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Cyber bullying and teachers' awareness

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Abstract

Purpose – The purpose of this paper is to determine the awareness levels of teachers with regard to cyber bullying. In line with this purpose, the extent of awareness levels of teachers in general, regarding the issue of personal cyber security in their daily lives and the precautions that can be taken in this context have been measured.

Design/methodology/approach – Survey method is used in this study. The participants of this research were 184 teachers working at various provinces in Turkey during 2012-2013 academic year. A scale was used in this study.

Findings – The findings of the study reveal that the teachers in the sample group of the study have an average level of awareness on cyber bullying, in general. According to the findings of the study, based on branch, gender and frequency of internet use, there are statistically significant differences among teachers' awareness levels on cyber bullying.

Research limitations/implications – The data collection tool used for the study is a self-report scale and it is restricted to determining the awareness levels of teachers with respect to personal cyber security within the context of cyber bullying awareness and the precautions that need to be taken in this respect.

Practical implications – The data obtained from the study, the authors have conducted, can contribute to updating in-service and pre-service educational contents developed for teachers and prospective teachers, by providing insight for the policy makers.

Originality/value – It is believed that this research will contribute to the literature. On the other hand, this study will guide the policy makers/implementers in Turkey, as well.

Keywords Computer security, Internet research, Children, Cyber bullying, Teachers' awareness, Teachers' responsibility

Paper type Research paper

1. Introduction

Although it has many advantages, it should be taken into consideration that the internet has certain negative effects (Aoyama *et al.*, 2011). One of these negative effects is cyber bullying (Aoyama *et al.*, 2011). Though there are many definitions, it is seen that cyber bullying is defined as: "intentional acts carried out by an individual or a group via computers, mobile phones or other electronic devices in order to torment on others" (Kowalski *et al.*, 2008; Patchin and Hinduja, 2006; Smith *et al.*, 2006). Cyber bullying is growing every other day and individuals face it in a large part of their lives (Bamford, 2005; Wolak *et al.*, 2007). Studies on bullying in Turkey (Ayas and Horzum, 2011; Akbulut *et al.*, 2010; Aydoğan *et al.*, 2009) have started in the 2000s. Studies that have been carried out hitherto (Arıcak *et al.*, 2008; Bamford, 2005; Chen *et al.*, 2005; Kowalski, 2005; Smith *et al.*, 2006; Williams and Guerra, 2007; Wolak *et al.*, 2007; Ybarra and Mitchell, 2004) have shown that many students encounter cyber bullying either inside or

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outside of the school. In their study that they carried out in Taiwan, Chen *et al.* (2005) stated that individuals encounter cyber bullying even when they are playing games in online environments. Hugl (2011) found that compared to young people, grown-ups were more awareness about privacy and security issues in virtual environments. When the issue is discussed from the point of young people, however, the researches made show that one out of every five students encounter cyber bullying (Beran and Li, 2005; Smith *et al.*, 2006; Ybarra and Mitchell, 2004).

When studies on cyber bullying are examined, it is found that students experience cyber bullying at a rate between 10 and 34 percent and that more than half of them witness cyber bullying (Bamford, 2005; Beran and Li, 2005; Li, 2007; Patchin and Hinduja, 2006; Smith *et al.*, 2006; Ybarra and Mitchell, 2004; cited in Ayas and Horzum, 2011). On the other hand, it is also found that in many cases, the same students also experienced face-to-face bullying (Raskauskas and Stoltz, 2007; Shariff and Hoff, 2007).

In recent years, there are various projects carried out in Germany, the UK, Norway, Poland, Italy, Bulgaria and Israel by experts on cyber bullying. Anti-Bullying Village for Kids , which is one of those projects, creates a virtual learning environment and teaches students the mechanisms to cope with cyber bullying (Eden *et al.*, 2012). Researches show that cyber bullying effects students' academic achievement and skills negatively (Shariff and Hoff, 2007). There are also findings showing that it reduces motivation, decreases attendance to school and creates problems in focussing (Beale and Hall, 2007; Li, 2007). All these conditions create new roles/tasks for teachers (Eden *et al.*, 2012). One of these roles is being aware about cyber bullying.

High-awareness levels of individuals with regard to cyber/information/internet security is directly proportional to their knowledge about the subject (Şahinaslan *et al.*, 2009). No doubt, this situation reflects the fact that teachers' awareness about cyber bullying is closely related to their knowledge on the same subject. In the research he carried out with 154 prospective teachers in Canada, Li (2005) found that prospective teachers did not have sufficient knowledge on cyber bullying, and thus they did not know how to deal with it and were not sure if they could provide support for students. Bauman and Del Rio (2005) performed a study with 82 prospective teachers working in the USA and UK and explored that they were not very knowledgeable on cyber bullying. They also stated that this was a factor that prevented students from being careful about the concept of cyber bullying. Bradshaw *et al.* (2007) investigated the cyber bullying at the level of all school groups (elementary, middle and high) in their research. According to the results of their research, school staff was knowledgeable on cyber bullying and the students were quite rarely exposed to cyber bullying. Undoubtedly, this might have been the result of school staff's sensitivity to cyber bullying.

According to Spears (2009) in order to achieve academic goals at schools, teachers should support students in academic, social, emotional and peer relationships. At the same time, teachers are the most important element in coping with all kinds of problems related to bullying (Li, 2007). In his research Mason (2008) found that although most teachers' level of awareness in face-to-face bullying was high, the same was not valid for cyber bullying. Similarly, Dake *et al.* (2003) and Limber (2002) found in their studies that since teachers were not well aware about cyber bullying cases, they did not pay attention to this negative case.

As can be seen in the above-mentioned studies, findings of which have been conveyed, students are quite more exposed to cyber bullying. This results in students' loss of motivation for education, causes them to be absent from school and adversely affects their academic successes (Beale and Hall, 2007; Li, 2007; Shariff and Hoff, 2007). It is

highly important that teachers have a high level of awareness regarding cyber bullying for both themselves and supporting their students coping with cyber bullying (Migliore, 2003). In order to provide support, teachers should be aware of this issue. There are very limited studies in Turkey on the issue (Ayas and Horzum, 2011; Yenilmez and Seferoğlu, 2013). On the other hand, when it is considered that each student and teacher will be provided with a tablet computer until 2016 within the scope of FATİH Project and that these tablets will have internet connection at least inside the school, awareness of cyber bullying becomes more important. Students' great interest especially social media reveals the significance of attaching more importance to the issue of cyber bullying. High-awareness levels of teachers about cyber bullying are believed to have direct effects on the solution of problems experienced/to be experienced by the students. Problems of absence from school, lack of motivation and academic successes of students are, therefore, considered to be eliminated to a certain extent. On the other hand, it is also expected that determination of the awareness levels of teachers will lead to updating in-service educational contents, held in Turkey on a regular basis with respect to use of technology. In this context, it is believed that this research will contribute to the literature in Turkey and to the practices in terms of showing what kind of precautions can be taken. In this framework, the overall aim of this research is to measure teachers' level of awareness regarding cyber bullying. Answers to the following research questions are searched in order to reach this overall objective:

RQ1. What is teachers' awareness level on cyber bullying?

RQ2. Does teachers' awareness level on cyber bullying increase/decrease by teachers' gender?

RQ3. Does teachers' awareness level on cyber bullying increase/decrease by teachers' branch?

RQ4. Does teachers' awareness level on cyber bullying increase/decrease by teachers' frequency of using internet?

2. Research method

2.1 Research design

We used survey method in this study. According to Karasar (2008, p. 77) "Survey method is a research method which aims to describe an existing situation as it is." In this context, we aimed to determine teachers' level of awareness regarding cyber bullying.

2.2 Sample

Snowball sampling, which is one of the purposeful sampling methods, is used in this study. In snowball sampling, first of all one of the agents of the population is accessed. Via this agent, a second and later a third agent is accessed. Thus, the sample size grows like a snowball (Yazıcıoğlu and Erdoğan, 2004). In this study, the sample size was enlarged by reaching one teacher from each branch (information technology, guidance, classroom teachers and other branch teachers). And via e-mail, four teachers from these four branches reached the other teachers. The teachers in the sample group work at primary and secondary schools. The reason behind choosing teachers from different branches and levels is to provide voluntary participation and to form a heterogeneous structure. The study pays particular attention to information technologies, counselling and participation of classroom teachers. The reasons behind this can be listed as

follows: teachers of information technologies play a leading role in ensuring effective and safe use of information technologies in Turkey, considering that the condition of cyber bullying has a psychological aspect, awareness levels of the school counsellors, the main reference guide who can support students in this regard, also need to be determined and awareness levels of classroom teachers with regard to the subject, who are together with their students during almost every course hour nearly every weekday at elementary school level, is considered significant.

Accordingly, the participants of this research were 184 teachers working at various provinces in Turkey during 2012-2013 academic year. Among these teachers 78 (42.4 percent) were male, 106 (57.6 percent) were female. In total, 36 (19.5 percent) of the teachers in the sample group were information technology teachers, while 62 (33.7 percent) were classroom teachers, 38 (20.6 percent) were guidance teachers and 48 (26.2 percent) were branch teachers.

2.3 Data collection instrument

To determine teachers' awareness regarding cyber bullying "Sensibility Scale on Cyber Bullying" (see Appendix 1) developed by Tanrıkulu *et al.* (2013) was used in this study. The scale is composed of 13 items and there are three answer options which are "Yes, Sometimes and No." The items listed on the scale generally measure to which extent teachers are aware of personal information security and how they react when they encounter cyber bullying. High scores achieved by teachers over this scale indicate that they have a high-awareness level about cyber bullying.

2.4 Validity and reliability

The first validity and reliability study of this scale developed by Tanrıkulu *et al.* (2013) was made in April 2011 with a limited number of participants. Later, in order to make better analysis about the reliability and validity of the scale, a second study was carried out in November 2011 with the participation of 663 different participants. As a result of the analysis carried out, the Cronbach's α internal coefficient of consistency was found as 0.904 for the first participants (the group to which exploratory factor analysis was applied); 0.832 for the second participants to which confirmatory factor analysis was applied and 0.873 for the combined group. Internal consistency reliability coefficient which was obtained via split-half method was found as 0.846 for the first group; 0.751 for the second group and 0.805 for the whole combined group. In order to determine the reliability coefficient by test-retest method, the scale was implemented on 120 people in a two-week interval. As a result, test-retest reliability coefficient of the scale was found as 0.63. In addition, it was stated that the item-total correlation for all items in the scale was 0.537 for the first group; 0.285 for the second group and ranged between 0.419 and 0.629 for all groups; and the *t*-scores were significant ($p < 0.001$). It is stated that this shows that the scale has a distinctive character (Tanrıkulu *et al.*, 2013).

As a result of validity and reliability analysis carried out by the researchers, it was reported that this scale was accepted as a scale measuring the level of awareness on cyber bullying. And they reported that this scale was a valid and reliable one-dimensional scale (13 questions) α internal coefficient of consistency calculated using the data obtained in the research was found as 0.88.

2.5 Data collection and analysis

The data of the research were collected online. To this end, an online "Sensibility Scale on Cyber Bullying" form was created and the participants were given the web address to

access the scale. SPSS 13 package program was used in statistical analysis of the data collected for the research. Shapiro-Wilks Normality Test was used in testing the normality hypothesis of the data. If the significance value of the Shapiro-Wilk Test is greater than 0.05, the data are normal. If it is below 0.05, the data significantly deviate from a normal distribution (Yazıcıoğlu and Erdoğan, 2004). In our study, the result of Shapiro-Wilks Normality Test revealed that the data did not show a normal distribution. If the data does not show a normal distribution, nonparametric tests must use. Therefore, Mann-Whitney *U* and Kruskal-Wallis test methods, which are nonparametric tests, were used in analyzing the data. In significance tests 0.05 level was based on.

3. Findings

In this section, the findings obtained by analyzing the data collected from the teachers and the comments on these findings are given.

3.1 Teachers' awareness levels on cyber bullying

In line with the first research question of the study, high arithmetic average of total points obtained from the scale shows that their awareness level on cyber bullying is high; and low arithmetic average shows that their awareness level is low. In interpreting the results obtained from the three-point Likert-type scale; the following formula (Tekin, 1987; Turgut, 1982 cited in Ayas and Horzum, 2011) has been used: range width (a) = row width/group number to be applied. Frequency of observation and their limit values in the scale created accordingly are shown (see Table AI).

In this framework, descriptive statistics showing teachers' awareness levels on cyber bullying are given in Table AII. According to Table AII, the average of the total score teachers got from the scale is 30.79 (2.36 over 3). So, it can be said that teachers' awareness level on cyber bullying is moderate.

3.2 Differentiation of teachers' awareness levels on cyber bullying by gender

In line with the second research question of the study, descriptive analysis of teachers' awareness levels on cyber bullying by gender are given (Table AIII). When Table AIII is analyzed, it is seen that there are differences among average score on awareness levels in cyber bullying by gender. In order to determine whether this is a statistically significant difference or not, Mann-Whitney *U*-test, one of the nonparametric tests was used. Test results are given in Table AIV.

When Table AIV is analyzed, it is seen that there is a statistically significant difference among teachers of different genders regarding their awareness levels on cyber bullying ($U = 3{,}320.00$, $p < 0.05$). As is seen in Table AII, when the averages of groups are examined, it is seen that male teachers have a relatively higher level of awareness compared to female teachers.

3.3 Differentiation of teachers' awareness levels on cyber bullying by branch

In line with the third research question of the study, descriptive analysis of teachers' awareness levels on cyber bullying by branch are given in Table AV.

In line with the third research question of the study, Kruskal-Wallis test results on whether teachers' awareness levels on cyber bullying differ by branch are given in Table AVI. When Table AVI is analyzed, it is seen that teachers' awareness levels on cyber bullying differ significantly by branch ($\chi^2 = 143.45$, $p < 0.05$). In order to determine among which groups this differentiation exist Mann-Whitney *U*-test was

used. Accordingly, there are statistically significant differences between "Information Technology" and "Classroom," "Guidance" and "Other" branch teachers; and between "Classroom" and "Other" branch teachers; "Guidance" and "Other" branch teachers.

When the averages of the groups are examined, it is seen that information technology teachers have the highest average while teachers grouped as "other" (science and technology, foreign language, mathematics, social sciences) have the lowest averages.

3.4 Differentiation of teachers' awareness levels on cyber bullying by the frequency of using internet

In line with the fourth research question of the study, descriptive analysis of teachers' awareness levels on cyber bullying by frequency of using internet are given in Table AVII. In line with the third problem of the research, Kruskal-Wallis test results on whether teachers' awareness levels on cyber bullying differ by frequency of using internet are given in Table AVIII.

When Table AVIII is examined, it is seen that teachers' awareness levels on cyber bullying differ significantly by their frequency of internet use ($\chi^2 = 33.29$; $p < 0.05$). To determine among which group(s) this differentiation exist Mann-Whitney *U*-Test was applied. According to the test, there are statistically significant differences between teachers who use internet "less than 1 hour" and those teachers who use internet "1-5 hours," "5-10 hours," "10-15 hours" and "more than 15 hours"; and between those teachers who use internet "5-10 hours" and those who use internet "10-15 hours" and "more than 15 hours" weekly. When the averages of the groups are examined, the highest average belongs to the teachers who use internet "10-15 hours" a week while the lowest average belongs to the teachers who use internet "less than 1 hour" a week.

4. Conclusion and suggestions

Bullying is a complex and multifaceted concept (Brotheridge, 2013). Since particularly young adults behave less aware in internet environment, the issue should be discussed more seriously. Numerous studies (Beran and Li, 2005; Grigg, 2012; Jiang, 2014; Kowalski *et al.*, 2012) conducted up to now show that students need to be informed about cyber bullying. This requirement can be met by informing the students in the field of cyber bullying and by increasing their awareness levels (Sprague and Nishioka, 2012; Tettegah and Hunter, 2006). This duty was assigned to teachers with the role titled "to raise students in accordance with the requirements of the age of information and to guide them with respect to information security" as mentioned in the declaration of duties and responsibilities of teachers published by the Turkish Ministry of National Education.

Within the framework of FATİH Project, which is currently in progress and is planned to be completed in 2016, an interactive board will be given to each classroom and a tablet computer will be given to every teacher and student. This means that both students and teachers spend most of their times in a day with tablet computer and internet. From this perspective, students and teachers may face with more cyber bullying than they did in the past. However, when the relevant literature in Turkey is analyzed, only a few studies determining the awareness conditions of teachers about cyber bullying are observed. Determination of teachers' awareness on this subject through various studies will direct both the literature and the policy implementers.

The findings of our study reveal that the teachers in the sample group of the study have an average level of awareness on cyber bullying, in general. Findings of the study have some differences compared to the findings of other studies carried out on

the same issue in Turkey (Ayas and Horzum, 2011; Yenilmez and Seferoğlu, 2013). Different from the findings of this study, in the mentioned studies, it is given that the teachers are aware of the fact that internet is a media that could pose risk and danger and that their awareness on cyber bullying is high. One possible reason behind this difference could be that the teachers participating in the study are working at places with different socio-economic backgrounds and that they work at different branches. On the other hand, these findings are not consistent with the findings of the studies carried out by Beran and Li (2005), Chibbaro (2007), Keith and Martin (2005), Li (2007) and Singh (2009). The reason behind this difference could be the cultural differences and the fact that these researches carried out indirect assessments based on student views.

According to the findings of the study, based on branch, gender and frequency of internet use, there are statistically significant differences among teachers' awareness levels on cyber bullying. That participants' awareness levels on cyber bullying differ by gender is not a result that is parallel to many researches (Eden *et al.*, 2012; Ayas and Horzum, 2011; Yenilmez and Seferoğlu, 2013). On the other hand, it is found that information technology and guidance teachers have more awareness compared to other branches and that those teachers who use internet more frequently have more awareness compared to those who use internet less frequently. In evaluating on the basis of gender, male teachers proved to be more awareness to cyber bullying than female teachers. This finding may be explained by the generally accepted fact in Turkey asserting that males are more competent at any issue relating to technology than females (Akcaoğlu, 2008; Birgin *et al.*, 2010; Korkut and Akkoyunlu, 2008; Summak *et al.*, 2010; Usluel, 2007). Similarly, the findings derived from this research are in consistency with the fact that teachers who use technology more effectively have a higher level of awareness of cyber bullying. However, this is an issue that female teachers, whose number nearly equals to number of male teachers among hundreds and thousands of teachers in Turkey, must deal within a serious manner.

It is stated that information technology teachers who have a significant mission in the integration of technology into education, also have an active role in safe utilization of technology (Ministry of National Education-Turkey). It can be said that the intense use of technological devices especially within the scope of FATIH Project will lead to encountering cyber bullying problem more frequently compared to past. The effectiveness of the filtering methods offered by various institutions regarding secure internet utilization within the country is open to question. Especially, students' intense interest in social media clearly shows that cyber bullying should be attached more importance. In this context, it is believed that information technology teachers should cooperate with school administration and organize activities to inform and advise other branch teachers and students on cyber bullying. Besides, additional content related to cyber bullying can be included in educational content developed within the scope of FATIH Project. Various advisory content on the subject should be delivered to the teachers, parents and students and thus, their awareness should be increased. On the other hand, it is believed that researching the level of awareness of parents and school administrators on cyber bullying will be effective in overcoming this situation.

The data collection tool used for the study is restricted to determining the awareness levels of teachers with respect to personal cyber security within the context of cyber bullying awareness and the precautions that need to be taken in this respect. From this perspective, awareness of teachers about cyber bullying will be determined in a more detailed manner, by studying on issues like how teachers react when they face with such situation, what kind of precautions they take and whether they warn those around them

or not. On the other hand, a self-report data collection tool has been used for the study. The literature shows that data obtained through such scales might be affected by the component of "social appreciation" and, in some cases, less realistic results might be reached. The results to be attained by means of qualitative studies that can be carried out by through data collection can, therefore, be compared with the results reached in this study. It is believed that this research contributes to the cyber bullying literature within its own limitations. In addition, it is believed that the results of the research have a potential contribution to schools, families, politicians and researches studying cyber bullying. As a result, below given operational suggestions can be made for the implementers:

- With regards to cyber bullying, school-wide activities as well as the ones inside the classroom should be organized in order to emphasize the significance of the issue.
- Since cyber bullying could happen everywhere where there are electronic communication tools, it can be said that the trainings provided should not be intended only for teachers. There should also be studies toward creating the same awareness in families who have an important responsibility in creating an awareness about cyber bullying in their children.
- Because cyber bullying is done via technological tools, there should be courses toward increasing the technology literacy of teachers in order to ensure that they have full command of the issue.
- Children should be made aware of the risks and threats in internet in order to handle them and online environments where they can get support whenever they need.
- Through filtering method concerning internet use, especially child users should be prevented from being exposed to inappropriate internet content and also, they should be prevented from accessing these web pages.
- Public service ads on cyber bullying should be developed and people should be made aware by putting these ads on TV.
- Development of an open and applicable vision by politicians on cyber bullying is considered important in overcoming this problem.

On the other hand, below given suggestions can be made for the researchers:

- the study could be done on larger sample groups and thus, the generalizability of the study should be provided;
- in-depth researches supported by qualitative data could be carried out and thus, the existing state should be studies in detail;
- researches with parents and students at different grades should be carried out and the existing problems should be revealed;
- researches should be carried out with policy implementers and thus, what they think about cyber bullying should be studied; and
- a study can be conducted on whether trainings provided within the framework of FATİH Project, regarding effective and efficient use of technology, affect awareness levels of teachers about cyber bullying or not.

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Appendix 1. Sensibility scale on cyber bullying items

(1) I consider that others may steal my data when I use the internet.

(2) I consider that my personal data in the social networking sites (e.g. Facebook, Twitter) may be used by the others with bad intentions.

(3) I try to avoid people on virtual platforms with whom I have problems in real life.

(4) There are times I feel that I need to take some measures to prevent others from harming me on virtual platforms.

(5) I consider that a hacker may pose a risk against me, too, when I am online.

(6) I consider that someone who wants to do harm to me can also achieve that via internet, a mobile phone and, etc.

(7) I never share my online membership passwords for e-mail accounts, forums and, etc. on the internet with anyone.

(8) I cut my communication with individuals who swear or insult on virtual platforms.

(9) I sometimes consider that there is a risk that a picture or an image of me that I do not want to be seen may get around without my knowledge.
(10) I consider that unreal rumors about me may spread via communications on virtual platforms.
(11) I bear in mind when I use the internet that internet might also be used to do harm to the others.
(12) There are times I think what I would do if unreal information about me spread on the internet.
(13) I do not communicate with people on virtual platforms from whom I may receive threats via e-mails or texting (SMS) on mobile phone.

Appendix 2

Table AI. Parameters used in the interpretation of the scores obtained from the scale

Given weight	Answer	Limit values
3	Yes	2.33-3.00
2	Sometimes	1.67-2.32
1	No	1.00-1.66

Table AII. The breakdown of the scores of teachers' awareness levels on cyber bullying

	Number of items	Lowest score	Highest score	$\overline{X}$	SD	$\overline{X}/k$
Scale	13	13.00	39.00	30.79	1.99	2.36

Table AIII. The breakdown of the scores of teachers' awareness levels on cyber bullying

	Gender	n	$\overline{X}$	SD
Scale	Male	78	30.52	2.07
	Female	106	31.15	1.90

Table AIV. Mann-Whitney U-test results of teachers' awareness levels on cyber bullying by gender

	Gender	n	Mean square	Sum of squares	U	p
Scale	Male	78	84.82	8,991.00	3,320.00	0.017
	Female	106	102.94	8,029.00		

Table AV. Descriptive analysis of teachers' awareness levels on cyber bullying by branch

Branch	n	$\overline{X}$	SD
Information technology	36	34.05	0.95
Classroom	62	30.03	1.16
Guidance	38	31.31	2.02
Other	48	29.02	0.86
Total	184	30.79	1.92

Table AVI.
Kruskal-Wallis test results of teachers' awareness levels on cyber bullying by branch

Branch	*n*	Mean square	SD	χ^2	*p*	Variables in which statistical significance is observed
Information technology (A)	36	166.50	3	143.45	0.000	A-B A-C A-D B-D C-D
Classroom (B)	62	95.50				
Guidance (C)	38	93.29				
Other (D)	48	32.50				

Table AVII.
Descriptive analysis of teachers' awareness levels on cyber bullying by frequency of using internet

Frequency of using internet (weekly)	*n*	$\overline{X}$	SD
Less than 1 hour	16	29.12	0.35
Between 1 and 5 hours	40	30.80	1.88
Between 5 and 10 hours	56	30.25	1.57
Between 10 and 15 hours	40	31.60	2.26
More than 15 hours	32	31.56	2.24

Table AVIII.
Kruskal-Wallis test results of teachers' awareness levels on cyber bullying by frequency of using internet

Frequency of using internet	*n*	Mean square	SD	χ^2	*p*	Variables in which statistical significance is observed
Less than 1 hour (A)	16	40.38	4	33.29	0.000	A-B A-C A-D A-E
1-5 hours (B)	40	87.10				C-D C-E
5-10 hours (C)	56	82.57				
10-15 hours (D)	40	114.85				
More than 15 hours (E)	32	114.75				

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