

"Kulwap" a trend of health promotion during the COVID-19 pandemic: Implementation of the STIKES Buleleng Community Partnership Project

Ni Kadek Diah Purnamayanti,* Kadek Yudi Aryawan, Made Sundayana

Department of Nursing, College of Health Science (STIKES) Buleleng, Bali, Indonesia

SUBMITTED: 5 December 2020

REVISED: 5 September 2021

ACCEPTED: 2 March 2022

KEYWORDS

Community partnership
Empowerment
Kulwap
Online Health promotion
WhatsApp

ABSTRACT The pandemic of COVID-19 has brought the global community into a new perspective of living. Due to the social distancing protocol, face to face meetings should be avoided. This could be a barrier in implementing the previous health promotion programs which were based on group gatherings. Hence, nowadays, the online approach has become a promising strategy. The intensive use of social media platforms in Indonesia serves as a great opportunity to penetrate the public awareness of society. The initiation of "Kulwap" (Kuliah WhatsApp or lecturing by WhatsApp), which is an approach to gather a group of people in a WhatsApp Group and deliver a lecture to this group through the application is also being implemented in STIKes Buleleng Bali. The aim of this study was to assess the effectiveness of WhatsApp as a media of health promotion. It is a part of the community partnership integrated into the educational process of nursing students. During the program, there were four major topics promoted: Non-Communicable Disease (NCD), Communicable Disease, and Wellness and Child Health Issues. This program succeeded in involving 357 participants who lived in Bali. Based on the participants' feedback, the engagement was successful due to the use of WhatsApp as the preferred social media platform (84.3%), the beneficial contents being shared during the Kulwap (65.5%), the attractiveness of media being used in the lecture (82.8%) and the way of delivery was easy to be understood (70.3%). Almost all (98.6%) of the participants expressed their willingness to rejoin the program. Therefore, the study concluded that the use of Kulwap serves is an effective and acceptable strategy to establish a health promotion initiative during the current COVID-19 pandemic.

© The Journal 2022. This article is distributed under a [Creative Commons Attribution-ShareAlike 4.0 International license](https://creativecommons.org/licenses/by-sa/4.0/).

1. Introduction

The pandemic of COVID-19 has been declared globally since March 2020.¹ Many public activities are prohibited including face-to-face meetings among patients and health care providers are avoided except in an emergency case. This restriction affects the health promotion programs in the community such as the public gatherings for mobile community care (Posbindu) and the non-communicable disease group lead by primary care (Prolanis), which are postponed indefinitely.² The pandemic also impacts nursing school institutions around the country,

making it challenging for nurses to find a location for the students' internship programs especially those related to the students' community nursing course.

Adapting to the situation, moving to an online platform has been a viable alternative. In May 2020, the Indonesia Government through the Ministry of Communication announced the use of the Internet for daily activity had increased up to 40%. In 2015, the McKinsey research finding calculated there would be a boost of Internet users in Indonesia to 57 million people in 5 years.³ This trend is supported by the government's long term goal to support the communication infrastructure such as providing a fiber-optic network with 35,000 km of undersea and terrestrial cable network spread from Sumatra to West Papua to fulfil 73% of the 4G connections from Sumatra to Papua.

*Correspondence: nikadek2019.stikes@gmail.com
Department of Nursing STIKES Buleleng, Jl. Raya Air Sanih,
Bungkulan Bali 81171, Indonesia.

The data above indicate that Indonesian citizens have moved online and their daily life is now highly dependent on online communication. This predicament is a good opportunity to fix the interpersonal communication problems that arise during the pandemic. Since January 2020, the digital trend in Indonesia reported 5,190 billion mobile users, 4,540 billion Internet users, and 3,800 billion social media users with various social media platforms being widely accessible among the people.⁴ The statistics show that currently 88% of Indonesian access YouTube, 84% access WhatsApp and 82% access Facebook. They are spending 3 hours 26 minutes on average per day to access the social media listed above. Penetration of health promotion would be a great innovation during the pandemic to reduce the hoaxes related to the current health issues.

WhatsApp is known as a more private social media. The utility itself is more like instant messaging nowadays. The recent studies found that WhatsApp has already immersed people in daily communication because once it is installed the phone contacts directly in the same apps.⁵ In a recent social experiment, WhatsApp was used for health promotion to influence health behavior among pregnant women taking iron supplement tablets.⁶ In Brazil, another experimental study using WhatsApp as an integration of hospital care effectively improved breast cancer knowledge during a three week program.⁷ According to the findings, the use of WhatsApp can be considered beneficial as a verified digital health information media. Accordingly, the aim of this research was to describe the effectiveness of the use of WhatsApp as a health promotion platform.

2. Method

2.1 Design

This study was designed as a part of the Nursing Community Course in the Bachelor of Nursing program in STiKes Buleleng. This community partnership program is designed to apply the skills of health promotion during students' 3rd year in the university. Since the pandemic of COVID-19, the students should do social quarantine and learn through a virtual distance-learning model. To fulfil the curriculum requirement, the Kulwap program is integrated into the course to include the community as a partner. The students had the responsibility to

encourage public awareness about health during the pandemic. Table 1 shows the topics that have been shared with the community.

Kulwap is selected as the feasible approach since WhatsApp is the most common social media among all generations in Indonesia. Its popularity among all generations compared with Facebook Messenger, Wechat, Telegram, and Snapchat makes it possible to establish such a system to be utilized by the students to promote a health initiative.⁸ The wide use of WhatsApp guarantees the more intensive engagement of Kulwap, hence, the university decided to launch the program by releasing ethical clearance through STiKes Buleleng Ethical Board's letter number 113/EC-KEPK –SB/XI/2020.20).

2.2 Program preparation

The Kulwap topic is determined by the course lecturer based on community needs and the institution's expertise. The topics targeted all stages of the population from pediatric, adult, and old populations. The topics include degenerative health issues or non-communicable disease (NCDs); communicable diseases for the adult and older populations; stunting and diarrhea in children; as well as reproductive health and fitness for adolescents and the general population.

The lecturers teach the students to design the program plan. The program plan explained explicitly the urgency of each topic, population targets, method and duration of the health promotion program. When the program plan is done for the students, the lecturer guides the students to construct the protocol. The protocol at least consists of three pillars: with column one consisting of topic, column two is type of media such as pictures or videos that will be uploaded, and column three for the text messages that will explain the health promotion.

Besides the protocols, the students should recruit the participants and invite them to join the WhatsApp Group. The students recruited the participants by broadcasting an announcement to join the Kulwap Program to their family, neighbors, and friends. Once they agreed, they will be invited then to join the WhatsApp Group. The nursing students take the role of health educators who

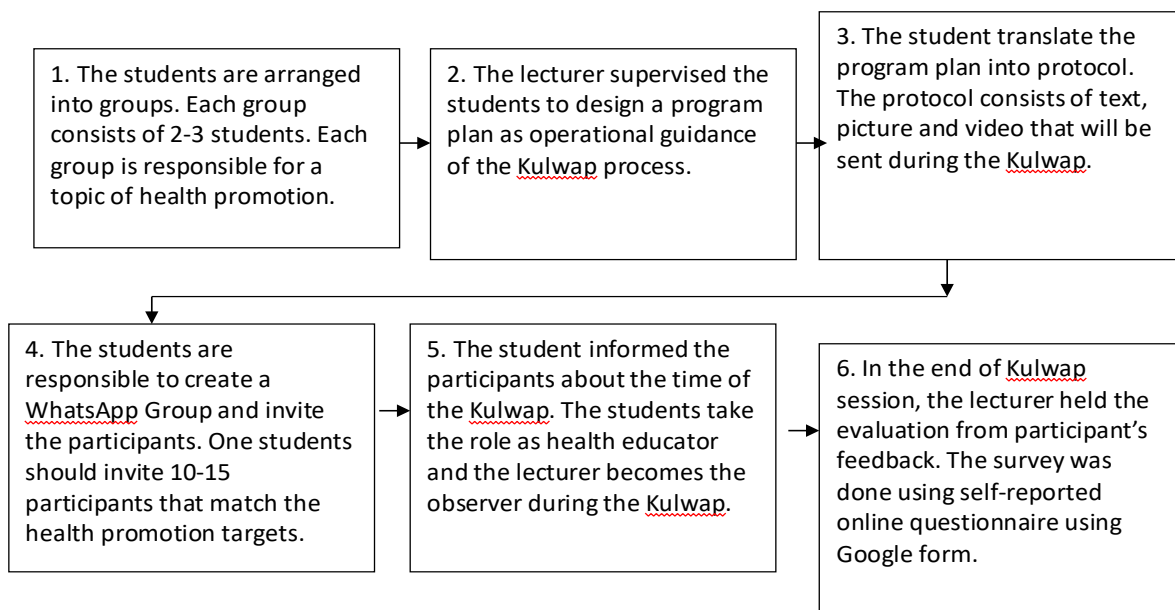


Figure 1. Framework of Kulwap program.

Table 1. Kulwap participation based on topic

No	Topic	N	(%)
1	NCDs (hypertension, diabetes mellitus, obesity, cancer, dementia, depression and anxiety)	149	(40.28)
2	Communicable diseases (COVID-19, meningitis, TB, HIV)	128	(35.07)
3	Reproductive health wellness (contraception, abortion, vaginal discharge, cervical cancer)	47	(12.87)
4	Children health issue (stunting and diarrhea)	51	(13.97)
5	Fitness and work from home (WFH) harm	34	(9.31)

arrange the online meetings supervised by the lecturer. This program is supervised by 2 lecturers involved 63 nursing students. The students were divided into several groups based on the topics. Topic NCD involved 21 students implemented in 5 WhatsApp Groups; Communicable disease involved 13 students implemented in 4 WhatsApp Groups; Reproductive Health involved 14 students implemented in 5 WhatsApp Groups, Children’s health involved 6 students applied in 3 WhatsApp Groups; and Fitness and Wellness involved 9 students implemented in 3 WhatsApp Groups. In more detail,

the program framework is described in Figure 1.

2.3 Program evaluation

The health promotion process is evidently happening online at WhatsApp Groups guided by the previously made protocols. The Kulwap program opens the discussion among participants and the health educator. The evaluation is held by a Google form while the link is shared at the end of the discussion session. The online questionnaire collects the characteristics of the participants and their feedback about the Kulwap program. The feedback is assessed by closed ended questions about the precise

participants' recruitment based on topic; the media such as image, texts, and whether the videos were attractive or not; and if the delivery process was understandable or not.

2.4 Data analysis

Using Microsoft Excel descriptive analysis was done to find out the 'big picture' of this research.

3. Result

3.1 Participant characteristics

Table 2 shows the majority of the participants are late adolescents with age 17-25 years old (246; 67.39%). More than half of the participants are students (187; 51.32%). Most of them are female (258; 73%). The role of the participants regarding the Kulwap program is not directly affected by the disease or health problems. They might be exposed to the health issue (38.4%) or surrounded by extended family, friends or neighbors who are affected by the diseases (46.4%)

3.2 Participants' responses and feedback about Kulwap

Table 3 describes participants' responses regarding the Kulwap Program at STIKES Buleleng during the pandemic COVID-19. This study discovered WhatsApp was chosen by 307 (84.3%) of the participants as the most preferred social media to join a health promotion program. More than half of participants (65.5%) feel the Kulwap program was very beneficial to gain knowledge about several topics of health issues related to the recent condition. Almost all of participants (98.6%) would join the next Kulwap program. Based on the feedback, the information provided during the program was easy to be understood (70.3%) and the use of media (text, picture, and video) were attractive (82.8%).

4. Discussion

4.1 Kulwap as a new trend of health promotion

Group chatting in WhatsApp, which delivers certain topics as the Kulwap program does, has become well-known nowadays. The number of WhatsApp users has increased rapidly since 2017 and reached the top of the messaging apps in the world over Facebook

and YouTube. WhatsApp also dominates all countries around the world except the US, Australia, and some countries in Asia.⁸ In Indonesia, WhatsApp has become very popular, and covers 83% of all Internet users in the country.⁴ Rosenfeld *et al.* mentioned the pattern of WhatsApp usage is unique because it could create a medium range of networks rather than Facebook which is more public.⁹ Remarkably, the user can compose a text in less than a minute only by using a mobile phone.

4.2 The effectiveness of Kulwap (for who, the approach based on responses)

According to the participant characteristics, the majority of the program participants are late adolescents (17-25 yo). More than 50% of the participants were in the Z generation around junior high school and college students (born in 1998-2009).¹⁰ The Z generation is also known as the "net generation or Net-Gen" who engage much of their time and money in the Internet and technology compared with Pre Baby Boom (born before 1945), The baby bust (born in 1965-1976), the Echo of the Baby Boom or Y generation (born in 1977-1997).¹¹ The behavior pattern of the Z generation is more adaptive with technology since they were born as the tech natives, dealing with disruption of information, more likely to connect with virtual communication, and can commonly engage in multitasking duties in one gadget.¹² The results of this study match with the previous evidence, because the majority of the participants gave a fast response during the Kulwap. Even before the online lecture session finished some participants started asking questions and opening up the group for the discussion. This relates to the communication behavior of the Z generation, which commonly lacks a deep reflective meaning of communication and prioritizes the instant process of the "Internet of things".

Based on the observations during the Kulwap process, this program attracted the student's population which is not directly affected by the health issue. Most of them were healthy, however, they were surrounded by people affected with the health issue (neighbors or friends) with 46.4%, compared to the persons who might be exposed to the health

Table 2. Characteristics of Kulwap participants

Variable	N	(%)
1 Age		
Children (10-11 y.o)	4	1.09
Early adolescent (12-16 y.o)	16	4.48
Late adolescent (17-25 y.o)	246	67.39
Early adult (26-35 yo)	54	14.79
Late adult (36-45)	19	5.20
Elderly (46-55)	18	4.93
Old (56-65)	8	2.19
2 Gender		
Male	99	27
Female	258	73
3 Area distribution		
Buleleng	317	88.79
Outside Buleleng	40	11.20
4 Role of participants		
The patient his/herself	31	8.6
Family as caregiver	19	5.2
The person who might be exposed to the health issue	139	38.4
The person who is surrounded by people affected with the health issue	168	46.4
Unrelatable	5	1.4
5 Occupation		
Student	187	51.32
Private employee	56	15.34
Public officer	38	10.41
Entrepreneur	26	7.12
Farmer	6	1.64
Unemployed	54	14.79

Table 3. Participant's responses and feedback

Variable	N	(%)
1 Social Media Preferences to join health promotion program		
WhatsApp	307	84.3
YouTube	25	6.9
Facebook	7	1.9
Instagram	9	2.5
TikTok	8	2.2
Other application	8	2.2
2 Kulwap content utilization		
Very beneficial	241	65.5
Beneficial	111	30.2
Enough	16	4
3 Kulwap health promotion media (text, picture, and video)		
Attractive	303	82.8
Enough	62	16.9
4 Kulwap health promotion process (way of content delivery)		
Easy to be understood	258	70.3
Moderate	107	29.2
Hard to be understood	2	0.5
5 Preference to rejoin Kulwap program		
Yes	361	98.6
No	5	1.4

issue with 38.4%. In the nursing theory of health promotion by Newman, the Kulwap program gains a role in primary prevention by providing education,

early screening, and developing public awareness among a healthy population. The Newman Nursing Theory defined three lines of the human state of

health.¹³ There are two lines of defense (flexible and normal line of defense) and 1 resistance line. The Kulwap program has a role in strengthening the flexible line of defense to ensure a level of wellness by supporting the coping and healthy behavior habits.¹⁴

In the future, the Kulwap program could initiate the prototype of digital health. In the current guideline of digital health, there is a classification of technology in health. The framework is defined according to the function and direct implication to the patient. Level 1 only provides efficiency among the health system such as integrated medical records. Level 2 could give information, self-monitoring, and 2-way communication. Level 3A advances efforts in cognitive and behavior prevention through self-management distance guidance. Level 3B advances efforts in a regulated dose of therapy according to accurate clinical data. Kulwap program may be classified in level 2 of the digital health framework.¹⁵

Further implications of the WhatsApp in the current health system will be considerable in health system research.¹⁶ In low to middle income countries, WhatsApp has been massively used for data collection by providing online questionnaires using hyperlinks from websites. The advantages of WhatsApp include easy-of-use and engagement of many levels of the population. But the challenge remains about participant recruitment, which is not clearly described by some research directly into the targeted population, while forwarding invitations, and using snowball recruitment.

In other clinical research, WhatsApp is beneficial to maintain engagement in patients with psoriasis for at least one year and could effectively reduce the knowledge gap since patients get timely responses from their health care.¹⁷ However, the uses of WhatsApp in other chronic diseases such as diabetes might be to improve health literacy but did not significantly increase self-management determined by HbA1C after 6 months of intensive online education.¹⁸ WhatsApp also did not significantly improve motivation of oral hygiene among patients with gingivitis compared with traditional education.¹⁹ Related research demonstrated that using WhatsApp to deliver health education by nursing student enhanced patients' outcomes.²⁰ WhatsApp could

be a media for preliminary tools among the health students facing a real-life situation. Otherwise, students improved their skills using problem based learning methods through the online discussion. This media also can improve patient safety, since the lecturer could supervise the students more immediately.

4.3 Limitations and Recommendations

Based on researchers' knowledge, the Kulwap program is already popular as a media of health promotion. However, this program is relatively new in Bali, especially in the Buleleng regency. This program involved many topics with a large population of 357 people in 9 regencies of Bali Province. This Kulwap program is hosted by the nursing students in their 3rd year, and the success might be related to the participants who are mostly the same age as them. Further evaluation is needed by a qualitative study, to discover the barriers of the program and identify the best media that will match with the directly affected population of patients with NCDs or communicable diseases.

5. Conclusion

The Kulwap program succeeded in engaging a broad population through online health promotions during the pandemic. This approach is a feasible prototype of a Level 2 digital health population. The majority of the participants have a role to enrich public awareness regarding the health issue. The pandemic COVID-19 may reduce the health provider contact but on the other hand, massive online health education is still possible to be applied.

Acknowledgements

This study did not receive specific grants from funding agencies in the public sector, commercial, or non-profit section.

Conflict of interests

The authors declare they do not have any conflict of interests, such as any financial, professional, or personal relationships that are relevant to the submitted work.

References

1. WHO. COVID-19 Pandemic [Internet]. 2020. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019?gclid=CjwKCAiAnIT9BRAmEiwANaoE1R8XtFmtoXKExzPqAvLoS2m1XrgV6mRCJrnglg01yv6MKBaADDkzUxoCULkQAvD_BwE.
2. BPJS Kesehatan. Optimalisasi FKTP di Masa Pandemi. 2021.
3. Das K, Gryseels M, Sudhir P, Tan KT. Unlocking Indonesia's Digital Opportunity. McKinsey Co [Internet]. 2016;(October):1–28. Available from: [https://www.mckinsey.com/~media/McKinsey/Locations/Asia/Indonesia/Our Insights/Unlocking Indonesias digital opportunity/Unlocking_Indonesias_digital_opportunity.ashx](https://www.mckinsey.com/~media/McKinsey/Locations/Asia/Indonesia/Our%20Insights/Unlocking%20Indonesias%20digital%20opportunity/Unlocking_Indonesias_digital_opportunity.ashx).
4. We Are Social & Hootsuite. Indonesia Digital report 2020. Glob Digit Insights. 2020:247. [Internet]. 2020. Available from: <https://datareportal.com/reports/digital-2020-global-digital-overview>.
5. Sutikno T, Handayani L, Stiawan D, Riyadi MA, Subroto IMI. WhatsApp, viber and telegram: which is the best for instant messaging? Int J Electr Comput Eng. 2016;6(3):909–14.
6. Dewi DTK, Kusumawati W, Ismarwati I. Effect of health promotion and WhatsApp reminder to self-efficacy of the consumption of Fe tablets adherence among pregnant women. J Heal Technol Assess Midwifery. 2019;2(1):23–32.
7. Pereira AAC, Destro JR, Bernuci MP, Garcia LF, Lucena TFR. Effects of a whatsapp-delivered education intervention to enhance breast cancer knowledge in women: mixed-methods study. JMIR mHealth uHealth. 2020;8(7).
8. Globalwebindex. WhatsApp ahead of Facebook for usage frequency. 2019.
9. Rosenfeld A, Sina S, Sarne D, Avidov O, Kraus S. WhatsApp usage patterns and prediction of demographic characteristics without access to message content. Demogr Res. 2018;39(1):647–70.
10. Youarti IE, Hidayah N. Perilaku Phubbing Sebagai Karakter Remaja Generasi Z. J Fokus Konseling. 2018;4(1):143.
11. Tapscot D. Grown Up Digital, How The Net Generation Is Changing The World. Mc Graw Hill; 2009.
12. Hadion Wijoyo, Indrawan I, Cahyono Y, Handoko AL, Santamoko R. Generasi Z & Revolusi Industri 4.0 Penulis [Internet]. 2020. 95 p. Available from: https://www.researchgate.net/publication/343416519_GENERASI_Z_REVOLUSI_INDUSTRI_40
13. McClelland HM. Nursing Theory: Utilization & Application (2nd Edition). 2020.
14. NICE. Evidence Standards Framework for Digital Health Technologies. 2019;
15. Manji K, Hanefeld J, Vearey J, Walls H, De Gruchy T. Using WhatsApp messenger for health systems research: a scoping review of available literature. Health Policy Plan. 2021;36(5):774–89.
16. Mazzuoccolo LD, Esposito MN, Luna PC, Seiref S, Dominguez M, Echeverria CM. WhatsApp: a real-time tool to reduce the knowledge gap and share the best clinical practices in psoriasis. Telemed e-Health. 2019;25(4):294–300.
17. Al Omar M, Hasan S, Palaian S, Mahameed S. The impact of a self-management educational program coordinated through WhatsApp on diabetes control. Pharm Pract (Granada). 2020;18(2):1–9.
18. Al-ak'hali MS, Halboub ES, Asiri YM, Asiri AY, Maqbul AA, Khawaji MA. WhatsApp-assisted oral health education and motivation: a preliminary randomized clinical trial. J Contemp Dent Pract. 2020;21(8):922–5.
19. Salam MA us, Oyekwe GC, Ghani SA, Choudhury RI. How can WhatsApp® facilitate the future of medical education and clinical practice? BMC Med Educ. 2021;21(1):1–4.
20. Salam MA us, Oyekwe GC, Ghani SA, Choudhury RI. How can WhatsApp® facilitate the future of medical education and clinical practice? BMC Med Educ. 2021;21(1):1–4.