What Makes a Young Adult Take or Not Take Self-Protective Action Against Cyberbullying?

A Study on Risk Communication

Universiteit Twente Master Thesis Psychology Conflict, Risk and Safety

Author: Marie Hellmann s1876422

Date: 07th July 2017, Dortmund (Germany)

University of Twente Dr. J.M. (Jan) Gutteling Dr. Ir. P.W. (Peter) de Vries

In collaboration with Kinderschutzbund Kreis Unna

Preface

I have written this master thesis to finish my Master of Psychology "Conflict, Risk and Safety" at the University of Twente. My interest in risk communication and working with children and young adults has developed early during the study but is now more clearly and defined. With satisfaction, I review the last ten months. There were both positive and negative moments but I have learned much, had a great time and evolved myself.

By this preface, I would like to thank the team of the Kinderschutzbund Unna, Frank, Hannah and Henriette for giving me the chance to realize my idea of a master thesis and to complement the process with practical experiences. This study would not have been possible without their support. I feel truly grateful for making me feel welcome and offering me an amazing time. Especially I would like to thank Hannah for being so patient, considerate and open. In particular, I thank Jan Gutteling for the supervision and support during the whole process. The enthusiasm for the topic, the interesting feedback moments and freely sharing of ideas helped me through the writing and got me a positive attitude. Moreover, my thanks to Peter de Vries for his constructive feedback.

Special thanks goes to Moritz, for being such an uncomplaining partner during this time, for all the critical advice and the reading-through's, for being amazing. I would like to thank my family as well, for always bolstering me up.

Dortmund, 07 July 2017

Marie Hellmann

Abstract

Cyberbullying is a new and fast growing form of traditional bullying. It has hazardous consequences for victims as well as offenders. The position of social media, the internet and new technologies makes risk communication to prevent and control cyberbullying effectively difficult. Previous research found that risk communication about a particular risk is more effective when it does include efficacy messages. Moreover, supporting or opposing peer feedback might influence the effect of risk communication either positively or negatively. For these reasons, this study examines the relationship between risk communication including efficacy information, peer feedback and the intention to take self-protective action against cyberbullying. With the use of a questionnaire, 314 German primary-school pupils were asked about cyberbullying. The results indicate that high efficacy information and supporting peer feedback are positive predictors of the intention to take self-protective action. Pupils who are conscious of the need for recommended self-protective actions feel able to perform them. Those who receive supporting peer feedback show more self-protective actions.

Zusammenfassung

Cybermobbing ist eine neue, sich rasant entwickelnde Form des traditionellen Mobbings und hat gefährliche Konsequenzen für sowohl die Opfer als auch die Täter. Die Stellung der sozialen Medien, des Internets und der neuen Technologien heutzutage machen eine effektive Risikokommunikation zur Prävention und Kontrolle von Cybermobbing schwierig. Frühere Studien haben gezeigt, dass Risikokommunikation effektiver ist, wenn diese selbstvertrauensstärkende Informationen enthält. Des Weiteren kann die unterstützende Rückmeldung von Gleichaltrigen den Effekt der Risikokommunikation positiv beeinflussen. Aus diesen Gründen beschäftigt sich diese Studie mit den Zusammenhängen zwischen Risikokommunikation, die selbstvertrauensstärkende Informationen enthält, Rückmeldung durch Gleichaltrige und der Intention, selbstschützendes Verhalten auszuführen. Mit Hilfe eines Fragebogens wurden 314 Grundschüler zum Thema Cybermobbing befragt. Die Studienergebnisse zeigen, dass selbstvertrauensstärkende Informationen und unterstützende Rückmeldung von Gleichaltrigen die Intention, selbstschützendes Verhalten gegen Cybermobbing auszuführen, verstärken.

Table of Contents

Prefac	e		2
Abstra	ct		3
Zusan	menfassung		4
1	Introduction	n	6
2	Theoretical	Background	8
	2.1 The Digi2.2 Cyberbu2.3 Preventiv2.4 Model and	tal World llying ve Measures nd Hypotheses	8 9 12 17
3	Methods		19
	3.1 Research3.2 Procedur3.3 Manipula3.4 Measure3.5 Participa	Design e ation of Efficacy Information and Peer Feedback ments of Dependent Variable nts	19 19 20 21 21
4	Results		22
	4.1 Prelimin4.2 Descript4.4 Main An	ary Analyses ive Statistics alysis	22 22 23
5	Conclusion	and Discussion	25
	5.1 Conclusi5.2 Limitation5.3 Practical	ons and Explanations ons Advice for Future Research	26 28 29
6	References		31
7	Appendix		
	I Pass II Ques III Peer	ive Consent Letter tionnaire Feedback	35 36 39

1 Introduction

The story of the 18-year-old Jessica Logan ("The Top Six Unforgettable CyberBullying Cases Ever", 2017) began when she sent a nude photo of herself to her boyfriend. After the couple broke up, the photo was sent to hundreds of teenagers around her own high school and seven different high schools close to Jessica's hometown. Via Facebook, Myspace and text messages, Jessica was bullied throughout weeks. She committed suicide by hanging herself. More famous is the case of Amanda Todd who committed suicide in 2012 after posting a video on YouTube telling her story entitled as "My story: Struggling, bullying, suicide, self-harm." (SuicidePreventionLLC, 2012). By using video chats to meet new people, she got to know a stranger who convinced her to denude her breasts while being on camera. The picture began to spread online, including an own Facebook profile where the picture with her denuded breasts was used as the profile image ("The Top Six Unforgettable CyberBullying Cases Ever", 2017). Another case is the case of Tim Ribberink, a boy from the Netherlands, who committed suicide after years of being attacked online (Schmitz, 2012).

More than 46% of the world population are connected to the internet in some way and 31% use social network sites (Schumann, 2016). The unavoidable consequence of this usage is a growing rate of harmful offences against children and young adults. Cyberbullying, which is a new form of traditional bullying, is one of the offences which attracts notice (Tokunaga, 2010). Traditional bullying is defined as: "[...] an ongoing misuse of power in relationships through repeated verbal, physical and/or social behaviour that causes physical and/or psychological harm. It can involve an individual or a group misusing their power over one or more persons." ("Definition of bullying", 2017). It is an accepted and serious problem that can occur in schools, workplaces and during free time activities. Usually, it does involve two or more persons showing aggressive behaviour in either physical or verbal ways against one other person. The behaviour is repeated and endures over a long period of time. Victims often feel powerless and show a loss of self-confidence.

Recently, cyberbullying got established. It involves the use of information and communication technologies such as e-mail, smartphones and social network sites, to support deliberate, repeated and hostile behaviour by an individual or group that is intended to harm others (Belsey, 2005). Studies found that, although cyberbullying is still less frequent than traditional bullying, the negative effects are comparable (Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008). Additionally, the most threating part about cyberbullying is that it

does not stop after school or by changing environments but follows home. Combined with the fact of fast developing technologies, cyberbullying is "widely recognised as a serious problem" (Li, 2007, p. 435). Smartphones, computers and the possibilities of the internet offer many positive scopes and are a given nowadays. But they have also negative side effects as cyberbullying.

According to Li (2007), there are different predicting factors of cyberbullying. The use of technology, which is rarely limited or controlled, is one predicting factor. Another predicting factor, which leads to increasing use of the internet and influencing the attitude towards what happens online, is peer pressure or peer feedback (Li, 2007). To fulfil the expectations of peers and to go along with the attitudes of what others of the same age group think is especially important for youth and a possible explanation for behaviour.

In order to cope with cyberbullying and to prevent it, the right risk communication is important. "Risk communication is the process of informing people about potential hazards to their person, property, or community. [...] They should put a particular risk in context, possibly add comparisons with other risks, include advice about risk reduction behaviour, and encourage a dialogue between the sender and receiver of the message." ("Risk Communication", 2016). By the right risk communication about cyberbullying, the intention to take self-protective action should be activated. Several aspects like the natural use of the internet and peer feedback must be involved if youth need to be cached and convinced (Li, 2007). Moreover, strengthening different efficacy beliefs through communication can help to motivate the listeners to take action (Witte & Allen, 2000).

There are many previous researches which studied either cyberbullying, risk communication, peer feedback or efficacy effects but so far no study examined the relation between all these factors.

Therefore, the following research deals with cyberbullying and effective risk communication about cyberbullying among youth. Additionally, it contains the aspect of peer feedback and the aspect of initialization of efficacy information on risk communication about cyberbullying. This is to find out more about the influence these factors might have on the effectiveness of risk communication and on taking self-protective action against cyberbullying.

2 Theoretical Background

2.1 The Digital World

Communication seems important for a number of reasons: it is needed to transfer information and exchange ideas, to emphasize concerns of society or to inform and entertain. Especially technology in the form of electronic media as the internet and smartphones has improved the way of communicating for both personal and business activities (Ramey, 2012). In this regard, the digital world offers many possibilities.

First of all, the internet provides the possibility of communicating fast with e-mailing, online discussions and on-demand information. As the study of the Internationales Zentralinstitut für das Jugend- und Bildungsfernsehen (2017) states, 99% of German households have a smartphone or mobile phone, 98% have a computer or laptop and 97% have an internet connection. Among youth, 91% of the young female adults and 93% of the males are connected to the internet. Between the age of 14-29, young adults spend 248 minutes a day online. During their time online, 84% use social network sites (hereinafter: SNS) and messaging services. As mainly young people use SNS which is shown by a study of the PEW Research Center ("Social Media Fact Sheet", 2017), they are connected with others in a highly voluntary and independent way. The social network sites as Facebook, WhatsApp and Instagram are the offers that young adults like best. Their motivation to spend time online differs but the main reasons are to have fun (82%), to be part of it (78%) and to not feel alone (72%). Almost half of youth (49%) spend more daily time online than intended and 22% get nervous if the internet connection is cut ("Computer, Internet und Web 2.0", 2017). Frequent internet users spend less time in social activities and more time at home (Nie & Erbring, 2000). But does a high internet usage lead to a decrease of sociability? Castells (2014) argues that the isolation of the social environment due to internet usage does not necessarily reduce sociability but can even increase it. Communication in virtual life, can be more social than in a real life setting as it can lead to a higher intensity of relations (Castells, 2014). Due to the use of SNS, it is possible to regularly and independently interact with other known and unknown internet users. Therefore, the high sociability makes communication via the internet important to its users.

2.1.1 The Concept of Identity

According to Erikson, a person develops by successfully resolving crises in different phases. During adolescence, the psychosocial crisis of ego identity versus role confusion

occurs. In this phase, adolescents search for a sense of self and personal identity. Therefore, they explore personal values, beliefs and goals in an intense way. The wish to belong to society and becoming more independent are learning challenges. During this stage, the adolescent re-examines his or her identity. The development can be disrupted by role confusion because the individuals are not sure about themselves and their place in society. The resulting identity crisis leads to experiments with different lifestyles, self-expression and rebellion (Erikson, 1959).

In line with this, Evers, Albury, Byron, and Crawford (2013) describe young people's use of social media as a sort of self-expression and an experimentation with the own identity: they might choose with whom they want to belong or not belong, they can negotiate intimate relationships online and they can present themselves the way they like to be. Especially due to the fact of acting in the impersonal environment of social media, difficulties like managing relationships or composing an identity in the offline world can be negotiated (Dunne, Lawlor, & Rowley, 2010). Different online situations as writing a status update, uploading a profile picture or publishing personal information on a platform are seen as forms of identity (Larsen, 2016). Therefore, SNS seem important for the young generation to find out about their identity and offer space for free self-expression. However, the use of SNS can give rise to many risks one must be aware of. The possibility to download or upload different media as well as to be part of data abuse, chatting with strangers or having a public profile can lead to negative consequences, such as illegal actions and hurt feelings (de Zwart, Lindsay, Henderson, & Phillips, 2011).

2.2 Cyberbullying

2.2.1 Definition

The examples enumerated in the beginning depict the phenomenon of cyberbullying and its consequences. Cyberbullying is defined as an "aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him of herself." (Smith, Mahdavi, Carvalho, & Tippett, 2006). The three most important characteristics are an imbalance of power, repeated and constant activeness over a long period of time and the actions being made on purpose ("Cybermobbing", 2014).

2.2.2 Manifestations

Cyberbullying can take many different forms as bullying via text messages, via pictures or videos, via chatrooms or websites. There are different frequently occurring manifestations named in the literature ("Cybermobbing", 2014), for example flaming, exclusion, distribution of insults and distribution of wrong statements. Smith et al. (2006) found out that 22% of students have been victims of cyberbullying at least once. Thereof, girls are frequently victims of cyberbullying than boys, and that is mostly committed from a small group of students who are in the same class or age group.

2.2.3 Symptoms and Consequences

Although cyberbullying is less frequent than traditional bullying, the negative impact is perceived as comparable. Common symptoms in victims of cyberbullying are changes in behaviour such as decline in output, loss of interest in hobbies and school and the wish to be alone. Moreover, physical problems can occur including suddenly upcoming headaches, stomach aches and sleepiness. Furthermore, victims tend to use the computer less frequent, stop meeting friends online, turn off the computer as parents or friends enter the room and are often sad, angry and thoughtful ("Cybermobbing", 2014).

Many victims of cyberbullying suffer from isolation, anxiety and anger as well as eating disorders, depression, avoidance of areas where contact is possible and suicide. The short-term effects of cyberbullying can be minimized by taking immediate action like a school change. But the long-term effects remain, leading to a constant low self-esteem ("Cybermobbing", 2014).

2.2.4 Victims and Offenders

There is no detailed description of victim and offender but it is more likely to become a victim if a person seems more anxious and insecure or provoking. Provoking is a risk factor because it attracts possible offenders due to noticeable behaviour. Moreover, observable differences as skin colour, height, weight, socially unacceptable characteristics or divergent behaviour can be factors of an attack. Becoming an offender of cyberbullying is more likely if the own attitude towards violence is more positive, if a person is impulsive and dominant and has a strong self-esteem. Mostly, the offence begins as a joke without feelings of guilt or empathy for the victim's position. Offending can also be an act of revenge when the person him- or herself has been bullied before ("Cybermobbing", 2014).

2.2.5 The Nature of Cyberbullying

Regarding cyberbullying, using SNS does not only bear positive effects but also negative consequences.

Because using social media has a lot of benefits for young people as being permanently connected all over the world, developing relationships easier, increasing knowledge on every imaginable topic and finding out about one's identity, they are not per se willing to restrict themselves in their internet usage. Moreover, being online means being a part of a community because nowadays almost everyone is active online. Because of the fact that the internet is used for self-expression and identity construction there is a lot of personal and intimate information made public (Evers et al., 2013). Irrespective of whether this is done consciously or unconsciously, it offers possible contact points for offenders. For these reasons, also the risk of becoming a victim of cyberbullying or internet harassment increases ("Electronic Aggression", 2016).

Another important aspect of cyberbullying is the age of its users. Meanwhile 62% of the children between the ages 6-13 are frequent internet users. Because of the easy boundless handling, using the internet in this age range is no exception anymore. Even primary schools are struggling daily with the internet usage of many pupils and prevention programs against cyberbullying are already starting during the nursery school ("Studie: Cybermobbing weit verbreitet", 2013). Many are using the internet everyday - strictly increasing. Moreover, 36% have free internet access throughout the day mostly visiting SNS. Due to the assumption of many SNS to publish personal data, many young children do not understand the discussion about data protection, possible consequences and risks as cyberbullying (KIM-Studie, 2012). Parents and teachers are highly overstrained by the medial development. This can be related to lacking information offers, lacking education through schools and also to one's own missing initiative ("Cybermobbing", 2014). The study of Campbell (2005) shows that prevention measures are limited due to different reasons. Raising awareness about cyberbullying is difficult because many different views must be seen together. Most ways of electronic communication which are possible nowadays are not known to fore-mothers and fathers. Therefore, they often cannot understand what is going on. Moreover, cyberbullying is an undesired problem for many schools and institutions which must be kept secret and not dealt with. Furthermore, only few victims tell their families or friends about their experiences. That is why adults may not be aware of this problem (Slonje & Smith, 2008). But are at least the young people aware of that risk? The research by Smith et al. (2006) states that only 46% of students know about cyberbullying via pictures or videos. 34% of young adults between

the ages of 9-24 think that bullying online is bad and worse than being bullied offline and 65% think of being well-informed about protecting oneself online. Nevertheless 40% of youth state that they lack attention to surf safe online. As a reason, 31% claim that there are not enough possibilities to inform oneself ("Computer, Internet und Web 2.0", 2017). Cyberbullying is often seen as a "routine part of many social interactions" (Betts, 2016, p.22).

Regarding the facts and especially the consequences of cyberbullying, it gets clear that it must be taken seriously. Every year, 4400 young people commit suicide due to cyberbullying. Hence, both prevention and dealing with the consequences of cyberbullying are crucial. The impact of the internet on the young generation is immense and therefore difficult to deal with ("Cybermobbing", 2014). Although it is necessary, its omnipresence seems to be hindering the possibilities of preventing cyberbullying.

2.3 Preventive Measures

Due to the previously named reasons, preventing cyberbullying is complicated. Finding the right way of risk communication, considering the needs and external influences a young internet user has to deal with, can be a challenge. As a parent or teacher, it is important to be aware of what the youth are doing online, to understand the rules and conditions of the world wide web, to be informed about the possibilities one can have when being online and to establish rules and discuss limits about the technology use ("Prevent Cyberbullying", 2017). Talking with children about their internet usage and visiting websites together can be a good way to communicate. It is important to explain to the youth that it is necessary to protect their own data online. Shared deliberating with the young internet user of what can be posted online and which details should not be publicly displayed can help to make the children aware of data protection. This can, for example, be done by designing a profile on a SNS together. Furthermore, by this, the parent or teacher can get insights into what is published and how the private settings are adjusted. Explaining cyberbullying to youth can be another way to prevent it. When talking with children about the risk of cyberbullying, it is important to help them understand the concept and to make clear that this is unacceptable behaviour. Nevertheless, the communication should be open and the children's needs should be involved ("Prevent Cyberbullying", 2017). For youth it is important to take self-protective actions to protect oneself against the risk of cyberbullying. Self-protective actions can be data protection, creating secure passwords and a reasonable use of SNS when for example posting photos or videos.

Based on the previous findings, it is interesting to find out how young internet users

12

perceive the risk of cyberbullying and how this risk can be communicated in a convincing manner in order to prevent cyberbullying effectively. This is because cyberbullying is a growing form of bullying online and has hazardous consequences. This seem especially occurring at young internet users. Motivating the users to adopt self-protective behaviours seems to be essential to limit the risk of getting in contact with cyberbullying. Moreover, it might be important to study the impact of peer feedback concerning cyberbullying and to analyse if peer feedback can lead to cooperative behaviour when it comes to self-protective action against cyberbullying. While there are many offers and preventive trainings to process cyberbullying and to learn about it, there is also a proven lack of motivation to resist. That is why this research studies the relation between the effects of risk communication including efficacy information about cyberbullying on self-protective action and the possible influence of peer feedback.

2.3.1 Risk Perception

The first question is how risk communication can help to stimulate self-protective behaviour against cyberbullying. In that regard, risk perception plays an important role. Sjöberg, Moen, and Rundmo (2004) define risk perception as the subjective rating of the probability of a specified type of fear happening and how concerning the consequences are. This means that risk perception is necessary to estimate a particular risk or course of action as severe. Risk perception differs from person to person. This fact can be best described with the psychometric paradigm determined by Slovic (1987). The psychometric paradigm assumes that risk perception is subjective. Therefore, for each risk a profile can be created by means of analysing qualitative properties of the risks. By determining the dimensions of risk profiles, two factors were identified as central: the dread risk and the unknown risk. The dread risk describes risks that are characterized by "lack of control, dreaded consequences, catastrophic potential, inequitable distribution, increasing risk and fatal consequences" (Jenkin, 2006, p. 8). Secondly, the unknown risk is associated with "unobservability, novelty, unknown exposure, unknown to science, and delayed consequences" (Jenkin, 2006, p. 8). For that reason, based on subjective ratings, risks might be perceived as intimidating. Three main aspects are important when it comes to perceiving a risk: the degree of severity, the susceptibility and the personal relevance.

In the context of cyberbullying, risk perception means to know how severe the risk of cyberbullying is, what the probability is to get in contact with it and to reflect the personal relevance. But risk perception also depends on how beneficial a certain activity is. The greater

the people perceive a benefit, the greater their tolerance for risk. Therefore, cyberbullying might be not perceived as a threatening risk for young people when being compared to all the benefits of going online.

2.3.2 Risk Communication

Because risk perception is subjective and depends on various factors, cyberbullying might not be seen as severe by some users (Slovic, 1897). Hence, effective risk communication is necessary. Cole and Fellows (2008, p.213) state that "risk communication involves both crisis sensing and threat assessment with the objective of creating an informative and motivational dialogue about the nature and mitigation of a risk." Thus, risk communication is about informing people of potential risks which can be personally relevant. Effective communication in situations of high stress and concern can be important to manage the risk. Risk communication includes the context of a particular risk, possible comparisons, advice about self-protection and risk-minimisation and information in an open and fair manner ("Risk Communication", 2016). Most important is the aspect of exchange of important information about evaluations by different kinds of groups or experts (Leiss, 1996). Vague communication including inconsistent or incomplete messages, limited orders or unreasonable action advice leads to mistrust and misunderstanding. Ter Huurne and Gutteling (2009, p. 813) explain that "a lack of personal control or not knowing what behaviour to pursue in order to adequately cope with a risk could lead people to perceptions of low selfefficacy [...] make them feel helpless or anxious [...] [and] is also negatively correlated with perceived risk." In the context of cyberbullying, risk communication seems to be very important. Due to the fact that even very young children with little understanding of the risks and consequences are frequently using the internet and that preventing cyberbullying in general means to limit and curtail the appearance online, many young users need to elaborate information but are not open to changes or restrictions. For that reason, preventive risk communication is at least as important as consensus communication.

Consensus communication is a kind of communication which is designed to provide messages concerning a particular risk that are both informative and also persuasive (Cole & Fellows, 2008). A solution-oriented approach, integration and engagement with and of the user are the starting point. The aim is to reach acceptance of the risk and its consequences. Therefore, it is important what is communicated about the risk and what the response is. Especially when talking to children, a specific communication is needed. An age-based argumentation, simple explanations and measures which are suitable for youth are necessary for an effective communication (Hopper-Losenicky, 2010).

2.3.3 Efficacy Beliefs and Efficacy Information Effects

Besides the previously listed arguments, efficacy beliefs are important for risk perception and in risk communication because they are the reason why one might take selfprotective action which was advised in the risk communication. Bandura (1997, p.3) defines efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce to given attainments." Self-efficacy can vary between persons and within one person but it is important for emotional well-being and behaviour (Ter Huurne & Gutteling, 2009). In the field of risk communication, two kinds of efficacy beliefs are important. On the one hand perceived self-efficacy is relevant. This is "the person's perceived ability [to] actually perform or carry out [...] protective responses" (Grothmann & Reusswig, 2006, p. 106). An example of a self-efficacy statement is: "I think I can cope with the threat myself." On the other hand, response efficacy is important. Response efficacy is "the belief that protective actions will in fact be effective to protect oneself or others from being harmed by the threat" (Grothmann & Reusswig, 2006, p.106). A conclusion of response efficacy could be: "the given advice will be successful to remove the risk." Veil, Buehner, and Palenchar (2011) describe that adding efficacy information to risk communication can make risk communication more effective as it can enhance a feeling of control and empowerment which might lead to more self-protective behaviour. This assumption was also made by Verroen, Gutteling, and de Vries (2013). Consequently, regarding risk communication about cyberbullying, adding efficacy information might be helpful to increase self-efficacy and response efficacy to provide a higher intention to seek self-protective measures.

2.3.3.1 The Extended Parallel Process Model

The Extended Parallel Process Model (EPPM) is a fear appeal theory which focuses on the process of fear control. In general, the model defines four key factors which predict a reaction after communicating about a particular topic involving a fear appeal. The four factors are: self-efficacy, response efficacy, susceptibility and severity. Self-efficacy is the perception of the individual to be able to control the fear by performing a certain action. Responseefficacy is the perception of the individual that if the task is performed right, the fear will be successfully controlled. Susceptibility is the perception of the individual of how likely it is that the threat will have an impact for them. Lastly, severity means the perception of the individual of how great the extent of the threat is. Based on these four factors, three outcomes are likely to happen. The first outcome is determined as danger control which means that the perceived susceptibility and severity are high and that the person feels strong enough to take precautionary action. Secondly, fear control can take place which means that although susceptibility and severity are perceived as high, the ability to take action is perceived as low. As a result, people are likely to only minimize their fear. Thirdly, no action takes place if susceptibility and severity are perceived as low (Witte & Allen, 2000).

The EPPM can be applied to risk communication about cyberbullying and efficacy information effects. It can help to analyse the effects on risk perception and control in form of taken action concerning risk communication patterns. Based on the model, risk communication about cyberbullying should involve a fear appeal message emphasizing the risks and consequences of cyberbullying. This might lead to a high perception of susceptibility and severity. If the risk communication does include efficacy information, selfefficacy and response efficacy might increase. As an effect, if both perceived efficacy and perceived threat of cyberbullying are high, motivation to take action might take place. If perceived efficacy is low and the perceived threat is high, message rejection might occur and fear control is applied. Therefore, communicating cyberbullying and its consequences in the right way is crucial to promote self-protective action and to control risk perception.

2.3.4. Peer Feedback

To cope successfully with a risk is not only dependent on self-efficacy, response efficacy and efficacy information in risk communication but also on a further component: perceived protective response costs, such as monetary measures, time or effort, can influence the coping behaviour (Grothmann & Reusswig, 2006). Coping behaviour as self-protective measures in a risky situation can also be influenced by a further cost, namely the influence of peers, peer expectations and peer feedback. Roberts (2008) found out that learning can be facilitated when being with peers. Peers are used as a resource and a helping hand. Moreover, they teach each other different skills. If one considers the ubiquity of peers, it is likely to conclude that they have an influencing role (Reitz, Zimmermann, Huttemann, Specht, & Neyer, 2014). Therefore, peers and trust are closely linked. As a part of socialisation, trustworthiness plays a great role in childhood and early adulthood. Rotenberg, Michalik, Eisenberg, and Betts (2008) determined three components of trustworthiness: reliability, emotionality and honesty. Complying with these components is associated with the number of friendships an individual maintains and the amount of being liked by others. For that reason, peer feedback plays an important role and peers are likely to trust each other. Consequently, supportive peer feedback concerning a risk situation might result in higher engagement to take precautionary action whereas opposing peer feedback might result in less intention to engage in self-protective behaviour (Verroen, Gutteling, & de Vries, 2013). Considering risk communication about cyberbullying, peer feedback might have either a positive or a negative influence, depending on what peers think about cyberbullying and how they are dealing with the threat of getting cyberbullied.

2.4 Model and Hypotheses

The previously mentioned relations between the concepts relevant for cyberbullying will be investigated based on the EPPM. Thus, the current study examines whether peer feedback influences the effects of risk communication on self-protective behaviour among youth in the context of cyberbullying or not. Based on previous research, it is already known that risk perception is individually determined, depending on whether one feels threatened by a particular risk or not (Sjöberg et al., 2004). Moreover, risk perception can be influenced by different ways of communicating the risk (Grothmann & Reusswig, 2006). If risk communication contains high efficacy messages, it might be more effective and lead to preventive behaviour. In contrast, if risk communication contains low or no efficacy message, no preventive action might take place. Risk communication may be biased by peer feedback. These relations are already studied in several contexts, but the results were inconsistent. Moreover, it is not yet studied in the context of cyberbullying (Verroen, Gutteling, & de Vries, 2013; Grothmann & Reusswig, 2006).

The fact that these relations have not yet been studied in the context of cyberbullying is highly worrying. Previously, it was shown that cyberbullying plays a big role in the young generation. Because of its great impact on youth it is a risk which must be taken seriously. Although today's standards and technologies render it likely to be threatened by that risk, it is difficult to prevent children from getting in contact with cyberbullying. Youth might engage in non-protective behaviour due to the fact that social media and electronic devices are an important part in their everyday life.

Given these facts, the aim of this study is to find out about an interdependency of efficacy information in risk communication messages and peer feedback on the intention to engage in self-protective behaviour against cyberbullying among the young generation. It is expected that, if risk communication enhances high efficacy information, participants will be more likely to adopt self-protective actions:

H1: Risk communication including efficacy messages will result in higher intention to take self-protective action than risk communication without efficacy messages.

Moreover, it is expected that peer feedback which is supportive and confirmative to the given risk communication will increase the adoption of self-protective action compared to non-supportive, conflictive peer feedback:

H2: Supportive peer feedback will result in higher intention to take self-protective action than non-supportive peer feedback.

Finally, the interaction effects of peer feedback and efficacy information must be considered. Based on the previous assumptions, it is expected that the influence of peer feedback will be less strong if efficacy information is included in risk communication which enhances the adoption of self-protective action:

H3: The effect of peer feedback on the intention to take self-protective action will be less strong if risk communication includes efficacy information.

The hypotheses are shown in the following conceptual model:



Figure 1. Conceptual model of the hypotheses.

3 Methods

This study is conducted in collaboration with the Kinderschutzbund Unna in Germany within their project of prevention of cyberbullying in primary schools. This institution provides among others training courses at schools to teach pupils about the risk of cyberbullying. In these training sessions, risk factors are explained, advice on how to react in the case of getting in contact with cyberbullying is given and a contact person if needed is provided. The aim of this project is to prevent young pupils from getting cyberbullied and to give information on how to behave in the internet. The risk of cyberbullying is communicated age-based and a realistic risk perception is created.

This research was conducted in the setting of this project. Thereby, it is enabled to reach a large group of pupils and to let them take part in the study in a controlled and secure setting.

3.1 Research Design

This study is a 2 (high efficacy information vs. low efficacy information) x 2 (supportive peer feedback vs. opposing peer feedback) between-subject experimental design. The dependent variable is the intention to take self-protective action and the independent variables are efficacy information and peer feedback.

3.2 Procedure

During February and March 2017, different classes from different schools in Unna, Germany, with an average number of 25 pupils per class were selected randomly through the Kinderschutzbund to participate in this study. Before the implementation, on the one hand, a parental agreement was obtained in form of a passive informed consent letter (see Appendix I). On the other hand, the study set-up was approved by the Ethic Commission of the University of Twente in Enschede. The final sample consisted of 321 pupils who were randomly assigned to the given conditions.

During the implementation, the pupils were asked to fill in a questionnaire (see Appendix II). Firstly, they got general questions to fill in demographic variables as their age, gender, if they have a social network account, if they have free access to the internet and how much daily time they are spending online as well as if they have already received negative messages when being online. Next, the pupils received a risk message about cyberbullying. After reading this risk message, one half of the pupils received a high efficacy information message including self-protective actions advice on how to deal with cyberbullying. The other half of pupils received a low efficacy information message without self-protective action advice. Thereafter, half of the pupils received supportive peer feedback whereas the other half of the pupils received opposing peer feedback. Messages were shown which were all supposedly written by peers to provide realism. Closing, the pupils got a short questionnaire consisting of ten items to be answered on a three-point Likert scale in the form of 1 (yes), 2 (maybe) to 3 (no). Due to the age of the respondents, the length of the questionnaire (the number of items) was limited.

3.3 Manipulation of Efficacy Information and Peer Feedback

Two manipulations were used. After answering the demographic questions, the participants were asked to read an informative text about cyberbullying. The text was as follows (translation in English): "Do you know what cyberbullying is? We speak of cyberbullying if somebody is insulted, threatened or stashed via mobile phones or the internet. For many, this is as bad as being bullied in real life. Harassment via mobile phone includes never ending phone calls without someone answering. Other examples are insulting or threatening text messages. Bullying can also happen publicly online. Sometimes, mean comments are posted, kids are accosted in chats or embarrassing photos or videos are put and spread online. Other malice to show up can be that someone tells lies or betrays secrets. Hatred groups on social networks can be made. Moreover, identity theft happens where someone takes your name and writes things under false identity. For the affected person, cyberbullying is really bad. Cyberbullying differs from bullying in real life particularly in three aspects: it can take place any time. Cyberbullies are often anonymous. And it is not manageable to grasp who has received which information. The internet does not forget." This text was based on an existing age-based risk communication message which was rewritten in two versions. The first version contained a high efficacy information message (high efficacy information condition) to increase the levels of perceived self-efficacy including several aspects about how to prevent cyberbullying, how to react if cyberbullying happens and other helpful measures. To manipulate self-efficacy and response efficacy, the informative text contained the following statements:" Protect yourself! You should not be scared of cyberbullying. It is important to react properly and to put a stop on cyberbullying. Here is a list of important things you can do." followed by an enumeration of self-protective actions as protecting the own data, talking to an adult one can trust, keeping a bullying diary,

report photos or videos, speaking to teachers and changing the mobile number. The second version contained no efficacy message (low efficacy information condition).

Thereafter one half of the participants received three supporting and reinforcing social network messages (supporting peer feedback condition) regarding the self-protective actions within the text about cyberbullying whereas the other half of participants received three opposing social network messages (non-supportive peer feedback condition). The messages were all supposedly written by peers who gave feedback on the presented information about cyberbullying. The messages all included clear opinions about the effectiveness and applicability, for example: "*Protecting my data online makes cyberbullying not very likely*." or "*Cyberbullying does only happen to weak people. Thus, I will not be affected*." The messages can be found in Appendix III.

3.4 Measurements of Dependent Variable

Based on the existing and previously validated questionnaire "Risk Behaviour Diagnosis Scale" by Witte, McKeon, Cameron, and Berkowitz (1995), the intention to take self-protective action was measured using a ten-item scale. The scale consisted of selfefficacy items and response efficacy items. Self-efficacy items were items as: "*I am able to protect my data online to prevent cyberbullying*." or "*I know exactly what I have to do to protect myself against cyberbullying*". Response efficacy items were items as: "*Data protection is helpful to prevent cyberbullying*." To ascertain participants' risk perception, items as "*I think, cyberbullying is very dangerous*.", "*I think, cyberbullying has negative consequences*." and "*It is likely that I will be affected by cyberbullying in the future*." were used. Taken together the items, the overall scale proved to be highly reliable (α = 0.78).

3.5 Participants

The conducted research was an experimental research among pupils in primary schools in Unna, Germany. The participants were recruited by visiting the different classes and getting in contact personally. In total, 314 pupils participated in this experiment whereof 150 (47,8%) female and 164 (52,2%) male pupils. The average age was 10 years (M = 10.2, SD = .067). When they were asked if they were a member of one or more social network sites, 75,5% answered yes and 24,5% said no. Concerning the question if they had free access to the internet, 55,1% said yes and 44,9% said no. When asking if they were spending much time daily online, 28,3% answered yes and 71,7% said no. Additionally, 24,2% of the participants said that they already did receive negative messages when being online whereas 75,8% said they did not.

4 Results

4.1 Preliminary Analyses

The preliminary analyses were done to establish missing values and outliers before conducting the main analyses. The data was cleaned by sorting out cases which did not fit the criteria of this research. There were cases which were not finished completely. These were removed from the data set. Outliers were examined but there were no outliers found. Eventually, seven cases were removed because they were not complete and the analyses were done with 314 cases (N=314). A new variable was created to measure the intention to take self-protective action which was named i2tspa.

4.2 Descriptive Statistics

At first, frequencies were calculated to get a better overview. The frequencies were equally spread as each condition was N=157. Furthermore, reliability analyses were conducted. All items showed a moderate to high reliability of α = .79. Descriptive analyses were moreover done for all concepts which are shown in a table 1. Crosstabs were calculated to take a look at possible bivariate relations between the variables and to check the randomization. There were no bivariate relations found between the different conditions and their variables as Chi² was higher than .05. It can be concluded that the randomization was good. T-tests were done to check the relation between the dependent variable and the background information. No relations were found in terms of age (F (1, 313) = 0.47; p=.829), being a member in a social network (t (312) = .95, p = .081) and having free access to the internet (t (312) = .18, p = .831). Spending a lot of daily time online (t (312) = -2.4, p = .03) and already having received negative messages online (t (312) = -1.8, p = .073) showed significant relations but these were proven as not being influencing the results. This means that there are no differences between the groups which could lead to different behaviour.

Correlations were generated between the dependent and independent variables. It was shown that peer feedback and efficacy information were not significantly related. The intention to take self-protective action was significantly related to both, efficacy information and peer feedback. It can be derived that youth have the intention to take self-protective action (M = .34). The main findings are represented in Table 2.

Table 1

Descriptive Statistics for all Background Variables (N=314)

Variables	М	SD	%
Are you a girl or a boy?	1.53	.500	Girls: 47,8%
			Boys: 52,5%
How old are you?	10.21	.844	
Are you a member of a social	1.24	.428	75,5 %
network site?			
Do you have free access to the	1.45	.498	55,1%
internet?	1.71	.456	28,3%
Do you spend much time daily			
online?	1.75	.431	24,2%
Did you already received messages			
which made you feel uncomfortable?			
Intention to take self-protective	.337	.415	
action			

Table 2

Correlations (N=314)

	Intention to take self-	Efficacy Information	Peer Feedback
	protective action		
Intention to take self-protective		320**	181**
action			
Efficacy Information	320**		070
Peer Feedback	181**	070	

Note. **p<.001

4.3 Main Analysis

A one-way analysis of variance (hereinafter: ANOVA) was used in which efficacy information and peer feedback were set as independent variables and the intention to take self-protective action was used as dependent variable. The ANOVA is used to determine whether there are any statistically significant differences between the means of two or more independent (unrelated) groups or not ("One-way ANOVA in SPSS Statistics", 2013). This analysis was done in two steps. The first step was to examine the main effects between the dependent variable intention to take self-protective action and the independent variables efficacy information and peer feedback. In the second step, the outcome was regressed on the product term of efficacy information and peer feedback to find out if these variables are interacting.

4.3.1 Effects of Efficacy Information and Peer Feedback on Intention

Hypothesis 1. As expected, risk communication including efficacy messages result in higher intention to take self-protective action than risk communication without efficacy messages. There is a statistically significant difference found between risk communication including efficacy information and risk communication including no efficacy information ($F_{(1;310)} = 40.56, p < .05, \text{ partial } \eta^2 = .12$). Risk communication including efficacy information produces stronger intentions to take self-protective action (M = 0.48, SD = 0.31) than risk communication without efficacy information (M = 0.21, SD = 0.31; 95% CI = [.14; .26]). *Hypothesis 2.* As expected, supportive peer feedback result in higher intention to take self-protective action than non-supportive peer feedback. There is a statistically significant difference found between supportive peer feedback and non-supportive peer feedback ($F_{(1;310)} = 15.15, p < .05$, partial $\eta^2 = .05$). Supportive peer feedback produces a stronger intention to take self-protective action (M = 0.42, SD = 0.31) than non-supportive peer feedback (M = 0.26, SD = 0.31; 95% CI = [.19; .32]).

Hypothesis 3. Contrary to the expectation, the effect of peer feedback on the intention to take self-protective action is not less strong if risk communication includes efficacy information. The interaction effect is not statistically significant ($F_{(1;310)} = 2.06, p = .15$, partial $\eta^2 = .01$). These results are shown in figure 2.



Figure 2. Results of ANOVA.

5 Conclusion and Discussion

The aim of this research was to find out about effective risk communication to prevent cyberbullying and to study the factors peer feedback and efficacy information which could influence effectiveness of risk communication. In other words: what makes a young adult take or not take self-protective action against cyberbullying? In the hypotheses it was expected that high efficacy information included in risk communication lead to higher intention to take self-protective action. Moreover, supporting peer feedback was expected to lead to higher intention to take self-protective action as well. The effect of peer feedback was expected to be less strong if risk communication includes efficacy information. In the results, it was found that the intention to take self-protective action is higher if, on the one hand, risk communication includes high efficacy information and on the other hand, peer feedback is supportive. The effect of peer feedback was not found to be less strong if risk communication includes was not found to be less strong if risk communication includes efficacy beliefs are important when seeking for information about how to take self-protective action (Witte, 1992; Kievik & Gutteling, 2011; Verroen, Gutteling, & de Vries, 2013; Huurne, ter & Gutteling, 2008). Additionally, peer

feedback was reviewed as being influential in the development of young adults and decisive for decisions they make and behaviour they chose (Li, 2007; Roberts, 2008; Reitz et al., 2014; Rotenberg et al., 2008; Verroen, Gutteling, & de Vries, 2013). Moreover, the phenomenon of cyberbullying is proven as a relatively new, serious and far-reaching form of traditional bullying with no confinement (neither spatial nor temporal) and with long-term consequences for victims. Although much research exists on how an effective risk communication should look like and although there are many programs to prevent cyberbullying among youth, it has not yet been investigated how an effective risk communication about cyberbullying should be framed and how to include convincing aspects as peer feedback in order to reach youth. This combination is a new aspect within this type of research. The variables efficacy information, peer feedback and intention to take self-protective action were included in a model (figure 1) which represents the expected relations.

At first, the most important conclusions concerning the expected relations from the model will be discussed and possible explanations will be given, followed by limitations and practical advice for future research.

5.1 Conclusions and Explanations

Most of the relationships which are found in this research are the same as found in previous studies and therefore match the expectations from the hypothesized model. As expected (Witte & Allen, 2000), efficacy information was proven to activate the intention to take self-protective action. When participants have received high efficacy information, they reported a higher intention to take self-protective action as opposed to a low efficacy information. Apparently, low efficacy messages do not meet youth' needs when in a situation of crisis and do not cause them to adapt their behaviour. Similar results were found in the study of Verroen, Gutteling, & de Vries, 2013. It seems as if young adults who perceived cyberbullying as severe and risky have a high need for information about it. The positive relation between peer feedback and the intention to take self-protective action confirms the theory and the expectations from the hypothetical model as well (Verroen, Gutteling, & de Vries, 2013). Peer feedback influences the intention to take self-protective action. When participants have received supportive peer feedback, they reported higher intention to take self-protective action than when receiving opposing peer feedback. Peer feedback is an important topic for young adults and does influence their thoughts and decisions (Reitz et al., 2014). Moreover, Verroen, Gutteling and de Vries (2013) describe that the effects of peer feedback on the intention to take self-protective behaviour will be less strong when risk

communication contains efficacy information. That is why it was hypothesized that the effect of peer feedback on the intention to take self-protective action is less strong if risk communication includes efficacy information as compared to when it does not. Contrary to the expectations, no significant relation was found. The effect of peer feedback on the intention to take self-protective action is identical if risk communication does include or does not include efficacy information.

These findings can be explained to some extent. Literature contains strong evidence that contextual and personal factors may influence a person's reaction response to risk communication about cyberbullying. According to Witte and Allen (2000), effective risk communication depends on the appropriation of efficacy information to enhance selfconfidence and the feeling of control. Both, self-efficacy and response-efficacy information need to be included in risk communication. If people get to know about what they could do when facing a threat and feel able to perform self-protective behaviour, empowerment and emotional well-being is stabilized. Including efficacy information during risk communication enhances the intention to take self-protective action because the person feels able to do so. The strengthening influence of efficacy information in this context can also be explained by its special effect on youth. The participants are already using the internet quite often and are in contact with social media constantly. But, due to the young age, they are not sure on how to protect themselves against particular risks online and how to react when facing one ("Computer, Internet und Web 2.0", 2017). Many of them are aware of the risk of cyberbullying but report helpless and uninformed behaviour. Therefore, including efficacy information may have benefits in this age because it meets the needs of the young adults.

The findings about influence of peer feedback on the intention to take self-protective action are in line with previous research. Peer feedback is reported as being influential for young adults, especially in the process of identity finding where young adults are still suggestible and not yet self-confident (Reitz et al., 2014; Erikson, 1959). Young adults interpret peer feedback as decision factor and behavioural motivation. They want to be liked, accepted and to fulfil the expectations of peers. Therefore, supportive feedback in risk communication can lead to mental and behavioural changing compared to opposing feedback. Getting supportive feedback which stabilizes the own insecure impression after receiving information about cyberbullying and its risks and consequences makes young adults act more self-protective. In contrast, opposing feedback where cyberbullying is presented as not dangerous and preventing oneself as a bad cost-benefit ratio makes young adults being more blocked.

The interaction effect between efficacy information and peer feedback in risk communication was found as not being significant. Young adults who have a high level of perceived efficacy belief, both self-efficacy and response efficacy, are as susceptible for peer feedback as young adults who have a low level of perceived efficacy belief. This might be due to the influence peers can have on people especially at this age. Struggling with finding and building up an own identity and simultaneously fulfilling the expectations and unsaid rules of peers seems to be the most important challenge during this age (Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994).

Concerning the facts around cyberbullying, this research emphasizes the importance of this new, ever-increasing form of bullying. In line with previous research, the statistics show how high the influence of internet and social media is these days. Around 75% of the young adults are a member of a SNS and 55% have free access to the internet every day. Additionally, 24% have already received messages online which made them feel uncomfortable. These numbers underline the need for effective risk communication to counteract the growth of cyberbullying.

5.2 Limitations

This research was conducted based on self-report with the use of a questionnaire. Self-report is a good way to get insight into people's feelings and thoughts but these answers can also be delusive or wrong. This can be due to limitations as social desirable answers, differences in interpretation and skipped questions. However, this research made use of measuring different constructs with different items, which make the results reliable and valid.

Furthermore, the group of participants who took place in this research is not representative for the whole population. On the one hand, only participants of the fourth grade of primary schools were asked to attend the research. Therefore, only a certain age range is covered. On the other hand, the schools which were chosen are not settled in social hotspots but represent pupils of the social middle class. There might be differences in the amount of internet usage, contact points with cyberbullying and influences of efficacy information and peer feedback in lower or upper classes. Additionally, there might be other differences because the schools which took part in this research were chosen in collaboration with Kinderschutzbund Unna. This means that the schools themselves were interested in risk communication about cyberbullying. For that reason, it cannot be ruled out that the topic cyberbullying was discussed in class before the data collection took place due to the general interest and motivation of the particular schools.

Furthermore, during data collection, there was a frequently arising misunderstanding about one of the items of the questionnaire. When it was asked how much time the pupils spend online every day, they were not sure about what answer to tick (yes/maybe/no). They reported to not know how to define "much time". Therefore, this question might not be answered correctly and may not represent the real amount of time. This question was not considered in the interpretation of the results. Because of the age of the respondents, the length of the questionnaire (number of items) was limited.

5.3 Practical Advice for Future Research

Regardless of the limitations, this research shows the importance of risk communication about cyberbullying. Nevertheless, there is advice for future research to gain even more insights.

For future research, it might be reasonable to dilate some practical aspects. Firstly, widening the age group from not only the fourth grade, but to the fifth and sixth grade (and higher) to find out about age differences and differences between primary schools and high schools might be useful to get more insights in the differences between age groups. And secondly, widening the catchment area to get more insights in the differences between the social classes might be important to examine the role of internet, social media and cyberbullying in other environments. Another important insight which was gained and could be improved is the fact that no manipulation check was done. Depending on the time of lesson when the data collection was done, the pupils were more or less concentrated and motivated to take part. Doing the data collection early in the morning was much easier than doing it in the afternoon because the pupils were more concentrated and focused. Yet, as no manipulation check was done, it cannot be guaranteed that all the texts were read attentively. A manipulation check in form of a control question might be useful for further research when working with young adults to be sure that everything is read. The amount of ten questions was appropriate for this age group, because more questions would have been too much due to their speed of reading and their concentration span. It is necessary to formulate the questions agebased.

Content-wise, interesting points to investigate in following research are the psychological aspects as efficacy information and peer feedback which might influence the intention to take self-protective action and cyberbullying. Own responsibility and responsibility of others might be additional factors which could influence risk communication. Responsibility seems to be a crucial factor in effective risk communication

and can be enhanced by efficacy information as well as enhancing the intention to take selfprotective action. According to Helsloot, and van 't Padje (2011), responsibility to protect oneself against risks is activated, if a person recognizes advice as useful and feels able to do so. It is found that in most of the risks, this is not the case. For that reason, it might be possible that efficacy information as well as perceived action perspectives have a positive effect on responsibility. This is underlined by the research of Terpstra (2009) who states that responsibility is accepted when there are enough possibilities to take action (self-efficacy). Based on these assumptions, it might be reasonable to add responsibility as an additional factor in future research. Moreover, to find out about trust can be interesting as peers can fulfil a trustworthy role as well as professionals who are doing risk communication. Who is seen as more trustworthy might influence the intention to take self-protective action (Rotenberg et al., 2008).

By conducting this research, it was investigated in which way perceived efficacy information in risk communication about cyberbullying, peer feedback and the intention to take self-protective action are related. It was found that the inclusion of efficacy information as well as supportive peer feedback in risk communication leads to higher intention of selfprotective action. Based on these results, risk communication about cyberbullying can be further developed and new effective programs to prevent cyberbullying in schools can be designed. This might lead to more successful prevention and handling of cyberbullying. Risk communication experts should try to involve efficacy information during their communication messages which will increase intentions to take self-protective action among pupils.

6 References

- Bandura, A. (1997). *Self efficacy. The exercise of control.* New York: Freemand and Company.
- Belsey, B. (2005). Cyberbullying: An emerging threat to the "always on" generation. *Recuperado el, 5.*
- Betts, L.R. (2016). Cyberbullying: Approaches, Consequences and Interventions. *Palgrave Studies in Cyberpsychology*.
- Campbell, M.A. (2005). Cyber bullying: An old problem in a new guise? *Australian Journal* of Guidance and Counselling, 15, 68-76.
- Castells, M. (2014, September 8). The Impact of the Internet on Society: A Global Perspective. *MIT Technology Review*. Retrieved from https://www.technologyreview.com/s/530566/the-impact-of-the-internet-on-society-aglobal-perspective/
- Cole, T.W., & Fellows, K.L. (2008). Risk Communication Failure: A Case Study of New Orleans and Hurricane Katrina. *Southern Communication Journal*, *73(3)*, 211-228. doi: 10.1080/10417940802219702
- Computer, Internet und Web 2.0. (2017). *Internationales Zentralinstitut für das Jugend- und Bildungsfernsehen*. Retrieved from http://www.bronline.de/jugend/izi/deutsch/Grundddaten Jugend Medien.pdf
- Cybermobbing (2014). *Cybermobbing-hilfe.de*. Retrieved from http://www.cybermobbing-hilfe.de/#was-ist-cybermobbing.
- Definition of bullying. (2017). *Bullying. NO WAY*. Retrieved from https://bullyingnoway.gov.au/WhatIsBullying/DefinitionOfBullying
- de Zwart, M., Lindsay, D., Henderson, M., & Phillips, M. (2011). Teenagers, Legal Risks and Social Networking Sites. *Monash University*.
- Dunne, A., Lawlor, M-A., & Rowley, J. (2010). Young people's use of online social networking sites – a uses and gratifications perspective. *Journal of Research in Interactive Marketing*, 4(1), pp. 46-58. doi: 10.1108/17505931011033551
- Electronic Aggression (2016). *Centers for Disease Control and Prevention*. Retrieved from https://www.cdc.gov/violenceprevention/youthviolence/electronicaggression/index.ht ml

Erikson, E.H. (1959). Identity and the life cycle. *Psychological Issues*, 1, 1-171.

- Evers, C.W., Albury, K., Byron, P., & Crawford, K. (2013). Young People, Social Media,
 Social Network Sites and Sexual Health Communication in Australia: "This is Funny,
 You Should Watch It". *International Journal of Communication* 7, 263–280.
- Grothmann, T., and Reusswig, F. (2006). People at Risk of Flooding: Why Some Residents Take Precautionary Action While Others do not. *Natural Hazards, 38*, 101-120. doi: 10.1007/s11069-005-8604-6
- Helsloot, I., & van 't Padje, B. (2011). Met vertrouwen communiceren over potentiële rampen en crises; Een onderzoek naar wat burgers écht verwachten van risicocommunicatie door de overheid. *Crisislab*. Retrieved from http://crisislab.nl/wordpress/wp-content/uploads/definitief-eindrapport-10.pdf
- Hopper-Losenicky, K. (2010). Risk communication in the Internet Age: Parental challenges in monitoring the internet use of adolescents. *Iowa State University*.
- Jenkin, C. M. (2006). Risk perception and terrorism: Applying the psychometric paradigm. *Homeland Security Affairs*, 2(2).
- KIM-Studie (2012). Basisuntersuchung zum Medienumgang 6- bis 13-Jähriger in Deutschland. *Medienpädagogischer Forschungsverbund Südwest*.
- Kievik, M., & Gutteling, J. (2011). Yes we can: Motivating Dutch citizens to engage in selfprotective behaviours with regards to flood risks. *Natural Hazards*, 59 (3), 1475 – 1490.
- Larsen, M.C. (2016). An 'Open Source' Networked Identity. On Young People's Construction and Co-construction of Identity on Social Network Sites. M. Walrave et al. (eds.), *Youth 2.0: Social Media and Adolescence*. doi: 10.1007/978-3-319-27893-3_2
- Leiss, W. (1996). Three phases in the evolution of risk communication practice. *The Annals of the American Academy of Political and Social Science*, 85-94.
- Li, Q. (2007). Bullying in the new playground: Research into cyberbullying and cyber victimisation. *Australasian Journal of Educational Technology*, 23(4).
- Nie, N.H., & Erbring, L. (2000). Internet and Society: A preliminary Report. *Stanford Institute for the Quantitative Study of Society (SIQSS).*
- One-way ANOVA in SPSS Statistics. (2013). *Laerd statistics*. Retrieved from https://statistics.laerd.com/spss-tutorials/one-way-anova-using-spss-statistics.php
- Prevent Cyberbullying (2017). *Stopbullying.gov*. Retrieved from https://www.stopbullying.gov/cyberbullying/prevention/.

- Ramey, K. (2012, November 12). Technology and Society Impact of Technology on Society. Use of Technology. Retrieved from http://www.useoftechnology.com/technology-society-impact-technology-society/
- Reitz, A.K., Zimmermann, J., Huttemann, R., Specht, J., & Neyer, F.J. (2014). How Peers Make a Difference: The Role of Peer Groups and Peer Relationships in Personality Development. *European Journal of Personality*.
- Risk Communication. (2016). *United States Environmental Protection Agency*. Retrieved from https://www.epa.gov/risk/risk-communication
- Roberts, D. (2008). Learning in clinical practice: the importance of peers. *Nursing Standard,* 23(12), 35-41. doi: 10.7748/ns2008.11.23.12.35.c6727
- Rotenberg, K.J., Michalik, N., Eisenberg, N., & Betts, L.R. (2008). The relations among young children's peer-reported trustworthiness, inhibitory control, and preschool adjustment. *Early Child Res Q*, 23(2), 288-298. doi: 10.1016/j.ecresq.2007.04.003
- Schmitz, C. (2012, November 7). Wie Tim Ribberink sein Leben an die Mobber verlor. WeltN24. Retrieved from https://www.welt.de/vermischtes/article110746511/Wie-Tim-Ribberink-sein-Leben-an-die-Mobber-verlor.html
- Schuhmann, P. (2016, January 27). Der Global Digital Report 2016: Aktuelle Zahlen zur weltweiten Internetnutzung. *Job Ambition*. Retrieved from: http://www.jobambition.de/global-digital-report-2016/
- Sjöberg, L., Moen, B-E., & Rundmo, T. (2004). Explaining risk perception. An evaluation of the psychometric paradigm in risk perception research. *C Rotunde publikasjoner*, 84.
- Slonje, R., & Smith, P.K. (2008). Cyberbullying: another main type of bullying? *Scand J Psychol*, *49*(2), 147-54. doi: 10.1111/j.1467-9450.2007.00611. x.
- Slovic, P. (1987). Perception of risk. Science (New York, N.Y.), 236(4799), 280-285.
- Smith, P., Mahdavi, J., Carvalho, M., & Tippett, N. (2006). An Investigation into Cyberbullying, its Forms, Awareness and Impact, and the Relationship, between Age and Gender in Cyberbullying. *Research Brief*.
- Smith, P., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008).
 Cyberbullying: its nature and impact in secondary school pupils. *J Child Psychol Psychiatry*, 49(4), 376-385. doi: 10.1111/j.1469-7610.2007.01846. x.
- Social Media Fact Sheet (2017, January, 12). *Pew Research Center: Internet, Science & Tech.* Retrieved from http://www.pewinternet.org/fact-sheet/social-media/.

- Studie: Cybermobbing weit verbreitet. (2013, May 16). *Der Tagesspiegel*. Retrieved from http://www.tagesspiegel.de/weltspiegel/jeder-sechste-schueler-opfer-studiecybermobbing-weit-verbreitet/8218898.html
- Suicide Prevention LLC (2012, October 14). Amanda Todd Suicide. *Youtube*. Retrieved from https://www.youtube.com/watch?v=_gycqAJcDFM
- Tabachnick, B.G., & Fidell, L.S. (2007). Using multivariate statistics (5th ed.). *Boston, MA: Allyn & Bacon/Pearson Education Inc.*
- ter Huurne, E.F.J, and Gutteling, J.M. (2009). How to trust? The importance of self-efficacy and social trust in public responses to industrial risks. *Journal of Risk Research*, *12(6)*, 809-824. doi: 10.1080/13669870902726091
- Terpstra, T., Lindell, M.K., & Gutteling, J.M. (2009). Does Communication (Flood) Risk Affect (Flood) Risk Perceptions? Results of a Quasi-Experimental Study. *Risk Analysis*, 29,8, p. 1141-1155. doi: 10.1111/j.1539-6924.2009.01252.x
- The Top Six Unforgettable CyberBullying Cases Ever (2017, March 27). *NoBullying.com*. Retrieved from https://nobullying.com/six-unforgettable-cyber-bullying-cases/
- Thornberry, T. P., Lizotte, A. J., Krohn, M. D., Farnworth, M., & Jang, S. J. (1994). Delinquent peers, beliefs, and delinquent behavior: A longitudinal test of interactional theory. *Criminology*, 32(1), 47-83.
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in human behavior*, 26(3), 277-287.
- Veil, S.R., Buehner, T., & Palenchar, M.J. (2011). A Work-In-Process Literature Review: Incorporating Social Media in Risk and Crisis Communication. *Journal of Contingencies and Crisis Management, 19.* doi: 10.1111/j.1468-5973.2011.00639.x
- Verroen, S., Gutteling, J.M., & de Vries, P.W. (2013). Enhancing Self-Protective Behaviour: Efficacy Beliefs and Peer Feedback in Risk Communication. *Risk Analysis*. doi: 10.1111/j.1539-6924.2012.01924.x
- Witte, K., McKeon, J., Cameron, K., & Berkowitz, J. (1995). The Risk Behaviour Diagnosis Scale.
- Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health education & behavior*, *27(5)*, 591-615.

7 Appendix

I

Passive Consent Letter

Dear parents,

Your child's primary school has agreed to participate in a study on the Cyberbullying project conducted by the University of Twente in collaboration with the Kinderschutzbund Unna. Your child is asked to take part in this educational research that aims to explore internet usage and risk perception about cyberbullying. The study will take place during the lessons in school. The participation will take about 15 minutes. Participation in this project is voluntary and your child can withdraw from the project at any time. The survey is anonymous. There will be no identifying information on the form. Your child's grade does not depend on answering the questions. Your child does not have to fill out any part of the questionnaire that makes him or her feel uncomfortable or that you think your child should not answer. Your student will benefit from this survey to the extent that we can identify those programs that have the greatest chance of preventing or reducing risk factors in the community. No action on your part is required if you give consent for your child to participate in the study; however, if you do NOT wish to give consent, you are requested to make this known to the school. If you have any questions about the research, please feel free to contact (Marie Hellmann – m.hellmann@student.utwente.nl)

We would like to express our gratitude to your child for participating in this project. Thank you for your attention and support.

Yours faithfully, M. Hellmann Questionnaire (does include all texts for all conditions)

Hallo!

Wie du weißt, machen wir eine Umfrage zur Internetnutzung bei Kindern in deinem Alter. Da du jetzt ja schon in der 4. oder 5. Klasse bist, möchten wir gerne auch dich selbst fragen, wie es dir geht, ob du in deiner Freizeit das Internet benutzt, und ein bisschen mehr. Du kannst sicher sein, dass wir Deine Antworten weder deinen Eltern noch deiner Schule, deinen Freunden oder anderen Personen erzählen. Es gibt keine richtigen oder falschen Antworten, wichtig ist uns deine ehrliche Meinung. Bitte kreuze bei den folgenden Fragen immer das Kästchen an, das für dich am ehesten zutrifft.

Zunächst würden wir dir gerne einige Fragen über dich stellen.

Bist du ein Mädchen oder ein Junge?

- O Mädchen
- O Junge

Wie alt bist du?

- O Ich bin 10 Jahre alt.
- Ich bin 11 Jahre alt.
- O Ich bin 12 Jahre alt.
- Anders, nämlich

Bist du Mitglied in einem sozialen Netzwerk oder einem Messenger (Facebook, Twitter, Snapchat, Instagram, WhatsApp, online Spiele)?

O Ja.

O Nein.

Hast du freien Zugang zum Internet?

- O Ja.
- O Nein.

Verbringst du tagsüber viel Zeit im Internet?

O Ja.

O Nein.

Hast du schon Nachrichten im Internet bekommen, die dir Bauchschmerzen bereitet haben? O Ja.

O Nein.

Weißt du was Cybermobbing ist?

Von Cybermobbing spricht man, wenn jemand über das Handy oder Internet beschimpft, bedroht oder fertig gemacht wird. Für viele ist das sogar schlimmer, als im realen Leben gemobbt zu werden. Zum Mobbing übers Handy zählen Anrufe, die man ständig bekommt, ohne dass jemand dran ist. SMS mit Beleidigungen oder Drohungen sind ebenso Beispiele dafür. Das Mobben kann auch öffentlich im Internet geschehen. Manchmal werden gemeine Kommentare gepostet, Kinder werden im Chat angepöbelt oder es werden peinliche Fotos oder Videos gestellt und geteilt. Es gibt andere Bosheiten, um jemanden bloßzustellen, wie Lügen verbreiten oder Geheimnisse verraten. Manche gründen in sozialen Netzwerken eine Hassgruppe und ziehen darin mit anderen über die Person her. Besonders hinterhältig ist es, wenn der Mobber sich als sein Opfer ausgibt und unter falschem Namen Dinge schreibt. Für den Betroffenen ist Cybermobbing besonders schlimm. Es unterscheidet sich vom Mobbing im realen Leben insbesondere in drei Dingen:

Es kann zu jeder Zeit stattfinden.

Cybermobber sind oft anonym.

Und es ist unüberschaubar, wer welche Informationen erhalten hat. Das Internet vergisst nicht.

Wehre dich!

Doch du solltest keine Angst vor Cybermobbing haben. Es ist wichtig, richtig zu reagieren und dem Spuk schnell ein Ende zu bereiten. Hier sind die wichtigsten Dinge aufgelistet, die du tun kannst: **Schütze deine Daten!** Ein Erwachsener kann dir dabei helfen. Falls es doch einmal zu spät ist, vertrau deine Sorgen einem Erwachsenen an, zum Beispiel deinen Eltern, deinem Vertrauenslehrer oder einem Bekannten. Auch wenn es dir sehr peinlich ist, ist das der erste wichtige Schritt. Macht gemeinsam Screenshots der Beleidigungen oder Fotos und speichert diese ab. Diese Fotos vom Bildschirm sind deine Beweise für das Cybermobbing. Stellt jemand von dir beispielsweise gemeine oder heimlich aufgenommene Fotos online, ist das keine bloße Hänselei mehr. Es ist sogar strafbar! Überlegt, ob eine Anzeige erstattet werden sollte. Das geht natürlich nur, wenn du weißt, wer dahinter steckt. Schreib den Webseitenbetreiber an und fordere ihn auf, die Beleidigungen gegen dich oder die Fotos von dir zu löschen. Darauf hast du ein Recht! Im schlimmsten Fall solltest du deinen Benutzeraccount löschen oder deine Handynummer wechseln. Sei mutig! Wenn du einen Verdacht hast, dann spreche denjenigen an. Eine andere Möglichkeit ist auch, die Lehrer zu bitten, das Thema im Unterricht zu behandeln.

III

Peer feedback (supportive and opposing)

Das sagen andere Kinder in deinem Alter über Cybermobbing:

(supporting)

"Ich habe mein Profil auf ,privat' umgestellt, sodass es nur noch für meine Freunde sichtbar ist um mich vor Cybermobbing zu schützen."

"Ich gebe meine Handnummer nur Menschen denen ich wirklich vertrauen kann."

"Cybermobbing ist gemein und nicht lustig!"

(opposing)

"Cybermobbing passiert nur schwachen Kindern!"

"Cybermobbing ist gar nicht so schlimm."

"Mir passiert das nicht da Cybermobbing nur selten vor kommt."