



ORIGINAL SCIENTIFIC ARTICLE

AUGMENTED POKEMON GO IN TIMES OF COVID-19: DOES IT HAVE ANY EFFECT ON PROMOTING TEENAGERS' PHYSICAL ACTIVITY?

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Abstract

Study purpose. One of the main problems during the COVID-19 pandemic that needs to be considered is the decline in physical activity carried out by teenagers. The overall objective of this mixed method is to investigate the effects of the Pokemon Go intervention program to promote physical activity in teenagers during the COVID-19 crisis.

Materials and methods. This study was conducted through a mixed method approach. 94 teenagers in grades 10-12 from three high schools agreed to participate in this study. The subjects were divided into 2 groups, namely in the Pokemon Go intervention program group (N = 47) and a control group that did not get any physical activity (N = 47). The Pokemon Go intervention program was carried out for 7 weeks with an intensity of 3 times a week in physical education classes. After carrying out the Pokemon Go intervention program, the forty-seven subjects were interviewed. The quantitative instrument used to measure the physical activity level was IPAQ, while the qualitative instrument used in-depth interviews.

Results. The quantitative and qualitative (mixed) research confirms that the Pokemon Go intervention program showed to positively promote PA levels in teenagers to higher levels in the current COVID-19 crisis. The results of this study are in line with the previous studies which explained that Pokemon Go is an augmented reality game that requires players to travel to various locations in the real world where distances are relatively far.

Conclusions. Teenagers with the status of players, ex-players and non-players experienced a significant increase in physical activity level after participating the Pokemon Go intervention program for 7 weeks, and the majority of subjects considered that Pokemon Go had a positive effect to promote physical activity during the COVID-19 pandemic. After implementing the Pokemon Go intervention program for 7 weeks, the results of our study confirm that the physical activity levels of teenagers have gradually increased during the COVID-19.

Keywords: Pokemon Go, physical activity, COVID-19, mixed method.

Introduction

In this COVID-19 era, physical activity (PA) among teenagers until adults are drastically decline (Yan et al., 2020). Previous studies reported that physical activity has an important contribution in maintaining healthy body, fit and avoid chronic diseases, such as heart disease, obesity, cancer, diabetes (Dietz et al., 2016) and hypertension (Lee et al., 2021). Another study reported that, globally, more than a quarter of adults were physically inactive, caused 5 million deaths per

year (Ni et al., 2019). According to the study results by Xian et al. (2017), notwithstanding that exercise has been carried out and well documented, PA levels were still low in some countries. Based on this fact, innovative strategies to increase PA need to be promoted in current COVID-19 era.

Previous studies recommended Pokemon Go as a strategy to promote the low PA levels (Madrigras-Pana et al., 2019; Khamzina et al., 2020). Pokemon Go is an augmented reality game, a player has to find and get cartoon characters in real world or in the surrounding environment (e.g., house, yard, park, school) (Howe et al., 2016). According to Ma et al., (2018), this game created a condition as if players can catch and fight monsters (Pokemon) in the real world. Pokemon Go

has an advantage by utilizing the Global Positioning System (GPS) and compatible devices with cameras, so that players feel as if they are experiencing fantasy in the real world (Yan et al., 2020). Previous studies have reported that Pokemon Go had a positive effect on increasing PA levels (Ayers et al., 2016), because this game encourages people to walk or run to catch monsters (Pokemon), collect candy or hatch eggs (Wong, 2017; Wattanapisit et al., 2018). Although the benefits of Pokemon Go had been reported and documented, this game was claimed could cause traumatic injuries, for example the players were possible to fall, hit trees or walls, and even cause traffic injuries due to playing while walking, cycling or driving a vehicle. There were some data reported that the negative impact of playing Pokemon Go was serious injuries to players by 10.7% of all events and the most common side effect was musculoskeletal or skin injuries (68.0%) (Li et al., 2021). In addition, a study found that the long-term effects of Pokemon Go on increasing PA and health were not yet untested (An & Nigg, 2017). Based on the fact that there was found some gaps in previous studies, it was suggested that further research on Pokemon Go needs to be conducted and should be a major concern.

Previous studies on Pokemon Go have been reported internationally (Clark & Clark, 2016; Licoppe, 2016; Keogh, 2017). However, research on Pokemon Go as a strategy to increase PA levels through mixed methods has not been reported internationally. According to our knowledge, this is the first study that use a mixed method to investigate the effects of Pokemon Go during the COVID-19 crisis, because most of the previous research was conducted through Longitudinal, Cross-sectional, Experimental, Retrospective Cohort studies (Lee et al., 2021) and qualitative (Lindqvist et al., 2018). This study has the potential to explain the effectiveness of Pokemon Go in terms of quantitative and qualitative (mixed), so that it can provide accurate information to lecturers, students, athletes, public regarding the importance of the game Pokemon Go for increasing the PA level of teenagers during the current dangerous pandemic crisis. Thus, this study aims to investigate the effect of playing Pokemon Go on increasing PA levels during COVID-19.

Materials and Methods

Subject

The mixed method was used as an approach in this study. Mixed method is a research that combines quantitative and qualitative research. Thus, this study aims to obtain data in the form of numbers and descriptions of interviews results with subjects. The subjects in this study were teenagers who are currently undergoing education at the high school level in Cianjur City (Indonesia). Subjects were selected using Cluster Random, namely by sending messages via Whatsapps to all students from grades 10 to 12 from three schools regarding the purpose of this study and only 94 students responded and were willing to be subjects in this study. The characteristics of the subjects are presented in Table 1.

Measuring Instrument

Quantitative Instruments. International Physical Activity Questionnaire was used to measure a PA level. This

Table 1. Socio-demographic of Subjects

Variables		N(%)
Gender	Male	50(53.19%)
	Female	44(46.81%)
Age (y)	15	24(25.53%)
	16	32(34.04%)
	17	21(22.34%)
	18	17(18.09%)
Weight (kg)	50	19(20.21%)
	55	25(26.60%)
	60	36(38.30%)
	65	14(14.89%)
High (cm)	155	24(25.53%)
	160	39(41.49%)
	165	19(20.21%)
	170	12(12.77%)
School	Senior High School 1 Cipanas	29 (30.85%)
	Senior High School 2 Cianjur	41 (43.62%)
	Senior High School 1Ciranjang	24 (25.53%)
Class	10	59(62.77%)
	11	21(22.34%)
	12	14(14.89%)
Play Status	Players	30(%)
	Ex-Players	24(%)
	Non-Players	40(%)

instrument has been validated and has a validity value of 0.087 while the reliability was 0.77 and has been translated into Indonesian. IPAQ was used to measure three types of activities, namely high intensity PA, moderate PA and low PA (walking). These three PAs have different METs values, for example high PA = 8.0 METs, medium PA = 4.0 METs and low PA (running) = 3.3 METs. The total PA scores of the three activities between high, medium and low were combined and expressed in MET-min/week (Wong, 2017).

Qualitative Instruments. In qualitative research, researchers used in-depth interviews towards subjects about their experiences during the Pokemon Go program. Interviews were carried out by using Indonesian language with a duration of 10-15 minutes per day via online through Whatsapps platform. The interviews were recorded and noted in books, then analyzed by 3 experts who have Ph.D. degrees in physical education and sports.

Procedure

This research was conducted from November to December 2021 at Suryakencana University. This research has obtained permission from the Research Committee (N0:270.75/SP2H/UN64.10/LL/2021) Suryakencana University (Indonesia). In addition, this research has followed

the ethical guidelines of the World Medical Association (Helsinki Declaration) for human objects. In quantitative research, 94 subjects were divided into two groups, namely the experimental group (N=47) who received the Pokemon Go program and the control group (N=47) who only did daily activities at school or did not receive any physical activity program. The pre-test and post-test activities were carried out by sending IPAQ via Whatsapps to all subjects, so that they could fill out the questionnaire individually under the supervision of the research team. While the Pokemon Go program started from 08.00-09.00 AM during education classes and was carried out for 7 weeks with an intensity of 3 meetings a week. In addition, this study applied the COVID-19 health protocol, namely checking body temperature, providing hand sanitizer and vaccines to subjects.

As for qualitative research, all subjects were interviewed online by researchers regarding their experiences after participating in the Pokemon Go program for 7 weeks. The questions are as following: (a) The experience of intervention (Pokemon Go program), (b) the advantages of the Pokemon Go program and (c) the disadvantages of the Pokemon Go program.

Statistical analysis

Quantitative analysis. Quantitative data were processed to analyze descriptive statistics presented as mean, standard deviation (SD) and percentage. In addition, all data were checked for normal distribution using the Kolmogorov-Smirnov test. Meanwhile, the independent t-test was used for comparison between the experimental and control groups. Then the effect size (ES) was used to estimate the

significance of the group mean differences. All quantitative data were processed using IBM SPSS software (v25.0, SPSS Inc., Chicago, IL, USA) with a significance level of 0.05.

Qualitative analysis. Meanwhile, qualitative data were processed through thematic analysis. There were several steps in the thematic analysis that need to be taken, including: (a) Interviews were transcribed word for word. (b) The transcribed interview was read repeatedly by the researcher/expert to gain a broad understanding. (c) The data was sorted by categorization, coding, and highlighting based on their similarity (Rasmitadila et al., 2020). (d) Similar phrases were grouped and organized into themes (Ekström et al., 2017)

Results

The normality test in this study was normally distributed ($p = 0.246 > 0.05$). While the results of the quantitative study shows that there was a significant increase in total PA in teenagers with player status due to the impact of the Pokemon Go program (Table 2). The similar results also occurred in teenagers with ex-players status (Table 3) and non-players status (Table 4). Meanwhile, there was no increase in PA levels in the control group in all statuses.

The results of qualitative research through interviews with subjects are presented in three themes:

Theme 1: Experience of Intervention

The results of qualitative research through interviews with subjects are presented in three themes:

This first theme discusses the subjects' experience when participating in the Pokemon Go program for 7 weeks. Intervention experience is an important factor that needs to be

Table 2: Differences in Pokemon Go group and Control group values in Walking PA, Moderate PA, Vigorous PA of Players

Physical Activity	Pokemon Go Group (N = 15)				Control Group (N = 15)			
	Pre-Test	Post-Test	P	ES (d)	Pre-Test	Post-Test	P	ES (d)
	M(SD)	M(SD)			M(SD)	M(SD)		
Walking PA (METmin/week)	598.4(356.0)	558.8(342.1)	0.000	0.64	187.4(63.1)	173.8(61.7)	0.342	0.002
Moderate PA (METmin/week)	653.3(383.5)	664.8(362.7)	0.003	0.71	114.6(85.3)	101.3(79.8)	0.521	0.001
Vigorous PA (METmin/week)	629.3(367.2)	1024.0(433.1)	0.001	0.75	224.0(113.9)	208.0(89.7)	0.339	0.000
Total PA (METmin/week)	1881.1(456.1)	2246.8(742.4)	0.000	0.78	525.6(162.6)	483.1(128.5)	0.279	0.000

Table 3. Differences in Pokemon Go and Control group values in Walking PA, Moderate PA, Vigorous PA of Ex-Players

Physical Activity	Pokemon Go Group (N=12)				Control Group (N=12)			
	Pre-Test	Post-Test	P	ES (d)	Pre-Test	Post-Test	P	ES (d)
	M(SD)	M(SD)			M(SD)	M(SD)		
Walking PA (METmin/week)	533.5(369.3)	561.5(218.9)	0.000	0.69	203.5(44.1)	192.5(52.3)	0.221	0.000
Moderate PA (METmin/week)	733.3(331.3)	1063.3(288.1)	0.000	0.77	96.6(43.3)	90.0(38.6)	0.178	0.001
Vigorous PA (METmin/week)	466.6(278.8)	893.3(492.9)	0.000	0.72	186.6(104.2)	193.3(99.2)	0.264	0.001
Total PA (METmin/week)	1733.5(423.2)	2517.6(650.7)	0.001	0.80	486.8(100.0)	475.8(101.5)	0.380	0.002

Table 4. Differences in Pokemon Go and Control group values in Walking PA, Moderate PA, Vigorous PA of Non-Players

Physical Activity	Pokemon Go Group (N=20)				Control Group (N=20)			
	Pre-Test	Post-Test	P	ES (d)	Pre-Test	Post-Test	P	ES (d)
	M(SD)	M(SD)			M(SD)	M(SD)		
Walking PA (METmin/week)	506.5(252.0)	598.95(305.3)	0.000	0.64	196(43.4)	202.9(22.1)	0.321	0.000
Moderate PA (METmin/week)	642.0(398.8)	896.0(366.7)	0.000	0.71	98.0(39.9)	94.0(43.5)	0.201	0.001
Vigorous PA (METmin/week)	592.0(371.0)	1012.0(468.8)	0.000	0.78	200.0(105.4)	124.0(60.7)	0.111	0.001
Total PA (METmin/week)	1740.5(687.3)	2506.9(666.5)	0.001	0.79	494.3(98.8)	420.9(64.4)	0.108	0.002

known, in order to provide an overview of the effectiveness of the Pokemon Go program. The subjects give their opinion as following:

"I'm excited to be able to join the Pokemon Go program, because this game is very interesting and motivate me to walk."

"At the beginning of the intervention, I felt that this game was boring but after getting a lot of Pokemon monsters I liked the game."

"I've played this game previously, but I thought Pokemon Go can hurt me. But my opinion was changed because the location of the intervention in this study was carried out in an area on university that was far from the city center and there were no vehicles."

"Before taking part in this research, I have often played this Pokemon Go game and I confirm that this game is safe if it is done in a place far from vehicles, such as parks or hills. And I like this game, because it triggers me want to walk or run to find Pokemon monsters."

Theme 2: Pokemon Go Program Advantages

The second theme is about the advantages of the Pokemon Go game which is indeed an important factor and must be informed to everyone. The subjects argued that:

"I presume that the advantage of playing Pokemon Go is it can gradually increase our PA level. For example, before participating in the Pokemon Go intervention, I rarely did PA outside the house, especially during hot weather or the current pandemic situation. But, Pokemon Go has help me to have a much better PA level."

"In my opinion, Pokemon Go is one of the games that promotes PA in a positive way to teenagers in the current COVID-19 pandemic crisis. The advantage of this game can be played at any time, we just need to provide a smartphone with a mobile data."

"This game is incredibly fun, because it allows me to walk for an hour without feeling bored or tired. I will continue to play this game, even after the research has been completed."

"I believe that Pokemon Go can be one of the right strategies to increase PA levels during the current COVID-19 pandemic, because this game can be played individually and doesn't require many friends."

"I can't believe it!!, This Pokemon Go game trigger me to walk 1.2 km every day. This game is a great method for teenagers to increase their PA level even during a pandemic."

Theme 3: The disadvantages of Pokemon go program

This third theme discusses the shortcomings of the Pokemon Go game that must be investigated accurately, in

order to minimize the weakness. The subjects revealed their opinion that:

"Pokemon Go is indeed a game that can promote improvement in PA levels, but if the game is not played in a safe place, it can result in injury (e.g., falling, crashing into a tree or wall, being hit by a vehicle)."

"In my opinion, Pokemon Go has several weakness, such as : it requires a fairly large mobile data plan, we should have a smart phone with good quality in order to play this game."

"If the internet network is bad, then Pokemon Go cannot be used to increase our PA level. In addition, if the weather is raining, then we cannot walking outside the house. And the GPS signal sometimes gets interrupted, so players can't walk to search Pokemon monsters."

Discussion

In overall, the objective of this study was to evaluate the effects of the Pokemon Go game from a mixed method point of view on increasing PA levels during the COVID-19 period. In quantitative and qualitative (mixed) research confirm that the Pokemon Go program showed to positively promote PA levels in teenagers to higher levels in the current COVID-19 crisis. The results of this study are in line with previous studies which explained that Pokemon Go is an augmented game that requires players to travel to various locations in the real world which the distances was relatively far. Thus, after carried out this game, players can increase their PA level to be better than before (Althoff et al., 2016; Chaput & Leblanc, 2017; Ewell et al., 2020; Kosa & Uysal, 2022).

Teenagers with the status of players, ex-players and non-players who have participated in the Pokemon Go intervention program reported that they were able to walk 60 minutes in a day (Ni et al., 2019) and experiencing an increase in walking distance with an average of 1.5 km. Similarly, a study conducted in the US reported that the effects of Pokemon Go can lead to an average increase of 1473 runs in a day. While the research of Howe et al., (2016) noted that players experienced an increase of 955 steps per day (Wattanapisit et al., 2018).

In addition, this study refutes previous research that reported Pokemon Go was not effective if used in the long term to increase PA levels (An & Nigg, 2017). The fact is the Pokemon Go intervention program which was implemented for 7 weeks was effective for increasing PA levels in teenagers despite the current pandemic crisis. The main issue that is often found in previous studies is the safety or of players

(Wong, 2017; Marquet et al., 2017; Wattanapisit et al., 2018), but our research confirms that none of the teenagers got injured while playing Pokemon Go. This is because we had prepared a wide and safe environment for them to play.

Conclusions

This study becomes evidence that the Pokemon Go program is one of the strategies that has a positive effect in promoting PA among teenagers at high school level during the COVID-19 crisis. The scope of this study was limited in terms of the subject which comes from one area in Indonesia. Thus, future studies need to be carried out by targeting subjects from different ages including children, adolescents and adults in several regions in Indonesia or other countries.

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Conflict of interest

All researchers declare that there is no conflict of interest in this research.

References

- Yan, Z., Finn, K., & Breton, K. (2020). Does it promote physical activity? College students' perceptions of pokémon go. *Montenegrin Journal of Sports Science and Medicine*, 9(1), 5-10. <https://doi.org/10.26773/mjssm.200301>
- Dietz, W. H., Douglas, C. E., & Brownson, R. C. (2016). Chronic disease prevention: Tobacco avoidance, physical activity, and nutrition for a healthy start. *JAMA - Journal of the American Medical Association*, 316(16), 1645-1646. <https://doi.org/10.1001/jama.2016.14370>
- Ni, M. Y., Hui, R. W. H., Li, T. K., Tam, A. H. M., Choy, L. L. Y., Ma, K. K. W., Cheung, F., & Leung, G. M. (2019). Augmented reality games as a new class of physical activity interventions? the impact of Pokémon Go use and gaming intensity on physical activity. *Games for Health Journal*, 8(1), 1-6. <https://doi.org/10.1089/g4h.2017.0181>
- Xian, Y., Xu, H., Xu, H., Liang, L., Hernandez, A. F., Wang, T. Y., & Peterson, E. D. (2017). An initial evaluation of the impact of Pokémon GO on physical activity. *Journal of the American Heart Association*, 6(5). <https://doi.org/10.1161/JAHA.116.005341>
- Madrigal-Pana, J., Gómez-Figueroa, J., & Moncada-Jiménez, J. (2019). Adult perception toward videogames and physical activity using Pokémon Go. *Games for Health Journal*, 8(3), 227-235. <https://doi.org/10.1089/g4h.2018.0100>
- Khamzina, M., Parab, K. V., An, R., Bullard, T., & Grigsby-Toussaint, D. S. (2020). Impact of Pokémon Go on Physical Activity: A Systematic Review and Meta-Analysis. *American Journal of Preventive Medicine*, 58(2), 270-282. <https://doi.org/10.1016/j.amepre.2019.09.005>
- Howe, K. B., Suharlim, C., Ueda, P., Howe, D., Kawachi, I., & Rimm, E. B. (2016). Gotta catch'em all! Pokémon GO and physical activity among young adults: Difference in differences study. *BMJ (Online)*, 355(December). <https://doi.org/10.1136/bmj.i6270>
- Ma, B. D., Ng, S. L., Schwanen, T., Zacharias, J., Zhou, M., Kawachi, I., & Sun, G. (2018). Pokémon GO and physical activity in Asia: multilevel study. *Journal of Medical Internet Research*, 20(6). <https://doi.org/10.2196/jmir.9670>
- Ayers, J. W., Leas, E. C., Dredze, M., Allem, J. P., Grabowski, J. G., & Hill, L. (2016). Pokémon GO-A new distraction for drivers and pedestrians. *JAMA Internal Medicine*, 176(12), 1865-1866. <https://doi.org/10.1001/jamainternmed.2016.6274>
- Wong, F. Y. (2017). Influence of Pokémon Go on physical activity levels of university players: A cross-sectional study. *International Journal of Health Geographics*, 16(1), 1-12. <https://doi.org/10.1186/s12942-017-0080-1>
- Wattanapisit, A., Saengow, U., Ng, C. J., Thanamee, S., & Kaewruang, N. (2018). Gaming behaviour with Pokémon GO and physical activity: A preliminary study with medical students in Thailand. *PLoS ONE*, 13(6), 1-12. <https://doi.org/10.1371/journal.pone.0199813>
- Li, Y., Liu, Y., Ye, L., Sun, J., & Zhang, J. (2021). Pokémon GO! GO! GO! The impact of Pokémon GO on physical activity and related health outcomes. *MHealth*, 7(20), 5-9. <https://doi.org/10.21037/mhealth-20-121>
- An, J., & Nigg, C. R. (2017). The promise of an augmented reality game — Pokémon GO. *Annals of Translational Medicine*, 5(10), 10-12. <https://doi.org/10.21037/atm.2017.03.12>
- Clark, A. M., & Clark, M. T. G. (2016). Pokémon Go and Research: Qualitative, Mixed Methods Research, and the Supercomplexity of Interventions. *International Journal of Qualitative Methods*, December, 1-3. <https://doi.org/10.1177/1609406916667765>
- Licoppe, C. (2016). From Mogi to Pokémon GO: Continuities and change in location-aware collection games. *Mobile Media & Communication*, 1-6. <https://doi.org/10.1177/2050157916677862>
- Keogh, B. (2017). Pokémon Go, the novelty of nostalgia, and the ubiquity of the smartphone. *Mobile Media & Communication*, 5(1), 38-41. <https://doi.org/10.1177/2050157916678025>
- Lee, J. E., Zeng, N., Oh, Y., Lee, D., & Gao, Z. (2021). Effects of Pokémon GO on physical activity and psychological and social outcomes: A systematic review. *Journal of Clinical Medicine*, 10(9). <https://doi.org/10.3390/jcm10091860>
- Lindqvist, A., Castelli, D., Hallberg, J., & Science, C. (2018). The Praise and Price of Pokémon GO: A Qualitative Study of Children's and Parents' Experiences. *Journal of Medical Internet Research*, 6, 1-7. <https://doi.org/10.2196/games.8979>
- Rasmitadila, R., Widyasari, W., Humaira, M., Tambunan, A., Rachmadtullah, R., & Samsudin, A. (2020). Using blended learning approach (BLA) in inclusive education course: A study investigating teacher students' perception. *International Journal of Emerging Technologies in Learning (IJET)*, 15(2), 72-85.
- Ekström, A., Östenberg, A. H., Björklund, G., & Alricsson, M. (2017). The effects of introducing Tabata interval training and stability exercises to school children as a school-based intervention program. *International Journal of Adolescent Medicine and Health*, 31(4), 1-11. <https://doi.org/10.1515/ijamh-2017-0043>
- Althoff, T., White, R. W., & Horvitz, E. (2016). Influence of pokémon go on physical activity: Study and implications. *Journal of Medical Internet Research*, 18(12). <https://doi.org/10.2196/jmir.6759>

- Chaput, J., & Leblanc, A. G. (2017). Pokémon GO: snake oil or miracle cure for physical inactivity? *Annals of Translational Medicine*, 5(10), 3-6. <https://doi.org/10.21037/atm.2017.03.38>
- Ewell, P. J., Quist, M. C., Øverup, C. S., Watkins, H., & Guadagno, R. E. (2020). Catching more than pocket monsters: Pokémon Go's social and psychological effects on players. *The Journal of Social Psychology*, 160(2), 131-136. <https://doi.org/10.1080/00224545.2019.1629867>
- Kosa, M., & Uysal, A. (2022). Effects of Presence and Physical Activity on Player Well-being in Augmented Reality Games: A Diary Study. *International Journal of Human-Computer Interaction*, 38(1), 93-101. <https://doi.org/10.1080/10447318.2021.1925437>
- Marquet, O., Alberico, C., Adlakha, D., & Hipp, J. A. (2017). Examining motivations to play pokémon go and their influence on perceived outcomes and physical activity. *JMIR Serious Games*, 5(4). <https://doi.org/10.2196/games.8048>

ДОПОВНЕНА ГРА «РОКЕМОН GO» ПІД ЧАС ПАНДЕМІЇ COVID-19: ЧИ ВПЛИВАЄ ВОНА НА СПРИЯННЯ ФІЗИЧНІЙ АКТИВНОСТІ ПІДЛІТКІВ?

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Реферат. Стаття: 6 с., 4 табл., 26 джерел.

Мета дослідження. Однією з головних проблем під час пандемії COVID-19, яка потребує розгляду, є зниження фізичної активності підлітків. Загальною метою цього змішаного методу є вивчення впливу інтервенційної програми «Pokemon Go» на сприяння фізичній активності підлітків під час кризи, зумовленої COVID-19.

Матеріали та методи. Це дослідження проводили з використанням підходу на основі змішаного методу. Учасниками дослідження погодилися стати 94 підлітки-учні 10-12 класів із трьох середніх шкіл. Учасників розподілили на 2 групи, а саме: експериментальну групу, у якій учасники займалися за інтервенційною програмою «Pokemon Go» (N = 47), і контрольну групу, у якій учасники не здійснювали фізичної активності (N = 47). Інтервенційну програму «Pokemon Go» проводили на заняттях із фізичного виховання протягом 7 тижнів з інтенсивністю 3 рази на тиждень. Після завершення проведення інтервенційної програми «Pokemon Go» було проведено опитування 47 учасників. Засобом кількісної оцінки, який використовували для вимірювання рівня фізичної активності, була Міжнародна анкета з фізичної активності (IPAQ), а як засіб якісної оцінки використовували докладні інтерв'ю.

Результати. Кількісний і якісний (змішаний) аналіз підтверджує, що інтервенційна програма «Pokemon Go» показала позитивне сприяння зростанню рівнів ФА в підлітків до вищих рівнів під час нинішньої кризи, зумовленої COVID-19. Результати цього дослідження узгоджуються з попередніми дослідженнями, у яких було пояснено, що «Pokemon Go» – це гра доповненої реальності, яка вимагає від гравців пересуватися до різних локацій у реальному світі на відносно далекі відстані.

Висновки. Підлітки зі статусом гравців, колишніх гравців і не гравців зазнали значного підвищення рівня фізичної активності після участі в інтервенційній програмі «Pokemon Go» протягом 7 тижнів, і більшість учасників уважала, що гра «Pokemon Go» позитивно впливає на сприяння фізичній активності під час пандемії COVID-19. Після реалізації інтервенційної програми «Pokemon Go» протягом 7 тижнів результати нашого дослідження підтверджують, що рівні фізичної активності підлітків під час пандемії COVID-19 поступово зростали.

Ключові слова: Pokemon Go, фізична активність, COVID-19, змішаний метод.

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