

Research on the relationship between excessive use of social media and young athletes' physical activity

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Abstract:

Social media have an ambivalent effect on the physical activity of young athletes. The purpose is to establish the relationship between young athletes' psychological disorders through the excessive use of social media. The main task was to analyze whether there is a deviation from training, which increases time spent on social media. Research methods. The study is based on the results of anonymous valid psychodiagnostic tools submitted to Google Forms and statistical analysis. Physical activity of young athletes (N = 110) aged 16 to 21 years was assessed on the scales of diagnostic tests, parameters of physical activity, time spent online, feelings of loneliness, and sleep disorders due to excessive use of social media during the global pandemic. Results. It was found that during quarantine, young athletes prefer to displace bad thoughts and distract from training for spending too much time on social media applications ($r_s = .202$; $p \leq .05$). It was stated that young athletes experience negative emotions due to the situation with the coronavirus, which leads to the increased time spent on social media, which is a kind of coping strategy ($r_s = .340$; $p \leq .01$). As a result of uncontrolled use of social media and reduced parameters of physical activity, competitive performance during the lockdown, young athletes face sleep disorders ($r_s = -.277$; $p \leq .01$) and manifestations of depression ($r_s = .430$; $p \leq .01$). Conclusions. It is empirically established and theoretically substantiated that there are causal links to excessive use of social media due to reduced parameters of physical activity. The decreased physical activity provokes an exacerbation of loneliness, training regimen, and recovery. It is noted that the "mask of the active user" encourages manifestations of depression, displacement of feelings, and problems, which leads to a decrease in the psychological well-being of young athletes.

Key words: youth sports, sports safety, cyber socialization, mental health, psychological health.

Introduction

Cybersocialization is an integral dimension of modern communication. The term 'cyber socialization' has become relevant due to the rapid popularity of social media. This phenomenon demonstrates the restructuring of personal self-awareness. The latter can be explained by the increase in the number of gadgets and the influence of computer technology.

Various social media platforms have a significant impact on sportsmen, in particular youth athletes (Pegoraro & Jinnah, 2012). Social media presence allows athletes to engage with fans (Frederick et al., 2012) and gives them a new way to manage their brand, sell themselves to potential sponsors, and gain support (Geurin-Eagleman & Burch, 2016; Hull, 2014; Lebel & Danylchuk, 2012; Pegoraro & Jinnah, 2012). In addition to these types of involvement of athletes in social media, researchers have identified the following categories of activities in social networks: 1) interactivity, 2) diversion, 3) information sharing, 4) content, 5) fans, 6) advertising (Hambrick et al., 2010).

The most active users are young athletes aged 16 to 21 years. In youth, there is the greatest tendency to gain approval from peers or a significant social group, which in turn affects the perception of social roles and moral values (Popovych et al., 2019a; 2021g). Maintaining personal blogs, creating profiles, helping young people to become part of certain virtual communities, self-realization, and establishing themselves in the eyes of peers, provided the popularity of their account. A feature of the youth period is the high need to belong to the community. Researchers have found that the acute need of young athletes for social connections should be taken into account to create psychological security in the construction of educational space (Blynova et al., 2020). Social media, in turn, can greatly facilitate communication and emotional support, which can potentially increase the level of psychological security of young athletes. Because of their ability to connect people around the world, social media can potentially have a positive impact on mental health. However, certain risks can lead to serious

problems in the mental, psychological health, and well-being of young people (Hudimova, 2020). In particular, young athletes may receive negative messages or may be at high risk of being bullied online by their followers if their performances do not meet certain expectations (Farrington et al., 2014; Geurin, 2017).

Studies show that young people who are active users and spend more than two hours on social media are more likely to complain of mental health, including psychological disorders (anxiety and depression) (Sampasa-Kanyinga & Rosamund, 2015). The level of pathological involvement of young users is associated with subclinical depression, anxiety, loneliness, feelings of constant tension, and subjective stress (Hudimova, 2021a). In addition, social media can be a massive distraction from training and lead to deteriorating sports performance due to increased anxiety and sleep disorders (David et al., 2018; Encel et al., 2017; Jones et al., 2018).

The issue of the dependence on the psychological well-being of young athletes due to the use of social media during the progression of the COVID-19 pandemic deserves special attention. Studies indicate a significant decrease in the physical activity parameters among the younger generation and an increase in gadget screen time during the COVID-19 pandemic, which has negative consequences for physical and mental health (Xiang et al., 2020; Schmidt et al., 2020). Studies by researchers studying the effects of lockdown on the athletes' condition during coronavirus have shown that they experience negative psychological consequences (Dong & Bouey, 2020; Toresdahl & Asif, 2020). At the same time, other studies show that sport provides a protective effect that prevents psychological disorders, in particular, physical activity in the right amount can reduce the symptoms of anxiety and depression (Siefken et al., 2019). Exercise alters the subjective perception of psychological well-being (Saw et al., 2016), and a decrease in physical activity leads to an increase in the prevalence of higher severity of depressive disorders (Reardon et al., 2019). Due to lockdown, the activity of young athletes in social media is significantly increased, which has ambivalent consequences for the mental state of the latter. Spending a lot of time on social media during a pandemic increases the feeling of separation from others, which has negative consequences for psychological well-being. Social media not only harm psychological well-being during a pandemic. A positive role is the opportunity to expand the circle of communication with users from around the world, to be at the center of events and current trends, to create interesting creative content, and to participate in interesting discussions (Hudimova et al., 2021). Thus, the study of the relationship between excessive use of social media and the physical activity of young athletes is relevant.

Research Question. Theoretical analysis has shown that virtual communication enhances the reflection of one's own identity through the prism of relationships and views of other users. The problem of coexistence of the real 'I' with the virtual personality, the impact of Internet communication on the physical activity of young athletes led to the development of a research program.

The study was conducted to determine the characteristics of the impact of social media on the psychological state of young athletes during the COVID-19 pandemic. Following the chosen methods, the individual psychological characteristics of young athletes are established, which have a direct impact on the nature of the use of social media applications and spending time on the Internet. The results established a link between excessive involvement in social media and the pathological consequences for the psychological well-being of young athletes.

Hypothesis. Prolonged exposure of young athletes to social media significantly reduces their physical activity and leads to psychological disorders, including sleep disorders, anxiety, and depression.

The purpose research is to establish the relationship between excessive use of social media and the physical activity of young athletes. The global pandemic situation has allowed us to study in more detail the impact of social media on the parameters of physical activity and the mental state of young athletes.

Material and methods

Methodology. The methodological starting points of the empirical study of the impact of social media on the physical activity of young athletes during the progression of the COVID-19 pandemic were based on general scientific principles of studying the psychology of personal interaction in cyberspace. In particular, the principles of systematics, determinism, and unity of the empirical and theoretical have been tested in studies of competitive and training activities of team sports athletes (Popovych et al., 2020c; 2021e; 2021f; Strykalenko et al., 2020b; 2021), pre-game expectations (Popovych et al., 2019b; 2020b; 2021b), adaptation processes (Blynova et al., 2019; Kobets et al., 2021a; 2021b; Popovych & Blynova, 2019a; 2019b; Prontenko et al., 2017; 2019) and extreme loads in various activities (Mamenko et al., 2022; Nosov et al., 2020a; 2020b; 2021a; 2021b Popovych et al., 2019c; 2021a; Shalar et al., 2019; Solovey et al., 2020; Strykalenko et al., 2019; 2020a; Zinchenko et al., 2020; 2021; 2022). Sometimes the established data of different researchers are quite contradictory. For example, being able to share new information with others has a positive effect on mental health by increasing self-esteem and a sense of community (Verduyn, et al., 2017). However, private and public activity on social media can have completely different effects both on physical activity and mental health. Modern literature suggests that Facebook is predominantly used passively, which can cause social comparisons, increase anxiety and depressive symptoms (Appel et al., 2015). From the point of view of medical psychology, this study examined social media disorder, as there are such criteria as neglect of privacy, mental anxiety, escapism, mood swings, tolerance,

concealment of addictive behavior. In young athletes, compulsive social media checking is associated with the fear of missing out.

Participants. The participants were young athletes (N = 110) aged 16-21 years. The mean sample age was 18.49 years (M = 18.49; SD = 5.34). The study involved 46 female athletes (41.8%) and 64 male athletes (58.2%). The study was conducted with anonymous valid psychodiagnostic tools submitted to Google Forms. The information was posted on the websites of sports sections, colleges, and universities of Odesa and Kherson (Ukraine), which allowed to limit the age category of study participants. Participation was voluntary, anonymous, and no identifying information was collected. The sample size was determined by the number of young athletes who filled in the questionnaires correctly and completely.

Organization of Research. The research procedure consisted of filling in the questionnaire by the respondents. Each questionnaire was accompanied by instructions. The instructions list aspects of the study, such as confidentiality, purpose, and time. A specially designed questionnaire was used to collect data on the socio-demographic characteristics of young athletes, to study the psychological and individual spheres on the Warwick-Edinburgh psychological well-being scale (WEMWBS) ($\alpha = .84$) (Tennant et al., 2007); questionnaire on the severity of loneliness ($\alpha = .76$) (Korchagina, 2008); FPI-B ($\alpha = .85$) (Fahrenberg et al., 2010). The questionnaires consisted of multiple-choice questions, rating scales (Likert scale), and closed-ended questions. In addition, scales such as “Increased online communication”, “Behavior change”, “Quarantine feelings”, “Nature of thoughts in communication” were used to assess the condition of young athletes due to forced self-isolation during COVID-19. language with isolation”, “Frequency of fear associated with coronavirus”, “Frequency of using social networks to distract”, “Sleep changes”.

Measures. The 14-position Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) was used to more closely assess the mental well-being of young athletes. Participants appreciated statements describing their experiences over the past two weeks. The questionnaire used a scale from 1 (never) to 5 (all the time). During the quarantine, young athletes demonstrated a high level of psychological well-being: M = 46.95; SD = 10.98.

The study assessed the loneliness of young athletes due to the use of social media, using the questionnaire S. Korchagina (2008). The severity and type of loneliness are determined. The questions were intended to determine the level of loneliness experienced by the subject at the moment.

To obtain data on physical activity’s parameters, to estimate the amount of time spent on social media, to study the emotions experienced by young athletes when using social media, a special author’s questionnaire was developed and implemented (Hudimova, 2021a; 2021b).

Procedure. Participants were invited to participate in the study using the information on educational sites. They received information that the study will be anonymous and will be conducted to study the impact of social media on the psychological state of their age group. All participants stated that they understood the risks and wanted to participate in the study. The test time was unlimited, but it was found that the average time was 30 minutes. The survey was conducted in a form convenient for the respondents (computer version).

The study was implemented in four stages: 1) division of the sample to measure the use of social media; 2) defining the boundaries of the study; 3) filling out a questionnaire to determine the severity of loneliness, the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), FPI-B; 4) statistical analysis was performed using IBM SPSS Statistics 23.0.0. The r-Pearson correlation coefficient and Student’s t-test were applied.

Results

To test the hypothesis that prolonged stay in social networks leads to psychological disorders, pairwise correlations of the studied components were identified in Table 1.

Table 1. Ranked correlations of time spent in social media with the studied indicators

Time spent on social media (related to)	r-Pearson	Level of significance
Difficulties in exiting social media	-.296**	$p \leq .01$
Escape from problems in social media	.235**	$p \leq .01$
Decreased physical activity	-.288**	$p \leq .01$
Conflict	.2981**	$p \leq .01$
Replacing other types of activities with social media	.287**	$p \leq .01$
Sleep disorders	.290**	$p \leq .01$
Loneliness	.395**	$p \leq .01$
Depression	-.207**	$p \leq .01$

Note: ** – statistical significance of $p \leq .01$; * – statistical significance of $p \leq .05$.

The results of the involvement of young athletes in social media are presented. Differences between groups of subjects according to Student's t-test were established (Table 2).

Table 2. Statistical indicators of the results of young athletes' involvement in social media (N = 110)

Indicator	Group	M	SD	t-criteria
Age	1	18.48	6.50	1.5
	2	17.62	2.55	
Decreased physical activity	1	6.50	2.44	3.6
	2	7.59	2.28	
Psychological well-being	1	49.08	8.37	1.6
	2	46.89	10.95	
Time spent on social media	1	2.74	1.15	1.9
	2	3.57	.90	
Escape from problems in social media	1	2.60	.99	3.7
	2	5.90	2.83	
Sleep disorders	1	2.17	1.46	1.5
	2	2.41	1.13	
Loneliness	1	7.61	2.83	.8
	2	7.96	3.32	

Note: Group 1 – non-addicted to social media – time spent up to 2-3 hours; Group 2 – addicted to social media – time spent more than 6 hours a day.

The presented results give reasons to state that with increasing age, young athletes become less involved in social media (Tabl. 2). As shown in Fig. I, the time of activity in social media has a significant impact on the level of young athletes' psychological well-being. The shorter the online sessions, the more favorable and healthy the young athletes' psychological state.

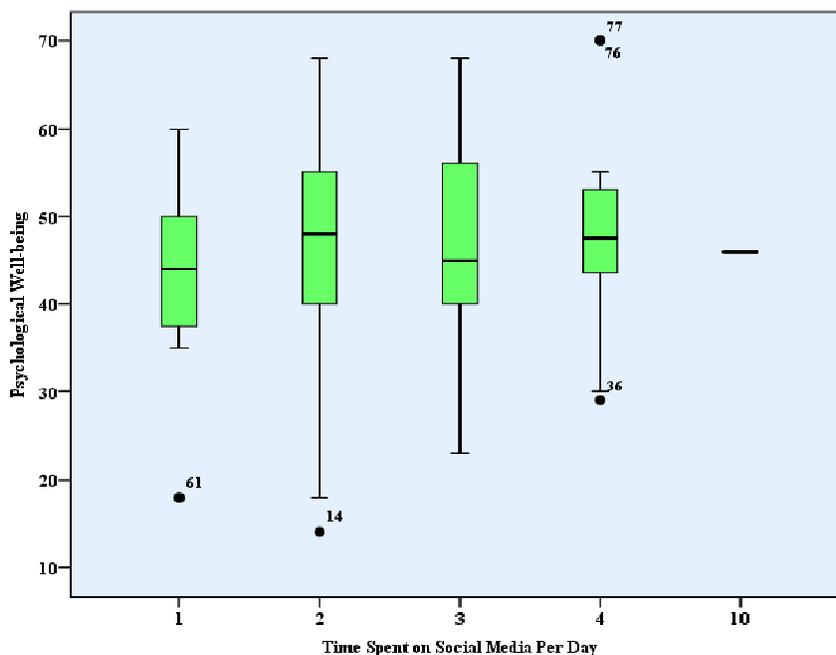
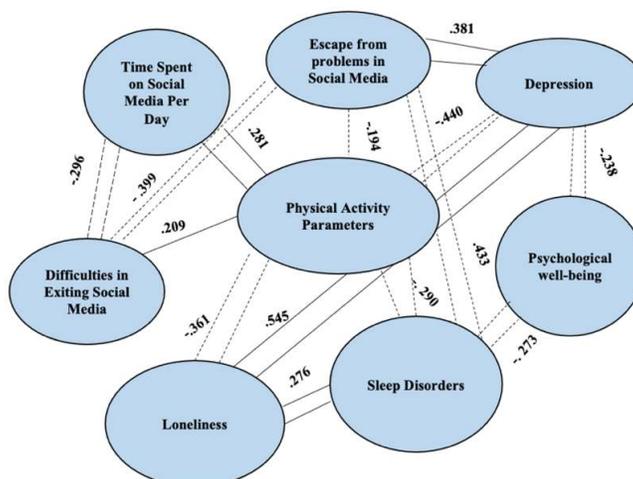


Figure I. The relation of time spent on social media with the psychological well-being of young athletes during a pandemic

One of the tasks was to establish how changes in physical activity parameters and what concomitant factors affect young athletes during a pandemic (Fig. II).



Note: _ positive correlation ($p \leq .05$), -- negative correlation ($p \leq .05$); = positive correlation ($p \leq .01$), == negative correlation ($p \leq .01$).

Figure II. Correlation galaxy of changes in the physical activity parameters of young athletes due to excessive use of social media

We state that excessive spending time on social media leads not only to a decrease in physical activity. This type of behavior leads to a violation of the young athletes' psychological state in general.

Discussion

The study identified several individual psychological characteristics of young athletes associated with virtual communication. Spending time on social media has both positive and negative consequences for athletes. The most important factor is the time that young athletes spend on the Internet. It was found that young athletes who have a low level of psychological well-being, delayed preparation for sleep, and increased levels of loneliness significantly reduced their physical activity and self-demand. They prefer long-term engagement in social media.

According to the data obtained, the average time spent on social media is more than four hours a day, which has a significant negative impact on the physical activity parameters of young athletes and health in general. Regarding psychological well-being, it should be noted that excessive involvement in the Internet (more than 4-6 hours a day) significantly reduces physical activity, affects the motivation of training activity and provokes cognitive-emotional arousal, accompanied by a change in sleep, escalation of social isolation, and impaired self-esteem. Young athletes try to find support and mutual understanding on the Internet from popular athletes and like-minded people, which should increase their mood and self-esteem.

Some studies have shown the negative impact of forced isolation during COVID-19 on physical activity parameters (Duncan et al., 2020; López-Bueno et al., 2020; Pieh et al., 2020). Behavioral changes during self-isolation associated with decreased physical activity parameters have been shown to lead to mental deterioration as COVID-19 progresses. Trying to get rid of negative thoughts and unwillingness to exercise, young athletes prefer to spend time on social media (view posts, videos, photos of friends), which leads to feelings of inferiority and the formation of manifestations of depression. At the same time, those young athletes who maintain a physical activity regime and combine indoor and outdoor sports spend 1-2 hours a day on social media and do not experience negative changes in psychological well-being. Thus, our study confirms the results of one study: that exercise can be a coping strategy to combat stress as the pandemic progresses and maintain a normal mental state (Shechter, 2020).

According to this study, the preference for viewing social media at night, before rest, often causes a delay (in rare cases, in the morning) sleep ($r_s = .290$; $p \leq .01$), which becomes more restless and shorter, and sometimes leads to insomnia. According to the study, young athletes aged 18-21 prefer to check social networks in the morning and afternoon, when there is free time, or distract from household chores. Younger athletes check social networking programs throughout the day. The most active period of use is nighttime. The young athletes said they had trouble falling asleep, so they used gadgets to prepare for sleep. However, such a behavioral pattern leads to the phenomenon of the "rabbit hole", thereby increasing the time spent on the Internet until the morning (Hudimova, 2021b). Involvement in social networks provokes emotional and cognitive arousal, which in turn leads to sleep disorders. Sleep disorders lead to reduced performance (Skein et al., 2011), impaired recovery (Skein et al., 2013), and increased risk of injury in athletes. Thus, mental health and sleep are the most important components that should be considered in the management, training, and rehabilitation of athletes (Kroshus et al., 2019; Reardon et al., 2019), so there should be a time limit on social networks.

It has been established that young athletes aged 18-21 prefer live communication and active recreation compared to scrolling on social media. Increasing your time online by finding new friends online or connecting with real acquaintances and friends can be a harbinger of development and addiction. Excessive use of social media, which leads to psychological experiences, depends not on one factor, but the totality: time spent online, the level of physical activity, and relationships with loved ones. There is a tendency in the form of attempts to escape from bad thoughts in social media, which harms the mental state. The mechanism of escape from bad thoughts and problems, avoiding communication with relatives and friends, and loneliness with online experience, developed over the years of using social media, is especially supported by forced self-isolation. Pathological involvement in social media exacerbates the feeling of separation from others, which has negative consequences for psychological well-being. The study shows that an unsatisfactory level of psychological well-being is associated with exacerbation of imbalance mechanisms of identification and alienation, bad mood, anxiety, immersion in social media to escape from problems and unpleasant thoughts, as well as avoiding new acquaintances or meetings with acquaintances.

According to the survey, young athletes enjoyed spending time on social media to distract themselves from anxious thoughts rather than training, watching a movie, reading a book, or sharing experiences with loved ones. Spending time on other things is accompanied by a desire to check gadgets, publish something or see friends' pages. Often, young athletes spend a lot of time on social media to take time off from homework, skip training, and, as a result, spend all day online. Due to such unhygienic distribution of time, the normal regime of rest and work is disturbed (Hudimova, 2021b), which in turn harms the motivational sphere of sports and reduces competitiveness. The competitiveness of athletes is an integral indicator of their development (Popovych et al., 2021c). The survey showed that with the right daily routine, proper distribution of physical activity, and willpower, young people can reduce spending a lot of time in the virtual world, feel psychologically safe, and achieve high results. Important in the psychological safety of young athletes are a highly social activity, ability, and readiness for self-development, developing self-regulation, setting on the conscious construction of their lives; the ability to see your life in a concrete perspective; self-confidence and predicting success (Popovych et al., 2020a; 2021d).

Excessive involvement in social media and reduced physical activity lead to an exacerbation of loneliness ($M = 7.96$; $SD = 3.32$). The use of social media simultaneously mimics the feeling of involvement and provokes an increase in the feeling of isolation from the environment, which is especially evident in the period of forced self-isolation. This explains the reason for the acute experience of actual loneliness by young athletes.

Our study confirms other results that show that excessive use of social media significantly reduces the physical activity of young athletes, associated with increased depression, anxiety, and stress symptoms. These findings underscore the critical need to consider the impact of lockdown on athletes and to develop strategies to support optimal sleep, mental health, and performance in this category (Facer-Childs et al., 2021).

Conclusions

The causal link between excessive use of social media significantly reduces physical activity, provokes an exacerbation of feelings of loneliness and isolation, disrupts a healthy sleep rhythm and psychological well-being of young athletes ($r_s = .235$; $p \leq .01$).

The decreased physical activity provokes an exacerbation of loneliness, training regimen, and recovery. The "active user mask" encourages manifestations of depression, displacement, and problems, which leads to a decrease in the psychological well-being of young athletes ($r_s = .395$; $p \leq .01$).

Young athletes experience stress due to the coronavirus situation, which increases the time on social media to five or more hours a day to distract from negative obsessions, which reduces physical activity.

We state that the lack of hygienic and controlled behavior of time in social media provokes an exacerbation of anxiety, apathy, depressed mood, and a sense of closeness from society. The constant feeling of emotional stress leads to a decrease in the parameters of physical activity, motivation to exercise. This pattern further encourages a decrease in mood and the initial manifestations of depression. The desire of young athletes to survive forced isolation without negative experiences leads to excessive involvement in social media.

The hypothesis was confirmed and stated that the prolonged stay of young athletes in social media significantly reduces their physical activity and leads to psychological disorders, including sleep disorders, anxiety, and depression.

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