

Researching the Current Situation and Proposing Some Basic Solutions to Limit the Adverse Effects of the Internet on Medical Students in Vietnam

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Abstract— Today, the outbreak of the Fourth Industrial Revolution makes the Internet an indispensable medium, having a profound influence on all areas of life. Besides the great benefits, the Internet also causes many adverse effects. In fact, in Vietnam in recent years, there has been a situation of students becoming addicted to online games, participating in betting, lotteries, gambling, keeping and spreading the culture of depraved products through the Internet, causing many adverse effects on both mental and physical health, as well as on social relations of students, especially adversely affecting the quality of learning. The abuse of the Internet, improper use of the Internet for the wrong purposes may cause students' health to fail, academic performance to diminish, school regimes and rules not being followed, which may even cause students to violate discipline. Therefore, studying the situation and proposing solutions to limit the adverse effects of the Internet on students is an urgent issue that needs to be properly researched.

Keywords— Internet, the adverse effects of the Internet, medical students.

I. BACKGROUND AND OBJECTIVES OF THE RESEARCH

Today, the outbreak of the Fourth Industrial Revolution makes the Internet an indispensable medium, having a profound influence on all areas of life. In Vietnam, the Internet is a particularly important and necessary media for every student. The Internet not only provides rich resources for learning, but also provides knowledge for all fields, helping students improve their understanding and improve themselves. Especially in the complicated situation of the Covid-19 epidemic, the Internet plays an indispensable role in helping students maintain their planned study schedule and flexibly adapt to the "new normal state". However, besides the great benefits, the Internet also causes many adverse effects on students. The abuse of the Internet, improper use of the Internet for the wrong purposes may cause students' health to fail, academic performance to diminish, school regimes and rules not being followed, which may even cause students to violate discipline. If there is no reasonable solution, the adverse effects of the Internet can even overwhelm the benefits it offers.

From the above issue, our research was carried out with two objectives: the first is to survey and assess the current situation of the adverse effects of the Internet on the medical students in Vietnam; the second is to propose and experiment with some solutions to limit these adverse effects.

II. SUBJECTS AND METHODS OF THE RESEARCH

2.1. Subjects of the research

The subject of the study is the current situation of the adverse effects of the Internet on the students of medical universities in Vietnam and some factors related to these effects. The survey evaluated the situation of 450 students at 4 medical universities in Hanoi (Vietnam), the proposed solutions were tested on 38 students at Le Huu Trac University of Medicine and Pharmacy.

2.2. Methods of the research

* Situational research method

The survey is designed based on questions about undesirable expressions caused by malicious content or Internet abuse, unreasonable and improper use of the Internet causing three different aspects, questions and answers. The answers are the frequency of these expressions, scored as follows: frequently (3 points); sometimes (2 points); rarely (1 point); never (0 points).

The Internet's adverse effect score on each aspect is the average of the scores of 7 questions on that aspect. The level of effect is assessed according to the adverse effect score as follows: Low (0 to less than 0.75); medium (0.75 to less than 1.5); high (1.5 to less than 2.25); very high (2.25 to 3).

* Experimental research methods

After having the results of the current situation research, we proposed 4 solutions to limit the adverse effects of the Internet on students and randomly invited 38 students to participate in the experiment. At the end of our experiment, we compared the average score and the overall level of the adverse effects of the Internet of the experimental group of students before and after the experiment using the parametric Paired - Samples T - Test to evaluate the effectiveness of the proposed solutions.

III. RESEARCH RESULTS AND DISCUSSION

3.1. The research results of the current situation on the adverse effects of the Internet on the medical students in Vietnam

3.1.1. The current situation of the adverse effect of the Internet on the psycho-physiological health of the medical students in Vietnam

The prevalence of undesirable expression on the aspect of psycho-physiological health of the 450 students surveyed is shown in the table below.

The most common undesirable expression due to the Internet's adverse effect on this aspect is "stress, pressure". This expression is caused by many factors on the Internet, such as personal conflicts arising on the Internet, malicious

information about careers, gambling, betting via the Internet, online games. Another common expression is “eye pain, blurred vision”. According to our observations, the rate of students with myopia and astigmatism in medical universities is higher than in other universities and there is no denying that medical students have to use the Internet more often for study, document search is a cause of this situation. The expression “musculoskeletal-arthral fatigue” has the lowest prevalence with 6.2% of students experiencing it regularly and 25.5% of students never experiencing it. Students participated in the survey at the young age of 18 - 25 and the majority of students participated in sports activities, so the musculoskeletal expressions were less common. However, with the rate of 6.2% of students frequently experiencing this expression, we think that this is still a high number, because some students spend too much time on the Internet.

TABLE 1. Survey results of undesirable expressions due to the adverse effects of the Internet on the psycho-physiological health of 450 students

	The adverse effects of the Internet on the psycho-physiological health	Never	Rarely	Sometimes	Frequently
1	Headache, dizziness, fatigue	16%	35,6%	34,4%	14%
2	Eye pain, blurred vision	8%	39,1%	35,8%	17,1%
3	Insomnia	16,7%	37,5%	31,1%	14,7%
4	Musculoskeletal-arthral fatigue	25,5%	36,7%	31,6%	6,2%
5	Stress, pressure	6,7%	37,1%	38%	18,2%
6	Unusual anxiety	20%	42%	26,9%	11,1%
7	Unusual anger and irritation	13,3%	34,4%	35,6%	16,7%

The Internet's adverse effect overall level on the psycho-physiological health of the medical students is at a medium level (average score = 1.47), the percentage of students at all levels the following are as follows: Very high - 12.7%; high - 33.1%; medium - 39.5%; low - 14.7%. By examining the level of adverse effects of the Internet, we found that there is a relative inverse ratio between the Internet's adverse effect level on psycho-physiological health and the result of the physical fitness test of students. The percentage of students who met the physical fitness standard in latest quarterly test among the groups of students with the Internet's adverse effect level on psycho-physiological health at very high, high, medium and low is 49.1%, 61.1%, 73.0% and 83.0% respectively. From the above results, we suggest that limiting the adverse effects of the Internet on psycho-physiological health will contribute to improving the quality of physical training, improving the health of students significantly.

3.1.2. The current situation of the adverse effect of the Internet on the study efficiency of the medical students in Vietnam

The Internet has many negative effects on the study efficiency of the medical students. The undesirable expressions caused by the adverse effects of the Internet in this aspect are as follows:

TABLE 2. Survey results of undesirable expressions due to the adverse effects of the Internet on the study efficiency of 450 students

	The adverse effects of the Internet on the study efficiency	Never	Rarely	Sometimes	Frequently
1	Neglecting study in the lecture hall	20%	33,3%	30,7%	16%
2	Neglecting clinical study at the hospital	1,1%	22,9%	49,3%	26,7%
3	Neglecting self-study	1,3%	9,6%	54%	35,1%
4	Loss of interest in studying	16%	31,1%	39,6%	13,3%
5	Decrease in ability to think creatively	15,6%	32,4%	40%	12%
6	Decrease in ability to think logically	18,9%	36,7%	34,7%	9,8%
7	Decrease in ability to remember and learn	17,3%	39,6%	28,4%	14,7%

The most prominent undesirable expression is “neglecting study in the lecture hall”. This expression mainly comes from the subjective reason that the academic sense of many students is not good. Other common expressions: 26% of students frequently show “neglecting clinical study at the hospital” and 16% of students frequently show “neglecting study in the lecture hall” - these are extremely noteworthy figures. It is a common fact in medical universities that many students do well in basic science and basic medicine, but when studying clinically, they do not achieve the desired results. The loss of concentration due to the use of the Internet in the learning process when studying clinically is a common cause of this situation. The expressions of reduced creativity, logical thinking, memory due to the use of the Internet are also frequent in some students, but in general, the level is less frequent, but it should be noticed that these are the expressions that the Internet directly impacts on students reducing the study efficiency. This current situation has offered a requirement to consider the adverse effects of the Internet on study efficiency meticulously, specifically and comprehensively in order to propose effective solutions to reduce these undesirable expressions and effects.

The Internet's adverse effect overall level is at a high level (average score = 1.63), the percentage of the students is very high members in the group affected by very high and high, accounted for more than half (22.9% and 39%), the medium level accounted for 27.3% and the low level accounted for only 10.8%. The above results require that the study of the Internet's adverse effects on studying must be meticulous, specific and comprehensive in order to come up with an effective solution to help limit these undesirable expressions and effects. After collecting the studying results in 2021 of the participated students, we realised that the higher the Internet's adverse effect level on study efficiency the group of students gets, the higher the percentage of students who are below good or failed in some subjects the group of students has. To be more specific, the group of students with the Internet's adverse effect level on study efficiency at very high, high, medium, and low, respectively, has the proportion of students whose studying results in 2021 are below good or failed in some subjects are

39.8%, 36.4%, 19.5% and 14.5%. The above results show that improving the efficiency of Internet use will contribute to enhancing study quality of students.

3.1.3. *The current situation of the adverse effect of the Internet on the social relationships of the medical students in Vietnam*

Conflicts arising via the Internet are generally rare, the results of the survey are as follows:

TABLE 3. Survey results of undesirable expressions due to the adverse effects of the Internet on the social relationships of 450 students

	The adverse effects of the Internet on the social relationships	Never	Rarely	Sometimes	Frequently
1	Arising conflicts with classmates	42%	32,7%	15,1%	10,2%
2	Arising conflicts with other classmates	53,1%	33,3%	5,6%	8%
3	Arising conflicts students with lecturers	64,7%	26,9%	4,7%	3,7%
4	Arising conflicts with managers at all levels	82,2%	12,7%	4%	1,1%
5	Arising conflicts with family and relatives	77,8%	12%	8%	2,2%
6	Arising conflicts with acquaintances	40,9%	40,2%	16,2%	2,7%
7	Arising conflicts with strangers outside the university	31,3%	35,8%	18,2%	14,7%

Conflicting expressions arising through the Internet are generally rare. The expression "arising conflicts with strangers outside the unit" is the most common. Some students admitted that they were provoked and insulted to their honor and dignity by strangers on the Internet, and they were also drawn into meaningless conflicts on the Internet, especially on social networks. In contrast, expressions of internal conflict are much less common. The expression "arising conflicts with managers at all levels" is very rare, only 1.1% frequently but up to 82.2% of students never meet this expression. According to the observation and exchange with students, medical universities in Vietnam always do well in ideology, organize many movements, exchange and connect among students, improve the spirit of solidarity, willingness to share and help each other. In addition, the university's managers and lecturers also get along well with students, solving work, difficulties, problems of concern and transparency, thereby minimizing conflicts, both in real life and on the Internet.

The Internet's adverse effect overall level on the social relationships of the medical students in Vietnam is at a low level (average score = 0.66). Thus, on the three mentioned aspects, the aspect of social relationships suffers from the adverse effect of the Internet at the lowest level. The percentage of students with low, medium, high, and very high levels of the adverse effect was 61%, 27.7%, 10.3% and 2%, respectively. From the survey of students' personal conflicts caused directly or indirectly by the Internet in 2021, we found that the group of

students with a higher level of the Internet's adverse effect on social relationships have more higher prevalence of personal conflicts. This rate in ascending order is 27.1%, 40.7%, 44.3% and 52.4%, respectively. The majority of students in that groups have personal conflicts that lead only to quarrels. There are 2 students who have a personal conflict that leads to a fight. Thus, it is necessary to have solutions to find out the common causes of conflicts on the Internet, to limit the adverse effects of the Internet on the aspect of social relationships, and to contribute to creating a healthy and safe Internet environment.

3.2. *Some factors related to the adverse effects of the Internet on the current medical students in Vietnam*

The factor of "primary purpose of using the Internet" is related to the adverse effects of the Internet on the aspect of study efficiency. In this aspect, the group of students who use the Internet for the primary purpose of studying and researching has the lowest Internet's adverse effect score ($p < 0.001$), in contrast, the group of students using the Internet for the primary purpose of entertainment has the highest Internet's adverse effect score ($p = 0.001$). The factor of "average daily time using the Internet (in addition to the main online time)" is related to the adverse effects of the Internet on two aspects: psycho-physiological health and study efficiency. On both two aspects, the group using the Internet for more than 3 hours/day had the highest Internet's adverse effect score ($p \leq 0.001$). There was no difference between the group using the Internet less than 01 hour/day and the group using the Internet from 01 to 03 hours/day ($p > 0.05$). The factor of "sports, cultural and artistic movement" is related to the adverse effects of the Internet on two aspects: psycho-physiological health and social relationships. On both these aspects, the group of students who participated in activities for less than 30 minutes/day had the highest Internet's adverse effect score ($p < 0.05$). There was no difference between the group participating in activities from 30 minutes to 01 hour/day and over 01 hour/day ($p > 0.05$).

3.3. *Proposing some basic solutions to limit the adverse effects of the Internet on the current medical students in Vietnam and the experimental results of the solutions*

From the results and problems obtained when researching the current situation, we propose some basic solutions to limit the adverse effects of the Internet on medical students in Vietnam as follows:

Solution 1: Raise students' comprehensive awareness about the Internet, both the benefits and adverseness of the Internet. This is a solution to keep the fundamental and central role, promoting the self-discipline of students. In order to implement the above solution, the universities need to strengthen education and propaganda about the Internet through different media channels, provide rich resources, support students actively and proactively in learning about the Internet.

Solution 2: Increase the management and orientation of students in the use of the Internet, adjust the purpose of using the Internet in the direction of priority for studying and scientific research. Having right and reasonable purposes of using the Internet will contribute to enhancing the benefits of the Internet. This solution helps students use the Internet and

participate in social networks in a healthy way, while keeping students away from social evils on the Internet such as betting, gambling, sharing bad, perverse contents.

Solution 3: Manage students' time using the Internet, avoiding Internet abuse or using the Internet at the wrong time. This solution helps students use the Internet in a reasonable time, in accordance to regulations and achieve the best use. In addition to the online studying time, we encourage students to use the Internet for less than 3 hours/day, contributing to limiting the adverse effects of the Internet.

Solution 4: Building interests and healthy habits for students, promoting physical and mental strength of students, promoting sports, cultural and artistic movements in the universities. Based on the research results, we encourage students to participate in sports, cultural and artistic activities for at least 30 minutes a day.

After synchronous experimenting with the proposed solutions over a period of 3 months, the change in the adverse effects of the Internet on 38 medical students participated in the experiment is shown in the chart below:

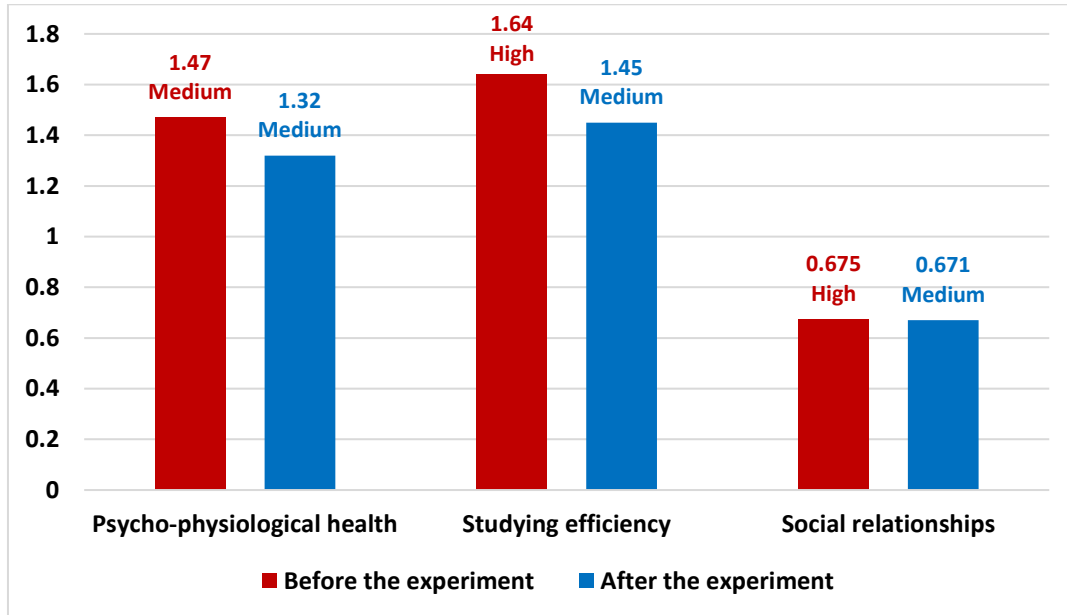


Chart 1. The change in the average score and the overall level of the adverse effects of the Internet on the participants in the experiment

Specifically: The Internet's adverse effect average score of the experimental group of students on two aspects which are psycho-physiological health and study efficiency, that decreased statistically significantly ($p < 0.001$), in which the Internet's adverse effect overall level on the study efficiency of the students decreased from a high to a medium level. Although on the aspect of social relationships, the decrease in the Internet's adverse effect average score is not statistically significant ($p = 0.161$), but from the observations made in the experimental process, we believe that if the solutions are applied synchronously for a long enough time, it will reduce the adverse effects of the Internet in all three aspects. The above results have confirmed the effectiveness of the solutions in limiting the adverse effects of the Internet on the current medical students in Vietnam.

IV. CONCLUSION

The research results show that the adverse effects of the Internet on the students of medical universities in Vietnam are clearly shown on two aspects of psycho-physiological health and study efficiency. All three factors of the main purpose of using the Internet, daily the Internet using time, and sports, cultural and artistic movements are related to these effects. In order to limit the adverse effects of the Internet, in addition to raising all-round awareness for students about the Internet, it is

necessary to implement synchronous solutions to adjust the purpose of using the Internet in the direction of priority for studying and scientific research, manage the time of Internet use, and at the same time build interests, healthy habits, promote the physical and mental strength of students.

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