



Impact of physical exercise on the mental wellbeing: implication for academic performance of primary school pupils in Gwagwalada Area Council, FCT, Nigeria

Shadrach Alice

Department of Educational Psychology, Faculty of Education, University of Abuja, Nigeria

Correspondence Author: Shadrach Alice

Received 14 Aug 2024; Accepted 2 Oct 2024; Published 21 Oct 2024

Abstract

This study examined the impact of physical exercise on the mental wellbeing: implication for academic performance of primary school pupils in Gwagwalada Area Council, FCT, Nigeria. Five research questions were answered and two hypotheses tested at 0.05 level of significance. The study used a descriptive survey design. Population for this study was 2524 primary six pupils of public schools. The sample size for this study was 200 pupils drawn from 20 primary schools. The study used a constructed questionnaire for data collection. Data was collected through interview conducted for primary school pupils. Data was analyzed using mean, standard deviation, Chi-square and linear regression analysis. Findings revealed significant physical exercises needed to be conducted for primary school pupils. The study found low level of participation of primary school pupils in physical exercises. It was found that physical exercises enhance academic performance of primary school's pupils in various ways. Also, the study found a significant relationship between physical exercises and academic performance of primary school pupils. Finally, the study found many challenges affecting full participation of primary school pupils in physical exercise. The study concluded that physical exercises significantly impact the academic performance of primary school pupils. It was recommended that all primary school administrators should ensure full conduct of physical exercises in their primary schools. The schools should ensure that experienced teachers are recruited to teach physical and health education that is embedded with physical exercises and made enough space for provision of physical health education facilities to ensure smooth conduct of physical exercises.

Keywords: physical exercise, mental wellbeing, academic performance, primary school and pupils

Introduction

A sound mental health enables students to build achieve their academic potential. Good physical and mental health are an important enabler of positive academic pursuit. There is a relationship of physical health and academic performance of pupils. Physical condition of a child's education programs in schools is required to promotion of academic activities of the child. Poor health does not only result from lower educational attainment of pupils, it can also cause educational setbacks and interfere with school activities. Unhealthy behaviours have an effect on educational outcomes. As a result, the psychological mental wellbeing of the pupils ought to be given a priority by parents and teachers.

Mental wellbeing is a state of wellness, prudential value, prosperity or quality of life or is what is intrinsically valuable relative to someone (Crisp, 2017) [3]. The well-being of an individual is what is ultimately good for this individual and what is in the self-interest of the individual (Fletcher, 2015) [7]. The author added that wellbeing is characterized as positive and sustainable characteristics which enable individuals and organizations to thrive and flourish. Yang and Ma (2021) [15] posited that wellbeing in children includes both their mental and their emotional health; it is as important to their development as physical health is. According to Gutman and Vorhaus (2012) [8], the dimensions of wellbeing are: emotional (including fears, anxiety and mood), behavioural (including attention problems such as difficulty to sit still; activity

www.dzarc.com/education

problems such as difficulty to memorize, careless mistakes; troublesome behaviour, such as playing truant, lies, stealing; and awkward behaviour such as blames others for mistakes, is easily annoyed), social dimension (including victimization of others i.e., being bullied and having positive friendships), and school dimension (including enjoyment i.e., likes school and engagement i.e., stimulated by school).

Good mental wellbeing gives children the best chance to develop into well-rounded, healthy adults who have the coping skills in place to deal with day-to-day life. Wellbeing and learning are associated with one another; however, there is less information on how multiple dimensions of wellbeing simultaneously predict later changes in educational outcomes for children and teenagers ((Ereaut & Whiting, 2008) [5]. Wellbeing makes a significant contribution to young people's personal development and character. Ereaut and Whiting (2008) [5] opined that wellbeing creates a focus on the social and emotional aspects of effective learning, such as self-awareness, managing feelings, motivation, empathy and social skills. Wellbeing is associated with academic achievement.

Academic achievement refers to the average marks obtained by an individual in final examination (Fam & Yaacob, 2016) [6]. It has long been recognized as one of the important goals of education (Bossart, Doumen & Buyse, 2011) [2]. Academic achievement is commonly measured through examinations or continuous assessments but there is no general agreement on

how it is best evaluated or which aspects are most important, procedural knowledge such as skills or declarative knowledge such as facts. Von-Stumm, Hell and Chamorro-Premuzic (2011) ^[14] noted that cumulative grade point average (GPA) and completion of educational grades represent academic achievement. In the context of this study, academic achievement is the completion of educational benchmarks of all pupils in primary schools. One of the determinants of academic achievement of the pupils is physical exercise.

Exercise is a physical activity that enhances the maintenance of fitness and overall health of an individual (Kylasov & Gavrov, 2011) ^[9]. Physical exercise refers to any bodily activity that enhances or maintains physical fitness and overall health and wellness (Liberman, 2020) ^[10]. The generally, Liberman (2020) ^[10] asserts that physical activities include scrubbing a floor, raking a lawn, or playing active games with young children or a pet are all activities that can have fitness and health benefits, even though they generally are not done mainly for this purpose. In primary schools, physical exercise can include everyday activities like walking, energetic play and organised sports. The common physical exercise carried out in our primary schools today include jogging, hooping, dancing, running, press up and sit up (Bergstrom, Muse, Tsai, Strangio, 2011) ^[1]. Song, Ge, Xue and Yao (2022) ^[13] noted that the physical exercise that students always do is running, badminton and table tennis, which rank the top three among the sports they do. The students usually play basketball, volleyball, and football. Bergstrom, Muse, Tsai, Strangio, (2011) ^[1] added that physical exercise is performed for various reasons, including weight loss or maintenance, to aid growth and improve strength, develop muscles and the cardiovascular system, hone skills, improve health. Usually, Otinwa (2014) ^[11] noted that 2.5 hours of moderate-intensity exercise per week is recommended for reducing the risk of health problems.

Physical exercise has been considered as an important aspect of activity in the life of children. For mental health and wellbeing, school pupils need light, moderate and vigorous physical activity each day. As a result, Otinwa (2014) ^[11] assert that the federal government of Nigeria has recommended as contained in the national objectives and stated in National Policy on Education, Millenium development goals and vision 2020:20 that teachers need a supporting curriculum and continued professional development (Otinwa, 2014) ^[11]. The national policy on education has place much emphasis on physical activity for pupils making PE as a compulsory aspect of primary school curriculum in Nigerian which is essential for maintenance of health and learning. However, an observation and interaction by the researcher with pupils and parents of primary schools in Gwagwalada Area Council has revealed that the physical exercise is not given a proper attention. Much emphasis has been placed on funds generation from the pupils with high expectation in their academic performance. The physical education is completely neglected and substituted to theoretical. The teachers are not so curious to enquire the root

causes of the poor performance. Pupils are been loaded with academic activities. The physical quality of the pupils declines on yearly basis. Consequently, the academic performance of this pupils is also declining.

Objectives

- Identify the types of physical exercises needed for primary schools pupils.
- Ascertain the level of participation of primary school pupils in physical exercise.
- Find out ways by which physical exercise enhances academic performance of primary school pupils.
- Examine the relationship between physical exercise and academic performance of primary school pupils.
- Identify challenges affect full participation of primary school pupils in physical exercise.

Research questions

- What are the types of physical exercises needed for primary schools pupils?
- What is the level of participation of primary school pupils in physical exercise?
- Are there ways by which physical exercise enhances academic performance of primary school pupils?
- What is the relationship between physical exercises and academic performance of primary school pupils?
- What are challenges affect full participation of primary school pupils in physical exercise?

Hypotheses

HO₁: There is no significant the relationship between physical exercises and academic performance of primary school pupils.

HO₂: There is no significant challenge affect full participation of primary school pupils in physical exercise.

Methodology

This study was conducted in Gwagwalada Area Council of the Federal Capital Territory (FCT), Abuja, Nigeria. Gwagwalada Area Council comprised of 10 council wards namely; Gwagwalada Center, Kutunku, Staff Quarters, Ibwa, Dobi, Paikon, Tungan Maje, Zuba, Ikwa and Gwako. There are 211 private primary schools in Gwagwalada Area Council (Sanni, Offiong, Anigilaje, Olateju, Ogbe, AbdulAzeez & Kareem, 2022) ^[12]. The study employed the use of descriptive survey design. According to Educational Planning, Research and Statistics, Federal Capital Territory Administration (2019) ^[4], there are 2524 primary six pupils of public schools. The population for the study was 2524 grade six pupils of public primary schools in Gwagwalada Area Council. The sample size for this study was 200 pupils drawn from 20 primary schools. The study used a constructed questionnaire for data collection. Data was collected through interview conducted for primary school pupils. The data collected was analyzed using mean, standard deviation, Chi-square and linear regression analysis.

Results

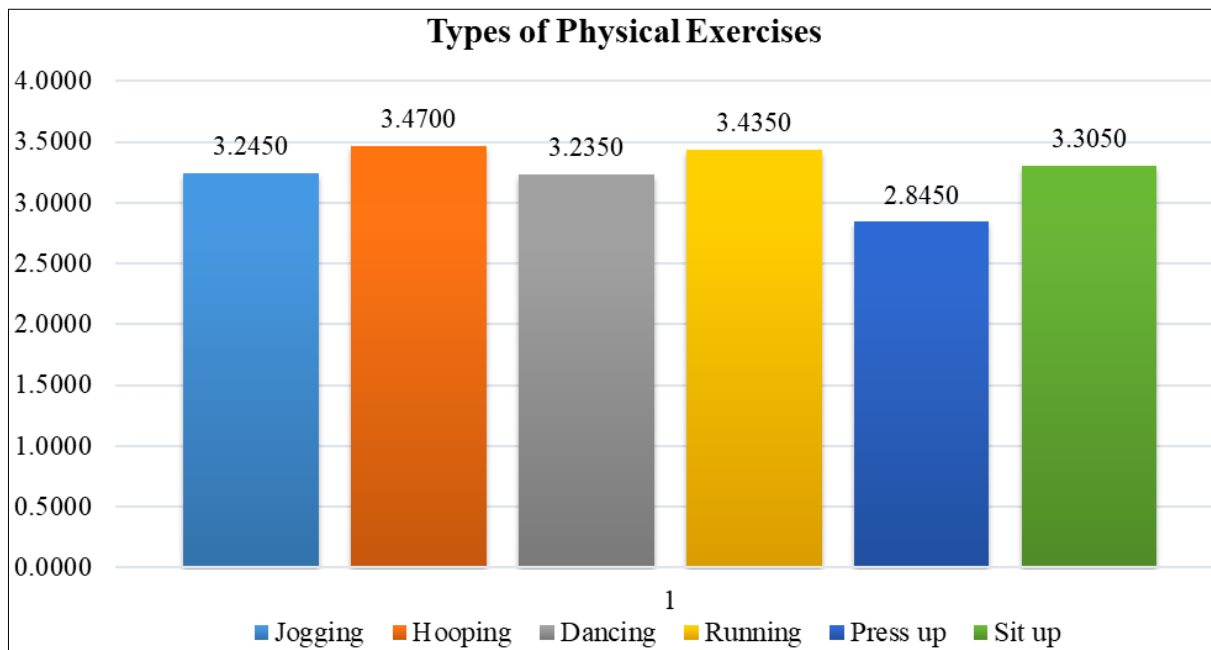


Fig 1: Types of physical exercises needed by primary schools pupils

Result in Figure 1 shows that all the physical exercises had mean values ranged from 2.8450 to 3.4350 and were above the bench mark of 2.50. This indicates that all the physical

exercises are needed by primary school pupils in Gwagwalada Area Council.

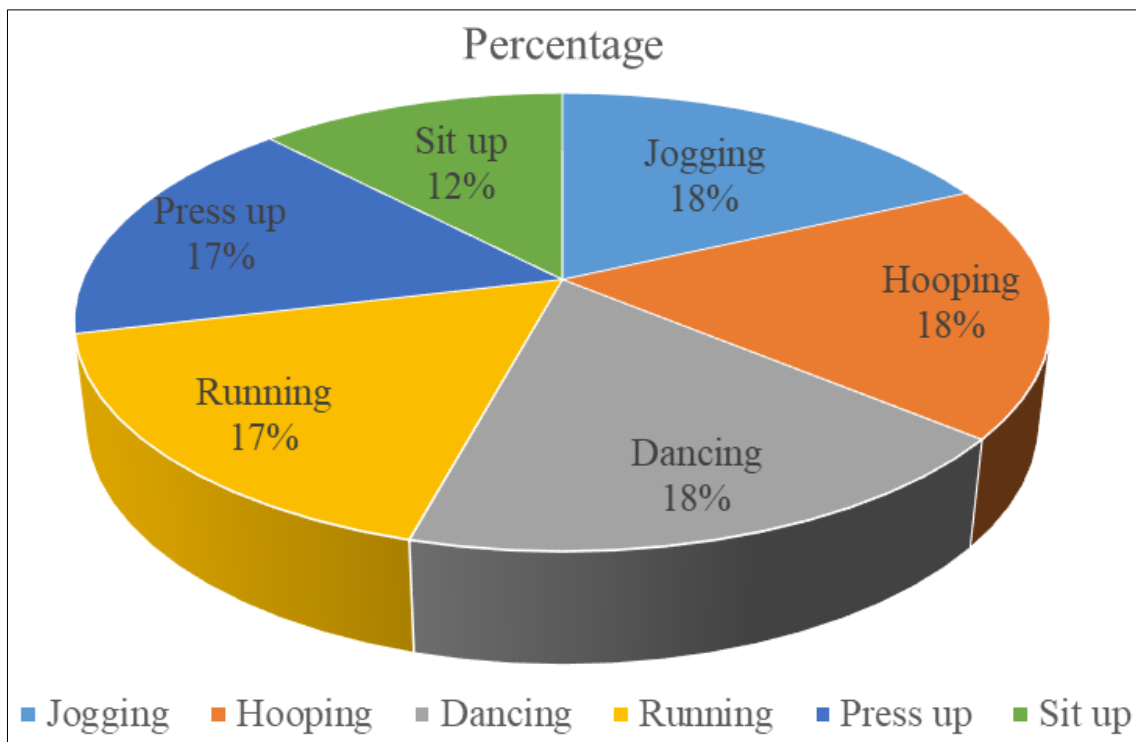


Fig 2: Level of participation by primary school pupils in physical exercises

Result in Figure 2 shows that all the physical exercises had their percentages ranged from 12% to 18% and were below 50%. This means that all the physical exercises are not

conducted for primary school pupils in Gwagwalada Area Council.

Table 1: Mean and standard deviation of pupils on the ways by which physical exercises enhances academic performance

S/N	Item	Mean	Std. Dev.	Remarks
1	Improves cardiovascular health which enhances brain functioning and cognitive abilities such as problem-solving, concentration and memory retention	3.3050	1.08529	Related
2	Enhances better sleep patterns which are crucial for learning and memory consolidation	3.4550	.92317	Related
3	Boost the immune system leading to fewer sick days and consistent attendance allowing for uninterrupted learning	3.2550	1.02235	Related
4	Instill discipline into pupils which translates to better organization of skills and time management in academic tasks	2.9400	1.10567	Related
5	Foster environment where students are also equipped with a range of habits and routine that support academic excellence	3.3650	.51292	Related
	Grand Mean	3.2640	.92988	

Source: Field survey, 2024

Result in Figure 1 shows that all the items had their mean values ranged from 2.9400 to 3.4550 and were above 2.50. This is an indication that physical exercises have influence on

academic performance of primary school pupils in Gwagwalada Area Council.

Table 2: ANOVA of Regression Analysis on the Relationship between Physical Exercises and Academic Performance of Primary School Pupils

	Sum of squares	df	Mean square	F	Sig.
Regression	46.847	6	7.808	870.701	.000 ^b
Residual	1.731	193	.009		
Total	48.578	199			

a. Dependent variable: Academic achievement, b. Predictors: (Constant), sit up, press up, hooping, juggling, running, dancing

Source: Field Survey, 2024

Result in table 2 shows ANOVA of Regression Analysis on the relationship between physical exercises and academic performance of primary school pupils with significant value of

0.000. This is an indication that physical exercises have a positive relationship with academic performance of primary school pupils.

Table 3: Mean and standard deviation of pupils on the challenges of effective conduct of physical exercises

S/N	Item	Mean	Std. Dev.	Remarks
1	Lack of experienced by physical and health education teachers	3.3600	.77030	Agreed
2	Lack of equipment for the conduct of physical exercises	3.4200	.78529	Agreed
3	Inadequate teaching space for provision of PE facilities	3.1550	.98275	Agreed
4	Unrealistic teaching schedules enhancing public image	2.8350	1.14206	Agreed
5	Implementing accountability systems of school administration	3.1350	1.21828	Agreed
	Grand Mean	3.1810	.97974	

Source: Field Survey, 2024

Result in Figure 3 shows that all the items had their mean values ranged from 2.8350 to 3.4200 and were above 2.50. This is implying that many challenges militate against the conduct

of physical exercises for primary school pupils in Gwagwalada Area Council.

Table 4: Regression analysis on the relationship between physical exercises and academic performance

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	.189	.049		3.880	.000
Jogging	.364	.015	.475	24.049	.000
Hooping	.062	.008	.132	7.382	.000
Dancing	-.199	.024	-.282	-8.335	.000
Running	.056	.011	.108	5.147	.000
Press up	.231	.030	.315	7.826	.000
Sit up	.030	.011	.059	2.781	.006
F	870.701				
R	.982 ^a				
Adjusted R Square	.963				

a. Dependent variable: academic achievement

Source: Field survey, 2024

The result in Table 4 shows that the relationship between physical exercises and academic performance was explained by independent variables included in the regression model as indicated by the R^2 (0.982), the $F = 870.701$ and adjusted R square value of 0.963. Result of the analysis also shows that the coefficient of juggling was 0.000; hopping had a value of 0.000; dancing had a positive value of 0.000; running had a value of 0.000; while press up had 0.000 and sit up had a coefficient of 0.006 respectively. This indicates that physical exercises have a positive linear relationship with academic performance of primary school pupils.

Table 5: Chi-square result on the challenges full participation of primary school pupils in physical exercises

	Value	Df	Asymptotic Significance (2-sided)
Pearson chi-square	12.000 ^a	9	.213
Likelihood ratio	11.090	9	.270
Linear-by-linear association	2.560	1	.110
N of valid cases	4		

a. 16 cells (100.0%) have expected count less than 5. The minimum expected count is .25.

Source: Field Survey, 2024

Result in Table 5 shows a p-value of 12.000 at 9 degree of freedom. The value was greater than the chosen significance level of 0.05 ($p=12.000 > \alpha = 0.05$). Therefore, the null hypothesis of no significant challenge affect full participation of primary school pupils in physical exercise is not rejected. This implies that many challenge affect full participation of primary school pupils in physical exercise in Gwagwalada Area Council.

Discussion of findings

Result of finding on the types of physical exercises needed by primary school pupils revealed that jogging with mean value of 3.2450; hooping (3.4700); dancing (3.2350); running (3.3450); press up (2.8450) and sit up (3.3050) were significantly needed to be conducted by pupils in primary schools in Gwagwalada Area Council. The finding affirms a report by Song, Ge, Xue and Yao (2022) ^[13] which reported that the physical exercises that students always do are running, badminton and table tennis, play basketball, volleyball, and football which rank the top three among the sports they do.

The result of finding on the level of participation of primary school pupils in physical exercises is very low in Gwagwalada Area Council. The pupils barely participate in jogging (18%); hooping (18%); dancing (18%); running (18%); press up (17%) and sit up (12%). The finding agrees with Otinwa (2014) ^[11] who reported that despite the recommendation made by the federal government in the national policy on education for the conduct of physical exercise in primary schools, many primary schools have completely ignored this recommendation.

Finding on the ways physical exercises enhance academic performance of primary schools revealed that physical exercises improves cardiovascular health which enhances brain functioning and cognitive abilities such as problem-solving,

concentration and memory retention (3.3050); enhances better sleep patterns which are crucial for learning and memory consolidation (3.4550); boost the immune system leading to fewer sick days and consistent attendance allowing for uninterrupted learning (3.2550); instill discipline into pupils which translates to better organization of skills and time management in academic tasks (2.9400); and foster environment where students are also equipped with a range of habits and routine that support academic excellence (3.3650). The finding agrees with Bergstrom, Muse, Tsai, Strangio, (2011) ^[11] who reported that physical exercise is performed for various reasons, including weight loss or maintenance, to aid growth and improve strength, develop muscles and the cardiovascular system, hone skills, improve health.

The result of finding on the relationship between physical exercises and academic performance of primary school pupils revealed that jogging a positive significant values of 0.000; hooping (0.000); dancing (0.000); running (0.000); press up (0.000) and sit up (0.006). The result is similar with the finding of Bergstrom, Muse, Tsai, Strangio (2011) ^[11] who found out that jogging, hooping, dancing, running, press up and sit up significantly relate to academic performance of students.

Also, the finding on challenges militating against effective conduct of physical exercises in primary schools revealed many challenge affect full participation of primary school pupils in physical exercise in Gwagwalada Area Council with a Pearson Chi-Square 12.000. This finding is not different from that of Otinwa (2014) ^[11] who reported lack of experienced by physical and health education teachers and lack of equipment for the conduct of physical exercises as major challenges affecting the conduct of physical exercises in primary schools.

Conclusion

Extra-curricular activities are designed with expectations that all primary schools should ensure full participation of their pupils in the activities. The overloaded school academic for pupils contribute to physical, mental, and emotional stress, negatively impacting their well-being and academic focus. This study has identified various types of physical exercises needed by primary school pupils. The study concludes that physical exercises significantly impact the academic performance of primary school pupils.

Recommendations

Based on the findings of the study, the following recommendations are made:

- All primary school administrators should ensure full conduct of physical exercises in their primary schools.
- The schools should ensure that experienced teachers are recruited to teach physical and health education that is embedded with physical exercises.
- The local area education authority in charge of monitoring, supervision and inspection of primary education activities should ensure that equipment for the conduct of physical exercises is provided for primary schools.
- All primary schools in Gwagwalada Area Council should be made available with enough space for provision of

physical health education facilities to ensure smooth conduct of physical exercises.

References

1. Bergstrom K, Muse T, Tsai M, Strangio S. "Fitness for Foreigners". Slate, 2011.
2. Bossaert G, Doumen SE, Buyse KV. Predicting Students' Academic Achievement after the Transition to First Grade: A Two-Year Longitudinal Study. *Journal of Applied Developmental Psychology*. 2011;32(2):47–57.
3. Crisp R. "Well-Being". *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University, 2017.
4. Educational Planning, Research and Statistics, Federal Capital Territory Administration (2019). Annual School Statistics Report for 2017/2018 and 2019/2019.
5. Ereaud G, Whiting R. What do we mean by 'wellbeing'? And why might it matter? Research Report No DCSF-RW073, 2008.
6. Fam JY, Yaacob SN. The mediating role of academic self-efficacy in the relation between parent-adolescent relationship and academic performance. Malaysia: Perpustakaan Sultan Abdul Samad, University Putra Malaysia, 2016, 51–63.
7. Fletcher G. "Introduction". *The Routledge Handbook of Philosophy of Well-Being*. Routledge, 2015.
8. Gutman L, Vorhaus J. THE Impact of Pupil Behaviour and Wellbeing on Educational Outcomes. A Research Report, Department of Education, Insitute of Education, University of London, 2012.
9. Kylasov A, Gavrov S. Diversity of sport: non-destructive evaluation. Paris: UNESCO: Encyclopedia of Life Support Systems, 2011, 462-91.
10. Liberman D. *Exercised*. Vintage Books, 2020.
11. Otinwa GO. "Trends in Physical Activity and Future Directions of Physical Education in Nigeria." *Journal of Nigerian Association of Sports Science and Medicine*. 2014;15:15-22.
12. Sanni UA, Offiong UM, Anigilaje EA, Olateju KE, Ogbe E, Abdul Azeez AT, *et al*. Healthful School Environment in Primary Schools: A Cross Sectional Study of Gwagwalada Area Council, Federal Capital Territory, Nigeria. *African Journal of Health Sciences*. 2022;35(2):190-201.
13. Song C, Ge S, Xue J, Yao W. Physical Exercise of Primary and Middle School Students from the Perspective of Educational Psychology and Parents' Entrepreneurship Education. *Front. Psychol*. 2022;12:777069. DOI: 10.3389/fpsyg.2021.777069.
14. Von-Stumm S, Hell B, Chamorro-Premuzic T. The Hungry Mind: Intellectual Curiosity is the Third Pillar of Academics Performance. *Perspectives on Psychological Science*. 2011;6(6):574-588.
15. Yang H, Ma J. "How the COVID-19 pandemic impacts tobacco addiction: Changes in smoking behavior and associations with well-being". *Addictive Behaviors*. 2021;119:106917.