty of Medicine, Muhammadiyah Surakarta University with letter number 4380/B.2/KEPK-FKUMS/XI/2022.

The study population consisted of 78,201 individuals aged 15 to 29 years who were active users of WhatsApp and Instagram, residing in five sub-districts in Pati Regency such as Batangan, Margorejo, Pati, Juwana, and Jakenan. This study was conducted in two phases. The first phase consisted of screening to identify the extent of HIV-related stigma in the community. Using the Lameshow formula, a minimum sample size of 225 respondents was calculated using the quota sampling technique. Quota determination was carried out by comparing the proportion of the target population per sub-district to the overall minimum sample based on the results of sample calculations. Phase II was evaluating the effectiveness of the *Pandang Dengar ODHIV* campaign in both the control and intervention groups. The phase II research sample was individuals with a high category of HIV stigmatization based on the first phase screening survey who were willing to participate in the study. By using the formula for continuous response variables, a minimum sample size of 90 was obtained which was then divided into two groups, namely the control group and the intervention group with 45 respondents in each group (Figure 1). The sampling technique used simple random sampling. The allocation of research samples to the two groups was performed using a block randomization technique with a block size of 4.

The *Pandang Dengar ODHIV* campaign intervention consisted of: 1) presenting video interviews with PLHIV; 2) Educational support for PLHIV; 3) Changing the perception that HIV/AIDS was not a deadly disease; 4) Myths of HIV/AIDS transmission; and 5) Fulfillment of human rights for PLHIV. The duration of the intervention was three weeks.

In the intervention group, the campaign was conducted using Instagram Reels as audiovisual content. Before the intervention began, all respondents in the intervention group followed the Instagram account @
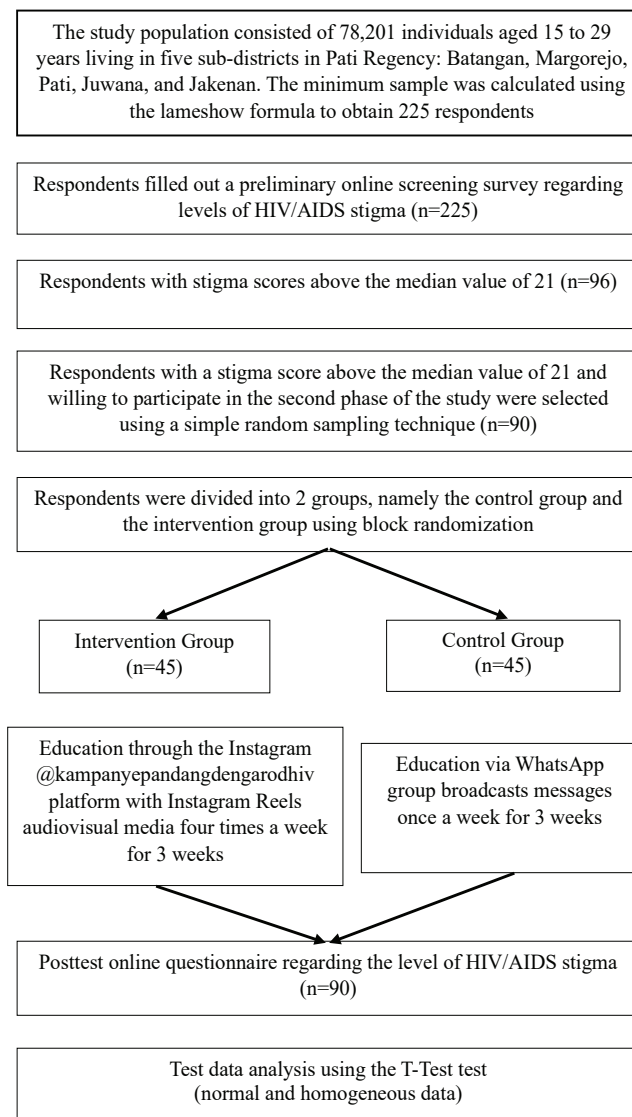
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The study population consisted of 78,201 individuals aged 15 to 29 years living in five sub-districts in Pati Regency: Batangan, Margorejo, Pati, Juwana, and Jakenan. The minimum sample was calculated using the lameshow formula to obtain 225 respondents

Respondents filled out a preliminary online screening survey regarding levels of HIV/AIDS stigma (n=225)

Respondents with stigma scores above the median value of 21 (n=96)

Respondents with a stigma score above the median value of 21 and willing to participate in the second phase of the study were selected using a simple random sampling technique (n=90)

Respondents were divided into 2 groups, namely the control group and the intervention group using block randomization

Intervention Group (n=45)

Control Group (n=45)

Education through the Instagram @kampanyepandangdengarodhiv platform with Instagram Reels audiovisual media four times a week for 3 weeks

Education via WhatsApp group broadcasts messages once a week for 3 weeks

Posttest online questionnaire regarding the level of HIV/AIDS stigma (n=90)

Test data analysis using the T-Test test (normal and homogeneous data)

Figure 1 Flow Chart Research Sample

kampanyepandangdengarodhiv. The duration of the intervention was three weeks, and the total assigned time for education was thirty-six minutes. There were three daily Instagram Reels videos posted with a maximum runtime of one minute each, and content uploaded were scheduled four times per week. The presentation of the PLHIV campaign comprised five primary components. The first week's material consisted of video interviews with HIV-positive individuals. In the second week, the idea that HIV/AIDS was not a deadly disease was changed through teaching and support for PLHIV. The third week concluded with education regarding the myth of HIV/ AIDS transmission and the realization of human rights for PLHIV. Preventing contamination of information resulting from the intervention toward the control group, this was done by listing the respondents' Instagram account and ensuring that the intervention group followed the Instagram account @*kampanyepandangdengarodhiv* and vice versa.

In the control group, information about HIV/AIDS transmission was shared via the WhatsApp (WA) group delivered via broadcast messages. Material was distributed once per week. This was different from educational content which only provided education about

HIV transmission without any direct social contact with PLHIV. Education through WA broadcasts was chosen as a control treatment since this intervention was considered less effective.

After the research phase entered week 4, a post-test regarding stigmatization was given to both groups. The level of stigma was measured using questionnaires, specifically a questionnaire evaluating HIV stigma in the general population developed by The Global Stigma and Discrimination Indicator Working Group (GSDIWG) and the Strive research consortium.[15] Before being used for data collection, the questionnaire was translated into Indonesian and then tested for the validity and reliability on 35 participants who had similar characteristics to research respondents. The test findings indicated seven questions were valid, and the Cronbach's Alpha reliability rating was 0.612. Research data was collected using a Google Form-hosted questionnaire which was distributed via WhatsApp.

To control the confounding variables, screening was carried out at the baseline and asked about the Instagram accounts of the control and intervention groups as well as their information-seeking behavior about HIV-AIDS were conducted. The Instagram accounts of respondents were checked to ensure that the control group did not follow Instagram @ *kampanyepandangdengarodhiv.*

The results of data analysis showed that the data were normally distributed, so statistical tests were conducted in multiple phases. The dependent T-test was used to compare the pre-and post-test scores of the control and intervention groups, meanwhile the T-test was conducted to compare the post-test scores of the control group with those of the intervention group. The significance level of the interpreted statistical test results was a significant level of 95% (p-value < 0.05).

Results

The majority of participants age in both groups were between 20 and 24 years old, with similar proportion in the control and intervention groups, at 71.2% and 73.3%, respectively. The proportion of female respondents was more significant in both groups. Furthermore, two-third of respondents had a high school education in both groups (Table 1).

The control group had a more significant proportion of respondents who searched for information about HIV/AIDS through Google (40%) before and during the study. In the intervention group, Instagram (33%) was the most popular source of HIV/AIDS-related information (Table 2).

Comparison of pretest and post-test HIV stigma data in the intervention and control group indicated that the *Pandang Dengar ODHIV* campaign reduced HIV-related stigma among young people in Pati (p-value<0.001). After the Instagram social media intervention, the level of HIV stigma in the intervention group decreased significantly. The control group had a significant difference between pre-and post-test scores (p-value <0.001). The level of HIV stigma decreased in the control group after receiving the information via

Table 1 Characteristics of Respondents Participated in A Survey Regarding the Level Of HIV/AIDS Stigma

Characteristics	Intervention Group (n=45)		Control Group (n=45)	
	n	%	n	%
Age (year)				
15–19	11	24.4	11	24.4
20–24*	33	73.4	32	71.2
25–29	1	2.2	2	4.4
Gender				
Male	8	17.8	9	20
Female*	37	82.2	36	80
Education				
Junior high school	3	6.6	2	4.4
Senior high school*	30	66.6	27	60
Diploma III	5	11.2	5	11.2
Diploma IV/Bachelor degree	7	15.6	11	24.4

WhatsApp messages (Table 3).

The effectiveness of the *Pandang Dengar ODHIV* Campaign in the control group and intervention group can be seen in Table 3. After the intervention period, the mean stigma score in intervention group was 19.58 slightly decreased compared to control group score, however, the difference was not statistically significant (p-value=0.961) (Table 3).

About 33.4% of respondents in the intervention group watched videos uploaded to Instagram Reels between one and ten times. This data demonstrated that the majority of respondents in the intervention group did not adhere to the research protocol and watched all the videos submitted by the researcher. The most favorite Instagram Reels content was interviews about the life experiences of PLHIV which were accessed by forty (88.9%) respondents. Furthermore, 84.4% watched the materials regarding the myth of HIV/AIDS transmission and only 20% of respondents accessed the material on fulfilling the human rights of PLHIV (Table 4).

Discussion

This study revealed that the *Pandang Dengar ODHIV* campaign on Instagram significantly reduced HIV stigma among Pati's youths. The post-intervention reduction in stigma is consistent with the finding that Instagram can be used to conduct mental health campaigns targeting high school students.[16] Exposure to a 30-minute social contact video effectively reduces stigma against people with mental problems.[10] It has been proven that the displaying structured intervention videos increases knowledge about HIV, hence, decreasing stigma. Education and contact have a positive impact on stigma reduction.[17] Instagram-based health campaigns generate positive responses, influence beliefs and change the behavior of the account's followers.[18] The use of Instagram Reels seems to influence knowledge better than the education posted

Table 2 Information Seeking About HIV/AIDS by the Respondents

HIV Information seeking	Intervention Group (n=45)	Control Group (n=45)
Ever seeking HIV-related information before the intervention		
Yes	21 (47%)	24 (53%)
No	24 (53%)	21 (47%)
Ever seeking HIV-related information during the intervention		
Yes	22 (49%)	25 (56%)
No	23 (51%)	20 (44%)
Source of HIV-related information seeking		
Google	28%	40%*
Instagram	33%*	28%
Twitter	11%	11%
News	-	9%
YouTube	6%	6%
TikTok	11%	3%

Note: * the highest percentage

Table 3 Comparison of Pretest and Posttest Data of HIV stigma in Groups Having Pandang Dengar ODHIV Campaign as an Intervention and Its Control

Group	n	Pre-test Mean ± SD	Post-test Mean ± SD	P-value	Mean Difference	P-value
Control	45	24.44 ± 2.61	19.62 ± 4.19	<0.001	0.04	0.961
Intervention	45	24.11 ± 2.30	19.58 ± 4.44	<0.001		

Table 4 Frequency of Watching Videos Posted on Instagram and Education Topics on the Intervention Group

	n	%
Frequency of watching the video posted on Instagram		
0	2	4.4
1–10 times	15	33.4
11–20 times	10	22.2
21–30 times	10	22.2
>31 times	8	17.8
Education topics		
Interview about the living experience of PLHIV	40	88.9
Changing the perception that HIV was not a deadly disease	18	40
HIV Transmission, treatment, and support	26	67.8
HIV transmission fact and myth	38	84.4
Fulfillment of human rights for PLHIV	9	20

Note: PLHIV= People Living with HIV

on the feed. The use of audiovisual media is more effective than visual media alone in educating about HIV/AIDS.[19]

Apart from basic education, social contact can also be done through social media. The social contact intervention is deemed effective in reducing stigma compared to other interventions. The frequency of social contact affects the attitudes of the participants. However, direct or indirect social contact did not impact changes in participants' attitudes. Contact-based anti-stigma programs have a larger and more sustainable impact than educational strategies alone.[18] This campaign with social contact exposure is more effective than the educational social media campaign, suggesting that the social contact intervention implemented through the Pandang Dengar ODHIV campaign via social media Instagram has had a good impact on the youth in Pati, thereby reducing HIV stigma.

The *Pandang Dengar ODHIV* campaign, which was carried out for three weeks with a total of thirty-six minutes of educational sessions, was effective in reducing HIV stigma. The Stigma Reduction Intervention (SRI) conducted in the United States reduced HIV stigma in women over 18 years of age through video playback uploaded to an iPod touch for 45 minutes during a 12-week intervention period.[20] Another intervention in Indonesia has conducted research with a Brief Psychoeducation intervention using HIV/AIDS leaflets for 30–60 minutes for three months on housewives in Jember.[21] The *Pandang*

Dengar ODHIV campaign on Instagram has the advantages of being easily to access, providing education quickly, and having a wide reach. This campaign has used the hashtags *#PandangDengarkanBerikanRuangUntukODHIV; #DengarODHIVJanganStigma; #HapusStigmapadaODHIV;#lihatdengarmereka;* and *#pandangdengarmereka* to obtain a broad scope. In addition, Instagram can leave a digital footprint that becomes an educational medium in a relatively short time. Similar to research conducted in the United States which revealed a reduction in HIV-related morbidity and mortality.[22]

The *Pandang Dengar ODHIV* campaign through written messages also has the potential to reduce HIV stigma. Interestingly, various other factors may also influence study results, such as the level of education and access to HIV-related information during and before the intervention. The level of education can affect the level of knowledge. The higher the level of education, the greater the amount of intellectual curiosity. Additionally, respondents with low levels of education have a low desire to seek information about HIV/AIDS independently. This low level of education affects the level of knowledge and misunderstanding about HIV/AIDS, which may impact the level of stigma.[23] Education affects the learning process, behavior, and self-motivation so that someone with higher education tends to be more receptive to information.[24]

The control group has a more significant

proportion of information-seeking behavior post-intervention information about HIV/AIDS through social media. An individual with a high level of HIV knowledge typically seeks information about the virus. This enables respondents to have a more positive opinion about HIV.[25] In the control group, respondents sought information related to HIV/AIDS to verify the factuality of the material they received,[26] since they only received a summary of the material via WhatsApp. In contrast, respondents in the intervention group sought information related to HIV/AIDS after the study. This is possible due to the respondent's satisfaction with the audiovisual media presented is adequate to meet their HIV/AIDS knowledge needs. In addition, animated videos have an attractive appearance, and also have several benefits such as being easy to remember and making respondents feel satisfied.[27]

Another factor contributing to the insignificant difference in results of this study is the probability of the intervention contamination in the control group. Since the allocation of the two groups has used block randomization, there is a possibility that the respondents from both groups live nearby or know each other and share information. Moreover, there is also a possibility that they found the Instagram account @*kampanyepandangdengarodhiv* earlier. This study had monitored followers of Instagram accounts, and listed respondent's Instagram Accounts in both groups, ensuring the control did not follow the intervention account. However, the study could not control for seeking behavior among these group.

Another intriguing finding is that the most favorite content in the campaign on Instagram reels is content about social contact with PLHIV. This demonstrates that respondents favor social interaction presents of PLHIV compared to other materials, because these material include videos of PLHIV's life experiences, while other resources solely feature animated videos.[28] This probably drives curiosity about PLHIV because the PLHIV community is mostly hidden due to the existing stigma.[29] This study suggests that social contact with PLHIV is an excellent strategy to reduce stigma. Other health care providers intending to reduce HIV stigma can use these strategies to increase community acceptance of PLHIV.[30]

This study has several limitations, including the relatively low level of respondent compliance with the research protocol in the intervention group. Adherence to the study protocol and watching all videos submitted by the researcher was a challenge as this could affect the efficacy of the intervention implemented.

In conclusions, the *Pandang Dengar ODHIV* campaign has reduced HIV stigma among young people in Pati Regency. Interestingly, levels of stigma do not differ significantly between the intervention and control groups after the intervention. This study is the first trial in the Indonesian context using a media-based social contact intervention in reducing HIV stigma. Replication of the study intervention using other social media, in other settings, and on a larger scale is needed with careful monitoring of intervention contamination and adherence to the study protocol in both groups.

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