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Relationships between bullies, victims and mental health issues among adolescents

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ABSTRACT *The main purpose of this research is to examine the relationships between bullies, victims and mental health among adolescents in Maldives. The study investigates the types of bullying and victimization common among adolescent boys and girls. The study also investigate the types of mental health among adolescents in Maldives. Furthermore, this study investigates the moderating effects of gender and age on the relationship between bullies, victims and mental health among adolescents in Maldives. The research adopts a cross sectional quantitative survey method. Adolescents Peer Relation Inventory (APRI) for bullying and Mental Health Index (MHI38) were used as research instruments. A total of 460 survey questionnaires were analyzed in this study. The target group of this study were adolescents between 11 to 16 years. Descriptive data were analyzed using IBM SPSS version 22 and Structural Equation Modeling with AMOS were used to analysis the hypotheses. Findings suggest that verbal bullying is the most common type of bullying among males and females. Findings on victimization suggests that 85% of adolescents have been targets to all forms of bullying. The relationship between bullying others and mental health revealed a non-recursive relationship whereby, bullying others and mental health have significant negative relationship (-.96) and mental health and bullying others have a significant positive relationship (.96). Findings on moderating factors on the relationship revealed that age and gender does not moderate on this relationship. The study opens new doors for practitioners as well as policies makers on formulating positive interventions strategies such as engaging students in positive behaviours, peer counseling and nurturing empathy so that peers help each other in promoting healthy behaviour in school environment. The study looks through the lens of biopsychosocial model in order to provide insight into bullying. The study provides insight on understanding of the complexity of the life stressors that influence adolescents to engage as bullies and victims.*

Keywords: bullying, victimization, mental health, adolescents, Maldives

Introduction

Fighting and bullying are rapidly increasing in the schools of Maldives. Since 2008, there has been a steady increase in the number of domestic violence, rape, bullying and sexual harassment cases in Maldives (Madhok, 2012). Schools are becoming the focal point for bullying incidents. In 2009, Ministry of Education reported 37% of Maldivian students have been bullied on one or more occasions. A general survey conducted in Maldives (n=542) revealed that 61% of adolescents between 11 to 13 years reported being bullied while 80% witnessed bullying incidents (Advocating the Rights of Children, 2012). A World Bank (2014), report states that one out of five students in Maldives agree that they have been victims of bullying. In Maldives, not many muster the courage to report bullying incidents due to the stigma and labelling.

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Often those who report bullying incidents are labelled as "difficult", "doesn't know how to get along with peers", and "have an attitude". Due to these labels many do not want to report bullying incidents and they suffer in silence.

However, over the past few years, bullying has become a major concern for parents and school administrations as the number of students affected by bullying are becoming the front page headlines in the Maldives media. But, many are left with little clue about the impact of bullying on an individual's mental health.

Mental health issues are prevalent in the Maldives such that a nationwide survey conducted in 2003 reported 29.1% with mental health issues, with 5% reporting anxiety and depression (World Health Organization, 2014). This study fills the gap in the literature on bullying and effects on mental health of adolescents in Maldives. Since, bullying and mental health are not well-researched topics in Maldives, young people are not aware of bullying or the effects of bullying on one's mental health even when it happens. Even if they are aware, most of them do not have a clue on how to seek help on this matter.

Aim of the study

This research seeks to examine the relationships between bullies, victims and mental health among adolescents in Maldives.

Significance of the study

This study is important for Maldives due to a number of reasons. Firstly, few studies have been carried out on bullying in Maldives. These studies only stated that bullying does take place. This is a known fact as few school children had taken their lives due to prevalent issue. Secondly, it is important to strengthen the counselling services of schools in order to provide adequate support and guidance that is required for victims. In doing so, students learn to stand up for themselves and avoid bullying behaviours. Thirdly, it is important to increase awareness and eliminate stigma and discrimination about mental health wellbeing and mental health disorders in Maldives, so that young people are encouraged to seek professional help before it is too late and take charge of their lives. Moreover, examining the role of bullying and its effects on health among adolescents in Maldives will lead to understanding the need for sensitization, developing intervention strategies and better school policies on school bullying as well as addressing mental health problems in Maldives. It will also enable the community, parents, school staff and students to disseminate basic information about what bullying is and the negative effects it has on the individual mental health. Sensitization may lead to understanding of why some children do not report or stand up to being bullied, why some children bully others and why some bystanders do not report bullying incidences. This reluctance attitude may change with the support of parents, school administration and positive attitude of peers in Maldives.

In addition, scarce research have been conducted on bullying and its effects on overall health among adolescence with regard to biopsychosocial perspective. Biopsychosocial model explains human behaviour from a medical stand point with an addition of psychological and social factors (Kuyendall, 2012; Nemade, Reiss, & Dombeck, 2007; Sarafino & Smith, 2014). Correspondingly, stress and other emotional reactions are multifaceted interactions of biological, behavioral and environmental factors which

influences an individual's ability to remain healthy or resist illnesses (Baum & Posluszny, 1999; Swearer & Hymel, 2015). Hence, a more prominent illustration of biopsychosocial model is diathesis-stress model. The diathesis-stress model theorizes that some individuals have predisposed vulnerabilities that makes them prone to aggression and bullying (Nevid, 2015). Thus, stress is considered as a strain to the individual in all aspects; biological, psychological and social. Bullying is a traumatized stressful event that results in severe mental health problems (Kaltiala-Heino et al., 2010; Marsh et al., 2011; Rigby, 2000) influences emotional, intellectual, social and physical health of an individual (Kuyendall, 2012) and decreases coping resources and slower recovery from repeated exposure to the stressor (Rex-Lear, Knack, & Jensen-Campbell, 2012).

Literature review

Bullying perspectives

In the 90s, bullying was defined as a deliberate and conscious act to harm another physically and mentally (Tattum & Tattum, 1992). Olweus (1994), states that when an individual is repeatedly exposed to negative acts of violence or aggression, it is bullying. As a result, bullying can be conceptualized as any act of deliberate repeated aggressive behavior lacking empathy and social behavior to assert power over a weaker individual (Baumer & Goldstein, 2011; Kaltiala-Heino et al., 2010; Peeters, Cillessen, & Scholte, 2010; Salmivalli, 2010). However, it is important to point out that not all aggressive behaviour are bullying and not all bullying behaviour are aggressive. But what remains constant is the repetitive, intentional aggressive behaviour that is directed to hurt the other individual (Mishna, 2012; Rodkin, Espelage, & Hanish, 2015).

Targets to bullying

Studies on bullying revealed that individuals who are most likely to get bullied are children and adolescents who have difficulty in defending themselves. They are usually due to smaller in size than their peers, have fewer friends (Zou, Andersen, & Blosnich, 2013), physical appearance, obese or being overweight (Sidorowicz, Hair, & Milot, 2009).

Types of bullying and victimization behaviour

Bullying and victimization has two distinctive behaviours; direct and indirect. Direct or overt form of bullying is more face-to-face open attacks(Hemphill, Heerde, & Gomo, 2014) whereas the acts is concealed and subtle in indirect or covert bullying (Cross et al., 2009).

The types of bullying and victimization include: verbal, e.g., name calling, verbal abuses, threats of violence, making jokes, offensive remarks and teasing (racist, sexist or homophobic)(Carbone-Lopez, Esbensen, & Brick, 2010); physical, bullying such as beating, kicking, punching, spitting (Luxenberg, Limber, & Olweus, 2015)other types of physical violence and damaging others property or taking someone's belongings; Relational/Social such as starting false stories about someone, excluding someone from social groups (Scheithauer, Hayer, Petermann, & Jugert, 2006) and use of electronic devices to text messaging, call, take pictures and videos and posting them on social networks.

Bully vs victims

Literature implies that individuals bully others for various reasons such as to

gain more social acceptance, and power (Guerra, Williams, & Sadek, 2011; Rodkin et al., 2015). Thus, there are two target groups of bullying victims; passive and proactive.

The passive type or the victims are usually quiet, submissive, cautious, have low self-esteem, unhappy and sensitive. They do not bully others nor provoke the bullying. But they are easy targets because they are unpopular and are rejected by peers and hence their peer will support the harassing (Rodkin et al., 2015). Also, those who are victims to bullying incidents are associated with poor physical health and psychosomatic problem (Gini & Pozzoli, 2013). They are at risk of developing mental health problems such as anxiety, depress, low self-esteem (Swearer & Hymel, 2015).

The proactive type comprises of 10% to 20% of bullied students. These individuals have already been targets of bullying because they have been labelled to have poor self-esteem and emotionally unstable with physical and mental health problems (Rodkin et al., 2015; Yen et al., 2013). These students have difficulty in concentrating, lacks focus, is irritable, often hyperactive and disliked by peers. These students are bullied and in return they bully others. Although they are called proactive bullies there is no evidence that they actively provoke others or want to be bullied. But they may bully others if their behaviour is encouraged by their peers, which will gain them social status in the peer group (Rodkin et al., 2015).

Unlike passive and proactive victims, the real bullies are more strong and dominating. They have a strong desire to show their self-esteem, to assert their power in the social standings (Rodkin et al., 2015). They are easily angered and shows deviant behaviour towards adults, teachers and parents. The real bullies are considered maladjusted with mental health problems and they lack empathy (Caravita, Blasio, & Salmivalli, 2010; Yen, 2010). These bullies in general are aggressive towards other individuals, have a strong need to dominate and control. They are generally stronger than their victims. Students who bully others are more likely to engage in delinquent behaviour and substance abuse (Cook, Williams, Guerra, Kim, & Sadek, 2010; Guerra et al., 2011; Lazarus & Pfohl, 2010) they also have control over peer groups and encourage them to scapegoat their targets (Caravita et al., 2010; Rodkin et al., 2015).

Bullying, victimization and gender

According to Nansel et al. (2001) and Wang, Iannotti and Nansel (2009), the most common type of bullying among adolescents boys as verbal and physical bullying and verbal and social bullying among girls. But, Fanti and Kimonis (2012), found that gender does not play a significant role in patterns of bullying and conduct problems. However, study conducted among adolescents revealed that gender had a moderating effect on the associations between some forms of bullying and anxiety (Yen et al., 2013). Similarly gender moderation were significant and positive for relationship between victimization and internalization of anxiety problems and depression (Iyer-Eimerbrink, Scieizee, & Jensen-Campbell, 2015; Yen et al., 2013). Thus, it is noted that both boys and girls engage in bullying equally but the type of bullying that they are involved differs (Guerra et al., 2011; Hymel & Swearer, 2015).

Bullying, victimization and adolescents

Aadolescence is a crucial age for bullying as individuals move away from

families and spent more time with their peer. Peer affiliation are central to adolescents at this age. Adolescents who have aggressive friends are at risk of becoming bullies due to conformity biases (Iyer-Eimerbrink et al., 2015; Wang et al., 2009). Likewise, adolescents who are unpopular and who do not have friends are at risk of becoming victims to bullying and aggression (Hong, Espelage, Grogan-Kaylor, & Allen-Meares, 2012; Swearer & Hymel, 2015; Wang et al., 2009).

Pre-adolescents and adolescents often considered teasing, making jokes and pushing as part of having fun as long as it is not hurtful (Guerra et al., 2011). Instead, they link bullying to dominating and controlling behaviour and gaining social status (Caravita et al., 2010; Hong et al., 2012). Additionally, Sigurdson et al. (2015), suggests that preteens who are bullies maybe more vulnerable to mental health problems such as externalizing problems and those who are victims of bullying may have introvert and passive behaviour. Moreover, Cook et al (2010) found that age moderated significantly with bullying on three dimension (external behaviour, internal behaviour and peer status) for children between 3 to 11 years, it is only when children reach adolescence that they internalize problems related to bullying.

Apart from being at risk for bullying and aggressive behaviour adolescence is a period whereby, individuals go through number of physiological, emotional and physical changes. These changes makes the adolescent vulnerable to number of mental health problems such as stress, anxiety, depression, and loss of behaviour which can affect how they think, act and feel (Iyer-Eimerbrink et al., 2015).

Bullying and biopsychosocial model

Biopsychosocial model explains human behaviour from a medical stand point with an addition of psychological and social factors (Kuyendall, 2012; Nemade et al., 2007; Sarafino & Smith, 2014). Correspondingly, stress and other emotional reactions are multifaceted interactions of biological, behavioral and environmental factors which influences an individual's ability to remain healthy or resist illnesses (Baum & Posluszny, 1999; Swearer & Hymel, 2015). A more prominent illustration of biopsychosocial model is diathesis-stress model.The diathesis-stress model theorizes that some individuals have predisposed vulnerabilities that makes them prone to aggression and bullying (Nevid, 2015). Thus, stress is considered as a strain to the individual in all aspects; biological, psychological and social.

Research on stress is linked to impair individual cognitive functioning, decreases one's helping behavior and increases aggressive and violent behavior within an individual (Dogar, 2007; Sarafino & Smith, 2014). Bullying is a traumatized stressful event that results in severe mental health problems (Kaltiala-Heino et al., 2010; Marsh et al., 2011; Rigby, 2000) influences emotional, intellectual, social and physical health of an individual (Kuyendall, 2012) and decreases coping resources and slower recovery from repeated exposure to the stressor (Rex-Lear et al., 2012).

Biological factors

The model suggests that vulnerability to neurological and physiological arousal to stressful situations facilitates aggressive behaviours (Howard, Schiraldi, Pineda, & Campanella, 2006; Swearer & Hymel, 2015). Moreover,

research findings suggest that prolonged stress from bullying negatively affects the functioning of immune system (Rex-Lear, Knack, & Jensen-Campbell, 2012). Likewise, stressful social events serve as triggers in brain functioning, and hence social stressor can trigger health problems (Kuyendall, 2012).

It is reported that when victims experience bullying their bodies respond with biochemical reactions by providing more glucose to compensate for the oxygen and energy to fight or flight the situation (Kuyendall, 2012). Swearer and Hymel (2015), states that being bullied and bullying others are stressful events intensified by biological vulnerabilities and can lead to impaired social information processing which can lead to significant negative outcomes.

Psychological factors

In terms of psychological factors contributing to bullying and mental well-being of individuals. It has been noted that bullies and victims display cognitive vulnerability in the face of aggressive behaviours (Swearer & Hymel, 2015). In other words, the bodily challenges (puberty) and the psychology examines how individuals perceive stressful events in their life (Sarafino & Smith, 2014). When power and control is established through aggression and psychological abuse, victims feel distress. Thornberg and Knutsen (2011), argues that adolescents' cognition plays a vital part in situational settings particularly why some act as bullies or take a bystander role. Therefore, individuals who bully others lack understanding of others mental state, poor self-control and judgment which facilitate in impulsive aggressive behaviour (Swearer et al., 2009).

Further, victims of bullying reports several psychological problems such as low self-esteem, feeling of sadness, loss of emotional control, anxiety and depression. For example, physical bullying causes injuries for the bullies as well as for the victims (Kuyendall, 2012). Verbal bullying such as name calling, spreading rumours places adolescence at risk of developing emotional problems, leading to eating disorders and thoughts of suicide (Farrow & Fox, 2011; Kuyendall, 2012). Early exposure to bullying is associated with increased emotional damage (Dombeck, 2012) and psychosomatic disorders (Allison, Roeger, & Reinfeld-Kirkman, 2009). Similarly, Wolke, Copeland, Angold and Costello (2013) suggested that victims of childhood bullying is at risk of negative health, wealth and social relationships in adulthood. Likewise, exposure to prior abuse as well as humiliation and rejection by peers provoke some individuals to bully others (Aricak, 2016)

Social factors

Bullies and victims have their respective social status and peer groups. In general, victims are less popular, rejected among peers, whereas bullies are popular and have a high dominance in their social hierarchy (Caravita et al., 2010; Postigo et al., 2013; Rodkin et al., 2015; Swearer & Hymel, 2015).

Classroom and schools are the most common place where bullying take place. Most of the time children form cliques and friends who share same traits resulting in social structures consisting of group norms where some children take the role of bullies, assistants, supporters, while others take the victim and by stander roles (Caravita et al., 2010; Iyer-Eimerbrink et al., 2015; Salmivalli, 2010). Hence, peer group norms and expectation aggregate bullying behaviour as it places lots of stress on the individual for fear of peer rejection and being the target of victimization (Salmivalli, 2010).

The role of family is a vital part of an individual's well-being. The sense of belongingness and being loved gives a secure feeling and may protect children from adverse life experiences such as being bullied (Baldry, 2004; Gini & Pozzoli, 2013; Hong et al., 2012). On the contrary, individuals with low family ties, poor parental supervision maybe at risk of developing mental health problems such as depression and anxiety disorders (Gini & Pozzoli, 2013; Hong et al., 2012; Swearer & Hymel, 2015). Negative life events (such as few friends, parental neglect, divorce, domestic violence, low emotional support from care givers) and how the individual perceive these events (internalizing or externalizing) creates stressors and contributes to bullying and victimization (Hong et al., 2012; Kuyendall, 2012; Postigo et al., 2013; Swearer & Hymel, 2015).

Bullying implications on mental health

WHO (2014), defines mental health as being physically, mentally and socially fit, and the absence of disease. It is interconnected to the promotion of well-being, prevention, treatment and rehabilitation of people affected by mental disorders.

Abundant literature on bullying and victimization have established links between low self-esteem, anxiety, depression and adjustment problems. Research on bullying and health revealed that students who were victims had inferior self-concept, more psychosomatic disorders and high level of post-traumatic stress (Houbre et al., 2006). Cross-sectional study reveals both victimization and being a bully, leads to depression in later years (Kaltiala-Heino et al., 2010; Zou et al., 2013). Furthermore, longitudinal studies supported the notion repeated exposure to being targets to bully can undermine the health and the wellbeing of vulnerable individuals and are at risk of developing somatic illnesses, such as headaches, nausea, insomnia and lack of appetite (Kumpulainen et al., 1998; Kuyendall, 2012; Rigby, 2003).

Most notable issue regarding bullying is that it negatively affects psychological and social wellbeing of bullies and victims (Cook et al., 2010; Dake, Price, & Telljohann, 2003). Japanese adolescents study on psychosocial factors such as deviant peer influence, loss of focus in school or academic work, poor self-control of aggressive behaviour and efficacy were related with physical, verbal and indirect bullying (Ando, Asakura, & Simons-Morton, 2005).

Rigby (2002), identified four aspects of health that may be affected by bullying as (a) Psychological well-being such as self-worth and happiness, (b) social adjustment such as involvement with others, (c) psychological comfort such as feeling of distress, anxiety and depression and (d) physical wellness by absence of physical health complaints. Benedict, Vivier and Gjelsvik (2014), suggest the diagnosis of mental health disorder, such as depression, anxiety and attention deficit hyperactivity disorder is strongly associated with identified as a bully. Similarly, Rodkin et al (2015), states that adolescents who bully others have low self-esteem, have emotional problems and maybe have been prior victims of abuse. Further, some argue that the deficiency in the environmental factors such as exposure to prior abuse, humiliation, rejection by peers (Aricak, 2016) and learned behaviour provokes some individuals to bully others (Hong et al., 2012; Postigo et al., 2013; Sanders, 2004).

Overall, it can be concluded that personal characteristics of adolescents

involved in any form of bullying (i.e., bully, victim or bystander) demonstrate poor psychological functioning (Dombeck, 2014; Kaltiala-Heino et al., 2010; McWhirter, McWhirter, McWhirter, & McWhirter, 2013).

Conceptual framework

Based on review of literature, a conceptual framework was developed (Figure 1). This conceptual framework was used to investigate the relationship between bullies, victims and mental health among adolescents in Maldives. The two domains of bullying construct (bully and victimization) serve as the independent variables. Moreover, bullying others also serve as a dependent variable as literature suggests that individuals with negative mental health such as depression and anxiety end up being bullies. Additionally, mental health is included as independent as well as dependent variable. Based on this conceptual framework, the hypotheses formulated for the study were;

H1: There is a non-recursive relationship between bullies and mental health among adolescents in Maldives.

H2: There is a significant relationship between victims and mental health among adolescents in Maldives.

H3: Gender does not moderate the non-recursive relationship between bullies and mental health among adolescents in Maldives

H4: Gender does not moderate the relationship between victims and mental health among adolescents in Maldives

H5: Age does not moderate the non-recursive relationship between bullies and mental health among adolescents in Maldives.

H6: Age does not moderate on the relationship between victims and mental health among adolescents in Maldives.

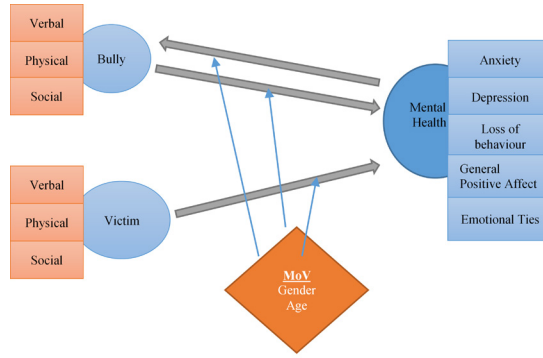


Figure 1

Research Methodology

Research design

This research was based on quantitative research design. The variables were quantitatively measured and the findings were analysed to determine the relationship between bullies, victims and mental health.

Target population and sampling frame

The population of this research were adolescents between of 11 to 16 years currently enrolled in schools of Maldives. Since Maldives, is dispersed into 7 provinces, cluster sampling was used to select the three provinces. The 1190 islands in the Maldives is divided into seven provinces, upper northern, north province, north central province, central province, upper south province,

south central province and south province. Out of the seven provinces, three provinces were selected using systematic sampling. Systematic sampling is selection of samples at regular intervals from a sampling frame (Saunders, Lewis, & Thornhill, 2009). From the selected provinces convenience sampling was used to select the island for data collection. Thus, data were collected from the capital province of upper north (Kuludhuffushi), south province (Addu city) and the main capital of the Maldives (Male' city) from north central.

Sample size and research respondents

Sample is the subgroup of population selected from the sampling frame (Shaughnessy et al., 2010). Therefore, sample size is important in research as it has the power to describe the entire population. According to Krejcie and Morgan (1970), a population with 20,000 the required sample size is 377. Additionally, in reference to table provided by Bartlett, Kotrlik, and Higgins (2001), the required sample size for a population of 10,000 (p=0.05) in continuous data is 119 and the same population in categorical data is 370.

Since the response rate for survey is low, some researchers recommend that it will be advisable to collect data from more than the required sample size (Bartlett et al., 2001). Therefore, a total of 565 survey questionnaires were distributed to the schools. Table1 illustrates the sample distribution.

Table 1

Sample Distribution

Province	Grades	Sample Size
Upper North Province	Grades 6, 7, 8, & 9	175
South Province	Grades 6, 7, 8, & 9	190
Male'	Grades 6, 7, 8, & 9	200
Total		565

Research instruments

To assess bully and victimization Adolescent Peer Relation Instrument: Bully/ Target (APRI-BT) (Parada, 2000)(Appendix B).Mental Health Inventory-38,developed by Veit and Ware in1983 for RAND Insurance Experiment (as cited in Department of Health and Aging, 2003) was given to students to assess overall mental health.

Pilot testing -The main purpose of conducting pilot study is to fine-tune the questionnaire before the actual study is conducted, so that respondents will not have any problem in answering the questions (Saunders et al., 2009). It is also important to select a sample for a pilot that is representative to the study (Johanson & Brooks, 2010;Thabane et al., 2010). Hence, Baker 1994 (as cited in Hazzi & Maldaon, 2015) stated that 10 to 20 percent from the main sample can be considered reasonable number for a pilot study. A pilot study was conducted to 52 students in Male' capital city as the sample population for the study was 565 adolescents.

Reliability and validity of the instruments - APRI - Internal consistency of the instrument reported by the developer using Cronbach Alpha yielded a scale

of .92 (Eweniyi, Adeoye, Ayodele, & Raheem, 2013). Moreover, the reliability was confirmed from the pilot study conducted on 52 adolescents of Maldives yielded a Cronbach Alpha coefficient between .80 to .87 for bully subscales and .84 to .87 for victimization subscales. Results in table 3.1 shows the reliability of bully subscales of the APRI. Similar reliability results were obtained from studies conducted on APRI for preadolescents .81 to .89 on subscales of bullying and .85 to .9 on subscales for victimization (Finger, Yeung, Craven, & Parada, 2008).

MHI-38 - The internal consistency of the instrument measured by Cronbach Alpha ranged from .63 to.93 for the subscales, .90-.97 for global scales and .93-.97 for mental health index. The test-retest reliability correlation reported for subscales and total score for MHI ranging .56 to .97 (Dare et al., 2008). Further research on reliability of MHI 38 for Australian adolescents suggests internal consistency by Cronbach Alpha for subscales .92 -.94. The test-retest correlation reported for subscale psychological distress was .71, for psychological well-being was .69 and total score was .73 (Heubeck & Neill, 2000). Similarly, the pilot testing conducted on 52 adolescents indicated that MHI-38, the Mental Health Index yielded a Cronbach Alpha of .94 and for subscales .72 to .88 respectively. Thus, based on pilot study reliability test, it can be concluded that both APRI and MHI-38 are reliable instruments.

Data screening and cleaning - Data screening and cleaning is an important procedure in carrying out research as it ensures that the data is accurate and valid for testing the proposed hypothesis. A quick visual inspection at the data indicated that there were four respondents who were older (17 years) than the target age group (11 to 16 years), these four respondents were removed from the data set as they were not from the intended population.

Outliers can influence the outcome of the statistical analysis. There are two types of outliers, namely univariate and multivariate outliers. Univariate outliers are extreme data point on a single variable, whereas multivariate outlier a combination of extreme data point on two or more variables. Only multivariate outliers using mahalanobis d-squared were deleted from the data set. 96 multivariate outliers were deleted from the data set. Thus, the sample size was reduced to 460.

Data analysis and structural equation modeling (SEM)- BM Statistical Package for Social Sciences (SPSS) version 22 and Analysis of Moment Structures (AMOS) version 20 were used to analyse the data. Descriptive statistics were analyzed using percentages to find out the types of bullying and victimization that adolescents are involved in, to find out if a particular gender group is more prone to a certain type of bullying or victimization and to determine the type of mental health problems concern to these adolescents. Furthermore, Structural Equation Modeling (SEM) with multi group moderations based on maximum likelihood estimation was used to: a) examine the bidirectional association between bullies and mental health, b) investigate the association between victims and mental health, and c) to investigate if age and gender moderates the relationships between the variables. SEM is a popular statistical analysis that can be applied to test the relationship between set of variables (Hair, Black, Babin, & Anderson, 2010). There are two types of models in SEM: a) structural, and b) measurement model. The structural model or the path model which helps to determine the extent of the relationships between

the paths (Hair et al., 2010; Schumacker & Lomax, 2010). Measurement models elaborates on the construct and assesses the validity of it (Hair et al., 2010). Moreover, SEM is a highly flexible, comprehensive method for investigating health issues, family, peer dynamics and depression to name a few. SEM models consists of latent and manifested variables. Latent variables are those which cannot be measured directly. Manifested variables have well defined ways of measuring them. Likewise, in this research model, the latent variables are depicted in circles and the manifested variables are depicted in squares.

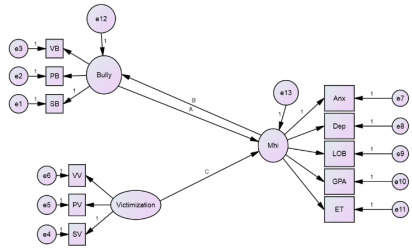


Figure 2 depicts research model with the proposed hypotheses. The relationship between bully and mental health issues is represented by path 'A'. Path 'B' indicates the relationship between mental health issues and bully. When there is a two way path, one influencing the other, it is known as a non-recursive model. Relationship between victimization and mental health are indicated by path 'C'. As shown in figure 2, there are three latent variables with six observed variables between bully and victimization. Mental health has 5 observed variables, making a total of 11 parameters. Additionally, variance are shown with error term 'e1- e12' associated with 11 observed variables. Since there are two endogenous variables (bully & mental health) error terms for these variables are 'e12 and e13' respectively. In this model there is one exogenous variable (victimization).

Findings and Discussion

Descriptive statistics - Types of bullying behaviour among adolescents. Findings on the types of bully behaviour indicated verbal bullying (74%) is the most common types of bullying among adolescent in Maldives. 43% of students used to physically harm others and 42% of students said they have socially abused them, such as ignoring or leaving them from groups. This finding differs from Carbone-Lopez et al (2010), which revealed that verbal and physical bullying are common among adolescents. But it is consistent with findings with Benton (2011); Luxenberg et al (2015); Scheithauer et al (2006); Swearer et al (2009) all supporting that the verbal bullying is the most common type of bullying among adolescents.

Types of victimization behaviour among adolescents. Current findings revealed that victimization is prevalent among adolescents in Maldives. The high percentages of victims reported in this study indicate that there are more victims than bullies. This finding is consistent with finding around the world for example, Craig et al., (2009); Denny et al., 2014; Malhi et al., (2015) indicating that victimization is a prevalent issue among adolescents.

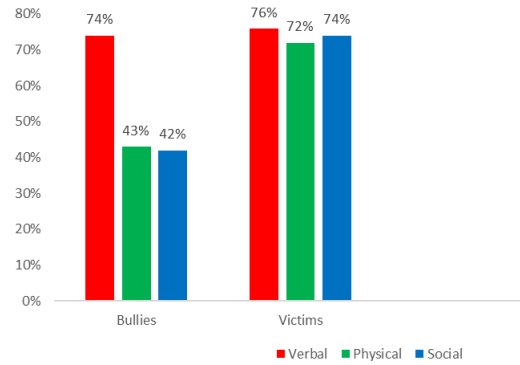
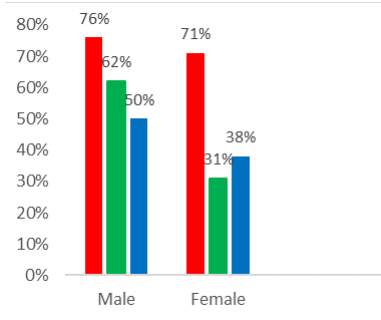


Figure 3 Bullying and victimization behaviour among adolescents in Maldives

Common types of bullying behaviour among males and females. Findings on types of bullying and gender indicates that more than 75% males and females reported having bullied others on one or more occasion.



:s and females

This finding is in line with Hymel &Swearer (2015), indicating that both males and females engaged in bullying equally but the type of bullying they were involved differed. Additional findings on the types of bullying behaviour indicated that males and females reported that they bully others verbally. Sixty two percent of males and 31% females reported that they physically bullied others. Forty nine percent of males and 38% of females engaged in social or relational bullying. This is a slightly different finding than Nansel et al. (2001) and Wang, Iannotti and Nansel (2009), who stated that the most common type of bullying among adolescents boys as verbal and physical bullying and verbal and social bullying among girls. More contrasting finding from Dake et al (2003);Marsh et al (2011), implied that physical bullying was more common among boys and girls tend to engage in more social bullying. In contrast to previous findings, this study revealed a slightly different finding suggesting that verbal bullying is the most common type of bullying among males and females in Maldives.

Common types of victimization behaviour among males and females

Findings (figure 5) based on common types of victimization among adolescents in Maldives revealed that boys and girls reported being victims of bullying. Eighty percent of males and 73% of females have been victims of verbal bullying. Seventy nine males and 67% females were targets of physical bullying.

More than 70% of males and females reported they have been targets of social bullying. This finding is consistent with (Annerbäck, Sahlqvist, & Winger, 2014; Klijakovic, Hunt, & Jose, 2015; Nansel et al., 2001) such that boys are more prone to being victims of bullying regardless of the type of bullying.

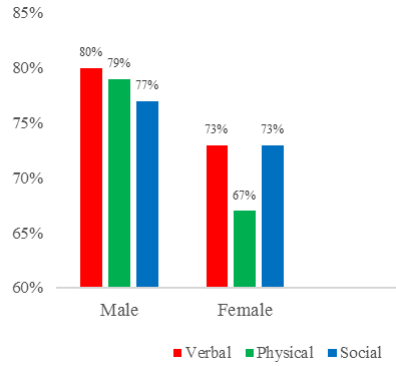


Figure 5. Victimization by gender

Types of mental health issues among adolescents. Findings on the types of mental health issues among adolescents in Maldives revealed that 23% reported being anxious frequently, where as 24% reported being depressed, 77.6% reported low behaviour control, 37% were low on general positive affect, 55% had weaker emotional ties with significant others in their lives. These percentages on mental health indicate that negative mental health such as anxiety, depression and loss of behaviour could just be at the brink of much more complicated issues. Besides, it was also noted that a little more than half of the respondents had weak relationships with parents and significant others. These findings do raise some serious concerns as literature suggest that social factors such as being unpopular among friends, having fewer friends, unstable relationships places stress on the individuals (Salmivalli, 2010). Stress is considered as a contributing element to poor functioning of immune system and causes mental problems, such as anxiety, depression and other psychological illnesses (Kuyendall, 2012; Rex-Lear et al., 2012).

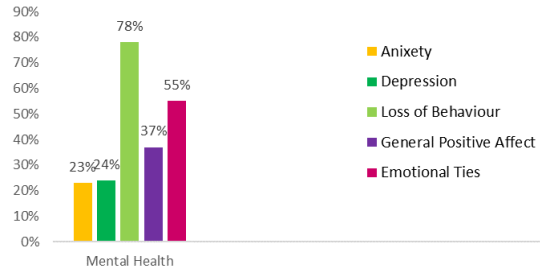


Figure 6. Adolescents Mental Health Status

Hypotheses testing - structural equation modeling (SEM)

There is a non-recursive relationship between bullies and mental health among adolescents in Maldives

This study hypothesized that there is a non-recursive relationship between bullies and mental health among adolescents in Maldives. The findings of the research indicated that there was a significant non recursive relationship

between bully and mental health and mental health and bully among adolescents in Maldives. In other words, the relationship works in both directions. Those individuals who bully others have poor mental health and those individuals with mental health problems end up bullying others. Adolescents who are already feeling the pressure of puberty may be going through lot of emotional and psychological insecurities may end up as bullies. This emotional and psychological interplay may be due to the multifaceted interactions of biological, behavioral and environmental factors which influences an individual's ability to remain healthy or resist illnesses (Baum & Posluszny, 1999; Swearer & Hymel, 2015). According to Kaltiala-Heino et al. (2010), middle school boys who bully others had signs of depression and it can be concluded that personal characteristics of adolescents involved in any form of bullying (i.e., bully, victim or bystander) demonstrate poor psychological functioning (Benton, 2011; Dombeck, 2014; Kaltiala-Heino et al., 2010; McWhirter et al., 2013). Especially, verbal and physical bullying having a negative impact on individual physical health (Zou, et al., 2013).

In addition, Swearer and Hymel (2015), states that being bullied and bullying others are stressful events intensified by biological vulnerabilities and can lead to impaired social information processing which can lead to significant negative outcomes. Thornberg and Knutsen (2011), argues that adolescents' cognition plays a vital part in situational settings particularly why some act as bullies or take a bystander role. Therefore, individuals who bully others lack understanding of others mental state, poor self-control and judgment which facilitate in impulsive aggressive behaviour (Swearer et al., 2009) and end up becoming bullies. Moreover, individuals who seek to lash out or engage in aggressive behaviour fail to understand the cues and intentions of the others due to the cognitive vulnerabilities and they feel stressed (Hong et al., 2012; Swearer, Buhs, Siebecker, Love, & Miller, 2008). Further, some argue that the deficiency in the environmental factors such as exposure to prior abuse, humiliation, rejection by peers (Aricak, 2016) and learned behaviour provokes some individuals to bully others (Hong et al., 2012; Postigo et al., 2013; Sanders, 2004). Thus, negative life events (such as few friends, parental neglect, divorce, domestic violence, low emotional support from care givers) and how the individual perceive these events (internalizing or externalizing) creates stressors and contributes to bullying and victimization (Hong et al., 2012; Kuyendall, 2012; Postigo et al., 2013; Swearer & Hymel, 2015).

There is significant relationship between victims and mental health among adolescents in Maldives

The study also hypothesized that there is a relationship between victimization and mental health issues among adolescents in Maldives. The findings on the relationship between victimization and mental health revealed that being bullied has a significant positive relationship on mental health. It is reported that when victims experience bullying their bodies respond with biochemical reactions by providing more glucose to compensate for the oxygen and energy to fight or flight the situation (Kuyendall, 2012). Swearer and Hymel (2015), states that being bullied and bullying others are stressful events intensified by biological vulnerabilities and can lead to impaired social information processing which can lead to significant negative outcomes. In other words, the bodily

challenges (puberty) and the psychology examines how individuals perceive stressful events in their life (Sarafino & Smith, 2014). It has been noted that bullies and victims display cognitive vulnerability in the face of aggressive behaviours (Swearer & Hymel, 2015). For example, physical bullying causes injuries for the bullies as well as for the victims (Kuyendall, 2012). Verbal bullying such as name calling, spreading rumours places adolescence at risk of developing emotional problems, leading to eating disorders and thoughts of suicide (Farrow & Fox, 2011; Kuyendall, 2012). Similarly, Wolke, Copeland, Angold and Costello (2013) suggested that victims of childhood bullying is at risk of negative health, wealth and social relationships in adulthood. According to biopsychosocial diathesis-stress model, when the biological and cognitive vulnerabilities interact with environmental stressors, such as being unpopular among friends, poor and unstable relationships with parents places individuals at risk of being bullied (Swearer & Hymel, 2015). The study findings are in accordance with results from bullying and consequences on health stating that adolescents who are victims or target of bullying behavior displayed inferior self-concept, more psychosomatic disorders, high level of post-traumatic stress followed by emotional, behavioural and psychosocial problems such as depression and suicidal thoughts (Houbre et al., 2006; Kaltiala-Heino et al., 2010; Rosen et al., 2009).

Moderating effects of gender and age on the relationships

A chi-square difference test for constraint and unconstraint model was tested to determine if gender and age influence the relationship. The results ($\chi 2$ =516.593- 671.524 =154.931; df=164-197=33) indicated that the two groups were not statistically significant suggesting that at the substantial level the study cannot conclude that age and gender moderated the relationships. According to Hair et al. (2009), moderation effect can be established, if there is an increase in the chi-square difference between the unconstraint and constraint model, and a significant better model fit is obtained with path by path analysis. In other words, gender nor age does influence the relationship between bullying behaviour and mental health among adolescents in Maldives. This finding is different from Cook et al (2010) who suggested that age moderated significantly with bullying on three dimension (external behaviour, internal behaviour and peer status) for children between 3 to 11 years, it is only when children reach adolescence that they internalize problems related to bullying. This study finding suggests a different tone compared to (Iyer-Eimerbrink et al., 2015) study which suggested that gender moderation was significant for victims and other issues such as internalization of anxiety problems and depression.

Conclusion and recommendations

With regard to bullying and victimization former studies has validated links between mental health such as poor psychological well-being (Cook et al., 2010; Frieden, Sosin, Spivak, Delisle, & Esquith, 2012; Houbre et al., 2006), anxiety (eg: Boyle, 2005; Dake et al., 2003; Frieden et al., 2012; Houbre et al., 2006; McWhirter et al., 2013; Swearer et al., 2009) and depression (Kaltiala-Heino et al., 2010; Seltzer & Long, 2012; Zou et al., 2013). More recent studies suggest that vulnerabilities such as neurological and physiological

(Swearer & Hymel, 2015), cognitive processing (Sarafino & Smith, 2014) and fear of peer rejection (Rodkin et al., 2015) may play vital role in being a bully or a victim. This study demonstrated a significant non-recursive relationship between bullies and mental health. The study also established a significant positive relationship between victims and mental health among adolescents in Maldives

Value of the research

The study provided a snapshot on the current status of bullies and victims and mental health in Maldives. This research has confirmed that both bullying, victimization and mental health are crucial subjects that needs to be tackled with caution and care. One of the underlying aim of this study was to attract more research in this field in investigating and identifying the vital issues relevant to adolescents' development and mental health in Maldives. There is scope and potential for further research in this field to better understand the complex issue of bullying and victimization. Moreover, this research serves as a platform for victims to disclose their fears and bullies to seek help within the school community.

The biopsychosocial model of stress provides a framework, which addresses the complex and the dynamic nature of stressful events that effects bullies and victims. Biological factors helps understand the role immune system, brain functioning and biochemical reaction involved in stress. The psychological factors helps in understanding cognitive vulnerabilities, information processing mechanism works in the presence of stress. The social factors takes into account relationship with parents, peers and social status. Moreover, this research allows to talk about bullies, victims and mental health concerns within the school communities, among school authorities and policy makers, for establishing intervention strategies, strengthening counselling and rehabilitation services in schools.

Research Implications

The main purpose of the research was to examine the relationships between bullies, victims and mental health among adolescents in Maldives.

During the course of this research, several issues were observed. Perhaps, the most excruciating observation was the percentage of bullying victims. Even though bullying has been a heavily researched area, this kind of research was new to the Maldivian context and implied on the little knowledge that the students had on this topic. School authorities, teachers, counsellors need to be aware of the negative outcomes for bullies, victims and health and wellbeing of students.

The study revealed that loss of emotional control is part of mental health. Hence, loss of emotional control raises serious concerns for mental health if young people do not know how to respond to life stressors in a positive and tolerable manner. Therefore, this opens new doors for practitioners as well as policies makers on formulating positive interventions strategies such as engaging students in positive behaviours, peer counseling and nurturing empathy so that peers help each other in promoting healthy behaviour in school environment.

Research limitation

Despite the usefulness of the findings of this research, several limitations are

to be considered. Firstly, the most challenging aspect of this research was reaching out to adolescents in different parts of Maldives. Since the islands in the Maldives are separated by sea. Travelling to south province was not possible due to cost and time constraints. Hence, data was collect with help from school teachers, this might have influenced on how students answered the questionnaire. Secondly, the topic mental health is considered a taboo, rarely people talk about such issues in Maldives. Therefore, students may have been biased while filling in the questionnaire. Thirdly, although, bullying has become a hot topic in schools recently, few students will muster courage to admit that they are bullies which explains why more students reported as victims than bullies. Finally, the data gathered were not equal on age group to conclude a basis if bullying was more prevalent between genders and across preteen or teens.

Recommendations for future research

This research is just the foundation in the field of bullying, victimization and mental health in Maldives as no research has been documented on such nature till date. An interesting aspect for future research, could be to analyze if the bullying cases were intentional or unintentional, how much students are aware that they are engaged in bullying behavior. This could help in understanding bullying behavior from the bullies' perspectives.

Also future researchers can add qualitative aspects in studying bullying and victimization behaviour, such as selecting number of students who are known to have bullied others, who have been bullied to find out the reason why they bully, in order to understand this phenomena.

It may also be interesting to do an experimental research on effectiveness of intervention programme such as Adolescents Sexual Reproductive Health life skills programme,(which is a widely known set of skills for life enhancement implemented in schools in Maldives) in preventing bullying behaviour to test if the programme is effective in prevention of bullying in schools. According to Swearer and Hymel, (2015), the best intervention for adolescent bullying is teaching them social and interpersonal skills to maintain relationships.

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