

The Effectiveness of Health, Educational, and Economic Awareness Programs to Reduce the Negative Effects of Internet Addiction on the Academic Achievement of Primary School Children

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ABSTRACT: Internet addiction negatively affects the health of children in the primary stage, which is reflected in their academic achievement negatively, and also affects Internet addiction on the economic level of these children's families. Therefore, it was necessary to apply a health, educational, and economic awareness program to reduce the negative effects of Internet addiction on the academic achievement of primary school children. Aim To investigate effectiveness of health, educational, and economic awareness program to reduce the negative effect of Internet addiction on the academic achievement of primary school children at Shaqra City. Research Design Quasi-experimental, included parents of primary schools' children at Shaqra used to fulfill the aim of the present study, The study settings using a multistage random sampling technique. Accordingly, the carry out in Shaqra primary schools, a governmental school. 100 parents (mother or father) of primary school children's participants. Tools of gathering data: Questionnaire on the impact of Internet addiction on the academic achievement of primary school children, health, educational, and economic awareness program to reduce the negative effects of Internet addiction on the academic achievement of primary school children, Statistical methods (T.test and Likert quintuple scale) have been used to analyze the data. Results was the effectiveness of the awareness program in reducing the negative effects of Internet addiction among primary school children, The results showed a significant impact of the program, with significant statistical differences in post-test measurements compared to pre-test measurements. The study recommends applying the awareness program to more schools and different age groups, and increasing the duration of the program for a period of not less than six months. limitations encountered during the study; the short duration of the program was one of the limitations faced by the current study.

Keywords: awareness programs - negative effects- the academic achievement- primary school children.



I. INTRODUCTION

In recent years, the widespread availability and usage of the Internet have revolutionized various aspects of human life, particularly in education, health, and economics. However, alongside its myriad benefits, the Internet also presents challenges, particularly concerning addiction among primary school children [1]. Internet addiction, characterized by excessive and compulsive Internet use, has emerged as a growing concern globally, with detrimental effects on various aspects of children's lives, including academic achievement [2].

Warning signs for Internet addiction: Students experiencing problematic Internet use may manifest symptoms in several different ways, and school counselors need to be prepared to recognize these signs and symptoms in their students. Excessive Internet usage can be hard to assess while a student is in school due to the limitation of unstructured time available during a school day. However, students may spend lengthy amounts of time on the Internet such as during lunch, homeroom, or possibly after school. While no set number of hours of Internet usage constitutes an addiction, an unusually large amount of time such as forty to eighty hours a week could be observed and should be brought to the student's attention. Academic, personal/social, and occupational difficulties can be attributed to any number of factors to students in school [3].

Primary school children, in particular, are vulnerable to the negative effects of Internet addiction due to their developmental stage and susceptibility to external influences [4]. Excessive screen time and engagement with online activities can lead to decreased academic performance, social withdrawal, and adverse health outcomes among this demographic. Thus, addressing Internet addiction among primary school children is crucial for promoting their overall well-being and academic success [5].

Recognizing the multifaceted nature of Internet addiction, interventions aimed at mitigating its negative effects must adopt a holistic approach. Health, educational, and economic awareness programs offer promising avenues for addressing Internet addiction among primary school children comprehensively. By integrating elements of health education, promoting responsible Internet usage, and fostering economic literacy, such programs have the potential to equip children with the necessary knowledge and skills to navigate the digital landscape safely and responsibly.

Since the health damage of Internet addiction greatly affects the educational achievement of these children, which also constitutes a burden on the families of this category of children as a result of the need for private lessons and longer Internet use. Which had the greatest role in the need to pay attention to the preparation of an awareness program that includes the three aspects (health - educational - economic).

This study examined the impact of the awareness program (health, educational, economic) in reducing the negative effects of Internet addiction on the academic achievement of primary school children, She was also interested in studying the parents' opinion poll on the extent of this negative impact of Internet addiction, as well as the role of the awareness program in reducing these negative effects. It is a study characterized by modernity due to the scarcity of studies that deal with the preparation of an awareness program that includes the three aspects together, and also to address a topic that has become a growing problem in the world, especially with this age group that does not have awareness of the harms of Internet addiction. The following questions were addressed in the study:

- 1. What is the degree of addiction of children to the Internet?
- 2. What is the impact of Internet addiction on children's health?
- 3. What is the impact of Internet addiction on children's academic achievement?
- 4. What is the impact of Internet addiction on the economic side of the children parents?
- 5. How aware are parents of the negative effects of Internet addiction on their children?

II. LITERATURE REVIEW

Internet addiction among primary school children has become a growing concern worldwide due to its potential negative impacts on their health, educational attainment, and economic well-being. This section provides an overview of the existing literature on the health, educational, and financial effects of Internet addiction on primary school children and its relationship with academic achievement [6].



Health Effects: Numerous studies have highlighted the adverse health effects associated with Internet addiction among primary school children. Excessive screen time and sedentary behavior contribute to physical health problems such as obesity, musculoskeletal issues, and disrupted sleep patterns [7]. Moreover, prolonged exposure to online content, including violent or inappropriate material, can lead to mental health issues such as anxiety, depression, and social isolation [8]. Research indicates that addressing these health concerns through targeted interventions and awareness programs is essential for mitigating the negative effects of Internet addiction on children's well-being and academic performance [9,10].

Educational Effects: Internet addiction can significantly impact primary school children's educational outcomes. Excessive use of digital devices and online platforms may lead to decreased academic engagement, reduced attention span, and poor study habits [5]. Furthermore, children addicted to the Internet often prioritize online activities over homework and studying, resulting in lower grades and academic achievement. Effective educational interventions focus on promoting digital literacy, teaching responsible Internet usage, and integrating technology into the curriculum to enhance learning outcomes while mitigating the negative effects of Internet addiction on academic performance [11].

Economic Effects: Internet addiction can also have economic implications for primary school children and their families. Excessive Internet use may increase household expenses related to Internet subscriptions, online gaming purchases, and electronic devices [12]. Economic awareness programs aimed at educating families about the financial costs of Internet addiction and promoting responsible spending habits can help mitigate these economic consequences and foster financial well-being among primary school children and their families [13].

Internet addiction disorder is defined as a "Psychophysiological disorder caused by an excessive, non-essential use of the Internet that brings harm to the user or others within the community. It includes psychological, physical, social, or other important functioning impairments [14].

Numerous studies have highlighted the prevalence and detrimental effects of Internet addiction among primary school children. [15]. Excessive internet usage was shown to be one of the most common behaviors among primary school children, which can lead to addiction and harm their personal, social, and academic achievement. And Recommendation: Children should be aware of the potentially detrimental effects of internet addiction, as well as the necessity to restrict internet usage, which can have a severe impact on kids' academic progress [16,17]. found a significant association between excessive Internet use and poor academic performance among this demographic. Additionally, [18].

Given the multifaceted nature of Internet addiction, scholars advocate for holistic intervention approaches that address various dimensions of children's lives. Health, educational, and economic awareness programs offer a comprehensive framework for tackling Internet addiction by promoting healthy behaviors, fostering digital literacy, and enhancing socio-economic resilience [19]. The integration of health education components, such as promoting balanced lifestyles and coping strategies, alongside educational initiatives aimed at enhancing digital literacy and critical thinking skills, has shown promise in reducing the negative effects of Internet addiction [20].

Several studies have investigated the effectiveness of health, educational, and economic awareness programs in reducing Internet addiction and improving academic outcomes among primary school children. For instance, a randomized controlled [13]. and demonstrated the efficacy of a school-based intervention program in reducing Internet addiction symptoms and improving academic performance. Similarly, research by [21]. the positive impact of a comprehensive intervention program incorporating health education, media literacy, and financial management skills on reducing Internet addiction and enhancing academic achievement among primary school students.

This research seeks to investigate the effectiveness of a health, educational, and economic awareness program in reducing the negative effects of Internet addiction on the academic achievement of primary school children. By examining the impact of such a program on children's Internet usage patterns, academic performance, and overall well-being, this study aims to contribute to the existing body of literature on Internet addiction prevention and intervention strategies among Children populations.

This research will assess the program's effectiveness in achieving its objectives and identify potential barriers and facilitators to its implementation. By exploring the perspectives parents of primary school children, and program facilitators, this study aims to provide insights into the mechanisms through which



health, educational, and economic awareness programs can positively influence children's Internet usage behaviors and academic outcomes. Hence, the objectives of this study are formulated to:

- To investigate effectiveness of health, educational, and economic awareness program to reduce the negative effects of Internet addiction on the academic achievement of primary school children at Shaqra City.
- Knowing the degree of addiction of a primary school child to the Internet?
- Know the impact of Internet addiction on children's health?
- What is the impact of Internet addiction on children's academic achievement?
- What is the impact of Internet addiction on the economic side of the child's parents?
- Know how aware parents are of the negative effects of Internet addiction on their children?

III. METHOD

For this investigation, a cross-sectional descriptive design and a pre-and post-test quasi-experimental design were used, The study was conducted in Shaqra primary school, in Shaqra Caty, Riyadh, Saudi Arabia.

In this study, an experimental approach with a pre-, post-, and follow-up design was used, to investigate the effect of a health economic educational counseling program for treating addiction disorder The Internet for primary school children affects academic achievement.

After the parents of primary school students agreed to voluntary participation, with the confidentiality of the data and information obtained, data was collected from 100 heads of families who have children in the primary stage. The researchers identified families through several criteria, including families whose children suffer from Internet addiction, and were excluded. Those whose children do not suffer from Internet addiction, but have difficulties in academic achievement

1. STUDY SAMPLE

The current study sample consisted of 100 from the category of parents of primary school Children who are addicted to the Internet, after applying the Internet addiction questionnaire correcting its results, and sorting the group whose children obtained the highest level of addiction to the Internet

The researchers followed a two-stage sampling procedure to collect data for this research study. The first stage, different schools were selected using simple random sampling technique. the second stage, systematic random sampling procedure was adopted to select parents of primary school Children whose children have internet addiction

2. ETHICAL APPROVAL AND INFORMED CONSENT

The ethical approval was obtained from Shaqra University and allowed to be carried out with the number (SU-F-202300042).

3. STUDY INSTRUMENTS

3.1 TEST

Using the survey method, qualitative and quantitative data were collected from a number of parents of primary school Children in the city of Shaqra, Saudi Arabia, by distributing an electronic questionnaire to a sample of 100 parents of primary school children whose children suffer from the problem of Internet addiction. Data relevant to this investigation were collected using two distinct tools: The first tool: an online questionnaire on Internet addiction. The second tool: the awareness program (health - educational - economic).

3.2 INTERVIEWS

The questionnaire was distributed to the study sample to collect data in the training program and understand their point of view on Internet addiction. The first stage: It is the initial design that was based on updating new tools and verifying their validity in a specific [22]. The second stage included the descriptive design of the tool through the demographic data of parents, which depends on (educational qualification, job, income level and time spent on the Internet), The design of the questionnaire was based on reviewing the



latest studies published during the period from 2015 to 2023 in order to identify and design the study tools and verify their validity, using the keywords "scientific research skills - verification - proficiency test - study tool efficiency" in the Web of Science and Scopus databases.

The theoretical basis was based on the literature and theoretical contributions, in particular Manal Ayed and colleagues [16]. who used a descriptive cross-sectional design to reduce Internet addiction and help primary school children control their Internet use, including identifying any underlying problems that may support Internet addiction, developing coping skills, strengthening the support network, gradually modifying Internet use, setting goals for Internet use time, and designing an Internet addiction scale for children. Al-Zahrani's contribution [23]. was also used, which explores the problem of using social networking sites on academic achievement, and Nayla Shahid and colleagues' study [24]. which sheds light on the impact of Internet addiction on school-aged children. Based on the previous suggestions, the study tool was designed, which consisted of 47 elements divided into five axes, each axis containing 10 elements, except for the fifth axis, which contains 7 elements. A five-point Likert scale was used. To verify the validity of the content of the study tool, it was presented to a group of arbitrators to express their opinions on each statement. Their number reached 9 university professors in the economic, educational and health fields. The arbitrators expressed their approval of all the statements that came to measure the level of awareness of parents about the extent of the impact of Internet addiction on their children's academic achievement at this stage. Evaluations were conducted based on the criteria of clarity, sufficiency, importance and coherence for each element. Based on the suggestions, the wording of the elements was modified, with the wording of some statements in the second axis being modified in light of the arbitrators' comments, namely statements 2, 5, 6 because they lack clarity. Statements 3, 9 in the fourth axis were also modified to modify the wording, and the arbitrators gave their evaluation on a scale from 1 to 5. Thus, the questionnaire was subjected to for the validity of the content in measuring and evaluating parents' awareness. Consistency was assessed using Cronbach's alpha coefficient, the evaluation scale is a 5-level scale (1 = not at all, 2 = little, 3 = enough, 4 = quite a lot and 5 = a lot).

4. RELIABILITY AND VALIDITY

4.1 TEST

The reliability of the test was verified by administering it to a sample of 10 parents of students participated and gave a qualitative and critical evaluation of each item and indicated whether it was understood or not, and in light of that, statements 5, 8, and 9 in the third axis were modified.

Table 1. The reliability of research indicators.

Variable names	Cronbach's alpha coefficient
Internet addiction	0.92
The impact of Internet addiction on children's health.	0.75
The impact of Internet addiction on the child's academic achievement	0.83
The impact of Internet addiction on the economic aspect of the child's family.	0.91
parents are aware of the negative effects of Internet addiction on their children	0.88

4.2 INTERVIEWS

After that, the research objectives, data confidentiality information and questionnaire items were copied to a Google form, and informed consent was requested for their anonymous and voluntary participation in the study. The link was distributed via WhatsApp and email to parents of primary school students between February 2024 and April 2024. The guidance program was then implemented from April 2024 to July 2024. In this study, the experimental method was used with a pre-design, and the post- and follow-up groups were divided into two groups: "experimental and control", to study the effect of an educational, economic, and health guidance program in treating Internet addiction disorders among primary school children. To achieve this, the researchers selected a sample for the study from the category of parents of primary school students addicted to the Internet, after applying the Internet Addiction Scale and correcting its results, and sorting the



group whose children obtained the highest degree of Internet addiction, then randomly dividing this sample into two groups, one of which is a control group and the other is an experimental group, and then influencing the experimental group with the independent variable. It is a guidance program by applying it to the experimental group at a time when the control group is not exposed to the guidance program, and evaluating the effectiveness of the guidance program, by reapplying the "Internet Addiction" scale again to the experimental and control sample, and together we calculate the significance of the differences in the average scores of the experimental group on the Internet Addiction Scale between the pre- and post-applications, and between the experimental and control groups. The questionnaire was distributed to 130 parents of primary school students, and 30 questionnaires were excluded because their children did not reach the stage of Internet addiction, thus the number of the completed and researchable sample is 100 families.

IV. DATA ANALYSIS AND RESULTS

1. TEST

The statistical analysis was performed using SPSS (version 26.0). The methods used to answer the research questions included calculating means and standard deviations and conducting a paired sample t-test. and the Likert five-way scale was used to analyze the questionnaire.

2. INTERVIEWS

Thematic analysis by Braun and Clarke [34] was employed to identify recurring themes in the qualitative data. The steps included familiarizing with the data by transcribing audio recordings and reading them multiple times, creating initial codes, transforming codes into main themes, and identifying the primary themes in the study: expanding knowledge of generative AI applications, developing teaching and learning methods, providing immediate feedback, and improving time and effort management. These themes were reviewed for consistency and coherence before compiling the final report logically and cohesively.

Table 2. Five-point Likert's scale.

The scale	Strongly Agree	Agree	Fairly agree	Disagree
Weighting	5	4	3	2

The five-point Likert scale was used to analyze the responses of the sample after passing the awareness program, to refer their responses to the questions of each of the five axes of the questionnaire.

Table 3 shows the socio-demographic characteristics and basic information of the families under study. About 31% of the participants have postgraduate studies, and about 57% of them have a higher qualification. Regarding work, we find that more than half of the sample works as employees (56%), and there were about 16% who have their projects. Regarding family income, about 77% of them, which is equivalent to more than three-quarters of the sample, have an income greater than 5,000 SAR. Regarding the time spent by the head of the family on the Internet, we find that nearly half of the participants in the sample (45%) spend six hours or more on the Internet.

Table 3. Socio-demographic characteristics and basic information of the families under study.

Items		No. 100	%
	Postgraduate	31	31
Educational	High qualified	57	57
Qualification	Diploma	9	9
	Intermediate-Secondary	3	3
	Total	100	100



	free business	1	1
	employee	56	56
	Remote work	1	1
Job	private job	16	16
	unemployed	26	26
	Total	100	100
	Less than 2000 SR	2	2
Family income	From 2000: 4000	21	21
	From 5000 or more	77	77
	Total	100	100
	More than six hours	31	31
time spent online	Six hours	14	14
daily	five hours	12	12
	Three: four hours	13	13
	Two hours or less	14	14
	Total	100	100

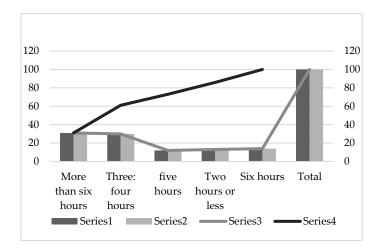


FIGURE 6. Time spent online daily: The time spent by the head of the household on the Internet.

3. QUANTITATIVE DATA ANALYSIS

First Research Question: What is the degree of addiction of children to the Internet?

To answer this question, a paired sample t-test was used to determine the significance of the differences between the pre- and post-test means. Table 4 presents these results:

Table 4. Paired Sample t-test Results for the Significance of Differences between Pre- and Post-Test Means.

Ite	ms	Pre(n=100)	Post(n=100)	t	Sig.
		Mean ± SD	Mean ± SD		
1.	Your child uses the Internet to learn.	$1.66 \pm .879$	4.25 ±1 .048	42.27	.000
2.	Your child uses the Internet to play.	$4.60 \pm .816$	$1.86 \pm .975$	54.28	.000
3.	Your child uses the Internet to communicate.	2.69± 1.529	3.19 ±1 .178	32.75	.000
4.	The number of hours your child spends online in non-	4 45 . 055	1.26 . 025	(2.02	000
	learning is four hours or more.	$4.45 \pm .857$	$1.36 \pm .835$	62.02	.000



5.	Among the most important applications that your child uses while browsing the Internet are gaming sites.	4.54 ± .702	2.23 ±1 .213	57.76	.000
6.	Chat sites are one of the most important applications that your child uses while browsing the Internet.	2.09± 1.357	1.16 ±1 .269	24.37	.000
7.	Your child is interested in educational sites while browsing the Internet:	1.89± 1.091	3.92 ±1 .116	23.48	.000
8.	Your child gets angry and fanatic when the Internet is disconnected or cut off from him and rejoices when the Internet returns:	1.89 ±1.091	3.92 ±1 .116	63.34	.000
9.	Your child is busy accessing the Internet and isolated from others.	4.36± 1.069	2.27 ±1 .302	34.17	.000
10.	Your child leaves food, plays, and goes out to enter the Internet.	4.10± 1.193	2.15 ±1 .158	27.03	.000

The above table shows statistically significant differences at the significance level of 0.05 between the means of pre- and post-testing, in favor of the application of post-testing. This indicates the positive impact of the awareness program and in statement No. 6 on the use of the Internet in communication at the level of statistical significance.000.

4. QUALITATIVE DATA ANALYSIS

Second Research Question: What is the impact of Internet addiction on children's health? To answer this question, a paired sample t-test was used to determine the significance of the differences between the pre- and post-test means. Table 5 presents these results:

Table 5. The impact of Internet addiction on children's health.

		Pre(n=100)	Post(n=100)		
	Items	Mean ± SD	Mean ± SD	t	Sig.
1.	Vous shild's addiction to the Internet positively				
1.	Your child's addiction to the Internet negatively affects your child's health.	$4.73 \pm .664$	2.02 ±1.155	55.531	.000
2.	The child's addiction to the Internet causes physical fatigue and stress.	4.67 ±.682	2.00 ±1.110	54.695	.000
3.	The child's addiction to the Internet causes poor	4.78 ±.484	2.06 ±1.229	59.649	.000
	eyesight and red eyes.	1,70 =,101	2. 00 21.22	03.013	.000
4.	Your child's addiction to the Internet causes neck pain and curvature.	4.76 ± .653	2.05 ± 1.218	64.688	.000
5.	Your child's addiction to the Internet causes back and spine pain.	4.76 ± .553	2.07 ± 1.249	51.451	.000
6.	Your child is obese.	2.67 ± 1.621	3.03 ± 1.417	23.488	.000
7.	Your child is lazy and lethargic.	4.32 ± 1.034	2.40 ± 1.310	36.927	.000
8.	Your child shows muscle weakness and tenderness.	$4.38 \pm .951$	2.52 ± 1.480	44.145	.000
9.	Your child does not exercise, lacks and weakness.	$4.46 \pm .858$	2.49 ± 1.480	40.980	.000



10. Your child is characterized by general weakness and	3 17 + 1 334	2.71 ± 1.629	33.865	.000
humor.	3.17 ± 1.334	2.71 ± 1.027	33.003	.000

The above table shows statistically significant differences at the significance level of 0.05 between the means of pre- and post-testing, in favor of the application of post-testing. This indicates the positive impact of the awareness program.

5. QUALITATIVE DATA ANALYSIS

Third Research Question: What is the impact of Internet addiction on children's academic achievement? To answer this question, a paired sample t-test was used to determine the significance of the differences between the pre- and post-test means, Table 6 presents these results:

Table 6. The impact of Internet addiction on the child's academic achievement.

	Items	Pre(n=100) Mean ± SD	Post(n=100) Mean ± SD	t	Sig.
1.	Your child's addiction to the Internet negatively affects his academic achievement.	4.53 ± 1.020	2.34 ± 1.512	37.346	.000
2.	Your child's addiction to the Internet causes poor memory and quick forgetfulness	4.67 ± .682	2.44 ± 1.604	57.150	.000
3.	Your child's addiction to the Internet causes him to lack attention and concentration.	4.72 ± .753	2.46 ± 1.636	63.652	.000
4.	Your child's addiction to the Internet leads to a lack of interest in your child in studying and neglecting it.	4.69 ± .761	2.50 ± 1.642	58.860	.000
5.	Your child is interested in doing his homework as a result of his addiction to the Internet.	$4.40 \pm .985$	2.38 ± 1.581	41.945	.000
6.	Your child cannot follow his lessons in different courses as a result of his addiction to the Internet.	4.45 ± .857	2.39 ± 1.550	35.673	.000
7.	Your child's addiction to the Internet causes his ability to study well.	$4.62 \pm .693$	2.41 ± 1.531	53.073	.000
8.	One of the reasons for your child's poor performance in tests is Internet addiction.	$4.35 \pm .809$	2.33 ± 1.477	43.949	.000
9.	Your child's addiction to the Internet affects the degree of interaction with teachers and response to their instructions.	1.85 ± 1.104	2.01 ± 1.115	47.366	.004
10.	Your child is characterized by poor cooperation and interaction with his classmates at school during the practice of school activity.	1.74 ± .960	$1.86 \pm .985$	30.734	.014

The above table shows statistically significant differences at the significance level of 0.05 between the means of pre- and post-testing, in favor of the application of post-testing. This indicates the positive impact of the awareness program. and in statement 9 at the level of significance .004, and statement 10 at the level of significance .014.



6. QUALITATIVE DATA ANALYSIS

Fourth Research Question: What is the impact of Internet addiction on the economic side of the children parents?

To answer this question, a paired sample t-test was used to determine the significance of the differences between the pre- and post-test means. Table 7 presents these results:

Table 7. The impact of Internet addiction on the Economic side of the child's parents.

	Items	Pre(n=100) Mean ± SD	Post(n=100) Mean ± SD	t	Sig.
1.	Spending on the Internet represents a large part of the family budget.	4.47± .926	1.91± 1.102	33.255	.000
2.	The amount spent on the Internet per month negatively affects the standard of living of the family.	4.22± 1.151	1.82± .936	32.568	.000
3.	The monthly package allocated from the Internet is sufficient for the needs of the family permanently.	3.41± 1.443	3.81± .884	43.736	.000
4.	Additional amounts are spent on the Internet as a result of the expiry of the package before the date or for any other circumstances.	2.88± 1.402	3.08± 1.253	22.702	.001
5.	Sometimes there are financial obstacles that prevent the use of the Internet for a while.	2.89± 1.497	3.25± 1.209	27.293	.000
6.	Spending additional amounts on private lessons for the child is an additional burden on the family budget.	4.32± 1.091	3.40± .899	40.552	.001
7.	The guardian bears only the burden of spending on the Internet for the family as a whole.	4.42± .955	4.50± .718	45.704	.045
8.	Some family members cooperate in bearing the expenses of the Internet bill.	1.56± .891	1.68± .942	24.497	.014
9.	Spending on the Internet represents a great burden on the head of the household.	4.11± 1.034	4.19± .849	38.640	.001
10.	The family plans to reduce the amount spent on the Internet in some way.	1.69± .971	4.22± .894	38.184	.000

The above table shows statistically significant differences at the significance level of 0.05 between the means of pre- and post-testing, in favor of the application of post-testing. This indicates the positive impact of the awareness program. and in statement 6 at the level of significance. .045, and in the phrase 7 at the level of significance. .045, and the statement 8 at the significance level of .014, and the statement 9 at the significance level .045

7. QUALITATIVE DATA ANALYSIS

Fifth Research Question: How aware are parents of the negative effects of Internet addiction on their children?



To answer this question, a paired sample t-test was used to determine the significance of the differences between the pre- and post-test means. Table 8 presents these results:

Table 8. The extent to which parents are aware of the negative effects of Internet addiction on their children.

			t	Sig.	
1.	You use the Internet for long periods other than working in front of your children.	4.35± .978	1.85± 1.184	34.479	.000
2.	You are busy with the Internet about your children and sit with them and talk to them.	4.32±.920	1.89± 1.091	37.791	.000
3.	Parents have a major role in reducing and reducing the negative effects of Internet addiction on their children.	2.07±1.225	4.10±.835	53.073	.000
4.	Encourage your children to use the Internet correctly.	2.02±1.146	4.52±.893	47.475	.000
5.	You organize your children's time online.	2.03±1.167	4.32±.942	41.552	.000
6.	Special awareness was obtained by the school about the negative impact of Internet addiction on your children.	1.85±1.019	3.99±1.115	37.167	.000
7.	You have different knowledge and knowledge about the seriousness of Internet addiction and its negative effects on you and your children.	2.14±1.263	4.57±.820	53.803	.000

The above table shows statistically significant differences at the significance level of 0.05 between the means of pre- and post-testing, in favor of the application of post-testing. This indicates the positive impact of the awareness program.

V. DISCUSSION

It is clear from the previous results the effectiveness of the awareness program in reducing the negative effects of Internet use on health, academic achievement, and economic side, as statistically significant differences were found in the pre-and post-measurement after the application of the awareness program, and This has been confirmed by many studies [25, 26, 27]. As for the first axis Which response The First Question:

- The use of the Internet in learning has increased
- As say use the internet in play
- But the percentage of its use in communicating with family and family remained the same
- Also, the number of hours a child spends online without learning has decreased.
- Less use of game applications by children after the awareness program
- Increased interest in the use of educational sites and games
- As they are less affected by the interruption of the Internet or being busy with it, without refusing food as a result of the role of the parents after presenting the awareness program to them.

There are studies concerned with attachment to the Internet, anger at its interruption, nervousness, and anxiety [28]. As for the second axis Which response The Second Question: on the impact of Internet addiction on the health of the child, this impact decreased clearly after the presentation of the awareness program.



Many studies have found the negative effects of Internet addiction on the health side, the results of which agreed with the results of the current study, which was the prevalence of headache symptoms, loss of concentration and memory, fatigue, sleep disorders, arm and shoulder pain, and others, including the study of [29].

As for the third axis Which response The Third Question: on the impact of Internet addiction on the educational achievement of the child, where this impact decreased clearly after the presentation of the awareness program in points from 1: 8, while 9, 10 for interaction and cooperation with colleagues and teachers were not affected or differ much.

The results of many studies have agreed with the result of the current study in the presence of a negative impact of Internet addiction on academic achievement and academic achievement. These studies include Study [30, 31, 32].

As for the fourth axis, Which response The Fourth Question: it is about the impact of Internet addiction on the economic aspect of the child's family. This impact decreased clearly after the presentation of the awareness program in points 1, 2, 4, 6, 10, and points 3. 8.9 There was no significant difference in terms of the nature of family income, and also the need to use the Internet in general. What happened was the difference in orientation to learning instead of playing and preserving the family budget to increase awareness after presenting the awareness program.

We must point out here that the impact of the program is not large enough as a result of the reduced period available for it. It is expected that the program will lead to better results if it is continued for a longer period, especially the economic program because it relates to the family budget and financial matters that take a longer period when changing.

There are not many economic studies that have addressed the issue of Internet addiction from an economic perspective and its impact on the family and the child. But we can say that few studies in this field are consistent with the current study [33, 34].

As for the fifth axis Which response The Fifth Question: on the extent of parents' awareness of the negative effects of Internet addiction on their children, this impact decreased clearly after the presentation of the awareness program in points from 1: 2 for parents' use of the Internet and preoccupation with it for their children, and increased points 4,5,7 for encouraging children to use the Internet correctly and to organize their time and increase their awareness of the negative effects of Internet addiction.

Among the studies that confirmed the importance of educating parents about organizing their time and their children's time on the Internet, and their role in educating their children about the danger of Internet addiction, is a study [35, 36, 37]. that it increases children's use of the Internet depending on the level of parents' use of the Internet, and that children have a high level of Internet addiction and parents have a role in reducing this while allocating more time for children to stay with their families, Parental control and the safe use of the Internet.

There are many studies and research that have been concerned with preparing different programs to reduce the impact of Internet addiction, which reached the same results of the current study in the effectiveness of these programs in reducing the impact of Internet addiction on the health, school and economic status, and among these studies [26].

The study suggests applying the awareness program to more schools and different age groups, and increasing the duration of the program for a period of not less than six months. Limitations encountered during the study; the short duration of the program was one of the limitations faced by the current study.

VI. CONCLUSION

The results of the study showed the effectiveness of the health educational and economic awareness program to reduce the negative effects of Internet addiction on the academic achievement of primary school children ,Where the program helped in its sessions to reduce the negative effects of Internet addiction in the five axes included in the Internet addiction questionnaire, and the results of this study agreed with the results of many studies that were mentioned in detail in each axis.

In light of the study's findings, Parents must be more aware of the harms of Internet addiction and the need to educate their children, and organize their stay times on the Internet.



The role of educational institutions in providing adequate awareness of the harms of Internet addiction must also be emphasized.

And the preparation of studies and research to study: the relationship of socio-economic level with children's addiction to the Internet, as well as the relationship of the absence of parents and parental upbringing methods on children's addiction to the Internet, And also the preparation of awareness programs through television programs and the media by preparing short flashes for children about the harms of Internet addiction.

Funding Statement

The data collection, analysis, editing, and publication of the current study was funded by the Deputyship for Research and Innovation, Ministry of Education in Saudi Arabia, Shaqra University.

Authors Contribution

All authors made an equal contribution to the development and planning of the study.

Conflict Of Interest

The authors have no potential conflicts of interest or such divergences linked to this research study.

Acknowledgment

The authors extend their appreciation to the deanship of scientific research at Shaqra University for funding this research work through the project number (SU-F-202300042).

REFERENCES

- 1. McHaney, R. (2023). The new digital shoreline: How Web 2.0 and millennials are revolutionizing higher education. Taylor & Francis.
- Kurniasanti, K. S., Assandi, P., Ismail, R. I., Nasrun, M. W. S., & Wiguna, T. (2019). Internet addiction: A new addiction? Medical Journal of Indonesia, 28(1), 82–91.
- 3. Sarkar, S., Bhandary, S., & Arya, A. (2021, February). Effectuating supervised machine learning techniques for multiclass classification of problematic Internet and mobile usage. In 2021 International Conference on Computing, Communication, and Intelligent Systems (ICCCIS) (pp. 1–8). IEEE.
- Cheng, L., & Cao, J. (2023). Factors influencing smart device addiction among preschool children: An extended protection-risk model perspective. Frontiers in Psychology, 14, 1017772.
- 5. Wang, J. C., Hsieh, C. Y., & Kung, S. H. (2023). The impact of smartphone use on learning effectiveness: A case study of primary school students. *Education and Information Technologies*, 28(6), 6287–6320.
- 6. Spina, G., Bozzola, E., Ferrara, P., Zamperini, N., Marino, F., Caruso, C., ... & Villani, A. (2021). Children and adolescent's perception of media device use consequences. *International Journal of Environmental Research and Public Health*, 18(6), 3048.
- 7. Abbasi, G. A., Jagaveeran, M., Goh, Y. N., & Tariq, B. (2021). The impact of type of content use on smartphone addiction and academic performance: Physical activity as moderator. *Technology in Society*, 64, 101521.
- 8. Masih, J., & Rajkumar, R. (2019). Internet addiction disorder and mental health in adolescents. *Journal of Depression and Anxiety*, \$13
- 9. Abu Khait, A., Mrayyan, M. T., Al-Rjoub, S., Rababa, M., & Al-Rawashdeh, S. (2023). Cyberchondria, anxiety sensitivity, hypochondria, and internet addiction: Implications for mental health professionals. *Current Psychology*, 42(31), 27141–27152.
- 10. Xue, Y., Xue, B., Zheng, X., Shi, L., Liang, P., Xiao, S., ... & Zhang, C. (2023). Associations between internet addiction and psychological problems among adolescents: Description and possible explanations. *Frontiers in Psychology*, 14, 1097331.
- 11. Griffiths, M. D., Kuss, D. J., & Pontes, H. M. (2016). A brief overview of Internet gaming disorder and its treatment. *Australian Clinical Psychologist*, 2(1), 201–205.
- 12. Venkatesh, V., Sykes, T., Chan, F. K., Thong, J. Y., & Hu, P. J. (2019). Children's Internet addiction, family-to-work conflict, and job outcomes: A study of parent-child dyads. *MIS Quarterly*, 43(3), 903–927.
- 13. Wu, L., Ding, F., Hu, T., Cheng, G., & Chen, X. (2021). Daily stress and behavioral problems in Chinese children: The moderating roles of family functioning and the classroom environment. *Frontiers in Psychology*, 12, 74229.
- 14. Servidio, R., Bartolo, M. G., Palermiti, A. L., & Costabile, A. (2021). Fear of COVID-19, depression, anxiety, and their association with internet addiction disorder in a sample of Italian students. *Journal of Affective Disorders Reports*, 4, 100097.
- 15. Li, L., Ma, Y., Friesen, D., Zhang, Z., Jin, S., & Rozelle, S. (2021). The impact of Internet use on adolescent learning outcomes: Evidence from rural China. *China Agricultural Economic Review*, 13(3), 569–592.
- 16. Mohamed, M. A., Hassan, G. A., Sayed, S., & Fathi, D. E. (2020). Effect of Internet addiction on academic achievement among primary school children. *Egyptian Journal of Health Care*, 11(3), 1219–1228.



- 17. Aksoy, E., & Öztoprak, Ü. (2021). The effect of Internet addiction in students on quality of school life. *Journal of Contemporary Medicine*, 11(2), 225–231.
- 18. Alenezi, A., Saleh, M. S. M., Kamel, L. H., Saad, A. F., Elmahdy, M. F., & Pandaan, R. P. (2020, February). Emerging technologies and the negative impacts of using the Internet among nursing students. In 2020 Advances in Science and Engineering Technology International Conferences (ASET) (pp. 1–9). IEEE.
- 19. Chen, C. (2021). Problematic Internet use, social-emotional learning competencies, and bullying victimization among Chinese adolescents. *University of California, Santa Barbara*.
- Tafuri, F., & Latino, F. (2024). School medical service: Strategies to promote psycho-physiological well-being. Pediatric Reports, 16(1), 214–231.
- 21. Soh, S. L. H., Lane, J., Lim, A. Y. H., Mujtaba, M. S., & Tan, C. W. (2022). Interventions and measurement instruments used for falls efficacy in community-dwelling older adults: A systematic review. *Journal of Frailty, Sarcopenia and Falls*, 7(3), 151.
- 22. Ato, M., López, J. J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología. *Anales de Psicología*, 29(3), 1038–1059.
- 23. Alzahrani, S. H. E., & Waeiskul, S. B. S. (2019). The impact of using social networking sites on the academic achievement of middle and secondary school students in Jeddah. *International Journal of Educational and Psychological Sciences*, 30, 224–282.
- 24. Shahid, N., Asif, M., & Pasha, M. A. (2022). Effect of internet addiction on school-going children. *Inverge Journal of Social Sciences*, 1(1), 12–47.
- 25. Al-Rifai, S. B. Q. (2011). The effectiveness of a counseling program to modify the behavior of Internet use among students of King Abdulaziz University in Jeddah addicted to the Internet. *Journal of the Faculty of Education, Alexandria University*, 21(4), 331–372.
- Suhaimi, A. R. (2022). The effectiveness of a values-based counseling program to reduce Internet addiction. *Journal of Psychological Counseling*, 71, 405–463.
- Alshammari, S. (2020). The effectiveness of a counseling program in improving the level of academic adaptation at the University
 of Hail students. *Journal of American Academic Research*, 8, 78–89.
- 28. Cheever, N. A., Rosen, L. D., Carrier, L. M., & Chavez, A. (2014). Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate, and high users. *Computers in Human Behavior*, 37, 290–297.
- 29. Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. Computers in Human Behavior, 17, 187–195.
- 30. Abdel Razaq, W. M., & Al Harbi, F. A. (2023). Internet addiction and its relationship to achievement motivation and academic achievement among female students of the College of Education at King Saud University in Riyadh in light of the Corona pandemic. Department of Psychology College of Education, King Saud University, 9, 91–111.
- 31. Hander, M. S. A. (2022). Internet addiction and its impact on the academic achievement of ninth-grade students. *African Journal of Advanced Studies in the Humanities and Social Sciences*, 1(4), 374–385.
- 32. Abdelmalek, N., & Abdallah, B. (2019). The impact of Internet addiction on the academic achievement of students who are about to obtain the baccalaureate degree. Faculty of Sciences, Humanities, Social Studies and Islamic Sciences, Ahmed Derayah University of Adrar.
- 33. Petruzelka, B., et al. (2020). Interaction of socioeconomic status with risky Internet use, gambling, and substance use in adolescents from a structurally disadvantaged region in Central Europe. *International Journal of Environmental Research and Public Health*
- 34. Al-Subaie, F. N. H. (2023). Children's use of the Internet from the parents' point of view: An applied study in the center of Makkah Al-Mukarramah, Saudi Arabia. *Journal of Educational Sciences, Umm Al-Qura University, 31*(1), 251–266.
- 35. Mohamed, S. M. A. (2022). A proposed vision for parental education for Egyptian society in light of the repercussions of the digital age. *Journal of the Faculty of Education Assiut*, 38(9), 134–168.
- 36. Hafiza, K. (2020). Digital socialization and the use of the Internet by the Arab child. *Arabic Journal of Media and Culture of the Child, Ammar Thliji University of Laghouat, 3*(11), 159–178.
- 37. Abdel Halim, M. M. (2022). Parental mediation in children's use of websites and its relationship to promoting their culture of digital citizenship. *Egyptian Journal of Public Opinion Research*, *Cairo University*, 21(4), 517–561.