



The Relationship Between Emotional Intelligence and the Different Roles in Cyberbullying Among High School Students in Tehran

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Abstract

Background: Cyberbullying is any kind of intentional harassment with the intent to harm others that is carried out via smart-phones, the internet, and digital technologies. Emotional intelligence (EQ) and the ability to understand emotions play major roles in the emotional and social development of children. There may be a relationship between the roles of victim, bully, and bystanders in cyberbullying and EQ.

Objectives: This study aims to examine the prevalence of cyberbullying through new communication technology among high school students and the relation of EQ to the different roles assumed by the individuals involved in a cyberbullying event.

Methods: In this study, 505 junior high school students who were in the 11th grade in Tehran (the capital city of Iran) in 2013 - 2014 were randomly selected. Their personal demographic data was collected using a demographic questionnaire. Their EQ was evaluated by a Bar-On questionnaire. To assess cyberbullying and the different roles of the participants, a self-designed questionnaire was used. Statistical analyses were conducted using SPSS statistical software, version 18 (SPSS Inc., Chicago, Illinois, USA). A P value less than 0.05 was considered to be statistically significant. To compare between groups, the chi-squared test (or Fisher's exact test), the analysis of variance (ANOVA), the Kruskal-Wallis non-parametric ANOVA, and the Mann-Whitney U test were used.

Results: The total number of participants was 505. This included 293 boys (58%) and 212 girls (42%). In general, 34.2% of the participants were reported to be victims, 46% were bystanders, 27.3% were bullies, and 34% did not experience cyberbullying at all. The study showed that 26.6% of males were victims vis-à-vis 44.8% of females ($P < 0.05$), while 31.8% of males were bullies vis-à-vis 22.2% of females ($P < 0.05$). There was no significant relationship between the total EQ score of the individuals and the different roles they assumed in cyberbullying. But in a gender-stratified analysis, male victims had a higher EQ score.

Conclusions: This study showed that the rate of cyberbullying was high among high school students in Tehran. In contrast to traditional bullying, the EQ score is not associated with playing different roles in cyberbullying. However, when considering gender, the male victims had higher EQ scores.

Keywords: Bully, Bystander, Cyberbullying, Emotional Intelligence, Student, Victim

1. Background

In recent decades, along with rapid advances in technology, a new face of bullying has appeared: cyberbullying. This is traditional bullying carried out using new technology (1-3). Smith et al. define cyberbullying as any deliberate act or behaviour with the intention of doing harm to others through electronic means -that is, through the internet, cell phones, short message service (SMS), Bluetooth, weblogs, and so on (2). Indeed, most definitions of cyberbullying indicate intentional hostile behaviour through the medium of electronics (3). Like in traditional bullying,

cyberbullying involves the clearly defined roles of bully, victim, and bystander (3-5). Studies conducted in different parts of the world showed a high variability in the prevalence of cyberbullying, ranging from 9% in a large-scale survey of youth aged between 10 and 17 years in New Hampshire, USA, and 18% in North Carolina, USA, to 25% of young people between 11 and 19 years in Britain and 70% of adolescents in California, USA (6-10). David-Ferdon and Hertz believe that these results failed to reveal a clear picture of the cyberbullying phenomenon (11).

Traditional bullying is associated with many destructive conditions, including anxiety, depression, poor school

performance, high rates of suicide, anti-social personality, susceptibility to accidents, and physical trauma (12-15). It has been proposed that cyberbullying may lead to similar effects in individuals, but that these effects could be more severe as the harm could be continuous, unpredictable, and carried out through various methods (16, 17). Raskauskas and Stoltz reported that the negative effects of cyberbullying made the victims sad, hopeless, and depressed (7). Ybarra et al. reported that, in their study, 38% of the victims reported that they were emotionally distressed and that they felt upset or afraid because of cyberbullying (18).

The Bar-On questionnaire defines emotional intelligence (EQ) as an appropriate perception of the self, others, and situations, and adaptation in different settings to achieve more success in life (19). Although some studies on traditional bullying reported that bullies have a lower EQ, it is proposed by previous researches that bullies have a higher EQ. This makes it easier for them to identify a victim's weaknesses (20). Barlow et al. believe that bullies have a high ability to perceive, which allows them to control others through narcissistic behaviour (21). They know how their behaviour might influence others (21). Besides this, bullies do not show certain major characteristics of EQ, such as empathy, for they have learnt to apply their social knowledge in order to abuse others (22). On the other hand, in victims, a low EQ may result in their being abused repeatedly, as a low EQ leads to misjudgment of other's motivations, to inappropriate responses, and to poor adjustments in improving their condition (23).

So far, there has not been any report on the prevalence of this phenomenon among high school students in Iran. There was no comprehensive study to evaluate the relationship between EQ and the different roles individuals assume in a cyberbullying event. Understanding the points of weakness for different aspects of EQ among the individuals involved in cyberbullying would open new windows that may help reduce its incidence by empowering EQ through the means of education (24).

2. Objectives

This study aims to investigate EQ with respect to the different roles assumed by the individuals involved in cyberbullying and to find out if there is any association between them.

3. Materials and Methods

This study employed a cross-sectional methodology to determine the prevalence of cyberbullying among 11th-

grade high school students of a metropolitan city in Iran and to evaluate the relationships among the different roles assumed by the individuals involved in cyberbullying and their EQ. After obtaining accreditation from the Ministry of Education in Tehran, 10 high schools from five different socioeconomic regions were selected randomly. These included five high schools for girls and five high schools for boys. The research was conducted in coordination with school principals and the students' families. Students received guidance on how to fill out the questionnaires.

3.1. Population

The target population of this study comprised high school students in Tehran in the school year 2013 - 2014. By using the sample size formula at a 95% confidence rate, the size of the sample was estimated to be least 360. The stratified randomization based on the gender of the students (high schools in Iran are not coeducational) was used to identify 10 high schools in five socioeconomic regions of Tehran. The inclusion criteria were: studying in the high school; an age range of 16 to 18 years; and the absence of any history of psychiatric disorders. The local ethics committee of the Shahid Beheshti University of Medical Sciences approved this study. Written informed consent was taken from all the participants before the sampling. The exclusion criteria were: students who refused to participate and incomplete questionnaires.

3.2. Questionnaires

Three types of self-report questionnaires were used to conduct the survey. Demographic data, socioeconomic status, and general information about using electronic communication devices were collected using a self-designed demographic questionnaire. To assess the status of cyberbullying, three expert psychiatrists drafted a questionnaire with five major scales: Intrapersonal, Interpersonal, Stress Management, Adaptability, and General Mood. Alongside these, various minor subscales in each major field were included by studying relevant questionnaires in other studies. This draft was then revised by 11 faculty members from the Department of Psychiatry of the Shahid Beheshti University of Medical Sciences. Finally, the questionnaire was validated on a sample of fourteen 11th high school students. The reliability of the questionnaire was evaluated by Cronbach's alpha test ($\alpha = 0.76$).

To assess the EQ of the sample population, the Bar-On questionnaire was used due to its comprehensiveness, simplicity, and the fact that it is not subject to cultural confounders (25). Bar-On can determine the EQ on 15 scales by using 90 Likert-type questions. This test was translated and

validated in 2002 in Iran (26). Dehshiri piloted it on 250 Iranian university students. According to him, the translated version is valid and all its subscales show acceptable reliability. He states that the Persian questionnaire has good internal consistency, test-retest reliability, and construct validity. The Cronbach's alpha coefficient for this measure was found to be satisfactory (26).

3.3. Statistical Analysis

Statistical analyses were conducted using SPSS statistical software, version 18 (SPSS Inc., Chicago, Illinois, USA). A P value less than 0.05 was considered statistically significant. To compare between groups, the Chi-squared test (or Fisher's exact test), the analysis of variance (ANOVA), the Kruskal-Wallis non-parametric ANOVA, and the Mann-Whitney U test were used. The analysis of covariance was carried out to control the effects of confounders and covariates.

4. Results

At the end of the survey, 505 high school students were recruited for the study. The characteristics of our sample population are presented in Table 1. Here, 90% of the respondents had access to the internet and 97% had a cell phone (Table 1).

Overall, 27.3% of the respondents reported being a bully in the last year, whereas 34.2% had the experience of being a victim and 46% were bystanders in a cyberbullying event in the last year (some of the respondents had assumed multiple roles). The majority of the students were involved in cyberbullying once or twice in the past year, but about 13% reported that they had been involved several times a week.

In this study, the demographic, cybernetic, and EQ scores were compared. Upon considering demographic and cyberbullying, no association was found between cyberbullying roles and family status, economic status, access to the internet, and owning a personal email or websites. Out of 173 victims (pure victim or in combination with other roles), 26.6% of males were victims vis-à-vis 44.8% of females ($P < 0.05$), 31.8% of males were bullies vis-à-vis 22.2% of females ($P < 0.05$), and 42.7% of males were bystanders vis-à-vis 53.8% of females ($P < 0.05$) (Table 1). Here, 36% of the victims had informed no one, whereas 63% informed others. Among the bystanders, 19% did not take any action after being informed, 12% spoke with the bullies, 16% sympathized with the victims, 3% informed teachers (or parents), and others did not respond to this question.

Among the respondents, 12% did not consider cyberbullying as a harmful event, 24% did not know about the negative effects, and 63% had the idea that cyberbullying could lead to deep personality disorders and interpersonal problems.

The EQ scores from the Bar-On EQ questionnaire were 227 ± 46 , 229 ± 32 , and 222 ± 34 in the victim, bully, and bystander groups, respectively (Table 2). The average score of students who had no experience of cyberbullying (considered as the normal group) was 223 ± 23 . Overall, no association was found between total EQ scores and cyberbullying roles. However, there were some significant associations between certain EQ sub-scale scores and different roles. The bullies had significantly higher scores in reality testing and social responsibility. In the gender-stratified analysis, male victims had a higher EQ score.

5. Discussion

The internet is a popular and commonplace tool among adolescents. They use it for different purposes, like doing their homework and research. But they also use it to conduct social relationships through social networking sites, chat rooms, and web pages. With the widespread use of electronic devices, a new type of bullying has become prevalent. Cyberbullying is a form of personal attack that is carried out online. The results of this study suggest that cyberbullying is a relatively common phenomenon among adolescents in Tehran, which is in line with the results of previous studies conducted in the USA and in Britain (6-8).

Compared to the male respondents, the female respondents in this study had a higher chance of being victims rather than bullies, which is similar to reports from previous studies (6, 27). This may be because girls are more socially oriented and social media is more appealing to them (28). Girls display greater emotional awareness, use more emotion-related language, and employ a more extensive range of emotion regulation strategies than do boys (29, 30). It makes them more prone to relational bullying, which is hidden behind a screen. This finding is also in line with findings from studies on traditional bullying; the difference is that, in cyberbullying, physical characteristics or power are not determinant factors, but gender is (31). It could originate from the view that cyberbullying fits well with societal expectations of girls. They are expected to use softer language in relationships and to be more subtle in their aggression. Technology provides an opportunity to bully and take revenge on peers, regardless of their gender and the victim's gender. Furthermore, in cyberspace, the element of power is difficult to determine. Power could be

Table 1. Basic Characteristics of the Respondents^a

Variables	Total	Victim ^b	Bystander	Bully	Normal
Sex					
Male	293 (58.0)	78 (42.6) ^b	123 (52.1) ^b	92 (66.6) ^b	114 (66.2)
Female	212 (42.0)	95 (57.4) ^b	113 (47.9) ^b	46 (33.4) ^b	58 (33.8)
Access to the internet					
No	40 (8.0)	13 (7.5)	16 (6.8)	7 (5.0)	16 (9.5)
Yes	458 (92.0)	159 (92.5)	219 (93.2)	131 (95)	151 (91.5)
Email					
No	134 (27.1)	39 (22.9)	65 (27.8)	34 (20.6)	50 (30.1)
Yes	360 (72.9)	131 (77.0)	168 (72.1)	103 (79.3)	116 (69.8)
Social networks					
No	251 (51.0)	80 (47.0)	120 (51.7)	51 (38.0) ^b	87 (52.7)
Yes	241 (49.0)	90 (52.9)	112 (48.2)	83 (61.9) ^b	78 (47.2)
Chat					
No	261 (52.6)	86 (50.0)	122 (52.1)	62 (44.9) ^b	94 (56.6)
Yes	235 (47.4)	86 (50.0)	112 (47.8)	76 (55.0) ^b	72 (43.3)
Cell phone					
No	15 (3.0)	1 (0.5) ^b	5 (2.1)	1 (0.7)	10 (5.9) ^b
Yes	483 (97.0)	171 (99.4) ^b	230 (97.8)	137 (99.2)	157 (94.0) ^b
Website					
No	399 (81.3)	133 (78.2)	188 (80.3)	104 (75.9)	139 (84.7)
Yes	91 (18.5)	36 (21.1)	45 (19.2)	32 (23.3)	25 (15.2)
No response ^c	1 (0.2)	1 (0.5)	1 (0.4)	1 (0.7)	0

^aValues are expressed as No. (%); note that roles are overlap.

^bThe difference was statistically significant ($P < 0.05$).

^cIn the calculation of P values No response was considered as missing data.

the ability of bullies to be anonymous or to have more expertise in using technology.

The phenomenon of being a bystander in the cyber world is different from that seen in traditional bullying. Bystanders might receive and forward emails, view web pages, forward images sent to cell phones, or break the cycle of bullying by informing school officials and parents. Besides, victims often avoid reporting cyberbullying incidents because of a fear of retribution. In this study, about 36% of the victims did not inform anyone and only 3% of the bystanders informed teachers (or parents). Among the bystanders, passive responses (no response: 19%; sympathizing with victims: 16%) were much higher than active responses (informing others: 3%; speaking to the bullies: 12%). These findings suggest that victims and bystanders do not know how to respond properly in a cyberbullying event. This shows the importance of educational empowerment for teenagers to break the cycle of cyberbullying

(32).

Knowing and understanding one's emotions as they arise is a fundamental skill in EQ. It helps individuals to develop psychological insight and self-understanding. Subsequently, it makes them more popular and increases their social competence.

This study revealed that, in contrast to traditional bullying, the EQ score is not associated with playing different roles in cyberbullying (25, 33, 34). In traditional bullying, individuals in all three roles come face to face during the bullying event; they receive emotional stimuli through each other's physique, posture, vocal tone, and facial expressions, and respond accordingly (25). Therefore, it is widely accepted that EQ has a direct association with traditional bullying (25, 33, 34). But in cyberbullying, individuals in different roles usually do not face or know each other; therefore, the bully, regardless of their appearance, physique, or age can play the role in perfect secrecy (25).

Table 2. EQ Questionnaire Results According to Different Roles^a

Results	Total	Victim	Bystander	Bully	Normal
Problem-solving	13.5 ± 3.4	13.7 ± 3.7	13.2 ± 3.5	14.0 ± 3.4	13.4 ± 3.1
Happiness	12.7 ± 4.3	13.2 ± 4.5	12.9 ± 4.6	12.5 ± 4.2	12.5 ± 4.1
Independence	14.6 ± 3.9	15.2 ± 4.4	14.8 ± 4.0	15.1 ± 4.2	14.2 ± 3.4
Stress tolerance	17.6 ± 4.2	18.0 ± 4.4	17.5 ± 4.1	17.5 ± 4.2	17.4 ± 4.3
Self-actualization	14.0 ± 3.7	14.5 ± 3.8	13.9 ± 3.6	14.6 ± 3.6	13.8 ± 3.7
Emotional self-awareness	15.1 ± 3.5	15.4 ± 3.9	14.8 ± 3.8	15.4 ± 3.5	15.1 ± 3.4
Reality-testing ^b	18.1 ± 3.6	18.5 ± 3.6	18.1 ± 3.5	19.1 ± 3.4	17.7 ± 3.5
Interpersonal relationship	12.8 ± 4.0	12.6 ± 4.5	12.8 ± 4.1	12.3 ± 4.2	12.9 ± 3.7
Optimism	13.5 ± 3.6	13.5 ± 3.8	13.1 ± 3.6	13.7 ± 3.7	13.7 ± 3.5
Assertiveness	13. ± 3.8	13.6 ± 4.3	13.2 ± 4.2	13.3 ± 4.0	13.0 ± 3.4
Impulse control	19.7 ± 5.4	19.6 ± 5.6	19.5 ± 5.5	20.5 ± 5.6	19.6 ± 5.2
Flexibility	17.5 ± 3.6	17.8 ± 3.7	17.2 ± 3.9	17.6 ± 3.8	17.6 ± 3.3
Social responsibility ^b	12.6 ± 3.5	12.6 ± 3.6	12.6 ± 3.5	13.7 ± 3.8	12.5 ± 3.4
Empathy	11.9 ± 3.7	11.4 ± 3.9	11.6 ± 3.9	12.3 ± 4.2	12.2 ± 3.4
Self-regard	16.8 ± 3.9	17.1 ± 4.2	16.5 ± 3.9	16.6 ± 3.7	16.9 ± 3.9
Total EQ score	224.2 ± 33.4	227.2 ± 35.8	222.3 ± 33.7	228.9 ± 32.3	223.2 ± 33.0

^aValues are expressed as mean ± SD.

^bmeans that difference was statistically significant ($P < 0.05$).

However, one exception was that male victims had higher EQ scores. This finding suggests that, in contrast to females, who were victims mostly because of their gender, male victims were abused mostly because of their high level of emotional excitation, which could make them more susceptible to social connections. In our opinion, people with higher EQ, because they develop stronger connections and more social relationships, can stimulate the envy of those with lower skills who are in poorer relationships. Cyberbullying is a way in which the bully can publicly humiliate the victim and damage their social standing in an important stage of life that is crucial in shaping their identity. Surprisingly, bullies had higher scores in the reality-testing and social responsibility subscales compared to victims, bystanders, and normal respondents. Since the reality-testing subscale is a measure of one's feelings and thoughts about external reality (19), the high scores of bullies on this scale imply that bullies are aware of the harmful consequences of their behaviour. Social responsibility is a measure of one's ability to identify with one's social group and how one cooperates with others (19). The higher scores for social responsibility among bullies might be a result of their passive aggression resulting from conflicts between their behaviour and their character.

In conclusion, the results of our studies suggest that cy-

berbullying is a common phenomenon. This high prevalence, along with its associated complications, calls out for more detailed investigations of higher sample volumes and studies conducted among a wider range of ages if there is any serious wish to control the problem. Given the high prevalence of cyberbullying among adolescents and its serious complications, it is recommended that adolescent education be started from an early age at home and at school. In addition, the study did not show any significant association with EQ. Considering the limited difference in EQ between the different groups involved in cyberbullying, it seems that each person with potential and ability can be placed in one of the bullying or victim groups, or in both.

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Footnotes

Authors' Contribution: Razjouyan, Sadr and Samimi Ardestani Studied and designed the concept. Sadr, Samimi, Hirbod and Razjouyan analyzed and interpreted the data.

Razjouyan drafted the manuscript. Sadr, Samimi and Razjouyan did critical revisions of the manuscript for important intellectual content. Yaseri have done the statistical analysis.

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