A Meta-analysis on Cyberbullying Factors Correlation in Thai Academic Research

Patchanee Cheyjunya

Abstract

This article aims to study the trends of research and studies on cyberbullying by exploring, gathering, and evaluating all concerned academic data in three educational databases in Thailand : (1) Thai-Journal Citation Index Centre (TCI), (2) Thai Journals Online (ThaiJO) and (3) Thai Library Integrated System (ThaiLIS). From the preliminary search, 6,679 pieces of academic work relating to cyberbullying are found; however, after data deduction, only 67 pieces meet the specified criteria. Only academic works that pass the hypothesis testing with t-test and F-test are synthesized and analyzed towards a standard index for concluding the variable correlation. From the meta-analysis, it indicates 5 important variable groups, including 3 groups of independent variables and 2 groups of dependent variables from 394 of hypothesis testing (as a unit of analysis) Moreover, the result reveals that media exposure has the highest effect sizeand correlation coefficient (d = -1.0289, r = -0.4569).

Keywords : Cyberbullying, Online, Database, Meta-analysis

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บทคัดย่อ

บทความวิจัยเรื่องการวิเคราะห์ความสัมพันธ์ระหว่างตัวแปรการข่มเหงรังแกออนไลน์ในผลงานวิชาการของไทย ด้วยวิธีการสังเคราะห์เชิงอภิมาน มีวัตถุประสงค์ศึกษาและรวบรวมองค์ความรู้ด้านการข่มเหงรังแกออนไลน์ในบริบทของไทย ด้วยการสังเคราะห์เชิงอภิมาน ผ่านตัวแปรและผลวิจัยต่าง ๆ ที่รวบรวมได้จากงานวิชาการของไทยที่ปรากฏบนฐานข้อมูลวิชาการในประเทศไทย จำนวน 3 ฐาน ได้แก่ (1) ระบบฐานข้อมูลศูนย์ดัชนีการอ้างอิงวารสารไทย (Thai-Journal Citation Index Centre : TCI) (2) ระบบฐานข้อมูลวารสารอิเล็กทรอนิกส์กลางของประเทศไทย (Thai Journals Online : ThaiJO) และ (3) ระบบฐานข้อมูลโครงการเครือข่ายห้องสมุดในประเทศไทย (Thai Library Integrated System : ThaiLIS) จากการสืบค้นเบื้องต้น พบว่า มีผลงานวิชาการที่ใกล้เคียงกับเนื้อหาด้านการข่มเหงรังแกออนไลน์ แต่ไม่เฉพาะเจาะจงมากนัก จำนวน 6,679 รายการ โดยเมื่อทำการพิจารณาคัดกรองเนื้อหาที่มีความเกี่ยวข้อง ด้วยวิธีการลดทอนข้อมูล (Data Reduction) พบผลงานวิชาการที่ผ่านการคัดกรองเนื้อหา 67 รายการ จากนั้นนำเนื้อหาดังกล่าวมาวิเคราะห์เนื้อหาอย่างเป็นระบบ และทำการสังเคราะห์เชิงอภิมาน โดยคัดเลือกเฉพาะผลงานวิชาการที่มีการทดสอบสมมติฐานด้วยสถิติ t-test และ F-test คำนวณเป็นค่าดัชนีมาตรฐาน เพื่อสรุปความสัมพันธ์และอิทธิพลของตัวแปรที่ศึกษา สามารถจำแนกได้เป็น กลุ่มตัวแปรสำคัญ จำนวน 5 กลุ่ม ประกอบด้วยกลุ่มตัวแปรอิสระ 3 ตัว และกลุ่มตัวแปรตาม 2 ตัว ที่มีคู่ความสัมพันธ์ในสมมติฐาน (มีสถานะเป็นหน่วยวิเคราะห์) รวม 394 คู่ ทั้งนี้ ผลจากการสรุปขนาดอิทธิพลและความสัมพันธ์ด้วยการวิเคราะห์ค่าดัชนีมาตรฐาน ในขั้นตอนการสังเคราะห์เชิงอภิมาน พบว่า กลุ่มตัวแปรที่มีขนาดอิทธิพลและความสัมพันธ์มากที่สุดคือ กลุ่มตัวแปรการเปิดรับสื่อ (d = -1.0289, r = -0.4569)

คำสำคัญ : การข่มเหงรังแก, ออนไลน์, ฐานข้อมูล, การวิเคราะห์อภิมาน

Introduction

It is apparent that at present online media plays a significant role in our daily life and yields an effect at both individual and societal level widely. This brings about a large number of interesting phenomena. Besides, the numbers of online users and the frequency of online usage have been increasing continually. One main concern of its consequence is the negative problems and influences. This concern leads plenty of scholars and concerned offices to study on types of incurred effects and problems caused by online media. (World Economic Forum, 2016)

One of the most mentioned negative effect, which can be considered as a phenomenon being paid high attention around the world, is a “cyberbullying” or “online bullying”, a kind of power abuse (Slonje, Smith, and Frisen, 2012) by threatening and harming other people in a virtual world. Such bullying exerts high psychological effects on the victims and in some cases, it also causes physical damage in the real world of the victims, i.e. a self-destruction, loss of self-confidence, fear, deception, sex harassment, etc. From the statistical data collection concerning the safety of internet usage, it indicated the expansion of bullying trends. (Enough Is Enough, 2018). Compared with the statistics five years ago, the increase was 88%. On the other hand, it was found that the proportion of people asking for an advice for being cyberbullied was close to those being bullied physically. (Physical bullying = 7,723, Online bullying = 4,541) (NSPCC, 2016).

This finding accords with the studies of various organizations around the world, which find that the effects and problems caused by a cyberbullying have been much increasing as well. For instance, from the survey of the Children’s Society and Young Minds (2018) in England, 47% of 1,000 samples were intimidated, threatened, and received nasty messages. When compared with the samples’ feeling on the online usage, 36% perceived negative effects on themselves, and only 23% perceived positive ones. Another study entitled, “Teens and the Screen Study : Exploring Online

Privacy, Social Networking and Cyberbullying (McAfee, 2014) in the United States of America, 87% of the subjects faced an online harassment. Among this, 72% were bullied on their physical appearances, 26% races and religions, and 22% sex respectively.

In Thailand, bullying has been found increasingly as well, in terms of the numbers and frequency of being bullied and related experiences. As an example, from the study on the prevalence and related factors of cyberbullying of Chanvit Pornnoppadol (2017 cited in Methinee Suwannaki, 2017), 45% of Thai youth experienced cyberbullying at least once. This percentage of being bullying victims is four-time higher than that of the U.S.A., Europe, and Japan. The type of bulling experienced the most was "mockery and name calling" (79.4%), "ignorance/indifference" (54.4%) and "no respect from others" (46.8%) respectively. The findings of previous studies on cyberbullying are in accordance with the researcher's results from data collection from major Thai academic databases, which found a continual increase of cyberbullying studies since 2004 up to present with a statistical significance (Pearson's r =.732, Sig <.01). This reflects the scholars' concerns and worries about such problem.

Due to such influential effects, the researcher intends to gather the studies and academic work in this area from Thai academic databases to gain significant body of knowledge in Thailand, especially to collect causal and relational variables. The findings will thus lead to know the causes and effects of cyberbullying, which can be used to explain the cyberbullying in Thailand and develop some preventive guidelines that are suitable for the context of the country.

Research Objectives

1) To explore and gather studies and academic work in cyberbullying in Thai context from Thai academic databases to gain the body of knowledge in the area.

2) To obtain a solution of the studied causes and effects of cyberbullying in Thailand from a meta-analysis of the factor correlation.

Expected Benefits

1) The findings of this study are expected to illustrate the body of knowledge in the area of cyberbullying with some individuated or particular attributes in Thai context, which will lead to understand the overall situation : origin, causes, and the relationship among variables, including the gap of the study in this field, towards a more complete study in future.

2) The findings are also expected to be applied as some academic recommendations used for developing preventive plans and guidelines to cope with cyberbullying effectively. Such guidelines and the understanding of the causes would be beneficial for all concerned, both individuals and organizations, and stakeholders to cope with cyberbullying.

Operational Definitions

1. Cyberbullying : An intentional and aggressive act or behavior that is carried out using electronic means via text messages, words, pictures, sound, or video, by an individual or a group against a victim, or a group of victims, on a virtual space or through other types of online media. Types of cyberbullying are classified into seven forms : (1) threats, bullies, sarcasm, or rude and violent words, (2) sex harassment/sex seduction, (3) disguise/claim to be others, (4) threats to reveal secrets or blackmails or raking up, (5) deception, (6) the formation of specific groups for revengeful online activities, and (7) cyberstalking.

2. Basic Searching Data Output : Preliminary information gathered and scrutinized from fourteen keywords without content screening and classification.

3. Verified Searching Data Output : Preliminary information after content analysis for data reduction and classification to obtain relevant information to cyberbullying.

4. Standard Index : The value gained from calculating all research findings from a hypothesis testing with t–test and f–test for calculating the Effect Size (d) and Correlation Coefficient (r).

5. Important Variable : A group of variables gained from the study used as variables in the synthesis of the relationship between dependent and independent variables.

6. Unit of Analysis : Relationship pairs between dependent and independent variable of each hypothesis of the study that is tested by t-test and F-test.

Research Methodology and Procedure

The research procedure of this study is divided into four parts : (1) Sources of Data, (2) Searching Method and Classification Criteria, (3) Meta-analysis, and (4) Data Analysis and Statistics, as shown in the following details :

1. Source of Data : The researcher searched data from three main academic databases in Thailand, certified or sponsored by the Office of Higher Education Commission (OHEC), National Research Council of Thailand (NRCT), The Thailand Research Fund (TRF), and the Inter-University Network (UniNet). : 1) Thai-Journal Citation Index Centre or TCI 2) Thai Journals Online or ThaiJO 3) Thai Library Integrated System or ThaiLIS

2. Searching Method and Classification Criteria : Four steps of searching and classifying data are as follow :

Step 1 : Keywords Searching. The researcher identified fourteen key words (seven Thai words and seven English words) and classified from broad to narrow definitions as follow : (1) การกลั่นแกล้งรังแก (2) การข่มขู่ (3) การข่มเหง (4) การคุกคาม (5) ความรุนแรงออนไลน์ (6) สังคมออนไลน์ (7) ออนไลน์ (8) Bully/Harm (9) Cyber (10) Cyberbullying/Cyberbully/Cyber-bullying (11) Harassment (12) Victims/Victimization (13) Violence/Violent and (14) Virtual (Space/Society).

Step 2 : Searching Access/Filter. Five cues were selected as a searching access or filters : (1) abstract/keywords, (2) articles/name/title), (3) research report, (4) thesis), and (5) All Data Area/All Field. Three documentary forms/types are included in this study : a research article, an academic article, and a thesis/an independent study/a research report.

Step 3 : Period. The searching started in April 2018 and traced back to the past time in which all target data was recorded in the databases.

Step 4 : Data Classification. The content of all academic works found from the basic searching data output was analyzed and classified by data deduction to select only the academic works whose content related to cyberbullying and to sort out the repeated works. Besides, the researcher selected only the works of Thai authors or researchers and/or containing the content in Thai contexts.

Step 5 : Systematic Review Analysis. Only quantitative research or study was selected, analyzed, and synthesized into a set of data. Such data illustrates a body of knowledge in the area of cyberbullying in a communication context, including the causes and preventive coping guidelines.

3. Meta-Analysis

The findings from the studying of academic work of stage 2 are analyzed to get a solution from Standard Index and other attributes of academic work with details and preliminary requirements as follow :

1) Unit of Analysis : a pair of studied variables from hypothesis test. In this study, a unit of analysis is a pair of correlational variables (hypothesis) tested by t-test and F-test.

2) Analysis data : Research findings or the results from hypothesis tests and attributes found in the academic work. All of these need to be defined clearly before a statistical analysis and research synthesis.

3) Research tools : Record and coding sheet

4) Synthesis Statistics : All studied academic works are synthesized by Meta-Analysis. Only academic works that pass the criteria are transformed to be a standard index and transform all statistics gained from hypothesis tests with different value to have one same standard value. The standard value is divided into the Effect Size (d) and Correlation Efficient (r). Both standard values can be transformed interchangeably.

However, for this study, only Correlation Coefficient (r) is selected to be a standard index in yielding the

final interpretation. From considering the Effect Size (d), the value of Correlational Coefficient (r) is between 0-1 only, which is easy for an interpretation (Kotrlik, Williams, & Jabor, 2011). The substitution in equations for adjusting the value of t-test and F-test according to the standard value calculation is as follows

Statistical value of t can be calculated the standard value of the Effect Size (d) by the following equation :

$$d = t\sqrt{\frac{1}{n_1}+\frac{1}{n_2}}$$

Statistical value of f can be calculated for the standard value of the Effect Size (d) by the following equation :

$$d = 2f\sqrt{\frac{3(k-1)}{(k+1)}} \text{ เมื่อ } f = \frac{n^2}{1-n^2} \text{ และ } n^2 = \frac{F(k-1)}{F(k-1)+(N-k)} \text{ หรือ } n^2 = \frac{SS\ between}{SS\ total}$$

The calculation of Effect Size (d) to be Correlation Coefficient (r) :

$$r = d\sqrt{\frac{N}{Nd^2+4N\quad 8}}$$

By d = Effect Size
t = t-test value
n1 = numbers of samples in group 1
n2 = numbers of samples in groups
n2 = Eta- squared
N = numbers of all samples
r = Correlation Coefficient
F = F-test value
k = numbers of variable groups

In order to achieve a congruent interpretation of the Effect Size and Correlation Coefficient, this study applies the Effect Size defined by Cohen (Cohen's Descriptors) (1988 cited in Kotrlik, Williams, & Jabor, 2011) and Sawilowsky (2009) and applies the Correlation Coefficient of Hopkins (Hopkin's Descriptors) (1997 cited in Kotrlik & Williams, 2003) as illustrated in Table 1

Table 1 Descriptors for reporting and interpreting effect size

Reference	Effect size statistics	Values	Interpretation of effect size and correlation
Cohen,1988	Sawilowsky's d	2.0 or higher	Huge effect size
Sawilowsky, 2009	Sawilowsky's d	1.20 to 2.0	Very large effect size
	Cohen's d	.80 to 1.20	Large effect size
	Cohen's d	.50 to.79	Medium effect size
	Cohen's d	.20 to.49	Small effect size
	Sawilowsky's d	.01 to.20	Very small effect size
Hopkins, 1997	Correlation Coefficient	.90 to 1.00	Nearly, practically, or almost : perfect, distinct, infinite
		.70 to.90	Very large, very high, huge
		.50 to.70	Large, high, major
		.30 to.50	Moderate, medium
		.10 to.30	Small, low, minor
		.00 to.10	Trivial, very small, insubstantial, tiny, practically zero

4. Data Analysis and Statistics

Qualitative Data Analysis : The researcher classified qualitative data by Typological Analysis and analyzed by Constant Comparison and Content Analysis from the content in the abstracts or in the articles.

Quantitative Data Analysis : Collected data were analyzed by descriptive statistics, and inferential statistics. Frequency, percentage, correlation analysis, effect size (d) and correlation coefficient (r) are used and displayed in the forms of tables and findings reports.

Research Findings

1. The Findings of the Basic Searching Data Output : From the basic searching data output classified by database and fourteen keywords, 6,679 academic works were found. The database contains the studied data the most is ThaiLIS with 2,851 pieces of academic works (42.69%), followed by ThaiJO with 1,976 pieces (29.58%), and TCI with 1,852 pieces (27.73%) respectively.

From data classification by keywords in Thai and English of 6,679 pieces of academic work found from all databases, it shows that Thai keyword that contains the number of academic work the most is "ออนไลน์" (online) with 2,054 pieces (30.75%), next are "สังคมออนไลน์" (social network) with 1,084 pieces (16.23%), and "การคุกคาม" (harassment) 367 pieces (5.49%) respectively. For English keywords, "violence/violent" has the highest frequency of academic work found with 1,055 pieces (15.79%), next are "Victims/Victimization" 851 pieces (12.74%), and "Bully/Harm" 425 pieces (6.36%) respectively.

2. The Findings of Verified Searching Data Output : From the verified searching data output, the researcher found 67 pieces of academic work related to cyberbullying published in fifteen years, tracing back from April 2018, or during 2004-2018. The researcher classified academic works from the verified searching data output by year into three 5-yearly intervals. It was found that during 2014-2018 (up to April 2018), it appeared the highest frequency of published academic works relating to cyberbullying, followed by the period during 2009-2013, and 2004-2008 respectively, as illustrated in Table 2.

Table 2 The frequency and percentage of academic works from the verified searching data output published in each period, classified by yearly intervals

Yearly intervals	Frequency (N)	Percentage (%)
2004-2008	7	10.45
2009-2013	23	34.33
2014-2018 (April 2018)	37	55.22
Total	67	100

Besides, from the correlation analysis, it was found that the period of publication and the number of academic works relating to cyberbullying have a statistically significant linear relationship. ($r = .732$, $Sig < .01$) the correlation between the two is found to be positive. Specifically, the more recent years in which the academic works relating to cyberbullying were published, the more quantity of such published academic works was found. This finding is in accordance with the expansion trends of the usage of online media at present.

3. Systematic Review Analysis : The researcher conducted an in-depth content analysis of all 67 quantitative academic works from the verified searching data output and then conducted a meta-analysis in the next stage with 11 criteria. The eleven criteria were (1) independent variables, (2) dependent variables,

(3) operational definitions of cyberbullying, (4) theories, (5) methodology, (6) population, (7) sample size, (8) instrument, (9) statistics used, (10) research finding, and (11) recommended issues. The findings from this stage were synthesized into 23 sets of data for explaining the body of knowledge of cyberbullying in a communication context in Thai society.

From the classification of 67 academic works meeting the criteria of this study, the content of these academic works are of three main issues : (1) Negative effect of cyberbullying, (2) coping strategies and prevention guidelines covering knowledge provision, surveillance, monitoring, and legal actions, and (3) healing and rehabilitating cyber-victims.

The findings from this stage were synthesized into 23 sets of data for explaining the body of knowledge of cyberbullying in a communication context in Thai society. From this part of study, the following results were found : 1) Cyberbullying has a significant relationship with the frequency of the usage of online media, numbers of friends online, and the level of interaction in social networks, which is found to be the most significant cause of cyberbullying. 2) Most of the cyber-victims are children and youth. 3) There are several forms of cyberbullying with different level of violence. 4) Cyberbullying causes negative effects, from low to high level. 5) The coping and prevention guidelines cover self-control and self-management, media Literacy, discreet usage of technology, and the surveillance of a family, educational and social institutes.

4. Meta- Analysis : The studied academic works from the stage of Systematic Review Analysis are analyzed to obtain the final solution based on the Standard Index by selecting only the academic works that pass the hypothesis tests by t-test and F-test. Then, t and F are substituted in the equation to transform to be the Standard Index in the form of Effect Size (d) and Correlation Coefficient (r).

The variables relating to cyberbullying found in this study are classified into five groups : Demographic and personal background, media exposure, knowledge and cognition, attitude towards cyberbullying, and behaviors towards cyberbullying variables. Besides, 394 relationship pairs are found and classified by groups and types of variables to conclude the overall Standard Indices as follow :

Table 3 : A conclusion of Standard Indices between groups of independent and dependent variables

Group of dependent variables	Group of independent variables	(d)	(r)	Number (pair)
Attitude toward cyberbullying	Demographic & Background	**0.0718**	**0.0363**	**200**
	1. General demographic	-0.2027	-0.0991	52
	2. Socioeconomic status	0.2325	0.1156	124
	3. Family background, domestic violence and experience in violence	0.1858	0.0925	24
	Media Exposure	**-1.0289**	**-0.4569**	**32**
Behavior toward cyberbullying	Demographic & Background	**0.0989**	**0.0490**	**141**
	1. General demographic	0.1258	0.0616	41
	2. Socioeconomic status	0.0821	0.0409	93
	3. Family background, domestic violence and experience in violence	0.0889	0.0444	7
	Media Exposure	**0.1310**	**0.0652**	**18**
	Knowledge and Cognition	**0.1315**	**0.0658**	**3**

From Table 3, by treating groups of attitude variables relating to cyberbullying as dependent variables, it is found that the group of independent variables that has the largest Correlation Coefficient Size is "Media Exposure", followed by "Demographic and Background". In the group of Media Exposure variables, the Effect Size found is very large and the Correlation Coefficient is medium (d = 1.0289, r = -0.4569) while in the group of Demographic and Background variables, the Effect Size found is very small and the Correlation Coefficient is tiny to almost practically zero (d = 0.0718, r = 0.0363).

By treating groups of behavior variables relating to cyberbullying as dependent variables, it is found that the pair of independent variables that has the largest Correlation Coefficient Sizeis"Knowledge and Cognition" (d = 0.1315, r = 0.0658). In other words, the value of Correlation of this pair is higher other pairs in the group independent variables. Although r value is low, d or effect size is evaluated in the very large effect size as shown in Table 1. The next largest Correlation Coefficient Size are "Media Exposure" (d = 0.1310, r = 0.0652), and "Demographic and Background" (d = 0.0989, r = 0.0490) respectively.The Effect Size and Correlation Coefficient of all three independent variables are at small level. Nevertheless, from the comparison between independent variable groups, the Effect Size and Correlation Coefficient of the group of "Knowledge and Cognition" variables and the group of "Media Exposure"or specifically an exposure to online media, which are internet and social media. Their Effect Size and Correlation Coefficient are relatively large and almost equivalent. Therefore, in the study of cyberbullying, more attention should be paid to the relationship between "knowledge and Cognition" and "Media Exposure" affecting cyberbullying behaviors than to "Demographic and Background" variables.

Table 4 illustrates some standard index between dependent and independent variables

Dependent variables	Independent variables	(d)	(r)	Quantity (Pair)
Attitude toward cyberbullying	Media Exposure			
Opinion towards obscene images and content	Media/internet usage status	**-1.0844**	**-0.4776**	**13**
1. Nude/pornographic picture		-1.7367	-0.6556	1
2. Male-female sexual intercourse picture		-1.3329	-0.5545	1
3. Male-male sexual intercourse picture		-0.8415	-0.3878	1
4. Female-female intercourse picture		-1.0522	-0.4655	1
5. Hidden Camera with sexual connotation		-1.1787	-0.5077	1
6. Bestial/man-animal sexual intercourse picture		-0.6187	-0.2955	1
7. Sexual intercourse with a family member		-0.6512	-0.3096	1
8. Pornography/sexual intercourse with a juvenile aged lower than 18.		-0.8443	-0.3889	1
9. Picture/content of group sex. 1		-1.0267	-0.4566	1
10. Website selling obscene objects		-1.3145	-0.5492	1
11. Collection of sexual experiences website		-1.3117	-0.5484	1
12. Website with sexual sevice		-1.0338	-0.4591	1
13. Game with sex-related content		-1.1547	-0.4999	1
Attitude toward cyberbullying	Media Exposure			
Opinion towards violent picture and content	Media/internet usage status	-1.0160	-0.4538	7
1. Picture showing wars/fighting/killing		-1.1759	-0.5068	1
2. Picture showing injuring people by weapons		-1.1144	-0.4867	1
3. Picture showing injuring people without weapon		-1.1674	-0.5041	1
4. Picture of torture of man or animal		-0.8768	-0.4015	1
5. Picture/content with sexual violence		-0.8881	-0.4058	1
6. Picture showing people with disgusting disease		-0.6675	-0.3165	1
7. Game with violent fighting		-1.2219	-0.5213	1

Dependent variables	Independent variables	(d)	(r)	Quantity (Pair)
Attitude toward cyberbullying	Media Exposure			
Opinions Towards Picture and content with Impolite Language.	Media/internet usage status	**-1.1685**	**-0.5054**	**5**
1. website with violent reviling		-1.1964	**-0.5133**	1
2. Website with vulgar words		-1.1554	**-0.5002**	1
3. Website/webboard with double-meaning words		-1.3336	**-0.5547**	1
4. website/webboard with insulting words		-1.1321	**-0.4926**	1
5. website		-1.0253	**-0.4561**	1
Attitude toward cyberbullying	Media Exposure			
Opinion towards immoral picture/content	Media/internet usage status	**-0.8470**	**-0.3908**	**7**
1. website with harmful seduction content		-0.8471	-0.3900	1
2. online gambling website		-1.2290	-0.5235	1
3. illegal-product sales website		-0.8959	-0.4088	1
4. website with national-stability impact		-0.8422	-0.3880	1
5. website with religion-defamation content		-0.6293	-0.3001	1
6. website with monarchy-defamation content		-0.5812	-0.2790	1
7. website teaching a hacking		-0.9044	-0.4120	1
Behavior toward cyberbullying	Demographic & Background			
Cyber-bullying behaviours	1. Gender	0.1646	0.0821	1
	2. Age	0.0073	0.0037	3
	3. Level of education/school type	0.0816	0.0408	7
	4. Residential	0.0076	0.0038	6
	5. Marriage status	0.0138	0.0069	6
	6. Family relationship	0.0598	0.0299	3
	7. Violence in the family	0.1181	0.0590	4
	8. Income	0.0260	0.0130	5
Behavior toward cyberbullying	Media Exposure			
Cyber-bullying behaviors	Duration of using the internet	0.1015	0.0507	5
Attitude toward cyberbullying	Demographic & Background			
Cyber bullying Attitude	1. Types of family	0.1947	0.0971	2
	2. Experience in being punished	0.1079	0.0540	2
	3. Experience in parent's quarrels, arguments, or use vulgar words	0.2198	0.1095	5
	4. Experience in seeing their parent's physical attacks other	0.2922	0.1449	5
	5. Care and attention from parent	0.1196	0.0598	5
	6. Obedience advices from parent	0.1807	0.0902	5
Behavior toward cyberbullying	Demographic & Background			
Violation of personal right on internet	1. Gender	0.2985	0.1480	1
	2. Education : Field of study	0.1315	0.0658	5
	3. Occupation	0.0694	0.0347	1
	4. Income/Expenses	0.1225	0.0613	3
Behavior toward cyberbullying	Media Exposure			
Violation of personal right on internet	1. Number of social media usage	0.0541	0.0271	3
	2. Place of using	0.0475	0.0238	4
	3. Time of using	0.1435	0.0717	3
	4. Aspect of information	0.3084	0.1528	3
Behavior toward cyberbullying	Knowledge/Cognition			
Violation of personal right on internet	Knowledge/understanding on laws	0.1315	0.0658	3

Dependent variables	Independent variables	(d)	(r)	Quantity (Pair)
Behavior toward cyberbullying	Demographic & Background			
Online communication of all kinds of violence	Gender	**0.3072**	**0.1462**	**4**
1. Physical violence (crimes)		0.0139	0.0070	1
2. Physical violence (pornography)		0.7680	0.3593	1
3. Structural violence		0.4448	0.2176	1
4. Legal violence		0.0022	0.0011	1
Behavior toward cyberbullying	Demographic & Background			
Online communication of all kinds of violence	Age	**0.0816**	**0.0408**	**20**
1. Physical violence (crimes)		0.0294	0.0147	5
2. Physical violence (pornography)		0.1788	0.0893	5
3. Structural violence		0.0922	0.0462	5
4. legal violence		0.0263	0.0132	5
Behavior toward cyberbullying	Demographic & Background			
Online communication of all kinds of violence	Education level	**0.0313**	**0.0157**	**16**
1. physical violence (crimes)		0.0451	0.0226	4
2. physical violence (pornography)		0.0360	0.0180	4
3. structural violence		0.0274	0.0137	4
4. legal violence		0.0169	0.0085	4
Behavior toward cyberbullying	Demographic & Background			
Online communication of all kinds of violence	Occupation	**0.1786**	**0.0885**	**28**
1. Physical violence (crimes)		0.0357	0.0179	7
2. Physical violence (pornography)		0.3819	0.1880	7
3. Structural violence		0.1821	0.0909	7
4. Legal violence		0.1149	0.0575	7

Discussion and Recommendation

From the researcher's previous study on the overview of the studies on cyberbullying in Thailand from Thai academic databases, it is found that cyberbullying has been identified as an important problem amongst youths similar to many western countries (Slonje, Smith, and Frisen, 2012). The previous study found some variables relating to cyberbullying in Thai context. Thus, in this study, those variables are further investigated by hypothesis testing and analyzed statistically to conclude some significant relationship among variables.

From the finding, it indicates that media plays a role as a major communication tool and sphere, according to the Impact Theory, in cyberbullying that has a great impact on the receivers. This can be illustrated from the results of the study that the group of Online-Media Exposure variables (as this study focuses on online media only) can explain the cyberbullying phenomena the best, especially the attitude towards cyberbullying has very large Effect Size in spite of medium level of Correlation Coefficient. However, when compared with other variable groups, its size of Correlation Coefficient is larger apparently and it is the only variable group that has Standard Index meeting the criteria. This points out the relations and significance between the usage of online media and media exposure and its effect on a cyberbullying. This reflects the role of online media as "a sphere of cyberbullying" involving three main groups : perpetrators, victims, and followers.

Besides, the implication of such relationship can be summarized and proposed as follows :

1) The relationship between media exposure and cyberbullying reflects an anxiety in witnessing and confronting cyberbullying, especially with violent content. The threat, violence, and the forwarded message that may cause indirect psychological effect on the online users or followers witnessing cyberbullying. On the other hand, the anxiety towards the violence of direct physical and psychological effect on the cyber victims tends to be increasing. (with reference to the findings in Table 4) Accordingly, it is necessary that knowledge and practical guidelines be provided in the

context of cyberbullying confrontation. The knowledge and guidelines in coping with cyberbullying should be classified into different situations; for instance, knowledge and guidelines for appropriate usage of online media to reduce the violation and unintentional cyberbullying, coping methods with cyber-bullies or perpetrators, counseling guides, the observation of the irregularities of surrounding people who can possibly be cyberbullying victims, etc. Especially, the findings confirm the relationship between the group of Knowledge and Cognition variables and cyberbullying has the largest effect size. (From Table 3, d = 0.1315 as compared with the criteria in Table 1)

2) Online media usage and exposure is found to have a larger Effect Size than other variables or causes in constructing and transmitting the issues of cyberbullying. Therefore, concerned people and organizations, i.e. schools, parents, Ministry of ICT, Ministry of Education, private companies selling online products, etc. should warn online users to be aware of the impact and power of online media in a real and virtual world in violating others' rights, including in harming, abusing, and insulting others. This includes distributing cyberbullying, which are common characteristics of cyberbullying. Slonje et al (2012) states that the users should be aware that one cyberbullying act might readily snowball out of the initial control of the bully due to the technology used. Picture and content can be sent and uploaded onto the internet repeatedly or be repeated many times by others while the victims can see this repetition but feel powerless. This is because online media is easily distributed and forwarded while it is hard to remove or avoid it. Users should use this technology carefully and be aware of its consequent effects on oneself, others, and on the society as a whole. (As shown in Table 4)

3) The nature and characteristics of online media facilitates cyberbullying, i.e. the construction of a virtual, hypothetical, and anonymous self without presenting one's real self. Thus, the perpetrators feel it is easier and more convenient for them to attack their victims online than in an actual confrontation. Since its initial emergence, online media has been expected to provide a better public sphere for making previously marginalized people and arguments more visible to a broader public but the result of the study of Gerhards & Schafer (2010), "Is the Internet a Better Public Sphere? Comparing Old and New Media in the U.S.A. and Germany" rejected the hypothesis. New Media has not performed such functions more widely. Thus, online media is often used in a negative way, including cyberbullying. In new media, including online, which is a public sphere with no strict monitoring or with some gaps in the system, users can create their content more easily than in offline situations. They can create their own pictures and content freely to display their violent feeling and statements against other people. Such harmful message about the cyber victims (both pictures and content) can be sent, forwarded, and distributed, intentionally or unintentionally, to other people widely. Therefore, they invade others' sphere freely without concerning about the consequences of their bullying.

Accordingly, new media literacy and competency relating to cyberbullying should be emphasized by all concerned, especially the ability to think thoroughly before creating and transmitting any message in this public sphere. At an individual level, a self-expression based on an individual's right and freedom of expression should be counter-balanced with the value of respect of other people's human dignity and the value of privacy non-violation. At the structural level or societal level, online service or information service providers (ISP) should develop a system that helps identify the user more strictly and create a standard in screening in appropriate content to restrict and prevent harmful content and picture and reduce the content leading to cyberbullying.

4) Negative effects from cyberbullying can widespread into social network and there is a tendency that such negative effects will extend to the real world rapidly. This accords with many previous studies of many countries, such as Beran& Li, 2007; Ybarra,

Diener-West; Leaf, 2007, Hertz & David-Ferdon, 2008; Juvonen, 2008; Konig, Gollwitzer, & Steffgen, 2010 (as cited inOjanen, Boonmongkon, Samakkeekarom, Samoh, Cholratana, and Guadamuz, 2015), including the study ofTudkua&Sabai-Ying (2017) about the effect of cyber-bullying on psychological and physical problems of the victims in a real world, i.e. stress, anger, worries, shame, etc. Therefore, online users need to have a thorough judgement of such effect. In addition, a society should be concerned of establishing some surveillance on inappropriate and undesirable acts on the online media, and cooperate in setting some standards for a common use to prevent cyberbullying problems and in commonly creating a safe public sphere for use. From the findings in regards to recommendations for academic purposes, future researchers are recommended to explore other types or groups of variables, besides demographic and background variables, i.e. economic and social status, etc. found in this study. Especially, the findings of this study reveals that the Correlation Coefficient level or size of demographic and background variables is very tiny or almost practically zero. Some other variables, such as cultural variables, should be explored more deeply from the previous studies. For instance, culture of violence (or cultural violence) is best seen as a societal-level explanation of violence. On the individual level, culture of violence can arguably be operationalized in terms of moral disengagement and normative beliefs about aggression, which indicate its association with cyberbullying perpetration. (Ojanen, Boonmongkon, Samakkeekarom, Samoh, Cholratana, and Guadamuz, 2015). Especially, from the finding of Slonje R. et al (2012), it reflects some cultural dimension relating to cyberbullying and the ways the victims cope with cyberbullying. According to Hofstede's study in 1984, Thailand has a high power- distance dimension, which has been supported by many studies. Thus, there might be some coping behaviors influenced by the victim's culture, i.e. some victims are reluctant to reveal the problem to their parents or their teachers or some subordinates keep their cyber victimized problem caused by their superior in secret, due to a high power distance in Thai society, etc.

Besides, due to the complexity of cyberbullying and variables involved, an experimental research should be conducted to supplement a survey research to obtain Effect Size and Correlation Coefficient with other control groups or while controlling other variables. The results will achieve higher internal validity and can indicate the effect of the variables more clearly.

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