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Estimation Of Psychometrics Of Cyber Bullying Attitude Measure In Indian Context

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Abstract: This study aims to determine the validity and reliability of the "Cyber Bullying Attitude Scale" in the Indian scenario. Two empirical studies were conducted for this purpose. First study was conducted to find the validity and reliability of the CABS using EFA. Second study sought to ascertain the evidence regarding psychometric parameters of the scale using CFA. The result of the present study depicts that the scale is having good construct validity, as all the fitness estimates are above the threshold values. The sample for the current study consists of undergraduate and postgraduate students studying in different government and private universities of Punjab.

Key words: cyberbullying, exploratory factor analysis, construct validity.

1. INTRODUCTION

With the rapid increase in technology a new form of bullying known as cyber bullying is prevalent among adolescents. "Cyber bullying involves the use of information and communication technologies such as email, cell phone and pager text messages, instant messaging, defamatory personal web sites, and defamatory online personal polling web sites, to support deliberate, repeated, and hostile behavior by an individual or group, that is intended to harm others" (Bill Belsey 2005). The research on this phenomenon is increasing across the world on daily basis. But in Indian context no such study has been conducted to measure the attitude of cyber bullying behavior among adolescents. Although there are many studies on conceptual basis but no empirically tested study is present in the literature. Although the report of Microsoft (2012) clearly given the dangerous stats that India is at number 3 in terms of cyber bullying with 53% of its population is involved in cyber bullying mostly adolescents which is only behind to China and Singapore. This harmful disease is spreading at an alarming rate and it has dangerous consequences for those who are involved (Nixon 2014).

Cyber bullying can occur in different forms like, sending or posting harsh words or irrelevant information meant to cause harm or defame a person's reputation and relationships with friends, family, and acquaintances. It also involves hacking a person's e-mail account and send messages which can embarrass the individual and negatively affect his or her relationship with others. Fighting online and then sharing offensive and disrespectful messages about other on different sites, blogs also form bullying. Another type is threatening another person's and following him/her online. Deliberately excluding someone from an online group is also common among youths and it is a form of cyber bullying as well. It also occurs in the form of repeatedly posting or sending offensive, rude, and insulting messages.

Sometimes remarks on the Internet threatening or implying violent behavior, displaying suicidal tendencies is also a type of cyber bullying. Outing is when a bully shares personal and private information, pictures, or videos about someone publicly. A person is ousted when his information has been disseminated throughout the internet. Tricking is also a form of cyber-bullying where someone is fooled to reveal his or her secrets or embarrassing information, only to be later shared online (Bauman 2015).

In many studies cyber bullying is termed as synonym of traditional bullying but, certain specific characteristics like, 1. It is prevalent beyond school walls, (Patchin and Hinduja 2006) 2. Lack of online supervision by parents, teachers, 3. The absence of physical aggression (Barlett and Gentile 2012) distinguished it from bullying in general. Thus, the above-mentioned characteristics suggests that cyber bullying is more dominant than bullying (Calvete et al. 2010). Most of the studies conducted on adolescent's sample reported that cyber bullying is predominant among secondary level students (Kowalski et al. 2018; Palermiti et al. 2017).

It is also found that large percentage of Indians shares their passwords with others. Further finding of the study revealed that 48% of the online population is affected by cyber bullying and majority of them are not aware of what to do when they are confronted with such issues. Most of the Indians opined that it is more likely that their credit card will be stolen online rather than from their pockets(Learning, 2016). As per the finding of the study conducted by telecom company Uninor, on 10,500 school going children across seven Indian states, one third of the Indian population is involved in some kind of cyber bullying such as cyber stalking, impersonation, harassing, hacking. Prime Minister Shiri Narendra Modi while addressing NASSCOM's silver jubilee in March 2015 stressed that cyber security is a major concern and it needs to be addressed. It is noted that cyber bullying has harmful implications for both bully and victims as they suffer from low self-esteem, drinking and drug addiction (Brack and Caltabiano 2014), anxiety and depression (Jenaro et al. 2017).Sharma; Kishore and Sharma, (2016)found that behavioral disorder caused by internet habits among teens is high. Therefore, children need to be taught some online etiquettes and moral values to save them from any harm. High usage of internet leads to change in behavior as they develop violent and aggressive behavior towards their mates and parents. For instance, in New Delhi, it was found that a fifteen-year-old teen, which used to be calm and cool, suddenly developed aggressive behavior and started beating and abusing his parents because they were not allowing him the access to the internet. In another similar case, picture of two friends sitting on the bed outed on social media sites tagging them as gay. As a result, one person namely Anand Sharma attempted suicide.

From the above stats it can be said that cyber bullying, being a new form of violent behavior is an important issue as it has very higher rate of occurrence and harmful consequences for those involved in that. Many studies are conducted to explore the factors which can predict that perpetration of cyberattacks, predictors of cyber bullying attitude (Barlett 2015; Barlett and Gentile 2012; Doane et al. 2014).

Every individual possesses a mental or emotional entity i.e. an "attitude". It is a liability or an inclination of an individual or a person to behave in a certain way; it can be in a positive manner or negative manner depending on the other person, object, idea or situation. An attitude differs from person to person. As, it talks lot about the personality, interests of an individual as how he/she behaves and deals with particular problems and challenges in his/her life. In psychology, attitude is one of the significant and broad topics to be read about, as it not only provides the information about the human behavior but it also provides an in-depth knowledge of how to predict the actions, way of thinking of an individual (Ajzen 2002). In the context of cyber bullying knowledge of attitude helps to observe how the bully/victims behave with their peers and other people around them. Some other studies were

conducted to predict the power of attitudinal variables in regard to engaging in cyber bullying (Barlett et al. 2016a; Hirman and Walrave 2012). Suriyabandara (2017) revealed that attitude towards cyber bullying is related to psychoticism and extraversion traits of personality. It is also found that when the level of psychoticism possessed by an individual increased such person tend to see cyberbullying as less harmful and thus end up in engaging in those activities. On the other hand, when the level of extraversion increased the person tend to see cyber bullying as harmful.

Various measures have been developed to understand the background of cyber bullying. Bartlett et al. (2016) revealed five valid instruments regarding attitude towards cyberbullying. At the first they highlighted the scale developed by Barlett and Gentile (2012). It is a 9-item scale and this scale was criticized due to two reasons one because of its poor reliability and second some of its items are old-fashioned. The second scale constructed by Barlett et al. (2014) consists of 20 items. Although this has good reliability and items were also updated, but it was discarded because number of items were more. The 3rd scale used by Doane (2014) to explore cyber bullying behaviors. Although this scale is valid but due to some of the limitations it was criticized i.e. it contains large number of items and its reliability is not mentioned by Doane et al. (2014). The fourth measure developed by Heirman and Walrave (2012). It is four items measure and has good reliability. Due to no evidence of construct validity this measure was ignored. Finally, a scale proposed by Boulton et al. (2012) predicts certain type of cyber bullying behavior not others. In spite of having good validity, it was disapproved it only ascertains social network bullying and text bullying not multimedia uploads, and also its internal consistency was not reported by the authors.

Cyber bullying Attitude Scale

In order to fill the exiting gap in the literature Barlett et al. (2016b) proposed a new short, valid and reliable scale consisting of nine items i.e. “Cyberbullying Attitude Scale” (CBAS). Barlett et al. (2016b) conducted three studies to develop and validate the scale.

The first study was conducted on the sample of 166 college students with higher percentage of females i.e. (59.60%) having average age of 20.13 years (SD= 1.13). An EFA with Varimax rotation as conducted on ten proposed items. The results showed that the proposed ten items scale yielded two factors i.e. “Harmful cyberbullying attitude” (HCA) and “General Cyberbullying Characteristics” (GCC). However, due to factor saturation one item was removed. Both the factors showed good reliable indices i.e. ($\alpha = 0.71$) for HCA and ($\alpha = 0.62$) for General Cyberbullying Characteristics.

Second study was conducted to replicate the findings of first study. Therefore, a CFA was performed on a sample of 336 undergraduate students with majority of females i.e. (66.4%) and the average age was 19.47 years (SD = 2.04). The CFA “results showed a good model fit, $X(df = 22) = 56.53$, $p < 0.05$, comparative fit index (CFI) = 0.97, Tucker-Lewis index (TLI) = 0.96, root mean square error of approximation (RMSEA) = 0.07 (90% CI: 0.05 to 0.09), and standardized root mean square residual SRMR = 0.03.” The result also suggests a two-factor model (HCA $\alpha = 0.86$; GCC $\alpha = 0.64$).

Study 3 was conducted by replicating the results of study 1 and 2 in order to test the incremental validity of the new scale. The sample consists of 159 college students having higher percentage of males i.e. (52.9%) with the average age of the respondents is 19.30 years (SD = 1.32). The results predict that while corelating with the existing cyber bullying attitude scales, the proposed scale has concurrent and predictive validity. It provided three cyberbullying perpetration measures. Moreover, the internal consistency was (HCA $\alpha = 0.94$ and GCC $\alpha = 0.77$).

In the light of above results, it has been observed that with the increasing number of social media users, the problem of online bullying is increasing day by day and there is no

such monitoring agency which keeps check on online harassment activities. As a result of this, it is found that India ranked number three in terms of cyber bullying as 53% of its population is involved in cyber bullying out of 25 countries(Microsoft Corporation, 2012). India is only behind to China (70%) and Singapore (58%). The study also reported that 50% of the Indian children with access to internet are online harassed. Furthermore, kids carry out these activities just for fun or taking revenge from their peers and seniors in the college they are studying. Thus, keeping in mind, the attitude of adolescents towards cyber bullying behavior, it is appropriate and need of the time to explore such variables using valid and reliable scale. This will help in comparing studies on attitude towards cyber bullying across cultures.

It was decided to use the scale developed by Barlett et al. (2016) as there was no scale of this kind available in Indian context. Therefore, the present study aimed to explore the validity and reliability of the "Cyberbullying Attitude Scale" in Indian context. In this regard two studies carried out, the first using Exploratory Factor analysis, the second using Confirmatory Factor Analysis in order to confirm the factors explored in the first study.

Study 1- Cyberbullying Attitude Scale

Exploratory Factor Analysis

The present study is aimed to ascertain the reliability and validity of the "Cyberbullying attitude scale" in the Indian scenario.

Method

Sample

The sample for the study consists of 190 numbers of undergraduates from different government and private universities of Punjab, India. The maximum number of respondents are females with 57.1% having average age of 21.5 years. The students were selected using simple random sampling method.

Instrument

Cyberbullying Attitude measure developed by Bralett et al. (2016b) was used to evaluate the attitude of adolescents in cyberbullying instances. This is a nine items scale consists of two factors i.e. Harmful Cyberbullying Attitude (HCA) and General cyber Bullying Characteristics (GCC). The internal consistency of the scale is 0.71 for HCA and 0.64 for GCC. Data was collected using five-point Likert scale with 1= strongly disagree and 5= strongly agree. The results of the scale showed that higher values indicating less favorable attitude towards cyberbullying.

Procedure

The Dean and Head of the different Universities were contacted and purpose of data collection was explained. After getting proper permission the investigator visited different departments and instructed the students regarding the filling up of scale. It was made sure that the collected data will be kept confidential and it will not be used other than research work.

Data Analysis

Data was analyzed using IBM-SPSS software (version 23). Exploratory factor analysis was performed with principal component analysis in order to analyze the factor structure. Similarly, Cronbach's alpha was used to check the internal consistency. Composite reliability was also calculated.

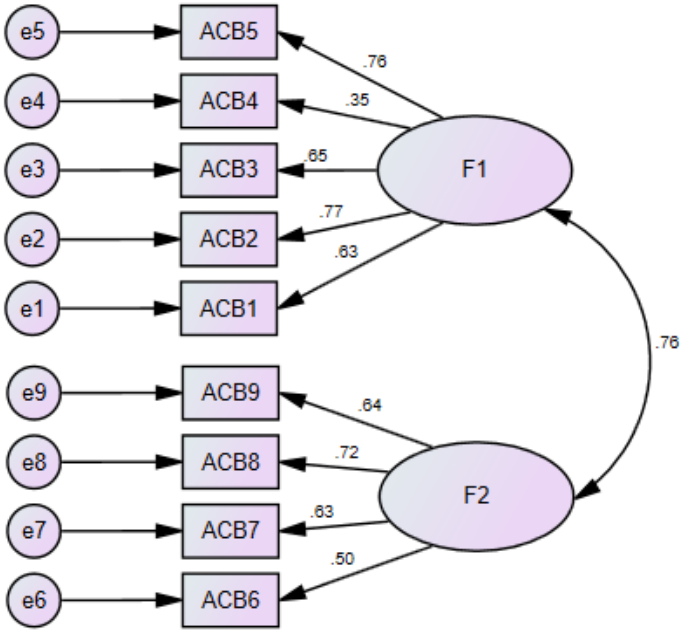
Results

Table 1		
Rotated Component Matrix[a]		
	Component	
	1	2
ACB5	.805	
ACB2	.803	
ACB3	.702	
ACB1	.666	
ACB4	.429	
ACB6		.737
ACB7		.727
ACB9		.723
ACB8		.540

The factor loading of the items varied from 0.80 to 0.42 for factor 1 and similarly factor loading of the factor 2 varied from 0.73 to 0.54. Table 1

Study 2- Cyberbullying Attitude Scale
Confirmatory Factor Analysis

Method
Sample
New sample of 190 respondents were used to conduct the CFA.
Instrument
Same scale of Study 1 was used.
Procedure
Same ethical procedure of data collection was used as in first study.
Data Analysis
Confirmatory factor analysis was performed using AMOS software version (23). It was conducted to verify the fit indices of the model.
Results



The fitness estimates of the model are as follows.

Measure	P value	CMIN/DF	RMR	RMSEA	GFI	IFI	TLI	CFI
Benchmark	>0.05	< 3	<0.08	<0.08	>0.90	>0.90	>0.90	>0.90
Result	0.000	2.05	0.06	0.07	0.94	0.94	0.92	0.94

The result of CFA in the above table revealed that the factor structure and the estimates depict the model fit as the CMIN/DF= 2.05 and Good-of fit-index, GFI= 0.94, which is showing excellent fit to the data. Further statistics of "Root Mean Square Error of Approximation" (RMSEA) = 0.07 which is also acceptable and advocate good model fit (Browne and Cudeck, 1993). "Root Mean Square Residual" (RMR) = 0.06, Incremental Fit Index (IFI) = 0.94, "Comparative Fit Index" (CFI) = 0.94, "Tucker Lewis Index" (TLI) = 0.92. Hence, all the values are above the threshold criteria and contributing in confirming the model fit. Therefore, it is clear from the table 3 that standardized factor loading of all the items are in acceptable range. Also, the factor loading of all the items ranges from 0.35 to 0.77. Hence, CFA validated the construct validity of the Cyberbullying Attitude scale.

Reliability

Reliability of the Cyber Bullying Attitude Scale was calculated by using below mentioned method.

CRONBACH'S ALPHA RELIABILITY

In order to determine the reliability of the scale and each dimension, Cronbach Alpha was applied on the sample size of 190 respondents by using IBM SPSS version 23. The internal consistency of the whole scale was 0.824 which was considered as reliable score (Cronbach,

1951). Further the internal consistency of the dimensions was found as 0.75 for HCA and 0.72 for GCC. All the dimensions were found to be reliable. Results are presented in the below mentioned table.

Table
Reliability of Cyberbullying Attitude Scale

S No	Dimension	Item No.	Total Items	Cronbach's Alpha	Composite
1	HCA	5, 2, 3, 1, 4	5	0.75	0.77
2	GCC	6,7,8,9	4	0.72	0.71
Total scale				0.82	

COMPOSITE RELIABILITY

The composite reliability (Raykov, 1997) was obtained from the sample size of 190 respondents. The results in the above table indicated that the reliability value of HCA and GCC were 0.77 and 0.71 respectively.

2. DISCUSSION

In research, every scale must demonstrate psychometric parameters such as validity and reliability. Validity of the scale means it should measure what it intends to measure and a scale supposed to be reliable when it produces consistent results across different time and space (Hutz et al. 2015). Thus, the aim of the present which was to obtain validity and reliability of the Cyber Bullying Attitude Scale in Indian culture has been achieved as there was no scale in the country. The investigators revalidate the scale in Indian context and found that the scale possess good construct validity. Further the scale was found to be high on reliability. The present study has also some limitations. As the sample was only delimited to University students with variation in the gender. Thus, the study can be conducted on other age group also.

3. CONCLUSIONS

Cyber bullying has many negative consequences and has become a serious public issue. In order to reduce the menace conceptual knowledge that incline young adolescents towards the online aggression; one such variable is attitude toward cyber bullying. Therefore, the present study brings forth the psychometric properties of the Cyber bullying Attitude Scale. Given the fact, that in Indian context no scale has been constructed and validated, the present study is first initiative in this concern. Further the scale is short and easy to apply. The adapted scale shows good psychometric properties, and further suggests that through its use new theoretical and empirical findings can be explored in Indian context. Moreover, the application of this scale can be used to identify the attitude of adolescents towards a new form of online aggression i.e. cyber bullying among different age group of students of school, college and universities. There are many other factors like, immoral activities, problems in relations, school bullying, drugs, consumption of liquor also contributes in cyber bullying perpetration. More studies on attitude towards cyberbullying will improve our understanding of participant's involvement in cyberbullying, their attitudes. The information obtained through the present study will add to the literature as the empirical literature in our country is still emerging.

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