

Changing Teaching Methods under the COVID-19 Pandemic for Generation Z Physical Activities: Gender Differences

KALVIS CIEKURS¹, IVARS KRAVALIS¹, ANASTASIJA ROPA², INESE MAVLUTOVA³, JANIS HERMANIS³

¹Department of Skiing, Shooting, Orienteering, Rowing, Tourism and Recreation,
Latvian Academy of Sport Education,
Brivibas Street 333, Riga, LV1006,
LATVIA

²Department of Sport Management and Communication Science, Latvian Academy of Sport Education,
Brivibas Street 333, Riga, LV1006,
LATVIA

³Department of Economics and Finance, BA School of Business and Finance,
Kr. Valdemara 161, LV-1013, Riga,
LATVIA

Abstract: - The beginning of Covid 19 and the establishment of restrictions to curb the development of the pandemic on the territory of Latvia have led to the changing of the lives of the youth, including their physical exercise and study habits and practices. This article investigates the role of physical activities training for young males and females and their choice of teaching platforms by different genders. The study methodology encompasses critical examination of previous research conducted on Generation Z, gender differences and the significance of physical exercise and sports in for the youth combined with statistical evaluation and assessment of primary survey data. Compare with previous articles this article is constituted by its identification of the way in which gender differences influenced changes in physical activity and in which attitudes towards healthy lifestyles and physical activity changed before and during the COVID-19 pandemic. The authors of the study observed substantial differences between the answers of males and females about their health before and during the pandemic, with Independent Samples t-Test ($p=0,03$) and ($p=0,025$), which is likewise confirmed by the answers about the presence of depressive moods, which are more pronounced in females ($p=0,004$). In assessing the difference between males and females in the area of physical activities, differences were observed both before and during the pandemic ($p=0,001$) and ($p=0,005$), with females doing less physical activities than males both before and during the pandemic. To direct their physical activities, females are more likely to engage an instructor or attend training sessions via special platforms than males ($p=0,001$). In examining the most popular applications and platforms for teaching physical activities, no substantial difference was observed in their use between the two genders.

Key-Words: Generation Z, genders, teaching methods, physical activity, Latvia, COVID-19 pandemic

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1 Introduction

The generation currently studying in secondary and higher schools is commonly termed Generation Z and also described as the “digital natives” or the “net” generation. An important event informing the evolution of Generation Z is the rise of digital technologies, considered widely as the main characteristic of the generation. Generation-Z representatives are informed by their interest in a healthy and active lifestyle and the choice of active leisure activities, as well as their predilection for digital study methods [1].

The previous research of the authors considered the choice of teaching methods by Generation Z representatives in doing physical activities in the context of Covid-19, but it did not look into the gender division within Generation Z [1]. The current research builds on the previous studies, but explores gender differences in the choice of physical activities.

The study examines the place of exercise and sports in a healthy and sustainable lifestyle combined with the choice of training methods through digital platforms by women and men of

Generation Z. We also examine the correlation between reported well-being and physical exercise.

As part of active leisure and recreation and to facilitate health and well-being Generation Z youths are recommended to spend time outdoors, in natural settings, and engaged in sport and physical activities especially during Covid-19 pandemics. An essential factor in adopting to Covid 19 and sourcing sustainable means of offering virtual instruction to Generation Z is ensuring the accessibility of IT provisions, including tablets or mobile phones, computers, powerful software and the Internet to enable virtual education for sports and physical exercise. These factors are particularly essential for Generation Z in Latvia, because not all students can afford studying distantly under this model.

Bearing in mind the restrictions necessary to limit the spread of Covid-19, provisions for sport education and physical exercise need to take into account gender differences and the use of various platforms by representatives of both Generation Z genders to facilitate mental and physical health and well-being. Nonetheless, it is essential to adopt teaching methods to respective platforms while ensuring sports exercise enjoyed by Generation Z through virtual applications and to bear in mind possible gender differences.

The limitations of the research are related to the age of the respondents, mostly students; geography – mostly Riga region, and comprehensiveness covers only Latvia; as well as the research period is from 2018 to 2021.

2 Literature Review

2.1 Description of Generation Z and its Fundamental Values

To describe Generation Z, we often use the term “digital natives,” meaning a differences between them and the generation of “digital immigrants” [2]. We cannot mark the change of different generations with precision, but Generation Z or Gen Z scholars consider that it consists of people born between the late 1990s and 2010 [3, 4]. As a result, some Generation Z individuals will be still receiving secondary education, other will be receiving tertiary education, and still others would be already in employment. Thus, we have to question internal cohesion within this group and whether it shares the same set of opinions, views and beliefs, especially bearing in mind the gender differences [6].

Cheicca and Shellenbarger underline the fact that Generation Z is a unique and truly digital native generation, which is now entering college and the workplace [7]. In difference from the previous “digital immigrants,” representatives of this generation had access to the web through various gadgets from a very early age [8]. Hurrelmann and Albrecht highlight that this generation consists of individuals who are experts in the use of digital technologies, so that the digital world is a norm rather than a curiosity for them [9]. Moreover, in terms of gender difference, they find that Generation Z men may be more susceptible to becoming addicted to the digital technologies, though they can break free from it eventually [9].

Looking at the value systems of Generation Z, we see that this generation is motivated by tolerance, trust and new challenges, and their basic beliefs encompass freedom, personal fulfillment, individual identity and happiness, so that this generation is occasionally represented as somewhat egoistic. Technological advances, climate change, the movements in support of justice and other factors are also cited as shaping this generation [7, 8].

Still, researchers cannot agree if being born into the technological world leads to a fundamental difference between Generation Z and Generation Y (the Millennials). Nowadays, all generations have access to and presence on social media, and their level of expertise depends not only on age, but also on other factors, including economic, political and ethnic considerations and contexts [10, 11]. Generation Z representatives are very heterogeneous not only globally, but also within Europe, and even within individual countries, as we can see from various scientific studies [12, 13, 14]. No study to date has been devoted to gender differences within Generation Z in Latvia, though country-wide Generation Z studies have been conducted elsewhere in Europe, for instance, in Germany [9], and the use of teaching methods for Generations Z has been studied by Kravalis et al. [15].

Meanwhile, scholars and scientists agree concerning specific features peculiar to Generation Z, certain characteristics are repeatedly quoted as associated with Generation Z, including their presence in both the physical and the virtual realities and their ease of transition between the two [5]. They are also good at sourcing and crowd-sourcing, as well as broadcasting data, though critical analysis of data may be more problematic [16], and they are efficient multitaskers [2, 7] with a shorter attention span [7, 8]. Moreover, they want

to see technologies and gadgets integrated into their learning experience. As Demaray et al. stresses, they see mobile phones and tablets as learning tools [11].

Studying Generation Z's perspective on health shows that they concentrate on the problems of emotional well-being, while not disregarding physical health entirely. Because they spend considerable time in the online world, they seek support there during the periods of emotional and psychological hardship, which may have adverse effect on their physical well-being [16]. This is especially important in the context of Covid-19 pandemic aftermath, when in-person study and communication options have been inaccessible or at least limited at least during some part of the pandemic [17, 18, 19].

Decreased communication due to Covid-19 restrictions imposed in various countries of the world and the significance of socialization to ensure a healthy lifestyle was studied by many scientists [20, 21, 22, 23]. There is no scholarly consensus on whether online communication, including communication on social media, is a valid substitute for real-world interaction and education for different generations, including the "digital natives." Demaray found that students in German schools see increased use of online content as desirable, but there is no evidence that online learning is viewed as an adequate substitute for in-person education [11]. Meanwhile, Csobanka and Dolat postulate that on-site interaction are as essential for Generation Z learners as online communication and study [24]. Interestingly, in terms of approaching learning experience and strategies Stahl believes that Generation Z has an unusual perspective on such eventualities of learning as failure, which they see as foreboding growth potential. Indeed, one study shows that 80% of Generation Z students view failure as an important part of the learning curve and as a motivation to improve [25, 7].

At the same time Generation Z is heterogeneous in social profiling and education opportunities: some representatives are school students and minors, while others are adult. Some are students, while others are employees. It is interesting to note that Generation Zs are more life and family than career oriented as compared to the Millennials or Generation Y [5]. Thus, 38% of Generation Z value work-life balance [1]. Regan finds that for Generation Z, it is important to get time off technology and enjoy active recreation in natural settings, which may be particularly topical in times of the pandemic crises [1]. It was also found that

Generation Z have different response to crisis, in this case, the pandemic and the measures imposed to curb it, with male and female representatives of Generation Z reacting to stress in different ways, which may have adverse effects on their physical and emotional well-being [25, 26].

Students of both genders may be particularly vulnerable to stress in times of the pandemic. Mushquash and Grassia found in their study of students in terms of depressive symptoms and stress that secondary students and in particular female students reported more symptoms of anxiety and depression, using coping strategies more often [27]. They suffered from Schoolwork Stress, associated with anxiety and depressive symptoms for all students, and there were additional associations with various stress factors. Students used various strategies to cope with stress, with lower levels of social isolation and increased engagement in social activities, including sports and physical activities, being associated with less stress [27]. Similarly, Çobanoğlu et al. states that outdoor activities offer opportunities for physical, emotional and mental development [28]. Hence, Generation Z individuals of both genders are advised to be active, to spend times outdoors and to interact in real life settings more often.

Studies conducted worldwide show positive correlation between physical activity and mental and emotional health and reported well-being in all gender groups during Covid-19 pandemics. Vogel et al. state that physical activity (PA) lowers emotional stress and facilitates physical and psychological health [29].

At the same time, social isolation and loneliness were shown to be associated with decreased physical activity levels and increased inactiveness for both genders [21]. As a result, introducing physical exercise into the education of male and female of Generation Z representatives can facilitate their physical and emotional health. Albeit physical education may be more complicated to practice in online settings, it has to be continued to ensure the activity of male and female learners both during and beyond classes [30].

2.2 Teaching Methods for Sports and Exercise Generation Z education

The twenty-first century education theory recognizes various teaching methods to employ in offline and online educational environments. Even before Covid-19, ideas about "school" and "traditional campus" were questioned and redeveloped to meet the needs of learners

Generation Z [31]. Education moved fully or partially online since the beginning of Covid-19, but this has created problems with online interface and lack of resources and methods. Not all teaching methods can be successful online because of the lack of physical devices and software [32]. Covid-19 and online education influenced students' results and their engagement in studies [33]. Still, if changes are implemented to the content and methods, all subjects can be adopted to the online environment. Generation Z is prepared to master the required content online, and students may consider this change to be good, because the material, including recorded lectures, can be accessed later and can be used at convenient times [34].

The teaching methods that can be used online and offline include lectures, seminars, conferences, cooperative learning, webinars, quizzes, discussions, brainstorming, group work, case study, project and research study [15].

In difference from the previous generations, Generation Z, the "digital natives", are responsive to the employment of visual materials [7]. Nonetheless, teachers need to adopt their methods and strategies to meet the needs of Generation Z: for instance, instant gratification means that students of both genders respond better to learning tools involving instant access to data and quick feedback, such as online quizzes and surveys. They also have a shorter attention span, so they are less likely to concentrate on studying and analyzing long texts in depth. Therefore, educators should give Generation Z students strict guidelines and criteria for sourcing information. Moreover, Seemiller and Grace teachers working with Generation Z need to help students make sense of the overflowing information [18].

Another characteristic of Generation Z is their predilection for interactive learning and decision making on where, how and what to study, which can be facilitated by online learning. Seemiller and Grace highlight that Generation Z students prefer a facilitative rather than an authoritative approach, where they can become related meaningfully to the material, peers, and their professors [18]. Cilliers notes that Generation Z students are distinguished by demand for visual forms of learning, instant information, and replacing "communication" with "interaction" [6].

Furthermore, representatives of this generation are interested in "applied learning," because they want to see how applicable the knowledge they acquire is [8]. They also like problem solving, so that such methods as case studies and problem-

focused discussions would be applicable for teaching this generation.

Given the shorter period of attention characteristic of Generation Z students and the predilection of this generation for immediate feedback, the educational perspective of edutainment is appropriate teaching students of this generation. "Edutainment" is an English term made by combining the words "education" and "entertainment". Edutainment is educational entertainment or entertaining education, socializing the audience by embedding lessons in any known way of entertainment: videos, video games, clips, films, TV trailers and shows, multimedia software and websites, to mention just a few [2, 19]. For teaching sports and exercise online, teachers can use various applications and platforms, including Strava: Run & Ride, My Fitness Pal, Runkeeper, and others [15].

2.3 Genders and Differences in Teaching and Usage of Tools

Gender differences are usually defined as biological differences between the sexes [35], even though they are just as often conditioned by the culture, environment, education, social media, etc., as by the biological characteristics [36, 37]. However, this study focuses on differences in gender behavior related to a healthy lifestyle, physical activity and sports activities, as well as the desire to spend financial resources on health promotion.

Discussions about how and why men and women differ and what this means for their role in society have not been resolved for decades. A study by the Pew Research Center reveals that most Americans say that men and women are fundamentally different in how they express their feelings, their physical abilities, their personal interests [38]

Weisberg et al. [39] found that gender differences in Extraversion, Openness, and Consciousness differ at the aspect level. The findings of Costa et al. clarify the nature of personality gender differences and emphasize the usefulness of measuring personality at the aspect level [40]. They believe clearly the average personalities of men and women are systematically different, but differences they found are small to moderate.

Boyle et al. and Peltiera et al. found that female students were more likely to engage in relationship maintenance behaviors on social media with close friends than the men [41, 42]. Moreover, females are more inclined to use alcohol in such conditions

and social media content more influences drinking among female [43]. It was found that females use such social platforms as Instagram, Facebook, Snapchat and Twitter more often; they mostly describe each of these social media platforms as social networking sites. Additionally, they engaged with content curators and other uses on each of the sites listed.

Galasso et al. point to the strong gender gap in people's belief that COVID-19 is a very serious health risk, as well as their acceptance of and adherence to restrictive public health regulations [44]. The results of their research suggest the importance of behavioral factors.

Some new studies suggest that women of the digital age are not good at ICT in spite of long-term ICT instruction and similar subjects in tertiary education [45]. The employment of ICT entails instructing women in professional use of technologies against the background of heightened demand for ICT services is essential [46, 47].

To date almost no studies on the gender difference between Generation Z females and males in Latvia has been conducted, as a previous study of Generation Z in Latvia did not focus on gender difference [15].

3 Research Methodology and Results

3.1 Research Methods

In the current study, a questionnaire was distributed among Generation Z representatives of both genders to determine their attitudes towards mental health, sport activities, the expenditure of finances for improving health and preventing disease and the changes that took place during the pandemic, and also the use of digital tools and applications in combination with modern teaching methods for the instruction in sports and exercise. The survey took place from the beginning of March 2021 until the end of May 2021. In all, 441 respondents living in Latvia gave their anonymous answers, most of them students studying social and exact sciences: most respondents were BA and MA students from the different universities. The respondents were divided into the following age gender groups: from 20 to 23 (70,7 % of the participants) and from 24 to 26 (29,3 % of the participants).

The questionnaire targeted Generation Z representatives who employ modern tools and methods for study. The authors used the Likert scale for descriptive statistics analysis, with the respondents expressing their view on a statement by agreeing or disagreeing with it. The questions

using Likert scale asked the respondents to assess their health and the methods of instruction by allocating each statement on their state of health, the methods of instruction, etc., a value from 1 to 7 to assess the level where "1" shows "ineffective" and "7" indicates an efficient method of teaching or Internet application, platform or website.

The authors carried out hypothesis test to measure variation in responses on the attitude towards physical exercise and evolution in the period of Covid 19, and the below hypotheses have been proposed:

H-1 The situation during the pandemic caused more depressive mood to Generation Z women than to men, influencing their health and lifestyle.

H-2 During the pandemic, females experienced substantial decrease in their physical activities, but they also employed different virtual platforms for physical activities than males.

H-3 Generation Z women choose the services of a coach or instructor for physical activities more often and spend more money on physical activities.

The Chi Square statistic is commonly employed for testing correlation between categorical variables. The Mann-Whitney U test is used to compare differences between two independent groups when the dependent variable is either ordinal or continuous, but not normally distributed. Standard deviation is a measure of dispersal in statistics. The standard error of a statistic is the approximate standard deviation of a statistical sample population.

In statistics the confidence interval describes the probability that a population parameter will fall between two sets of values for a particular percentage of instances.

All tests and subsequent computations were executed with JASP Team software (2021) Version 0.15. and the p-value provided was verified:

If $p\text{-value} > 0.05$, H-null is confirmed,

If $p\text{-value} < 0.05$, H-alternative is confirmed.

In determining the data obtained on age division into groups and gender, it was observed that females dominated among the respondents, constituting 75,3% of the respondents, with males constituting only 24,7% (see Table 1). It shows that only a quarter of the respondents were male; this gender ration corresponds to the overall gender division among university students, where females are dominant. The respondents come primarily from the capital of Latvia Riga (41,7%), and the least number of respondents come from the regions

of Latgale and Semigallia, respectively 5,5 % and 7,5 %.

Table 1. Gender, Age and Regional Division of Respondents

Variables	n	%
Gender		
Females	332	75,3
Males	109	24,7
Age group		
20 – 23	312	70,7
24 – 26	129	29,3
Regions		
Kurzeme	50	11,3
Latgale	24	5,5
Vicinity of Riga	61	13,8
Riga	184	41,7
Vidzeme	89	20,2
Semigallia	33	7,5

3.2 Research Results

The findings of the study show that the habits of the Generation Z changed and their reduced physical activities have influenced their self-assessed health. Essentially, women point to their depressed condition, which is likely to be also reflected in their health self-assessment as compared as compared to men.

The results of the survey confirm similarity in the female and male smoking practices during the pandemic, without substantial differences, with Independent Samples t-Test ($p=0,629$). In turn, the practices of using alcohol also did not indicate essential differences, also showing similarities in these habits among males and females during the pandemic, with Independent Samples t-Test ($p=0,609$). In determining the difference between the groups with Mann-Whitney U test (see Table 2) it was found that there was no substantial differences.

Table 2. The survey on smoking and alcohol use during the pandemic

Variables	n	Mean	SD	SE
Smoking - Female	332	2.006	1.614	0.089
Smoking - Male	109	1.780	1.294	0.124
Alcohol - Female	332	3.006	1.328	0.073
Alcohol - Male	109	2.936	1.435	0.137

Male				
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Source: computed using JASP Team (2021). JASP (Version 0.15) [Computer software].

The respondents also evaluated their health both before and during the pandemic, with Independent Samples t-Test showing substantial difference in results ($p=0,03$). The male respondents believed that their health condition is better than females', as confirmed by the data obtained by Mann-Whitney U test (see Table 3). Health condition worsened during the pandemic among both women and men, with the difference between the two being confirmed by Independent Samples t-Test ($p=0,025$). Comparing physical activities among males and females before the beginning of the pandemic with Independent Samples t-Test ($p=0.001$), and during the pandemic ($p=0.005$), this indicates substantial differences. The comparison of physical activities between males and males shows a tendency for males to be more active and to do sport more often as testified by Mann-Whitney U test, indicating that H2 was verified (Table 3). The survey results confirm that females choose to use the services of a sport coach more often than males, as confirmed by substantial difference in the results demonstrated by Independent Samples t-Test ($p=0,001$). The results show essential differences also in the area of instructors selected, with females choosing them more frequently, as shown by Independent Samples t-Test ($p=0,001$), thus confirming H3 hypothesis. Comparing the financial investments males and females made in sport activities, no substantial difference was found, as shown by Independent Samples t-Test ($p=0,597$).

The study also looked into the frequency of depressive moods occurring in the last twelve months, a factor which demonstrates substantial differences between males and females, with depressive moods being more characteristic of females, as shown by Independent Samples t-Test ($p=0,004$). It was also verified whether physical activities improve the mood, but this was not confirmed by Independent Samples t-Test ($p=0,331$). This shows that physical activities do not have a considerable effect on depressive mood among the respondents. This substantiates H1 about the occurrence of depressive mood during the pandemic, leaving important consequences for the self-evaluation of health during the survey.

Table 3. Comparison in health and sports activities before and during the pandemic

Variables	n	Mean	SD	SE	p
Health before the pandemic – males	109	5.67	1.32	0.126	0.03
Health before the pandemic – females	332	5.446	1.15	0.063	
Health during the pandemic – males	109	4.936	1.547	0.148	0.025
Health during the pandemic – females	332	4.557	1.491	0.082	
Comparison of physical activities by males and females prior to the Covid 19 pandemic – males	109	5.284	1.634	0.156	0,001
females	332	4.714	1.649	0.09	
Comparison of activities by males and females in the course of Covid 19 pandemic – males	109	4.514	1.73	1.66	0,005
females	332	3.955	1.68	0.092	
S Comparison of activities by males and females in their choice of instructor - males	109	2.844	1.651	0.158	0,001
females	332	3.991	1.857	0.102	
Comparison of activities by males and females in their usage of instructor services – males	109	1.532	1.259	0.121	0,001
females	332	2.102	1.702	0.093	
Comparison of activities by males and females in their use of finances - males	109	3.248	1.467	0.14	0.597
females	332	3.157	1.525	0.084	
Comparison of physical activities by males and females in reported depressive mood during the time of the pandemic - males	109	4.257	1.797	0.172	0.004
females	332	4.825	1.696	0.093	
Comparison of activities by males and females and the impact of physical activities on the improvement of their mood during the pandemic - males	109	5.982	1.367	0.131	0.331
females	332	5.88	1.316	0.072	

Source: computed using JASP Team (2021). JASP (Version 0.15) [Computer software].

The results of the survey provided insight into the use of applications for physical activities by Generation Z representatives; these applications enabled young people to continue various sports activities during the pandemic. In determining the mathematical mean, it can be observed that the most frequently used applications are Nike training Club, Facebook (app), My Fitness Pal and Strava: Run & Ride Training. It is noteworthy that the first three applications were more often used by females, but there were no statistically significant differences that could be determined by using Chi-Squared Test, where Nike Training Club (p=0,323), Facebook (app) (p=0,408), My Fitness Pal

(p=0,067) and Strava: Run & Ride Training (p=0,062), which were used wider by male respondents, so that H2 was not substantiated (Figure 1). In considering other popular applications used by Generation Z, there were substantial differences in the use of Runkeeper (p=0,003), Myzone (p=0,02) and Freeletics – Personal Trainer (p=0,009). There were no essential differences discovered in the use of other applications. Overall, there were no substantial differences in the use of applications by males and by females (p=0,094).

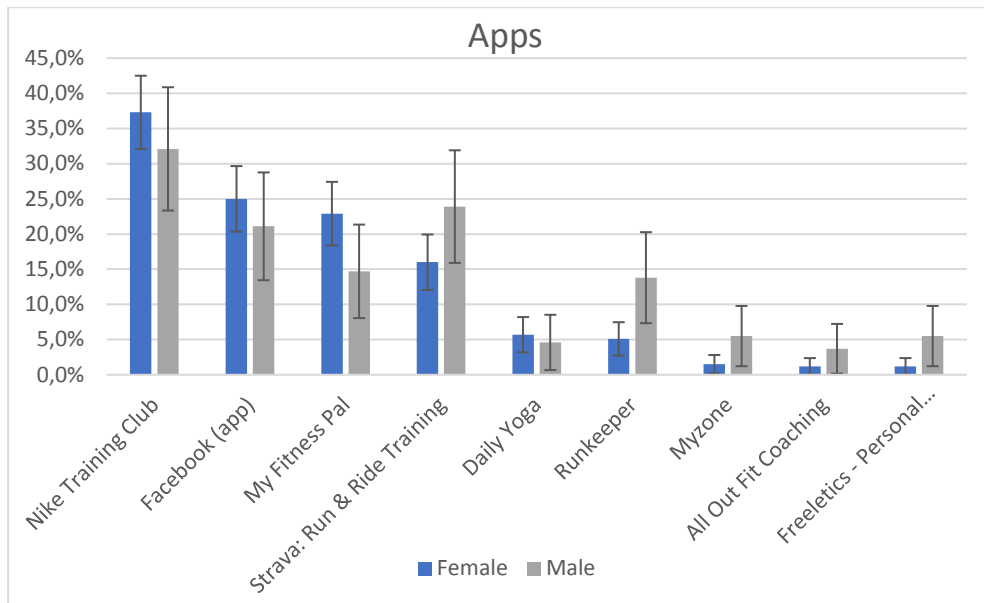


Fig. 1.: Ranking of sport activities Apps for Generation Z males, females

In determining the platforms used most frequently during the pandemic, the most popular among Generation Z was YouTube, with no essential difference between male and female

respondents, with Chi-Square Test ($p=0,096$), but the mathematically highest results were observed in females (Figure 2).

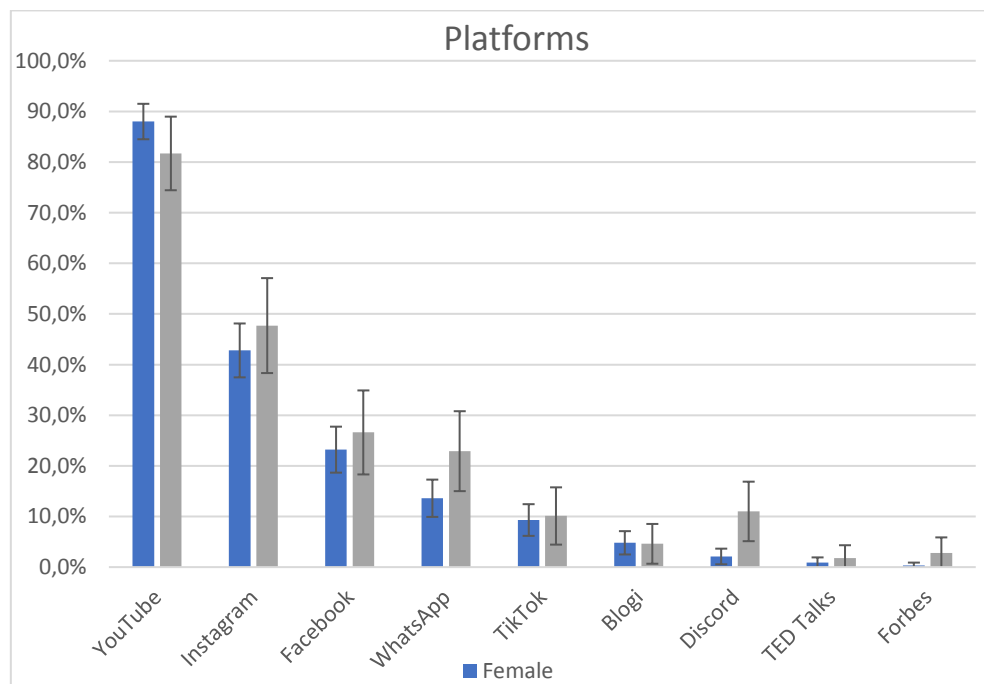


Fig. 2: Ranking of sport activities platforms for Generation Z males and females

In turn, there were substantial differences in the use of the following platforms: WhatsApp ($p=0,02$), Discord ($p=0,001$), Forbes ($p=0,019$). Thus, H2 was not substantiated by the results of the survey. Other platforms considered were, in the order of popularity: Instagram (the second most popular platform), Facebook (the third most popular platform), TikTok (the fifth most popular

platform), various blogs (the sixth most popular resource), and TED Talks (the eighth and penultimate platform in the list of popular platforms). The gender difference in the ranking of the latter platforms was insignificant.

3.3 Discussion

Studies conducted in various countries in the whole world in general and European countries in particular raise the question of internal unity among Generation Z [3]. One aspect in which Generation Z representatives show variety and lack of internal coherence as a group, and which would also benefit from further study is gender differences. It has been found that there are significant differences in the profile of Generation Z in different parts of the world, in different European countries or even in one small country such as Latvia [10, 13]. Our survey results show there are significant differences between different age subgroups, genders and living conditions in their sport activity, smoking and drinking habits, and the presence of depressive mood.

The authors agree with Vogel et al. that physical activity (PA) lowers emotional stress and facilitates physical and psychological health [29] and De Matos et al. that social isolation and loneliness were shown to be associated with decreased physical activity levels and increased inactiveness for both genders [21], but the study shows results that are similar to as those reported by Mushquash and Grassia, namely that secondary students and in particular female students reported more symptoms of anxiety and depression [27].

Peyer et al. state that special measures, including psychological and medical intervention, may be necessary for females and those with low levels of physical activity [26]. The authors of this study agree with the above scientists and recommend paying particular attention to gender differences in choosing suitable physical activities for male and female Generation Z representatives to facilitate their well-being and healthy lifestyle and prevent disease.

In examining preferred teaching methods, the Latvian representatives of Generation Z targeted by this study expressed a predilection for practical study methods with direct implications or connection to real life. Thus, such methods as case studies and problem-focused discussions were shown as being viewed as particularly appropriate for this group [8, 16]. As our survey showed, the most popular methods among the respondents of both genders are group work, seminars, conferences, discussions, webinars and case studies.

Mavlutova et al. considers that teaching should use sophisticated tools such as automated interactive digital software [48], together with the results of our survey, which emphasize the importance of developing teaching practices and

tools for sport, taking into account the opportunities offered by digitalization and artificial intelligence.

4 Conclusions

Worldwide studies in general and research conducted in European countries particularly foreground the problem of internal cohesion within Generation Z from the angle of gender. Studies suggest that there are notable divergences in the two Generation Z genders' attitude across world, in various parts of Europe and even in Latvia.

Overall, this study confirms that the pandemic left a profound adverse effect on the active lifestyle, health and sporting practice among both females and males of Generation Z in Latvia, with some pronounced gender difference observable. Thus, our survey results show there are substantial differences between the two genders in their physical activity, drinking and smoking habits, and the presence of depressive mood.

The study findings include the fact that there exist substantial differences in comparing the males and females who participated in the survey. The results of the survey show fundamental variation between females and males both before and after Covid-19 in terms their healthy and active lifestyles. The data indicates that both before and during the pandemic females have encountered more health problems than males, the latter estimating to have better health. Likewise, there was significant differences in physical activities exercised by females and males, showing that both before and during the pandemic females practiced physical activities rarer than males did. At the same time, albeit females engage in physical exercise rarer than males, they are more likely to seek the assistance of sport specialists, such as coaches and instructors, who would contribute the skills and knowledge necessary to master the sport. It is likewise noteworthy that females are more likely to use the services of sport specialists than males.

Another fundamental difference that emerged in the course of the study is the greater presence of depressive mood among females than among males, something that has been signaled by scholars studying the effects of Covid-19 elsewhere in the world. Additionally, in considering unhealthy habits, such as drinking and smoking, no substantial variation among females and males was discovered either before or during the pandemic. Similarly, no noticeable difference was found in the

area of financial investment in physical activities by the representatives of the two genders.

In determining the most popular applications and platforms for learning sports and practicing physical activities, the following applications were the top choice among the Latvian Generation Z representatives of both genders: Nike Training Club (p=0,323), Facebook (app) (p=0,408). However, the most popular platform was YouTube, which was somewhat more favored by female, as observed through the comparison of mathematic results, though the statistical difference was insignificant. Similar findings were made in a related study where the number of respondents was 697, where marked differences were observed in physical exercise and self-assessment of health, the greater presence of depressive mood among females and female respondents' greater acknowledgment use of alcohol [15].

Our study focused on the gender difference among Generation Z in their attitude and practice of physical activities during Covid-19 pandemic. The perspective of the future work is to determine changes in the attitudes of Generation Z and other generations to physical exercise after the lifting of Covid-19 related restrictions, both in Latvia and globally.

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