



STUDENTS WITH GOOD EXERCISE HABITS HAVE BETTER STUDY HABITS AND ALSO SPEND MORE TIME WITH THEIR FAMILIES

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Abstract:

The present paper is a quantitative, descriptive, synchronic, and comparative study, which investigated the exercise habits, the positive impacts of doing regular exercise, sports and other sports-related physical activities on senior high school and college students' study habits and the time they spent with their families. For this purpose, a self-designed survey questionnaire consisting of 3 multiple-choice questions was distributed among 324 senior high school and college students from three different schools in New Taipei City, Taiwan. **Results:** First, in general in Taiwan, 29% of senior high school and college students did exercise and sports-related physical activities 3 times or above per week. The percentage, however, came down to 24% if those 21 student-athletes were excluded from the data analysis. Second, in general, 25% of students studied 3 times or more per week after school. Third, the physically active students had better study habits compared to the physically inactive students. Among the physically active students, 40% of them studied 3 times or more per week, compared to only 8% among the physically inactive students. Fourth, it was also found that physically active students spent more time with their families compared to physically inactive students. Among the physically active students, 45% of them spent 5 hours or more with their families per day, compared to only 16% among the physically inactive students. **Discussion:** The research findings clearly show that students who have good habits of doing regular exercise, sports and sports-related physical activities have better study habits, better academic performance, and spend more time with their families than those students who are not involved in such physical activities.

Keywords: physically active students, physically inactive students, better study habits, spend more time with their families

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1. Introduction

In the last sixty-five years or so, many researchers, scholars and experts in the field of education, sports and overall mental and physical development have investigated, proved, and published many research papers, articles, theses and dissertations on the positive feedbacks of doing regular exercise, sports, and sports related physical activities on students' physical health, mental health, academic achievements as well as on social skills. In spite of all these benefits offered by these physical activities, the number of students involved in sports and physical activities is decreasing significantly day by day. One study published in *The Lancet Child & Adolescent Health* journal, produced by researchers from the World Health Organization, finds that more than 80% of school-going adolescents globally did not meet current recommendations of at least one hour of physical activity per day (The Lancet Child & Adolescent Health, 2021).

Thus, the main purpose of the present study was to investigate the exercise and sports habits, study habits, and habits of spending with their respective families among senior high school and college students in Taiwan.

To paraphrase Gorton (2010), since the publication of James Coleman's classic *The Adolescent Society* (1961), a large number of researchers like Eidsmoe (1961), Edwards (1967), Rehberg & Schaefer (1968), Schafer & Armer (1968), Spady (1970), Hanks & Eckland (1976), Otto & Duane (1977), Landers & Landers (1978) have been inspired and many further studies have been done and published on the myriad benefits of doing regular exercise, sports, and sports related physical activities on the physical health, mental health, and academic achievement among student communities.

In their study on literature review, Tomporowski *et al.* (2008) stated that systematic exercise programs may actually enhance the development of specific types of mental processing known to be important for meeting challenges encountered both in academics and throughout the lifespan.

Mohammad *et al.* (2012) found that there is a link between participation in sports and academic performance. They found sports activities had a positive influence by enhancing memory, academic focus, concentration, grades, and the ability of the students to succeed academically.

In their review of literature, Michael *et al.* (2015) summarized and highlighted the critical connection between health and academic achievement. They stated that the evidence in their literature review supports the need for school health services by demonstrating the association between chronic conditions and decreased achievement. Donnelly *et al.* (2016) also found evidence to suggest that there are positive associations among physical education, fitness, cognition, and academic achievement. Based on the evidence available, they concluded that physical education has a positive influence on cognition as well as brain structure and function.

Not only do physical activities improve academic achievement, but Andersen *et al.*'s (2017) study revealed that there is a positive effect of physical fitness even on attendance in post-compulsory education by establishing the relation between physical

fitness, academic achievement and post-compulsory education commencement, concluding that physical fitness helped more students to attend higher study.

In a two-year, with a three-time points longitudinal study of five public junior high schools in two suburban municipalities in Okinawa prefecture, Japan, from April 2015 to July 2017, Kyan *et al.* (2018) detected a possibility that an increase in physical fitness leads to good academic achievement among junior high school boys, regardless of between-person differences in physical level.

In a two-semester study in a Shanghai high school to examine the effect of a strengthened physical education pilot program consisting of specialized sports training on students' academic performance in the high school context, Zhang *et al.* (2019) found that strengthened physical education had a significantly positive effect on overall academic performance among the high school students, especially in Chinese language and English language scores.

In a longitudinal case study of a student for a period of 9 and a half years, Ngangbam (2023) found that there was a link between physical education and academic performance. The physical education grades and study grades went side by side, meaning when the student did better in physical education, he also did better in his studies, thus leading to better grades.

Recently, in their longitudinal study of 7, 11 and 14-year-old students, Vasilopoulos and Ellefson (2021) examined the relationship among physical activity, self-regulation in a multidimensional approach and educational outcomes.

Not only do sports and physical activities improve students' physical health and mental health, but they also directly influence social cognition, the processes by which people draw inferences about other people's beliefs and intentions, and how people weigh social situational factors in making these inferences (Lopez *et al.*, 2020).

Donnelly *et al.* (2016) also found evidence to suggest that there are positive associations among physical education, fitness, cognition, and academic achievement.

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Recently, in their longitudinal study of 7, 11 and 14-year-old students, Vasilopoulos and Ellefson (2021) examined the relationship among physical activity, self-regulation in a multidimensional approach and educational outcomes. They found out

that emotional regulation was linked to physical activity in early childhood and subsequently affected academic achievement.

Doing sports and physical activities is not just about regularity; it is also about intensity. In their study, Joca Zorc and Jurij Planinšec (2022) found that children engaged in physical activity most days of the week, with moderate-intensity and unorganized activities showing significant associations with above-average academic competence. They found out that higher frequency and intensity of physical activity, the absence of digital games, and attending sports clubs seem to have the most beneficial effects in terms of academic competence in school children.

In their study on participation in sports and games as well as extracurricular activities and development of personal and interpersonal skills in adolescents, Ivaniushina and Zapletina (2015) revealed that students who participated in sports and games activities offer a wide variety for developing various aspects of personality, such as social skills, interpersonal skills, goal-setting skills, self-identity and competencies.

In their study, Lazaro and Anney (2016) found that students who participate in cocurricular activities such as sports and games are more advantageous for developing talents, including enriching students' language skills and self-confidence.

Massoni (2011) also found that students who participated in extracurricular activities reduced behavior problems. Students who participate in these activities take pride in their accomplishments; hence, they gain better self-respect, self-esteem and self-confidence.

Elavsky (2010) states that, regardless of weight, size, gender, or age, exercise can quickly elevate a person's perception of his or her attractiveness, that is, self-worth. Based on their study on 34 male and female high school students divided into experimental (15) and control groups (19), Soy Turk and Ozturk (2020) revealed that among the high school students' behaviors, sports-based games are effective activities which can be used in reducing high school students' behavior problems.

In their study, "Extra-curricular activities and youth risky behaviors in South Africa", including a sample of 10,502,705, including both male and female youths aged between 12 and 22, Muloiwa and Odimegwu (2018) found that participation in sports and games, as well as extracurricular activities, was found to be beneficial to youth self-esteem and discipline.

Many researchers have already proved that increasing time for physical activities in schools helps students to improve their academic performance. Sadly, however, time for physical activity classes has been limited to less than 2 hours per week in the Taiwan region.

According to Ngangbam's study (2021), in Taiwan, 82% of students knew that doing physical activities could keep them physically and mentally fit and healthy, but only 28% of them did enough exercise.

The decline in physical activity during adolescence is a key public health concern. According to Kenneth *et al.* (2007), age-related declines in physical activity are reported in several countries, including the USA, Canada, Finland, and the Netherlands.

Considering the declining trend in adolescence and adulthood, Crumbley *et al.* (2019) talked about the importance of instilling a habit of doing physical activities during childhood. They stated that as physical activity and sedentary behaviors are developed during the early childhood period, for physical activity to occur in children, parents should also be engaged in and model the physical activity behaviors, increasing the likelihood of young children learning to be physically active.

Ngangbam's study (2023) found that adolescents and young adult student communities whose parents did regular exercise (3 times or more sessions per week) had better exercise habits than those students whose parents didn't do any sports-related physical activities.

Not only does parents' involvement in physical activities play an important role in supporting and encouraging children and adolescents to engage in physical activities, according to Qurban *et al.* (2018), but those children and adolescents who are involved in physical activities regularly are found to be more supported, liked, and loved by their parents.

2. Research Methodology

The present research is a quantitative, descriptive, comparative and synchronic study, which investigated the exercise and sports habits, study habits, and time spent with their families among the senior high school and college students. The present research used self-designed survey questionnaires consisting of 3 multiple-choice questions.

2.1 Research Sample

For statistical data collection, 324 senior high school and college students from three different schools in New Taipei City joined the survey. Out of these 324 students, 21 of them were student-athletes. Though these 324 students were studying in New Taipei City areas, they fairly represented the student community of Taiwan as they were from different parts of Taiwan. They belonged to the 17 to 25-year age group who were studying in different grades.

2.2 Data Analysis

For research analysis, Microsoft Excel Software was used. Once the students finished marking their answers, the questionnaires were collected and entered into the Microsoft Excel software for further study. For data analysis and results, the Microsoft Excel Pivot table was utilized. Through Microsoft Excel, the entered raw data was coded and converted into statistical numbers. Using the Microsoft Excel Pivot table, the converted statistical numbers were then transformed into charts and tables to display the results. The following table shows the three self-designed multiple-choice questions included in the survey questionnaires.

2.3. Multiple-choice Questions

Table 1: Multiple questions included in the questionnaire

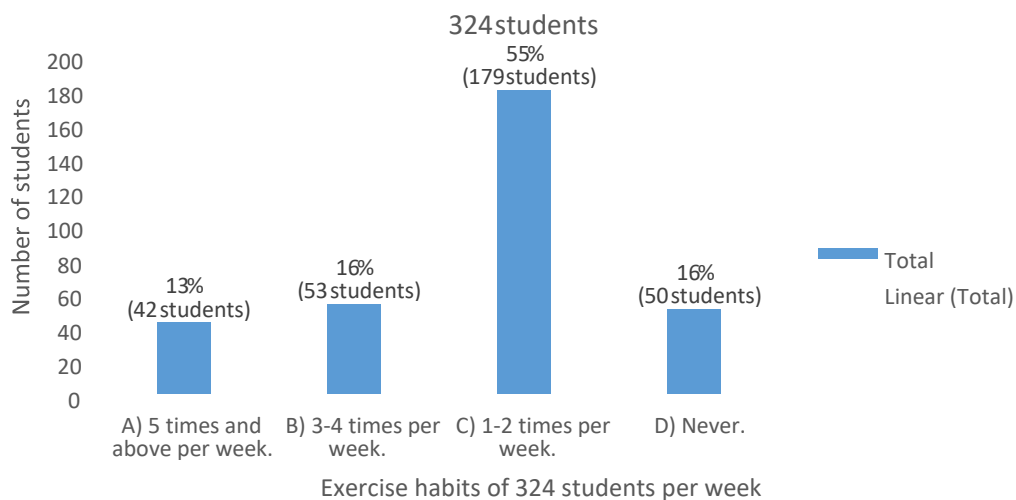
Multiple-choice questions	Answer A	Answer B	Answer C	Answer D
1. How many times do you exercise per week?	A) 5 times and above	B) 3-4 times	C) 1-2 times	D) Never
2. How many times do you review or study after school per week?	A) 5 times and above	B) 3-4 times	1-2 times	D) Never
3. How much time do you spend with your family per day?	A) 5 hours and above	3-4 hours	1-2 hours	D) Less than an hour

The following charts display the research results and findings.

3. Research Findings

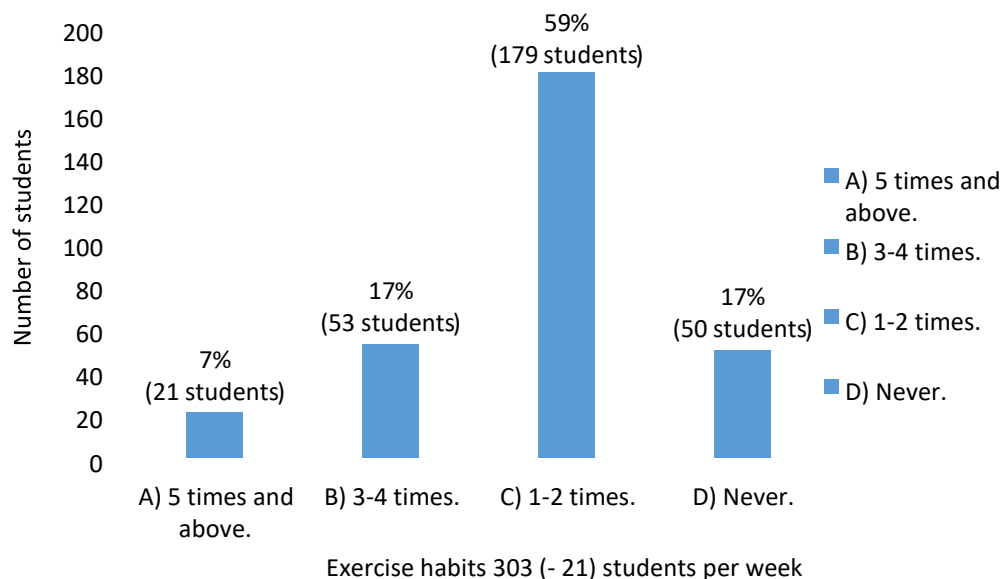
In general, in Taiwan, based on the present study of 324 senior high school and college students, 13% of senior high school and college students did exercise and sports related physical activities 5 times and above per week, 16% of them did 3 to 4 times, 55% of them did 1 to 2 times, and the remaining 16% never did any kind of exercise per week respectively as can be seen from the following chart in Figure 1.

Figure 1: Exercise habits of 324 senior high school and college students



However, the truth was that, if those 21 student-athletes were not included in the study, the percentage of students who did exercise and sports-related physical activities 3 times or above per week came down to 24% as can be seen clearly from the following chart in Figure 2 below.

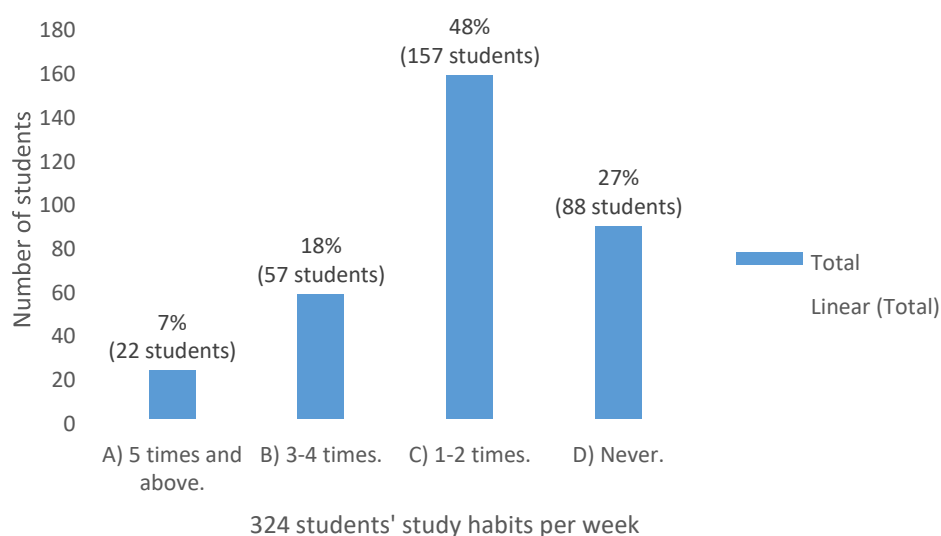
Figure 2: Exercise habits of 303 (without the 21 student athletes) students per week



Regarding exercise habits of 303 students, excluding those 21 student-athletes, in general in Taiwan, 24% (7% +17%) of students exercised 3 times or above per week. The trend lines in Figures 1 and 2 forecast the possible exercise habits of those students in the future, if their attitude towards exercise and sports-related physical activities is not changed.

The following section talks about the study habits of those 324 students, in general. The chart in Figure 3 below displays the study results.

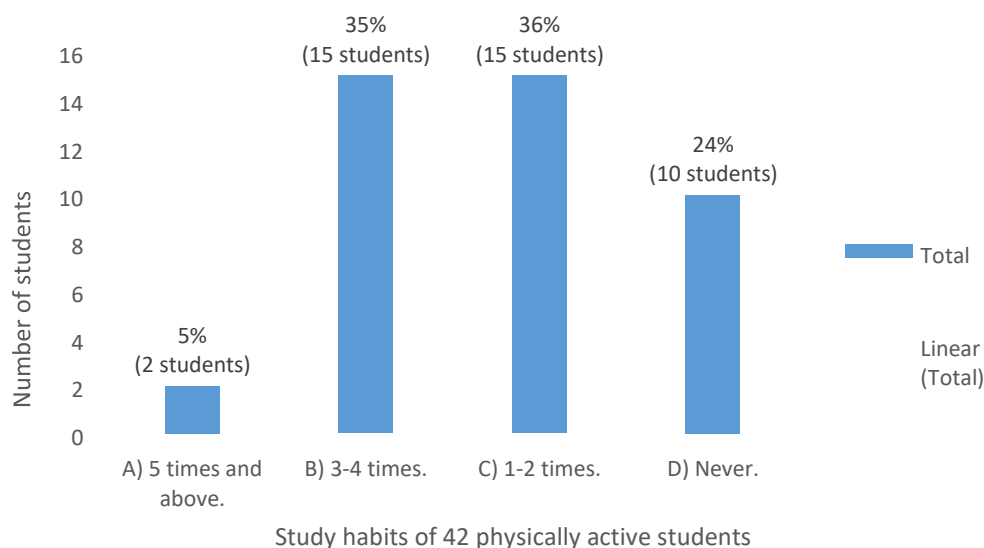
Figure 3: Study habits of 324 senior high school and college students after school



In general, according to the findings of the present study, out of 324 students, 7% of students studied 5 times or more per week after school. 18% of students studied 3-4 times per week, while 48% of them studied 1-2 times per week. The remaining 27% of students never studied after school.

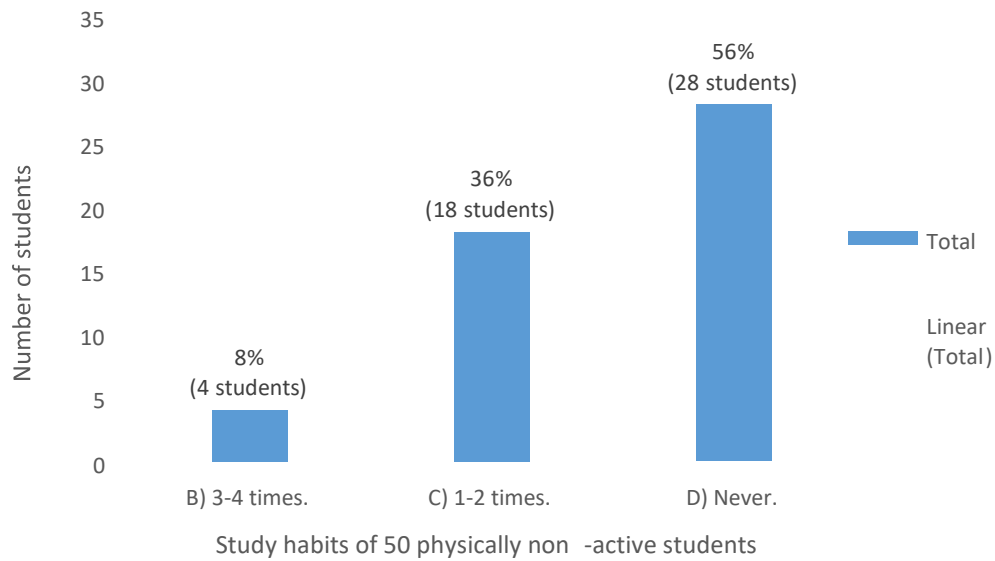
To investigate if there were any differences in study habits based on their involvement in exercise and sports-related physical activities, the researcher created two groups of students: one group that did exercise or sports-related physical activities 3 times or more per week and another group that never did any exercise or sports-related physical activities. The following charts in Figures 4 and 5 display the results, respectively.

Figure 4: Study habits among physically active senior high school and college students



Among the physically active students, 40% (5%+35%) of them studied 3 times or more per week after school. Another 36% studied 1-2 times per week. The remaining 24% never studied after school. The following chart in Figure 5 displays the study habits of those physically inactive students.

Figure 5: Study habits of physically inactive senior high school and college students



Among the physically inactive students, 8% of them studied 3-4 times per week after school, 36% of them studied 1 to 2 times per week, while the remaining 56% never did any kind of exercise. There was not a single student who studied 5 times or more per week among the physically inactive students.

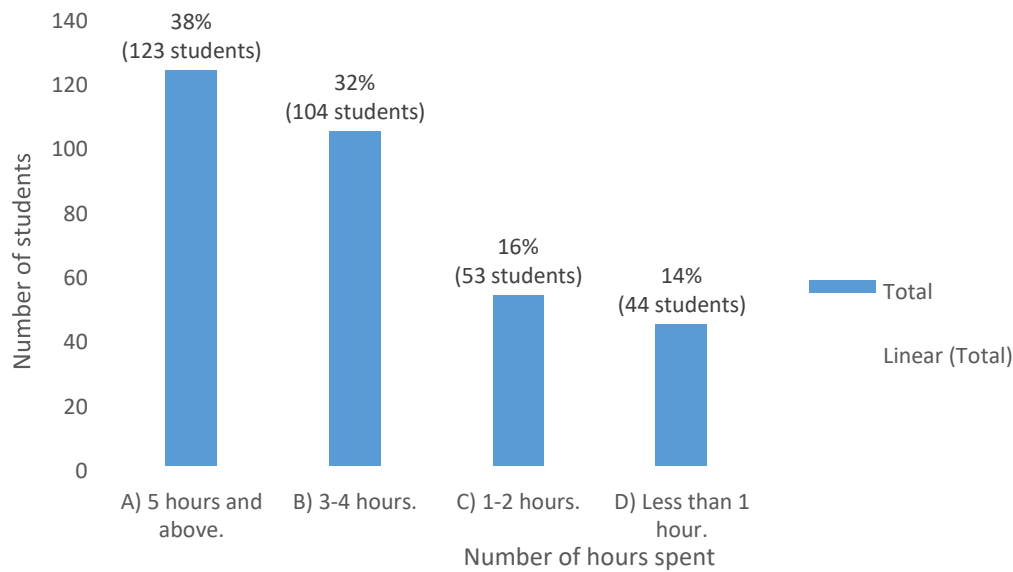
The following chart compares the study habits among the two groups of students.

Table 2: Comparison of study habits among physically active and non-active groups of students

Study habits per week	5 times or more	3-4 times	1-2 times	Never
Physically active students	5%	35%	36%	24%
Physically inactive students	0%	8%	36%	56%

Besides investigating students' study habits, the present study also investigated the habits of spending time with their families among these 324 students in relation to their habits of doing exercise and sports-related physical activities. The following chart in Figure 6 displays the amount of time spent by those 324 students in general.

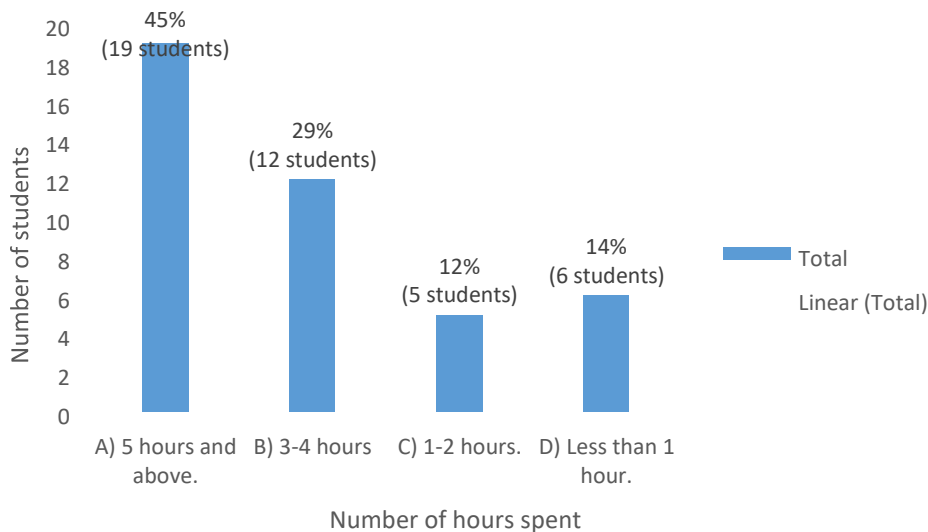
Figure 6: Habits of time spent with their families among 324 students in general



In general, out of 324 students, 38% of them spent 5 hours or above every day, 32% spent 3-4 hours, 16% spent 1-2 hours, while the remaining 14% of them spent less than an hour every day.

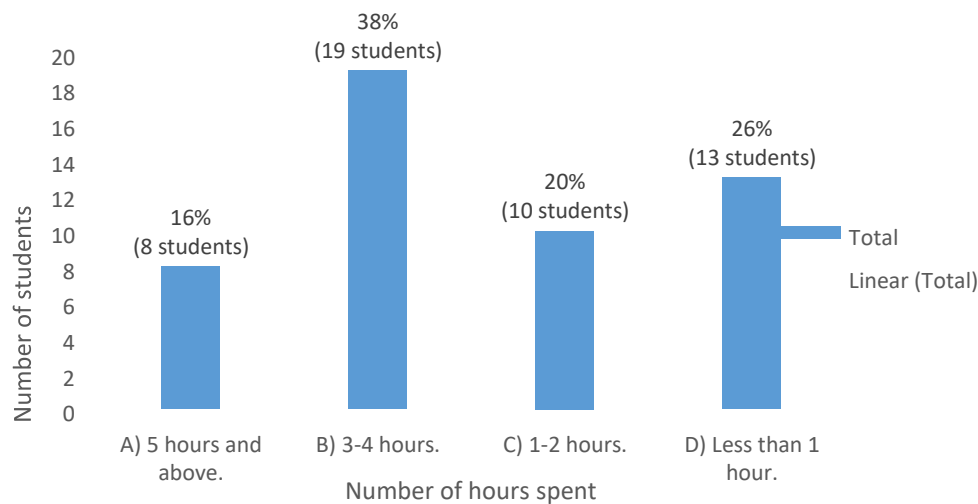
Besides investigating the amount of time these 324 students spent with their families in general, the researcher also investigated whether there were any differences in students' habits of spending time at home with their families based on their habits of doing physical activities. To do this, the researcher compared the physically active and inactive students. The following charts in Figures 7 and 8 show the differences.

Figure 7: Habits of time spent with their families among the physically active students



Among the physically active students, 45% of them spent 5 hours or more, 29% of them spent 3-4 hours, 12% of them spent 1-2 hours, while the remaining 14% of them spent less than an hour with their families per day. The following chart in Figure 8 shows the time spent with their families among the physically inactive students.

Figure 8: Habits of time spent with their families among the physically inactive students



Among the physically inactive students, 16% of them spent 5 hours or more, 38% spent 3-4 hours, 20% spent 1-2 hours, while 26% spent less than 1 hour per day with their families, respectively. The following section displays the comparison.

Table 3: Comparison of the amount of time spent by physically active and non-active students per day

Study habits per week	5 and above hours	3-4 hours	1-2 hours	Less than 1 hr.
Physically active students	45%	29%	12%	14%
Physically inactive students	16%	38%	20%	26%

4. Discussion

All around the world, a countless number of research papers, scholarly articles, theses and dissertations have been recognized and published on the benefits of doing regular exercise, sports, and related physical activities on the physical health, mental health, social health, academic performance, and overall personal development.

The present study investigated the habits of doing exercise and sports-related physical activities among students in Taiwan. The study also investigated whether these habits of doing these physical activities had any positive impacts on students' habits of study and spending time with their families.

Based on the present study, concerning the habits of doing exercise, sports and sports related physical activities among the 324 senior high school and college students in Taiwan, in general, 29% of senior high school and college students did exercise and

sports related physical activities 3 times and above per week, 55% of them did 1 to 2 times, and the remaining 16% never did any kind of exercise per week respectively.

However, the percentage of students who did exercise and sports-related physical activities 3 times or above per week came down to 24% per week if those 21 student-athletes were not included in the study (who had to practice their related sports 5 to 7 times a week).

To investigate if there were any differences in students' study habits based on their habits of doing exercise and sports-related physical activities, the researcher picked up two groups of students: one group who did sports-related physical activities 3 times or above per week and another group who never did any kind of sports-related physical activities.

The differences in study habits among the two groups of students could be seen very clearly from Table 2 given earlier. From the comparison in Table 2, it is very clear that students' study habits can be very much influenced by their habits of doing exercise and sports-related physical activities.

Among the physically active students, 40% of them studied after school 3 times or more per week compared to only 8% among the non-active students. On the other hand, the percentage of students who never studied after school was very high among the inactive students. 56% of the non-active students never studied after school compared to only 24% among the physically active students.

Concerning the habits of studying 1-2 times (sometimes) per week, there were no differences. Thus, it can be assumed that doing exercise and sports-related physical activities regularly, at least 3 times per week, can have a positive influence on students' study habits, meaning overall better academic performance.

Besides investigating students' study habits, the researcher also compared the habits of spending time at home among the two groups of students. Based on the chart displayed in Table 3, among the physically active students, 45% of them spent 5 hours or more with their families every day, while among the physically inactive students, only 16% of them spent their time with their families. On the other hand, regarding the time spent less than an hour a day with their families, among the physically active students, only 14% of them spent less than an hour compared to 26% among the non-active students.

From the above comparison in Table 3, it can be clearly seen that the percentage of students who spent the most time with their families is much higher among the physically active students compared to the physically inactive students. However, concerning the percentage of students staying the least time with their families, the percentage is almost double among the physically inactive students.

Does it matter how much time students spend with their families? Yes, it does. The amount of time staying with families matters a lot to students. When young students spend more time at home, they will be guided, loved and supported better, have better communication and relationships with their parents, siblings and other family members. And the opposite result will be with those students who spend the least time with their

families. How can we expect better communication without seeing each other face-to-face?

Thus, the findings of the present study show that doing regular sports-related physical activities is not only for health and fitness but also for better mental health, better communication, relationships, better academic performance, and overall personal development.

However, the normal tendencies indicated by the trend lines in the present study (Figures 1-8) are very concerning. Most of these young children will do these physical activities less and less, study less and less and stay at home less and less if they don't change their sedentary lifestyles. This will be bad for their physical health, mental health, academic performance, communication, relationships, and overall personal development. Thus, doing regular exercise and sports-related physical activities is very helpful in overall personal development among student communities (Ivaniushina and Zapletina, 2015; Lazaro and Anney, 2016; Masoni, 2011; Elavsky, 2010; Soy Turk and Ozturk, 2020; Muloiwa and Odimegwu, 2018).

When children do physical activities and stay at home more, there will be better communication, relationships, and more love and affection between children and parents. According to Qurban *et al.* (2018), those children and adolescents who are involved in physical activities regularly are found to be more supported (loved) by their parents.

Communication is a salient aspect of the parent-child relationship that influences both the parent-child relationship and the child's sport experience (Holt *et al.*, 2008; Knight *et al.* 2010). This kind of close and loving relationship will also help physically active students be more successful in the long run.

5. Limitations of the Study

The present study has its own limitations. Even though it was found that students' study habits and time spent with their families were influenced by their exercise habits, there could be other factors, too. So, future researchers can add some other questions to find out other factors which could influence their study habits and time spent with their families. The other limitation is the sample size. It would be even better if the sample size were bigger, with at least a thousand participants.

6. Conclusion

The present paper is a quantitative, descriptive, synchronic, and comparative study, which investigated the exercise habits, the positive impacts of doing regular exercise, sports and other sports-related physical activities on senior high school and college students' study habits and the time they spent with their families. Based on the findings, it was found that, in general in Taiwan, 29% of senior high school and college students did exercise and sports-related physical activities 3 times or above per week. The

percentage, however, came down to 24% if the 21 student-athletes were excluded. Second, in general, 25% of students studied 3 times or more per week after school. Third, physically active students had better study habits compared to those who were physically inactive. Among the physically active students, 40% of them studied 3 times or more per week, compared to only 8% among the physically inactive students. Fourth, it was also found that physically active students spent more time with their families compared to physically inactive students. Among the physically active students, 45% of them spent 5 hours or more with their families per day, compared to only 16% among the physically inactive students. These findings indicate that students who have the habits of doing regular exercise and sports-related physical activities have better study habits, better academic performance, and spend more time with their families. These habits of doing regular physical activities and spending more time at home can lead them to better physical health, mental health, communication, relationships, academic performance, overall better personal development, and more success in the long run. Future researchers are advised to use a bigger sample size and add some other questions to find out other factors which could influence their study habits and time spent with their families.

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Conflict of Interest Statement

The author has no conflict of interest to disclose/declare.

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