

Effectiveness of Educational Intervention for Adolescents' Mothers Regarding Safe Use of Internet

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Abstract:

Background: The internet is unique of technological progression that various adolescents routine on a daily base. The internet is observed to be progressively adopted as a readily reachable means for information retrieval, entertaining, and socialization.

Aim of the study: This study aimed to assess the knowledge, beliefs and practice of adolescents' mothers regarding the safe use of internet and evaluate the effect of educational intervention on mothers' knowledge, belief and practices regarding the safe use of internet.

Subjects and Methods: A Quasi-experimental design was used. This research achieved in two setting at Assiut and Tanta cities in Egypt.

Sample: A total of 50 worker educated mothers who have adolescent child involved by the convenience sampling technique. A structured interview questionnaire was planned to evaluate socio-demographic data, knowledge, beliefs and practices of the mothers about safe use of internet at pre- and post-intervention. **Results:** The study revealed statistical significance improvement regarding the knowledge, positive beliefs and practices of the mother about the safe use of internet ($P= 0.000$). Moreover, there was a positive correlation among knowledge, belief and practice of the mothers.

Conclusion: The post-intervention rising of knowledge, belief and practice pointed to effectiveness of the program. Consequently, the researchers suggested that all the health care providers for example pediatric nurses, school health nurses should offer in-service education concerning safe use of internet.

Keywords: Intervention program, adolescents, safe use of internet.

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I. Introduction

Internet is a global system that is increasingly used by all people as one of the most important devices for access of information in the world (Karrenberg et al., 2014).

The World Health Organization (WHO, 2015) states "adolescents" as individuals among 10 and 19 years. The American Academy of Pediatrics (2015) "Bright Futures" recommendations for pediatric preventive services identifies adolescence as the ages of 11-21 years.

Information and Communication Technology (ICT) is a broad term which can refer to any communication tool such as mobile phones, personal computers/laptops etc. It involves both software and hardware used for computers and internet access (Alpizar, 2010). Usage of new media like internet, mobile phones makes parents worried as excess use of such technology can have harmful effects on children. They may develop aggressive behavior and unhealthy eating habits (Strasburger et al., 2009).

Alam et al. (2014) exemplified that time mis- management effects are usually associated with heavy internet use. Too, stated that heavy recreational use of the internet between adolescents was interrelated with other problems including; late evening use, social isolation and sleep disorders and a decline in academic performance and they missed meals for being online. Sleep patterns are interrupted due to late night logins which cause excessive fatigue, impairing academic or decreasing occupational performance, and may diminish the immune system, leaving the addict vulnerable to illness. Heavy internet users were much less likely to involve in the following health promoting behaviors than the rest; attempting to eat a healthier diet, taking nutritional supplements, trying to increase physical activity levels, and were revealed to be significantly more possible to be overweight (Lam 2009).

Parents must set family rules on computer and internet use, rules which apply to parents as well. Through childhood and adolescence age social and sporting activities are very significant. Furthermore, children

and adolescences must be involved to family activities that do not involve the use of computer and internet. The installation and use access control programs to certain websites and time spent on the web can be very useful. Lastly, computer should be sited in a shared room by the family and not in the children's room (Tsitsika, 2011) .

Significance of the study:-

Ministry of communication and information Technology in Egypt(2017) indicated that 11% of population in Upper Egypt employ the **asymmetric digital subscriber Line(ADSL)** for the internet use. Over 80% of internet café customers are young people(**United National Development program (UNDP) &Institute of National Planning(INP), Egypt Human Development Report,2010**). Technology influences lifestyle of adolescents, with the advent of the internet, the virtual life created by the internet seems to be replacing real life experiences. This has significant bearing on both the physical and mental health of an individual. Adolescents spend a significant amount of time on the internet. Studies have demonstrated that this overindulgence can occasionally be problematic, with some students conforming to internet addiction symptoms such as heavy preoccupation with the internet, excessive online time, compulsive behavior and time management problems. Also, this could have a negative impact on their lifestyle, with a gradual transformation to a more sedentary lifestyle (**Lam et al., 2009**).

Aims of the study:

This study aimed to:

- Assess the knowledge, belief and practices of mothers having dolescents children regarding the safe use of internet.
- Evaluate the effectiveness of educational intervention on mothers' knowledge, belief and practice regarding the safe use of internet.

Hypothesis:

h1: The post program mean knowledge scores of mothers having adolescents children who will be exposed to educational nursing program will have higher than their per program mean knowledge scores.

h2: The post program mean practice scores of mothers who will be exposed to educational program will be higher than their per program scores.

h3: The post program positive beliefs scores of the mothers who will be exposed higher than their per program scores.

Research design:

Quasi-experimental design was used.

Setting of the study:

The study was carried in at Assiut University Children Hospital and at Tanta University Hospital. From the beginning of May to the end of June 2017.

Sampling:

Researchers used convenience-sampling technique for this study.

Sample size:

The study included 50 mothers with the following inclusion criteria: the mothers who are willing to participate, mothers who are available at the time of data collection, educated and workers and mothers who had children at adolescent stage. . The mothers who dropped at follow-up were excluded.

Tools of data collection:

Investigators used one tool to accomplish this study:-

Tool : A structured interview questionnaire:

It was developed by the researchers based on reviewing the relevant literatures and divided into four main parts to assess the followings:

Part 1) Socio-demographic characteristics:

Including mother age, residence,mother's educational level and number of children.

Part 2)Knowledge of the Mothers:

Researchers developed it and included (9) questions aboutuse of internet. Scoring system: The mothers ' knowledge was calculated for each item as follows: correct answer was scored (1point) while wrong answer or

did not know was scored (zero point). The total score for all questions related to knowledge was 9 points. Those who obtained less than 60% considered to have poor knowledge level. While those who obtained 60%-70% were considered having good level of knowledge.

Part 3) Belief of the Mothers toward hazards of misuse of internet on children health (5 items). The total score of the items was 5. The responses of participants were scored one for the positive response and zero for the negative. Mothers' score of 60% and more was considered positive beliefs while mothers' score less than 60% was considered negative beliefs.

Part 4) mothers' practices regarding protecting their children from internet risks:

It was developed by the researcher and includes specification of the risks expected by the mothers from internet on their children and the mothers' practice to protect them from internet risks. It includes 12 items related to the protective measures from internet dangers on the children.

- The total practice score was 12 grades. the grades for each step performed was assigned as follow:

Right action (one grade)

Wrong action or not done (zero grade)

- The total score was considered satisfactory when the total score was (60% to 100%).
- Unsatisfactory when the total scores less than (60%).

Validity:

The five experts in the field reviewed the tool to ascertain their content validity and it was 97.3%.

Administrative design:

An official letter approval was obtained from the Dean of Faculty of Nursing, to the Director of Assiut University Children Hospital and in Tanta Governorate. This letter included a permission to carry out the study and explain the purpose and nature of the study. Meetings with outpatient clinics' manager to explain the objectives and contents of the program and the methods for applying the program were held to gain their cooperation.

Pilot study:

It was carried out including on 10% of the study sample to assess the tool clarity, applicability, and time needed to fill each sheet. The participants of the pilot study were excluded from the main study sample. **The reliability** was assessed in the pilot study and it was estimated by Alpha Cronbach's test for the tools and its result was $R=0.883$.

field work

The program included four phases:

Phase I (assessment phase):

The actual fieldwork started from beginning of data was collected in the period from the beginning of May to the end of June 2017. Investigators interviewed the mothers to explain the purpose of the study and reassure them that all data and results will be confidential. Pretest Arabic structured questionnaire was distributed in order to collect the required data. The interview was carried out in outpatient clinic and it took about 15-20 minutes for each one.

Phase II preparatory phase:

The program was designed based on the identified needs of mothers. in a form of printed (Arabic booklet). It was also supplemented with information based on review of relevant literature about safe uses of internet. it included the following topics:

- Definition of internet
- Advantages and disadvantages of internet
- Summarize hazards of internet on adolescent health
- Measure taken to protect their adolescent
- Apply safety precautions during uses of internet
- Internet addiction, definition, causes, sign and symptoms and parent role

Sample was divided into small groups; each group involved 2 - 4 mothers.

Teaching time: The time of teaching sessions started at 9:30 am until 11.30 am.

Teaching place: The program conducted at Assiut University Children Hospital and Tanta University Hospital.

Phase III implementation phase:

Educational program teaching was administered to each group in three sessions (lecture, demonstration and video showing) on the same day and each session lasted 45minutes. The 1st session, included, pretest and learning the mothers about misuse of internet on children health and measures of protecting children from Internet risks

The 2nd session included uses of internet. The 3rd session included practices about safe using of internet. The program was presented in clear and concise form and different teaching methods, as illustrative lecture, group discussion, video-showing and demonstration were used. Each session usually started by a summary of what has been learned during the previous sessions and the objectives of the new topics. Feedback and reinforcement of teaching was performed according to the mothers to ensure their understanding. Each mother obtained a copy of the booklet that included all the training contents to facilitate the teaching of each topic.

Phase IV: follow up phase:

In order to assess effectiveness of the intervention program, a post-test was done using the same tool. Results of the post-test were compared to the pre-test results.

Ethical considerations:

All the relevant principles of ethics in research were followed. The pertinent authority approved the study protocol. Participants' oral consent to participate was obtained after informing them about their rights to participate, refuse, or withdraw at any time. Total confidentiality of any obtained information was ensured. The study questionnaire did not entail any harmful effects on participated mothers.

Statistical design:

The collected data was analyzed using Statistical Package for Social Science (SPSS) version 20. Descriptive and inferential statistics were calculated for socio-demographics, respondents' healthy practices while chi-square was used for inferential statistics of studied parameters. A probability level of 0.05 was adopted as a level of significance.

II. Results

Table (1): Percent distribution of the studied mothers according to their socio–demographic characteristics.

Characteristics	The studied mother (n=50)	
	N	%
Age (in years)		
▪ (20-<30) years	31	62.0
▪ (30-< 40) year	11	22.0
▪ 40 years and above	8	16.0
Educational level		
▪ Less than secondary education	8	16
▪ Intermediate education	32	64.0
▪ Bachelor degree and more	10	20.0
Marital status		
▪ Married	49	98.0
▪ Widow	1	2.0
Number of children		
▪ < 2	16	32.0
▪ (2-4)	34	68.0
Residence		
▪ Rural	41	82.0
▪ Urban	9	18.0

Table (1) presents socio-demographic characteristics of the studied mothers. It was noticed that 62 % of the studied mothers' age range were in 20-30 years. More than half of the mothers have intermediate education and coming from Rural area (80%,82% respectively).

Table (2): Percent distribution of true mothers' knowledge about the safe use of internet by children :

Items	The studied mothers (n=50)				FE P-value
	Pre		Post		
	N	%	N	%	
1. children are allowed to use the internet at an early age	8	16.0	10	20.0	0.795
2. Keeping browser archives for the control of children useage of the internet	31	62.0	40	80.0	0.077
3. Noticing children interaction with specific sites on the internet	27	54.0	39	78.0	0.02*
4. The site has to be suitable for the child age	32	64.0	38	76.0	0.275
5. Child affected by the internet in his or her life	32	64.0	35	70.0	0.671
6. Child benefit from the internet in searching for his or her academic problems	34	68.0	36	72.0	0.828
7. Hours allowed for the child per day to use internet	1	2.0	9	18.0	0.016*
8. Review a web browser to monitor sites visited by the child.	35	70.0	37	74.0	0.824
9. Teach the child to use a child-specific search engine	14	28.0	49	98.0	0.000*

FE: Fisher's Exact test

* Significance at level P < 0.05.

Table (2) shows the percent distribution of the true mothers' knowledge about the safe use of internet by children. It refers to that there was significant improvement in mothers' responses regarding the necessity of noticing children's interaction with specific sites from (54%) preprogram to 78% post program. There was significant difference at P= 0.02. regarding mothers' knowledge about the hours allowed for the child to use internet there was significant improvement from 2% preprogram to 18% post program. As regards to teaching the child using the child specific research engine mothers knowledge was improved from 28% preprogram to 98% post program. There was statistical significant difference at p =0.000.

Table (3): Percent distribution of the studied mothers according to their total score of knowledge about safe use of internet.

Total Knowledge score	The studied mothers (n=50)				χ ² P
	Pre		Post		
	N	%	N	%	
▪ Poor	38	76.0	19	38.0	39.733 0.000*
▪ Fair	12	24.0	3	6.0	
▪ Good	0	0.0	28	56.0	
Range	(2-6)		(3-8)		t=4.830
Mean ± SD	4.32±1.316		5.82±1.758		P=0.000*

Table 3 shows that there was statistical significant difference regarding total score of mother knowledge P=0.000 while it was found that 76% of the mothers had poor total knowledge score preprogram compared to 38% post program. In addition none of the mothers obtained good score before the program compared to 56% post program. There was statistical significant difference at X² =39.733 & P= 0.000). The mean score of mothers' knowledge was **4.32±1.316 preprogram** compared to **5.82±1.758 post program**.

Table (4): Percent distribution of the studied mothers according to their positive believes about their children's use of internet

Items	The studied mothers (n=50)				FE P-value
	Pre		Post		
	N	%	N	%	
1. Do you think that Internet influences the actions and decisions of the children	30	60.0	41	82.0	0.027*
2. Do you think it is necessary to impose special rules and conditions for your children when using the Internet	27	54.0	43	86.0	0.001*
3. Do you think the use of internet is important for your child	7	14	15	30	0.090
4. Do you think it is necessary to control your kids' use of the Internet	7	14	16	32	0.056
5. Do you think it is necessary to develop a child-friendly browser.	46	92.0	50	100.0	0.117

FE: Fisher's Exact test

* Significance at level P < 0.05.

Table (4) shows the percent distribution of studied mothers' positive believes about the safe use of internet by their children. It revealed that the majority of mothers (82%) had positive belief post program

regarding that internet influences the actions and decisions of the children compared to 60% preprogram. There was statistical significant difference at $P=0.027$.

Furthermore there was significant positive change in mothers beliefs regarding the necessity of imposing special rules for children when using the internet post program (86%) compared to 54% preprogram. There was statistical significant difference at $P= 0.001$.

Table (5): Percent distribution of the studied mothers according to their total belief score about children's use of the internet

Total mothers Belief score	The studied mothers (n=50)				χ^2 P
	Pre		Post		
	N	%	N	%	
▪ negative beliefs	19	38.0	18	36.0	FE 1.00
▪ positive beliefs	31	62.0	32	64.0	
Range	(2-4)		(1-5)		t=1.687 P=0.095
Mean ± SD	2.64±0.525		3.00±1.414		

FE: Fisher's Exact test

Table (5) shows the percent distribution of mothers total belief scores. It revealed that there was slight improvement in mothers believes regarding their positive believes. Mean score was 2.64 ± 0.525 preprogram compared to 3.00 ± 1.414 post program. There was no significant statistical difference.

Table (6): Percent distribution of the studied mothers according to their awareness about the dangers of the Internet on children

Mothers knowledge about the Internet risks on their children	The studied mothers (n=50)				FE P-value
	Pre		Post		
	N	%	N	%	
Does the Internet have risks for children?					FE 0.000*
▪ No	16	32.0	0	0.0	
▪ Yes	34	68.0	50	100.0	
Risks can a child have through Internet					12.190 0.001*
▪ No problems	16	32.0	0	0.0	
▪ Health problems	16	32.0	0	0.0	
▪ Psychological problems	13	26.0	0	0.0	
▪ Behavioral problems	24	48.0	0	0.0	
▪ Social problems	4	8.0	0	0.0	
▪ All of the above problems	10	20.0	50	100.0	

FE: Fisher's Exact test

* Significance at level $P < 0.05$.

Table (5) shows the percent distribution of the studied mothers regarding dangers of internet on their children. as regards to the agreement of the mothers on the presence of dangers for the internet on children it was found that 68% of the mothers agreed on the presence of dangers preprogram compared to 100 % of them get aware of the internet dangers post program. There was statistical dangers at $P= 0.000$.regarding the types of risks associated with internet usage by children the table revealed that all the mothers aware post program about all types of internet risks compared to 20% of them who were aware of all the risks preprogram.

Table (7): Percent distribution of the total mothers' practices score for protecting their children from Internet risks

Total mothers' practices score	The studied mothers (n=50)				χ^2 P
	Pre		Post		
	N	%	N	%	
▪ Un satisfactory	50	100.0	14	28.0	FE 0.00*
▪ Satisfactory	0	0.0	36	72.0	

FE: Fisher's Exact test

* Significance at level $P < 0.05$.

Table (7) showed the percent distribution of the total mothers' practices score for protecting their children from Internet risks. It revealed that the majority of mothers' practices improved post program and get satisfactory (72%) compared to 0% preprogram. There was statistical significant difference at $P= 0.00$.

Table (8): Correlation between mothers' total score of knowledge, practices to protect their children from Internet risks and mothers total belief score pre and post intervention

	Total knowledge level												
	Pre				χ ² P	Post							
	Poor		Fair			Poor		Fair		Good		χ ² P	
	N	%	N	%	N	%	N	%	N	%			
Total mothers belief level													
▪ negative	11	22.0	8	16.0	FE 0.000*	8	16.0	1	2.0	9	18.0	1.143	
▪ positive	1	2.0	30	60.0		10	20.0	2	4.0	20	40.0	0.565	
r , P	0.164 , 0.254					0.149 , 0.300							
Measures taken to protect children from Internet risks													
▪ unsatisfactory	38	76.0	12	24.0		12	24.0	1	2.0	1	2.0	7.980	
▪ satisfactory	0	0.0	0	0.0		16	32.0	2	4.0	18	36.0	0.018*	
r , P						0.346 , 0.014*							

FE: Fisher's Exact test

* Significance at level P < 0.05.

Table (8) presents correlation between mother's' total score of knowledge, practices to protect their children from Internet risks and mothers' total belief score pre and post intervention. It revealed that there was statistical significant correlation between mothers knowledge score and practices post program (r= 0.346, P= 0.014). Regarding mothers' beliefs there was no significant correlation between mothers' beliefs and totals knowledge score pre and post program. (r = 0.149, p= 0.300).

Table (9): Correlation between socio–demographic characteristics of the studied mothers and their total scores of knowledge, total score of belief, and practices to protect their children from Internet risks pre and post intervention

Socio–demographic Characteristics	Total knowledge score				Total belief score				Total score of Mothers' practices of protection		
	pre		Post		pre		post		pre	post	
	R	P	r	P	r	P	R	P	r,P	R	P
Age (in years)	-0.779	0.000**	0.134	0.354	0.138	0.339	-0.296	0.037*	-	-0.343	0.015*
Educational level	0.288	0.042*	0.441	0.001**	-0.230	0.108	-0.529	0.000**	-	0.089	0.538
Children number	-0.776	0.000**	-0.159	0.269	0.336	0.017*	0.096	0.509	-	0.050	0.732
Residence											
▪ Rural	-0.324	0.022*	-0.375	0.007**	0.094	0.516	-0.239	0.095	-	0.288	0.043*
▪ Urban	0.324		0.375		-0.094		0.239		-	-0.288	

* Significant at level P <0.05 .

** Significant at level P <0.01 .

Table (9) shows Correlation between socio–demographic characteristics of the studied mothers and their total scores of knowledge, total score of mothers' belief, and practices to protect their children from Internet risks pre and post intervention. It revealed that there was statistical significant negative correlation between mothers age and their total knowledge score preprogram (r=-0.779, P=0.000) and negative correlation between mothers age and their total belief scores (r= **-0.296, P=0.037**)and total practice score post program(r=-0.343 , P=0.015). Regarding level of education there was significant positive correlation between mothers level of education and total knowledge score preprogram (r=0.228 , P=0.042) compared to (r=0.441 , P=0.001) post program. Regarding children' number there was statistical significant negative correlation between number of children and mothers total knowledge score (r= -0.776, P=0.000) preprogram compared to (r= -0.159, P=0.269)post program. Regarding mothers' residence it was found that there was significant negative correlation with total knowledge score of the rural mothers pre and post program (r=-0.324, -0.375 respectively) and positive correlation with the urban mothers pre and post program (r=0.324, 0.375 respectively) and P=0.022, 0.007 pre and post program respectively.

III. Discussion

Adolescence is a key period of rapid and extensive psychological and biological growth. Changes that occur in the brain and all organ systems during puberty and adolescence interact with social development to make a range of new behavior that can be positive or negative. Usage of new media like internet, mobile phones makes parents worried as excess use of such technology can have harmful effects on adolescent. They may develop aggressive behavior and unhealthy habits.

One of the biggest challenges faced by families, schools and social and educational policymakers today is to maximize the benefits and minimize the risks of Internet use among children and teenagers. (Strasburger et al., 2010)and (Viner et al., 2012).

Therefore, the first aim of this study was assessing the basic knowledge, beliefs and practices of adolescents' mothers regarding the safe use of internet. Because recognition of what is known and what is not known will enhance the decisions regarding the protective measures has to be done for protecting children and adolescents from the associated risks of internet. The present study revealed that, the majority of the mothers had poor total knowledge score about the safe use of internet. This may be attributed to reduced national programs concerned with upgrading public awareness about the safe use of internet in, addition mothers are the main care giver of all the family in the Egyptian society which create a big load on them to be capable to follow their children in all aspects of their life also mothers tend to be less internet users than fathers which may contribute to reduced their knowledge about internet and its safe use and these findings are in agreement with findings of **Ahmed R 2014** who mentioned that mothers are less likely to use internet than parents. In addition mothers may not aware enough about the risks associated with unsafe use of the internet by adolescents and consider their use as a modern and beneficial act free of any risks. These findings are in agreement with findings of the study conducted by the **Media Awareness Network 2000** and **ENISA 2008 and Fleming et al 2006** who reported that poor parental awareness about the web sites visited by their children because they are not aware about the risks associated with internet on their children. In addition these findings are in agreement with findings of **Elsemary 2003** who reported that parents stated they has no enough time to follow their children while they are online . In the same line with the study of **Moreno (2013)** who found that only 70.0% of adolescents reported hearing teaching or receiving counsel on Internet safety from their parents.

Another reason that may attribute to reduced mothers awareness about the use of internet by their children is that adolescents try to protect their privacy from parents particularly online activities by adding passwords that prevent mothers from accessibility to their children online history. This finding is in agreement with **Livingstone and Bober (2004)** how found that two thirds of 12- to 19-year-old home Internet users have taken some action to protect their privacy online.

An important aspect of parental communication with adolescent regarding Internet use is the parents own belief toward excessive internet use. The present study showed positive mothers beliefs post program with respect to developing online safety. This result is in agreement with **Fletcher & Blair, (2014)** who revealed that negative parental attitude toward excessive use of internet by their children and positive attitude towards development of online safety.

The current study revealed that total score of all the mothers' practices of protecting their children from internet risks was unsatisfactory preprogram. This finding may be attributed to the reduced level of awareness of the mothers about safe use of internet and the negative believe about internet as an absolute safe media for children. In addition as mentioned before mothers may have limited time to spend with their children and limited access to their online activities and limited technical facilities that enable them to take the necessary protective measures of their children. These findings are in agreement with **Hamad 2012 and Elawady 2004** who reported that a considerable percentage of parents do not take actions or protective measures or apply protective programs for protecting their children because they lack awareness about how their children use the internet and they misbelieve that internet has benefits regardless its risks on children.

On the other hand the present study revealed significant improvement of the mothers' total knowledge score post program compared to preprogram results score (4.32 ± 1.316 and 17.9 ± 5.82 respectively) and also their total practice score Improved post program compared to preprogram (72% , 0%) respectively. This improvement may be attributed to improved mothers' knowledge about the safe use of internet by children and increased their awareness about the actions that could be done for protecting their children which supports the effectiveness of the current program in improving mothers' knowledge, beliefs and practices about the safe internet use by their adolescents children. There was significant positive correlation between mothers' total knowledge score and their total practices score post program. These findings are in agreement with findings of **Sharples et al.,(2012)** who came to a similar conclusion by reporting that only a few mothers understand Internet safety and they concluded that, structured teaching regarding safe internet use is effective in promoting knowledge and practices of participants regarding use of internet.

Regarding integrating between knowledge, believe and practice of the mothers about the safe use of internet, the present study has demonstrated statistically significant associations between knowledge score and belief score, knowledge score and practice and practice score and belief. These findings are quite expected and is congruence with previous studies have been conducted on the knowledge, belief, and practice. **Bortoleto et al 2012**, believed that the knowledge of individuals is recognized as an important and influential factor in practices. Recently, **Srinivasan & Swarnapriya 2019**, found that there was a positive correlation found between the knowledge and practice and reported that having significant knowledge on a particular subject will definitely have an influence on one's attitude towards it.

Regarding the correlation between socio-demographic characteristics of the studied mothers and their total scores of knowledge, belief, and practices taken to protect children from Internet risks pre and post intervention. The present study reported statistical significant negative correlation between mothers age and

their knowledge score preprogram ($r=-0.779$, $P=0.000$) and negative correlation between mothers age and their total belief score ($r= -0.296$, $P=0.037$) and total practice score post program ($r=-0.343$, $P=0.015$). This may be attributed to that youth mothers tend to use internet and more aware of it is technology than older mothers. These findings are disagreed with findings of **Ahmed R2014** who reported that no significant correlation between parents of different age groups regarding their knowledge and practices regarding safe internet use because all age group parents are capable of providing their children with advice regardless of their internet using skills but the present study findings agreed with **Kaurs et al.,2019** who found a significant relationship between the respondent's age and Knowledge, Beliefs and Practice on internet and agreed with **Al-Khatib, et al.,2015** who clarified a significant association of age with knowledge regarding health hazards of Internet use among children.

Regarding level of education there was significant positive correlation between mothers' level of education and total knowledge score preprogram ($r=0.228$, $P=0.042$) compared to ($r=0.441$, $P=0.001$) post program. These findings are in agreement with **Ahmed R 2014**. Regarding children' number there was statistical significant negative correlation between number of children and mothers total knowledge score ($r= -0.776$, $P=0.000$) pre program compared to ($r= -0.159$, $P=0.269$) post program. This may be attributed to that the increased number of children increase the load on the mother and reduce her chance to upgrade here knowledge and develop here self to accommodate with the recent trends affecting their children development like internet and reduce the possible time to be spent with each child. Regarding mothers' residence it was found that there was significant negative correlation with total knowledge score of the rural mothers pre and post program. It may be due to that mothers from rural areas has lower chance to attend to educational programs concerned with the safe use of internet added to that reduced the accessibility to technical facilities needed by the mothers to increase their control over their children use for the internet. These disagreed with findings of **Ahmed R2014 and Barakat et al 2009** who reported that no significant difference between parents and families from different cultural background regarding their trial to protect their children from online risks.

IV. Conclusion

The study findings lead to the conclusion that majority of adolescents' mothers had unsatisfactory knowledge and improper practice regarding the safe use of internet. Implementation of the intervention program based on assessment of the mothers needs led to statistically significant improvements in their knowledge, belief and practice. Hence, the program was successful in achieving its goals. The study findings reveal that there is the great positive relationship among the knowledge, belief and practice about the safe use of internet.

V. Recommendations

Based on the previous findings and conclusion drawn from the current study, the following recommendations are suggested:

1. Schools should include in their educational program, and seminars about safe use of internet.
2. Raising mothers' awareness about adverse effects of misuse of internet on their life; through mass media and health education program in the schools and family-centered care.
3. Close attention from parent should be paid to children at risk for internet to avoid the internet addiction from occur.
4. Further studies need to be conducted to clarify the effects of internet on all age groups of children.
5. Public health programs have to be offered to all the population segments concerned with online children safety.

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