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The Effectiveness of Virtual Counseling During The COVID-19 Pandemic; Counseling Virtual Study and Carbon Footprint Calculation.

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Abstract

During the still growing pandemic, the government immediately began to call for a social restriction policy to tackle transmission. It also impacts the health counseling model. Before the pandemic, health counseling was generally carried out face-to-face (physical) which required mobility of both the counselor and the counselee, resulting in a large use of energy in the process which in turn had an impact on environmental degradation. The energy used will be converted into exhaust gas which is known as Greenhouse Gas Emissions. This study investigated how effective virtual counseling is, both from the results (clients can access health services) and from the energy use side. The research method was a combination of qualitative and quantitative or what is called the Mix Method. The approach used the counseling results-based approach and the carbon footprint calculation approach. The results obtained the difference in the number of counselors that could be counseled from face-to-face and virtual

counseling comparing the results of energy use from face-to-face counseling and virtual counseling.

Keywords: Counseling, Virtual, Pandemic, COVID 19, Carbon Footprint.

Introduction

The emergence of a new type of virus called Coronavirus Disease 2019 (Covid-19) originating from Wuhan China has now stolen the world's attention (WHO, 2019; Hui et al., 2020). Due to the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), this outbreak has spread to more than 215 countries, and territories include Indonesia (WHO, 2020). The world, especially Indonesia is now facing the threat of health disasters, has not found a powerful formula to stop it until now.

Data on cases of positive patients with Covid-19 in the world on September 7, 2020, amounted to 27 million people with a death toll of 881 thousand. Whereas in Indonesia the infection rate has reached 197 thousand people with the number of deaths of 8,130 people (Wikipedia, 2020). The Covid-19 outbreak is classified as a very deadly disease and spreads very quickly, based on a large number of cases of infection and the high fatality rate of 2.2% (Rothan & Byrareddy, 2020). Initially, the transmission or transmission of Covid-19 from human to human was direct through saliva splashes from coughs or sneezes of an infected person and indirectly, namely touching the surface of objects that have been contaminated with the virus, the pattern of transmission has increased through the air at rooms and temperatures. It forces the government to implement a policy of maintaining physical and social distancing to reduce the rate of the spread of the outbreak (WHO, 2020; Rothan & Byrareddy, 2020). It also forces people to stay at home and adapt to most of their daily activities and mobility, although there are still many who ignore this situation and condition.

With the rapid development of information technology at this time and society with technology, Counselors as a professional profession must develop science following the development of technology and information. Cybercounseling is alternative counseling that is very appropriate as a counseling model during the Covid-19 pandemic. Cyber Counseling is a virtual counseling model or counseling that takes place through the help of an internet connection where the counselor and counselee are not physically present at the same time and space. In this case, the counseling process takes place via the internet in the form

of a website, email, Facebook, video conference (yahoo messenger), and other innovative ideas (Pasmawati, 2016). The implementation of counseling is commonly finished that is face-to-face between the counselor and the counselee, but in line with the rapid development of technology, the counseling process comes with different methods. The meaning that the counseling process is not only interpreted as a face to face meeting between the counselor and counselee conducted in the room. Moreover, counseling can be finished in a remote format and with the help of technology connected by an internet network, which is known as e-counseling, or cyber counseling, also known as virtual counseling. The counseling process organizes a variety of media that allows long-distance counseling relationships.

Adaptation activities are generally carrying out in activities that require mobility and require face-to-face or physical meetings with one or many other people. One of the activities that usually carried out during the new normal is virtual activity. In addition to adapting virtual activities such as webinars, web meetings, and web pieces of training, health assistance officers have also begun to organize strategies to carry out mentoring or counseling activities with clients through virtual methods as well as a form of adaptation to the Covid19 pandemic. Furthermore, this method of counseling clients is called Virtual Counseling (VC).

PKBI Semarang City is the Indonesian Family Planning Association (PKBI) in Semarang City. It is a branch of PKBI Central Java, and it was also built-in 1970. The main focus of PKBI Semarang City is reproductive health issues. The initial activities of PKBI in Semarang City were clinical service activities such as family planning services (contraception) with the cafeteria system, treatment of sexually transmitted infections (STIs), and health promotion (Hidayat, 2017).

This activity has more or less been running since 2016 with quite good results. The problem appears in the world; especially Indonesia is hit by the Covid-19 pandemic outbreak. Since Covid-19 struck, it has been three months since this Virtual Counseling model has been carrying out, and in its development, it has shown quite maximum results.

Besides, in terms of the process of Virtual Counseling, this activity is allegedly able to encourage energy efficiency, which also makes health assistance activities more environmentally friendly. It is due to a shift in the counseling model from face-to-face which uses various means of transportation,

communication, and accommodation for sure, now it has switched to only maximizing virtual communication tools as media and means. The result is a reduction in energy consumption, which in the process will produce waste substances in the form of Carbon (CO₂). Accumulatively, this carbon then becomes the Greenhouse Gas Emissions (GHG), which has led to global warming.

Method

The method used is a combination of qualitative and quantitative, which is called the Mix Method. The data to be analyzed is the comparison of data on the results of virtual counseling for PKBI in Semarang City before social restrictions (January 2020) with data from virtual counseling results during the pandemic or social restrictions (March-June). Besides, to analyze the efficiency of energy use in the virtual counseling process, this study will use a carbon footprint calculation approach by simulating or assuming a carbon footprint that can be eliminated in virtual counseling. The tools to be used are Microsoft excel with the formulation of the energy conversion formula from using fuel to carbon as follows:

$$\text{Fuel Emission} = \text{FC.EF}$$

Note:

FC: Fuel Consumption (Litter/Hour)

EF: Emission Factor (Premium Gas)

(Pedoman Teknis Perhitungan Baseline Emisi Gas Rumah Kaca Sektor Berbasis Energi, 2014)

Thus, the results of this study will describe how effective virtual counseling is in terms of objectives and energy use processes.

Theoretical Review

Virtual Counseling Concept during a Pandemic

Communication is a necessity for everyone. Being able to meet and start a conversation is a natural thing to do in an interpersonal communication relationship. However, with the times, communication is becoming increasingly

important because there are media or supporting facilities in communicating. Technology is the choice of humans to communicate in the modern era.

Social media is a must on smartphones. The indicator of a smartphone is that it has a social media application which also used to communicate with most people. This transition makes it easy to get information and communication regardless of the distance to meet. Not only for communication, but social media also sees as a medium that can be maximized even more. One of the cases is providing counseling services that can be more effective and efficient for clients. Schedules that can be adjusted according to needs or in planning make the need for easy counseling services. It is being used to good by counseling service providers who are starting to switch to online media because they are also in a pandemic situation where there is no need to gather or meet at random. These online counseling service guidance providers come from people who have the capability as counselors or online counseling service providers that are more structural in providing services.

The practice of counseling in the modern era has become more dynamic and flexible in line with the times. In the development of information technology and communication, the interaction between counselor and counselee does not only occur in a face to face relationship but is done virtually via the internet (online) in the form of cybercounseling. Therefore, counselors need to adapt and prepare themselves well in mastering information and communication technology in carrying out guidance and counseling services. It is no longer an option but an obligation for the counselor to do. Because considering the behavior of society today carrying out activities based on information and communication technology. Counseling practice penetrates cyberspace to facilitate client access to the services needed.

The presence of online counseling or virtual counseling is still relatively and not very well known in Indonesia. The increasing tendency for someone to experience mental problems, gambling, and addiction to things that are already acute. Online counseling is a combination of advances in knowledge about counseling guidance services and mastery of technology (Prahesti, 2017). Virtual counseling is one solution to provide mental support and care to the parties concerned. Guidance and counseling as a component in education also take a step to provide support for various groups, from adolescents to adults or the elderly (Irianti Mansyur et al., 2019). Mastery of information technology or social media

for a counselor is a must-have. The advantage that can be taken from virtual counseling is. It makes it easy for family members and friends to take access to the session, even when they are at home or in different areas. For youth assisted clients, they have the opportunity to find comfort in telling stories about the problems they are facing.

The virtual counseling process is not simple. The use of technology makes it easy to run, but the content and issues a counselor covers should be broader. The counselor is expected to understand the situation and condition of the counselee who is experiencing many problems. Cybercounseling services are the process of providing psychological assistance from a professional counselor to a counselee who has a problem and is unable to solve the problem on his own (Corey, 2013). As previously explained, cybercounseling needs to finish because cybercounseling must be understood as a guidance and counseling strategy.

In addition to these matters, counselors also have procedures for providing virtual counseling in general which are divided into two stages, namely; The preparation stage is the technical aspect or supporting facilities in the virtual counseling process, including the use of hardware and software connected to the internet. Software, namely a variety of social media applications support, email addresses, or websites; The counseling stage is a stage that emphasizes more on the virtual counseling stage process. This process is not much different from face-to-face counseling. a) the first stage of contact between counselor and counselee has a prime influence in determining the direction of the next conversation or conversation. b) the target stage of the assessment is what the counselee does in the problem development process. c) the stage of interpretation, namely interpreting the meaning, problem, goals, and feelings of the counselee. d) the coaching stage is the stage of confirming the counselee's desire to determine the goals he chooses. e) the assessment stage or ending counseling, which is the stage that focuses on assessing the acquisition of information and understanding, achieving relief from the burden of feelings, and planning post-counseling activities (Cahyo & Cahyo, 2017).

Virtual counseling is one solution in the counseling process. Counseling is essentially a face-to-face process between the counselor and the counselee in helping the counselee to help individuals overcome obstacles, problems, and achieve optimal development of their abilities. The COVID-19 pandemic

conditions force individuals to stay at home, work from home, and limit activities in public spaces.

Virtual counseling is a solution for counselors and counsees in carrying out the counseling process. Virtual counseling does not require another meeting, but it is replaced by the method by using internet media without addressing the essence of face-to-face counseling. From the statements above, it can be concluded that virtual counseling is a solution to provide mental support and care to the counselee without having to meet in person.

Practice Counseling Through Social Media/ Virtual Counseling (VC)

The strategy for implementing HIV prevention programs in Indonesia is still using outreach methods carried out by health workers or this case called field workers. The main task of field officers is to establish communication with the assisted groups or clients directly or face to face (TM) so that information about disease prevention, in this case, HIV AIDS, can be conveyed. However, evaluation data show that this approach was only able to cover 20% of the MSM (Man Sex Man) community in 2011, and in 2013 only reached 59% of the existing community (Spiritia, 2019).

Social networking becomes an important part of life in the modern era. The internet is an effective communication medium. The internet provides various communication services, social services, and so on for free. As we know, counseling services were initially carrying out face to face. However, online counseling services are an alternative for counsees to easily access the required information and services in this situation, which can be accessed simple and cheaper. The counselee does not have to vent face-to-face and only takes a short time.

The internet as a media provides advantages and can provide a safe and fearless place to identify their identities for the assisted community, when the environment and society do not support the existence of these communities in their midst, including for people who are HIV positive (PLWHA), to participate in prevention, HIV care, and treatment. Utilizing the use of the PKBI internet media in Semarang City intends to develop, create and implement alternative approaches, namely, virtual outreach (Virtual Counseling) and internet-based campaigns (cyber campaign) with the hope of being better to reach communities

that have not previously been served or are difficult to get. As the MSM (Man Sex Man), TG (Trans Gender), and Closed PWID (Person with Inject Drug) groups.

This approach is intended to complement the existing method, namely through face-to-face outreach, so that the implementation of HIV prevention programs for the MSM, TG, and PWID communities can reach even more coverage.

Carbon Footprint

Some kind of theories and opinions regarding environmental damage suggest that the waste or inefficient use of energy is one of the main factors for diverse damage to the environment. All substances wasted from the use of energy will eventually be pollutants or substances that harm nature. Generally, the pollutants released are hydrocarbons (HC), nitrogen oxides (NO_x), and carbon monoxide (CO) (Astra, 2010). Continuously, these waste substances cannot be synthesized by nature and will accumulate in the ozone layer. The accumulation of these pollutants is then known as greenhouse gases or GHG. These GHG emissions gradually fill the earth's atmosphere and become a crust of ozone. It can hold heat out of the atmosphere. This accumulated heat will accumulate and increase the temperature of the earth, which is called global warming. This global warming condition has gradually led to various inherited problems which are also the background for various environmental disasters, such as sea-level rise due to melting glaciers (eternal ice) at the poles, expansion of deserts, weather anomalies that have resulted in various hydrological disasters, migration to the extinction of flora and certain fauna (Surtani, 2015), as well as climate change that may encourage virus mutations to become more virulent until a pandemic appears as it is today.

The international community has long been aware of the threat of environmental damage caused by global warming caused by the pile of GHG emissions. It also has taken various steps to reduce the impact of environmental damage due to human consumptive activities as much as possible. Among the premier steps that have been taken is the Kyoto Conference. It discussed the commitment of the parties concerned to limit and reduce the number of emissions as a form of environmental returns from the carbon footprint produced by a country or region (Chamber of Commerce and Industry of WA, 1999).

Another step is the Bali Action Plan at the 13th Conferences of Parties (COP) United Nations Frameworks Convention on Climate Change (UNFCCC). It is a continuation of the results of COP-15 in Copenhagen and COP-16 in Cancun. Indonesia is one of the countries that agreed to take part or other words, to ratify the results of the convention. From these results, Law of the Republic of Indonesia Number 17 of 2004, one of which is published in the National Action Plan for Greenhouse Gases abbreviated as RAN-GRK, contains a series of technical plans for reducing greenhouse gases from various premier sectors, especially in the use of electrical energy and materials fuel oil (BBM). The issue of using electrical energy and fuel oil above is an important and urgent matter to be studied, especially to control environmental damage.

Discussion

The Effectiveness of Virtual Counseling during Pandemic

As previously stated, face-to-face health assistance, especially HIV AIDS, was only able to cover 20% of the MSM community in 2011 and 2013. It only reached 59% of the existing community. During the Covid-19, now this felt to be decreasing in effectiveness. It is due to the prevailing social restrictions so that the Semarang City PKBI and other health companion agencies cannot gather the community, especially clients or assistance, to provide assistance and human resources development activities such as discussions, seminars, and training.

It also enforces the Restriction of Community Activities (PKM) rules to tackle the spread of Covid-19 in Semarang, which also limit the number of people gathering. It affects the effectiveness of health assistance activities. It was exacerbated by the concerns of health assistants about the risk of contracting Covid19. For this reason, various alternatives are needed in this situation so that health assistance activities can still carry out their functions, especially in mentoring, client referrals, to developing Human Resources in disease control efforts, in this case, training or training.

Virtual counseling has finished, and it could be an alternative solution to be able to carry out counseling activities. It was seen from the results of the outreach activities of 3 (three) assisted communities, namely 1) MSM, 2) TG, and 3) PWID through Virtual Counseling as shown in the following figure:

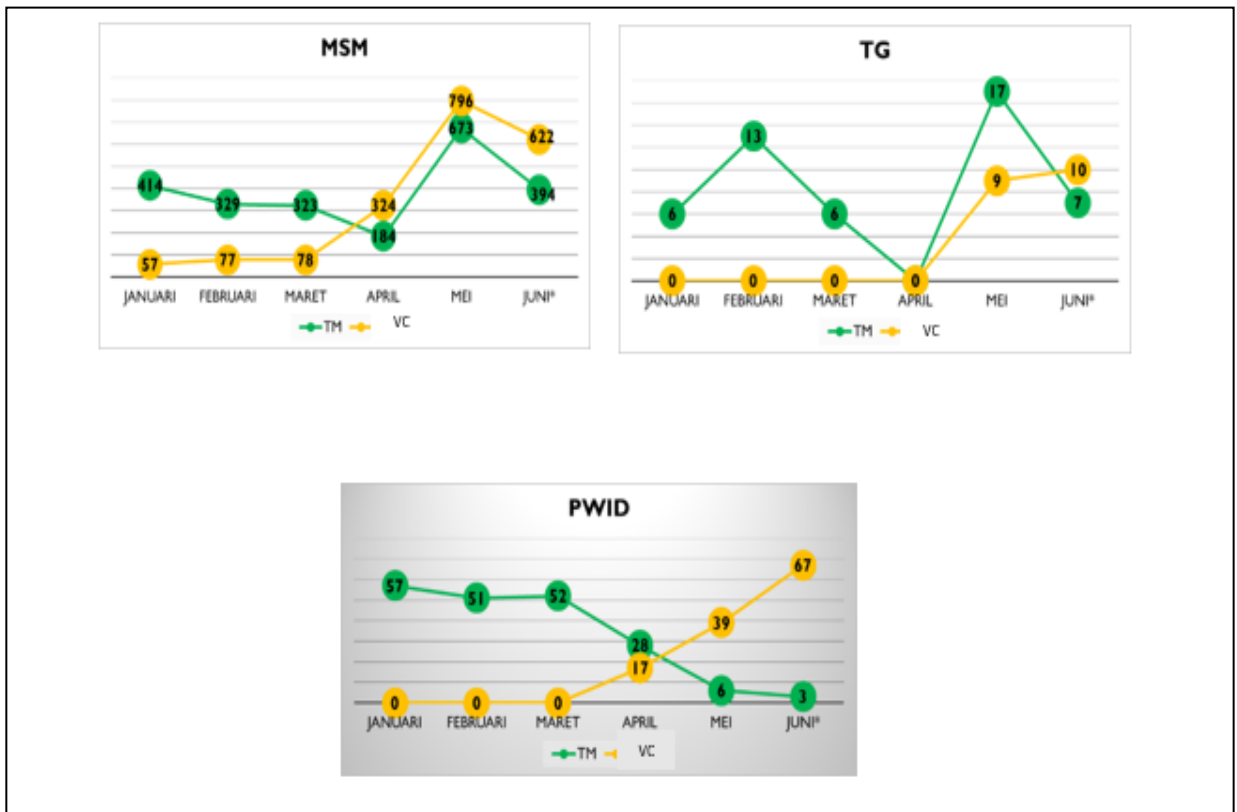


Figure 1 Virtual Counseling (VC) Results of MSM, TG, and PWID Groups (Ismail, Dkk 2020)

The figure is showing the dynamics of outreach using face-to-face Counseling (TM) and Virtual Counseling (VC) methods.

The results showed that in the MSM group, TM experienced a decline in yield since the Covid-19 pandemic. The peak of the decline occurred in April. It is evidenced by the decrease in TM results, from 323 who were reached become to 184. However, the situation has started to improve again until now. As the results in June, it showed the results were 394. Different things are shown by the Virtual Counseling results, in this case showing a significant increase when entering the Covid pandemic. As the Virtual Counseling results in the MSM group itself increased since April, the result reaching 324 people, and the last one that reached in June was 624.

Similar results were shown by the TG and PWID groups. The Virtual Counseling in June showed the results of 10 people, while the face-to-face outreach (TM) of the TG group in June was only 7. A similar thing was seen in the PWID group. The results of face-to-face outreach (TM) in June showed the number 3 people, then Virtual Counseling reached 67 PWID people who could be gotten during the pandemic until it was still on going.

Potential for GHG Emission Reduction in Virtual Counseling

The implementation of face-to-face health assistance could not be separated from the use of energy. Energy consumption is generated from the use of supporting tools or facilities such as transportation by motorized vehicles, means of communication with cellphones, to energy generated from eating and drinking activities. The energy used will produce waste substances in the form of Carbon Dioxide (Co₂). Accumulatively this Carbon is known as Greenhouse Gas Emissions (GHG), which will then fill the earth's atmosphere and make the temperature increase on the earth's surface or commonly known as global warming. Human dependence on this energy gradually contributes to the rate of environmental change to become damaged, or this is called the degradation of the environment.

Counseling activities during face-to-face before Covid-19 hit themselves also contributed to GHG production through media and electronic tools to support counseling and motorized vehicles used to mobilize people to and from the meeting place between counselors and counselees. Conditions changed when entering the era of the Covid-19 pandemic and forcing social restrictions, until counseling, which was initially face-to-face, has now begun to switch to a remote counseling model using virtual media or what we call Virtual Counseling. In this Virtual Counseling, it is possible to save energy because of the use of supporting facilities, such as motorized vehicles in the meeting process, it can be minimized. So that the efficiency can be calculated as follows:

Table 1 Calculation of CO₂ Emissions from Motorized Vehicles

Unit	Kind of Fuel	Distance (Km)	Average Speed (Km/Hour)	Times	Fuel Consumption/Hour (Liter/Hour)	Fuel Consumption	Factor Emission	Emission Co ₂ (Kg/Co ₂)
A	B	C	D	$[(c.2)/d] = e$	F	$e/f = g$	h	$g.h = i$
Motorcycles	Fuel	7	60	0.23	1.5	0.15	0.6	0.09
In amonth (30 meetings)								2.7
Perform by 15 Field Officer								40.5

The Calculation can be concluded that the average amount of Greenhouse Gas (CO₂) emissions resulting from face-to-face counseling activity and on motorized vehicles with an average distance of 7 km (Hanavie, A., & Setiawan, 2014) was 2.7 Kg. So, the total calculation of GHG emissions resulting from face-to-face counseling by all 15 PKBI field officers was 40.5 kg/month. So by not using a motorized vehicle. It can be assumed that Virtual Counseling activity can reduce GHG emission production by 40.5 kg/month. This number would be seen as significant if it could be imitated and followed by field officers from other institutions collectively.

Based on the data above, it was showed that the adaptation model of Virtual Counseling (VC) outreach carried out by PKBI Semarang City health workers since the Pandemic period has shown an increase in results both from the number of counselees and from the potential for GHG emission reduction from the use of supporting facilities. These results should be used as justification for the effectiveness of the Virtual Counseling adaptation model. Thus, the results of future energy efficiency and outreach were used as an urgent indicator in the world of health assistance and environmental conservation.

Conclusion

The Covid-19 pandemic situation has forced us to adapt to activities in every sector of life. One of the most important sectors is the health assistance sector. Health advocacy or assistance, however, must continue to run, and it is appropriate to emerge as the front line capable of enlightening and encouraging behavior change in society to be more Careful towards healthy behavior.

Adaptation of concepts and operational techniques that are safer and more effective is deemed necessary during this pandemic. Apart from what has been

discussed in this article through the Virtual method, it is also considered more environmentally friendly, it must be more creative in developing a model of health assistance based on solutions in future scholars.

Besides, this pandemic period is also the right moment to start encouraging concern for environmental improvement (the Conservation movement). One of the nets is to begin energy-saving measures. Future research is also necessary to insert environmental conservation content in each focus of the study. This pandemic period is also the right moment to start encouraging concern for environmental improvement (the Conservation movement). One of the nets is to encouraging energy-saving measures. Future research is also necessary to insert environmental conservation content in each focus of the study.

It explains the correlation between the world of counseling and the discipline of environmental studies. In the environmental science discipline, this refers to the environment of toxicology study, which is a science that discusses various foreign substances (xenobiotics), one of which is poison and other pollutants (Haikal & Gofur, 2016). Efficient counseling energy consumption can be categorized as an effort to detoxify (expel) toxins as environmental pollutants.

With the use of the Carbon Footprint instrument, it hopes that it will be able to show the calculation of how much contribution the world of health assistance has to efforts to improve the environment, one of which is in virtual counseling activities based on energy savings or efficiency. This correlation can be adopted in social activities, religious activities that also use energy in the future. It can push into the right formula in initiating environmental fiqh.

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