

Cyberbullying, Social Media & Fitness Selfies: An Evolutionary Perspective

Amanda DiFonzo, B. A. (Honours)

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Faculty of Social Science, Brock University St. Catharines, Ontario

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## Abstract

The general goal of the current research was to explore how social media influences a variety of aspects of young adults' lives, including motivation to be physically fit, and bullying behaviors. The specific objectives were to investigate the link amongst selfie, social media use, and cyberbullying in relation to physical fitness through the lens of evolutionary psychology. Brock University students ( $N = 83$ , 73.5% female) between the ages of 17 and 25 were recruited who have had some level of experience with fitness or living an active lifestyle. Participants completed self-report measures based on bullying/victimization experiences, cyberbullying, personality, narcissism, self-esteem, selfie use, physical activity, and self-body image. Based on evolutionary principles, it was hypothesized that those who post selfies are more likely to have been previously victimized. It was also hypothesized that males would have a stronger drive towards being physically fit, females would be more likely to be positively motivated to work out after viewing fitness selfies, and males would be more likely to view their peers as competitors and to have higher levels of jealousy. The results suggest that females were more likely to be motivated when viewing these fitness selfies, but also were more likely to be jealous of the types of body shapes posted. There was little effect on males in regards to viewing fitness selfies, suggesting that females are overall more engaged and influenced by this type of social media. The overall implications of the study suggest that technology and social media do encompass positive and beneficial qualities. Furthermore, social media should be engaged judiciously to educate young people about its positive use as well as inform them about the possible negative impacts of the digital world.

*Keywords:* Social media, fitness, physical activity, evolutionary psychology, young adults, bullying, cyberbullying

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## **Chapter 1: Introduction**

### **Bullying Behaviours**

Bullying is a continuous concern over the life span, ranging from childhood to adulthood, with a wide variety of factors that play a role in how it is perpetrated and how it affects both the bully and the victim. The definition of bullying has been recently redefined as “an aggressive goal-directed behavior that harms another individual within the context of a power imbalance” (Volk, Dane, & Marini, 2014, p. 337). It is important to consider the factors that are involved in bullying behaviors, which researchers have defined as goal-directedness, power imbalance, and harm (Volk et al., 2014). The elements of bullying can be applied to multiple settings, including in school and online bullying. Bullying actions have also been considered to be either direct or indirect; direct involves overt physical acts and verbal aggression, and indirect involves covert social aggression, relational and manipulation which can be more difficult to detect (Marini, Dane, Bosacki, & YLC-CURA, 2006). Indirect bullying specifically can be in the form of cyberbullying, which is a form of bullying that is pertinent to the present study through social media and fitness selfies. This has caused a shift of concern from traditional bullying to online, with much research focusing on what causes cyberbullying to occur in the first place.

### **Cyberbullying**

Cyberbullying has been defined as “an aggressive, intentional act distributed by an individual or group, using contact in an electronic medium, continuously and relentlessly against someone who cannot stand up for themselves” (Davison & Stein, 2014, 595). The

occurrence of cyberbullying has been on the rise due to the increase in Internet use among children and youth, especially with the popularity of social media platforms, such as Facebook, Twitter, and Instagram (Arntfield, 2015). Researchers have argued that because many platforms of social media, such as Facebook, Twitter, and Instagram, have video capacity cyberbullying has started to include the distribution of explicit videos and images (Davison & Stein, 2014).

### **Selfies and Social Media**

Social media has become a primary platform for adolescents and young adults alike to interact, connect, and share with one another, which has led to a widespread change in how these individuals see themselves and one another (Guan & Subrahmanyam, 2009). These platforms, such as Facebook, Twitter, and Instagram, have been integrated into various aspects of adolescence and young adulthood such as dating, advocacy, and photo sharing (Guan & Subrahmanyam, 2009). A trend that has occurred within social media has been selfie taking, where participants post photos of themselves alone or with others. Selfies have become such a phenomenon that research has been increasingly focused on how these types of photos have been affecting children and youth. Youth internet use in general has been explored previously, including the risks and opportunities it can have for individuals who immerse themselves in the cyber world (Guan & Subrahmanyam, 2009). It has been argued that the selfie has become a powerful tool for self-expression, which leads participants to share their most private moments as well as to engage in creativity (Murray, 2015). It is important to consider how this type of exposure online can affect children and youth, and what can arise psychologically and socially from engaging in taking selfies.

## **Physical Fitness and Selfies**

A specific form of photo sharing that has become highly popular among youth has been associated with their rising fascination with fitness and being physically fit. “Fitness selfies” have been appearing on platforms such as Instagram, where individuals take photos of themselves showing their fitness progression. The increasing need to become physically fit, and furthermore, to share photos that show their progress, has become a trend, and for some even a lifestyle. This phenomenon can be seen as having positive effects on youth involved, such as giving and receiving motivation and having a support system for those involved in the fitness lifestyles. In comparison, fitness selfies could also have detrimental effects on those participating in this lifestyle, such as being victims of bullying and having lowered self-esteem (Lockwood, Wong, McShane, & Dolderman, 2005).

## **Evolutionary Theory**

The framework that aids in conceptualizing the current research is an evolutionary perspective where being physically fit is believed to be an adaptation and necessity (Orr, 2009). This entails how, evolutionarily speaking, males are needed to be dominant in size, strong, and to be attractive to their female counterparts in order to survive and reproduce. The ability to retrieve resources and to be physically attractive is an evolutionary advantage for males, which may be why some males today strive to fit this ideal image of masculinity (Orr, 2009). Females similarly could possibly strive to be fit for these reasons, including being more physically attractive to males and to appear to be more suitable to bear children. The present research is an attempt to investigate possible

reasons why both males and females have fitness-related goals and what motivates them to be physically active, and to have this publicized on social media.

It was hypothesized that in the context of evolutionary theory, males would be more likely to engage in physical fitness in order to compete and to have a physical advantage over their male counterparts, in addition to gaining strength and increase physical appearance. Furthermore, females would be more likely to be motivated to match an ideal 'fit' body, while males would be more likely to want to exceed this ideal model in regards to a fitness selfie. A previous based notion supported this idea that males would view other males as competition causing feelings of jealousy and insecurity, while females were actually inspired and motivated for physical fitness by other females by wanting to model this particular body shape, and therefore be motivated to achieve this look (Pritchard & Cramblitt, 2014). In addition, females may invest more in their physical appearance due to mate selection. It was found in previous studies that males tended to prefer physical attractiveness in their mates compared to females (Buss & Barnes, 1986) which could also explain why females would be more motivated to enhance their appearance. Lastly, those involved in fitness are more likely to have been previously victimized by bullies, which has lead them to be motivated to change their current body shape and/or lifestyle.

## **Objectives**

The purpose of the present research was to examine social media, bullying and victimization behaviors, along with physically fitness through an evolutionary perspective. In particular, the focus was how social media plays a role in how young adults view themselves along with how they view others, and what influence selfies have

on an individual's motivation to engage in physical fitness. Past experiences with bullying and/or victimization in childhood was also examined, and how having these previous experiences has lead individuals to engage in physical fitness.

## **Chapter 2: Literature Review**

### **Evolution and Physical Fitness**

The drive and necessity to be physically fit can be examined through the lenses of evolution and natural selection, where being physically fit was a means of survival rather than aesthetics. Orr (2009) reviewed how fitness plays a role in evolutionary genetics, and the advantages physical fitness has for individuals, specifically males. There are various fitness components that contribute to the total fitness of an individual: viability, mating success, and fecundity (Orr, 2009). The ability to maintain oneself, to successfully mate, and to be able to produce healthy offspring are all components for what it means to be physically fit in an evolutionary sense and show the importance, especially for males, of being able to mate and reproduce in order to survive.

Physical fitness has also correlated with social dominance, particularly among males and muscularity. Swami et al. (2013) found that the drive for muscularity was associated with social dominance orientation, authoritarianism, aggression, and the need for power (Swami et al., 2013). This is associated with physical fitness in a sense that ads in the media suggest that in order to be a real man, one needs to be muscular to be able to defend oneself (Swami et al., 2013). Being physical larger in size and stronger has become the ideal form of a man, which is why physical fitness has become a priority in today's society. Additionally, males could also strive to be physically fit due to the health benefits that are associated with an increase in activity. One previous study focused on how low physical fitness was a strong predictor of health problems, with the study consisting of 1411 young men within the military service in Finland (Taanila, Hemminki, Suni, Pihlajamaki, & Parkkari, 2011). Furthermore, the observed risk factors were in fact

modifiable with the proper aerobic and muscular training (Taanila et al., 2011). This research exemplifies how males are highly at risk for health problems, and that having good health is also needed. The study showed that low levels of physical fitness, poor school success, poor self-assessed health, and a high waist circumference were associated with premature discharge from military service (Taanila et al., 2011), meaning that these types of males were not capable to participate in military service. This suggests that lower physical fitness is correlated with additional health problems, and the importance of physical fitness for males specifically.

The adaptation of being physically fit has also been closely linked to bullying behaviors, both physically and relationally. Dane, Marini, Volk, and Vaillancourt (in press) collected data on physical and relational bullying and victimization. This included how genetic factors are likely to contribute to bullying indirectly and the willingness to bully such as physical strength and athleticism. In order to display these physical traits, males use physical bullying to be attractive to their female counterparts, since this signals the ability to provide resources and protection (Dane et al., in press). In addition, being tough and athletic was associated with perceived popularity and power (Vaillancourt & Hymel, 2006).

In terms of competition, intrasexual competition has been previously researched in terms of how genders compete with one another in order to obtain resources. A study conducted by Leenaars, Dane, and Marini (2008) investigated how females specifically competed with one another, in addition to being targeted for bullying. The results showed that females who rated themselves as highly attractive experienced higher indirect victimization, implying that females that were more attractive triggered envy in females

causing indirect aggression (Leenaars et al., 2008). Overall the study concluded that physical attractiveness was a risk factor for females, while this factor was protective for males, and that intrasexual competition among females is more likely to involve indirect or (relational) bullying (Leenaars et al., 2008). Relational bullying appears to be used more predominantly by female to avoid detection and reprisal that could result in physical injuries (Leenaars et al., 2008). Additional research has also investigated this type of aggression among both males and females. In a recent study, adolescent girls that had a higher amount of dating partners had greater odds of being relational bully-victims, along with those who had more sexual partners being at greater risk of being physically victimized (Dane, Marini, Volk, & Vaillancourt, in press). In terms of males, it was discussed that adolescent boys display strength and athleticism through physical bullying to facilitate intersexual selection (Dane et al., in press). The previous literature supports the idea that in terms of evolution, competition is adaptive in sense that both males and females experience these types of interactions in different ways in order to survive. This leads to how bullying is incorporated when competing with the same sex, and how this differs from general aggression where bullying is goal-directed and involves a power imbalance (Volk et al., 2012; Volk et al., 2014).

### **Bullying & Cyberbullying**

In addition to examining the link between evolution and physical fitness, it is necessary to investigate the evolution and adaptation of bullying and victimization. Volk, Camilleri, Dane, and Marini (2012) argued how bullying could be an evolved adaptive strategy that can serve various purposes for adolescents. Other authors believed that the three goals of evolutionary adaptation are survival and growth, securing mating

opportunities, and parenting (Trivers, 1972; Konner, 2010). In relation to evolutionary adaptations, bullying can be seen as a dominating behaviour that can have the result of gaining certain advantages such as securing mating and resources (Volk et al. 2012). In order to be successful in achieving both resources and mates, individuals need to be dominant and obtain power. The importance of dominance is associated positively with bullying and peer nominations, which can lead to dating and popularity among young adults and adolescents (Pellegrini & Long, 2003). By having high status in a peer group, it is more likely for males to attract females and to have affection from others, which leads to a wider range of mating choices. Overall, the authors argue that the behaviour of bullying may be a result of an evolutionary adaptation in order to obtain resources, mates, and status in society.

With the idea that bullying is an adaptive behavior, Book, Volk, and Hosker (2012) found that bullying was positively associated with instrumental, but not reactive types of aggression. The authors also suggest that bullies can engage in targeted aggression while having positive relationships, which challenges the stereotype that bullies are aggressive and negative (Smokowski & Kopasz, 2005). These bullies were seen to still be able to maintain supportive and healthy relationships while having the capacity to bully others (Smokowski & Kopasz, 2005).

Aggression has also been found to be an advantage from the evolutionary lens, where bullies are more likely to have traits associated with gaining better sexual opportunities along with having less negative mental health (Koh & Wong, 2015). The authors revealed that from their study, bullies had the lowest levels of depression and highest levels of self-esteem compared to victims, which exemplifies how the behaviours of

bullies and the amount of power they have over their victims actually causes bullies to suffer less mentally than their victims, and to experience higher social status and a greater ability to obtain sexual partners which was furthered analyzed.

Popularity and aggression are two of the many characteristics that are related to individuals who are most likely to bully. Reijntjes et al. (2013) found that high bullying was positively related to high social status in terms of perceived popularity. It is important to determine these characteristics so that researchers and practitioners can be aware of at-risk children and youth who may be potential bullies. Possible associations with bullying that were examined by Rech, Halpern, Tedesco, and Santos (2012) include maternal education, socio-economic status, nutrition, body image, gender, and age. Maternal education and socio-economic status determined the overall income the household had, but the two variables were not statistically significant in the study (Rech et al., 2012). It was found that body image and sedentary habits were associated with victims and perpetrators, whereas male gender was more prevalent among perpetrators (Rech et al., 2012). By classifying bullies and victims, a pattern can arise as to how we see and possibly stereotype the two groups, and to better understand how and why bullies and victims develop. There is also a gender difference found between males and females, where males are seen as competing for status while females search for status, correlating with risk-taking behaviours (Rech et al., 2012). Males tend to compete for this status through qualities such as domination, while females search for these types of males in order to gain their attention and furthermore mate with them. Those involved as victims were found to skip school, have insecurity, have fewer friends, and develop depression (Rech et al., 2012).

Gender differences in narcissism have also been found, and have been previously researched in connection to both direct and indirect bullying. Reijntjes et al. (2016) found a distinction between males and females, where high narcissism in females did not relate to more intense bullying, whereas for males, narcissism predicted elevated direct and indirect bullying (Reijntjes et al., 2016). The results also showed that those who engaged in high levels of bullying are high in social dominance, implying that narcissism is also linked to obtaining social dominance.

Mental health problems have been highly associated with bullying and victimization. In particular, with victims it has been found in recent research that disorders such as muscle dysmorphia (MD) is related to childhood victimization experiences and mental health problems within male bodybuilders (Wolke & Sapouna, 2008). It was found within the study that higher scores on the muscle dysmorphic inventory (MDI) predicted lower self-esteem and overall psychopathology. In all, childhood victimization and MD are strongly associated with concurrent anxiety, depressive and obsessive-compulsive symptoms and low self-esteem (Wolke & Sapouna, 2008). Physical appearance and perception have been found to be correlated with bullying experiences, specifically with past childhood victimization experiences. It is important to take into consideration how bullying and victimization can have future effects on individuals, using body image and muscle dysmorphia as a popular example that directs this current research. Wolke and Sapouna (2008) suggest that being physically victimized as a child is a contributor to the development of MD symptoms and psychiatric difficulties. Furthermore, engaging in extreme physical fitness, such as bodybuilding, may also be caused by childhood victimization which causes the individual to change his or her body shape in order to feel

a sense of accomplishment and improvement from his or her past (Boyda & Shevlin, 2011).

Additional research has also been conducted by researchers based on the relationship between MD and childhood experiences, along with levels of anxiety and depression among male bodybuilders (Boyda & Shevlin, 2011). It was found that there was a direct effect between victimization and MD, and that the anxiety that is developed from childhood victimization may contribute to reinforcing the feelings of body dissatisfaction (Boyda & Shevlin, 2011). Victimization, such as social exclusion, was found to have a large influence on self-image and self-evaluation (Boyda & Shevlin, 2011). The need to improve one's self from past experiences of teasing and ridicule can lead to an over-fixation on the body, to the point of dysmorphia. Body and muscle dysmorphia is one of the many important manifestations that can develop from childhood bullying experiences, and can help further explain how adolescents and young adults develop a drive to be physically fit.

A subtype of bullying that is the focus of the current research is cyberbullying, which has been a focus of great discussion in past literature. Menesini and Spiel (2012) discuss the consequences, risk, and protective factors of cyberbullying among children and adolescents. It was discussed that those who bully at school were more likely to be cyber bullies online. However, a certain percentage of those who are victims online do not report being bullied at school (Menesini & Spiel, 2012). These results imply that electronic bullying is not always an extension of traditional bullying, and that there may be certain features that differentiate the cyber bullies and the cyber-victims from the traditional bullies and victims (Menesini & Spiel, 2012). Additional literature has

touched on cyberbullying victimization, and the detriments of being bullied online as opposed to being a victim of traditional bullying. Tokunaga (2010) described victims of cyberbullying as being more likely to have lower self-esteem, higher levels of depression, and experience significant life challenges. With these characteristics described, it is important to understand those who are mostly targeted by cyber bullies. The author also describes the three necessary conditions in order for a situation to be considered cyberbullying: repeated behaviors, psychological torment, and carried out with intent (Tokunaga, 2010). Various definitions have also been offered to describe cyberbullying, including “any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others” (Tokunaga, 2010, p. 278) With the increasing rates of cyberbullying incidents, it is necessary to be aware of how similar the detrimental effects can be compared to traditional bullying, which is why cyberbullying in general is and should be of high concern for researchers and practitioners. Furthermore, examining other possible factors in cyberbullying such as fitness selfies and physical fitness should also be taken into consideration.

### **Motivation & Drive for Physical Fitness**

When focusing on the importance of physical fitness, it is necessary to have an understanding of why young adults have the drive and need to become physically fit in the first place. Archer and Thanzami (2009) examined the relation among mate value, entitlement, physical aggression, size versus fitness, and strength among Indian men, and found that the association with size and strength was relatively independent of that between physical aggression and mate value. This shows that the physical appearance

and level of strength in males had a large influence on mate value, where females took into consideration these characteristics. Direct physical aggression was correlated with perceived mate value, which shows the highest association with physical aggression in the sample (Archer & Thanzami, 2009). This can imply that physical aggression is determined by the size and strength of an individual, which shows that physical fitness does play a role in mate selection and how females perceive males. Furthermore, a possible drive for males specifically to become fit is for the first impressions of females.

Media can play a large role in influencing individuals to become physically active and motivated to be fit. Media such as social media, television, advertisements, and so on can have an impact on how individuals, especially adolescents and young adults, think and the decisions they make. Rysst (2010) investigated how magazines influenced Norwegian men's and women's body ideals and body practices. The results suggested that the men and women are governed by "healthism" and dominant body ideals depicted in media discourses (Rysst, 2010). Females were found to be highly influenced by media pressures to have the ideal body image, going to the extent of procedures such as plastic surgery and weight loss. Rysst (2010) also argues that this is a form of present day feminism since these practices of body augmentation are advertised in the media as having control of one's life. It was concluded that women and, increasingly, men have self-surveillance and are conscious about how they look (Rysst, 2010). Individuals have a high awareness of how they feel about themselves, and how others perceive them, which is why characteristics such as physical fitness are of high importance.

Fitness exemplars through social media platforms such as Instagram have become widely popular and have gained up to millions of followers online (Lockwood, Wong,

McShane, & Dolderman, 2005). Fitness exemplars include individuals who devote themselves to physical fitness, with some even making a career from it. These exemplars have become major motivational influences to their audiences that also strive for physical fitness. Lockwood et al. (2005) studied the impact of both positive and negative fitness exemplars on motivation to participate in physical fitness and found that participants were highly motivated by positive physical fitness exemplars, while participants were also motivated by negative physical fitness exemplars only when undesirable body shape consequences were more noticeable. This suggests that these exemplars can significantly impact and prompt individuals to consider a healthier lifestyle, which can be quite life changing for some.

The motivation to be thin and/or muscular plays a large role in how individuals change themselves physically. Where typically females strive for thinness and males for muscularity, Pritchard and Cramblitt (2014) found that the drive for both thinness and muscularity is not particular to women and men, and that these two body types influence both genders. This research suggests that the stereotypes of women wanting to be thin and men wanting to be muscular can be reformed with new forms of femininity and muscularity that are appearing in today's society.

Muscularity is one of the main stereotypes that males strive to achieve and which conforms with a hegemonic concept of masculinity. Action films popularly depict males as being buff and tough, which Morrison and Halton (2009) investigated in their previous study. It was found that there was little representation of under muscular and overweight males in action movies, and that muscular males were seen to be more favourable by having more positive outcomes, physical aggressiveness, romance, and sexual activity

(Morrison & Halton, 2009). By having popular movies have muscular men in their leading roles, it reinforces how society views masculinity and what the superior form of the male is.

Along with motion pictures, models in the media also have a significant effect on the ideal body for males and females. Halliwell, Dittmar, and Orsborn (2007) examined how male gym users and nonusers perceived these male models and how this perception affected their own self-image. Non-exercisers reported greater body-focused negative affect after viewing images of muscular male models, while gym users showed a tendency for less body-focused negative affect (Halliwell et al., 2007).

Health and fitness mobile applications on devices such as cellphones have also been engaging young people in more active lifestyles, which is an emerging trend in society today. Gowin, Cheney, Gwin, and Wann (2015) examined how college students in the United States utilized these apps and how it changed their fitness behaviours. It was found that most participants in the study actually met their fitness goals by using the app, and that using technology was an easy way of keeping track of their daily activities (Gowin et al., 2015). Overall, these types of applications have an impact and influence on the way college students engage in healthy lifestyles, and can be seen as one type of media platform that influences young adults and healthy living.

In addition to mobile applications being used as motivation for physical activity, wearable technology has been the latest trend that tracks physical activity such as speed, distance, and duration of exercise, which allows the individual to hold themselves accountable for their physical activity. Stragier, Evens, and Mechant (2015) analyzed how status updates based on individuals' physical activity motivated them to continue

with their physical progress and, furthermore, share this progress. The results indicated that intrinsic motivation was actually the determinant for a participant's willingness to share his or her physical activity through social networking sites, rather than extrinsic motivation. This implies that self-determination was a large factor in how much individuals posted their physical progress, rather than others motivating them to post such progress. Intrinsic motivation included altruism, information sharing, and self-monitoring, which had a significant impact on sharing physical activities on Twitter and/or Facebook (Stragier, Evens, and Mechant, 2015). Therefore, personal commitment and goal setting were the primary reasons for sharing personal growth online.

The rationale behind why individuals participate in working out and include fitness in their lifestyle is a crucial topic when examining the motivation behind physical fitness. Previous research has been done on reasons behind training in the gym, which include being more productive in general, having control over their own lives, and having a healthier mentality (Dogan, 2015). It was also said by gym users that the gym was utilized as an outlet from everyday stresses, which is another motivator to work out daily (Dogan, 2015). Life events have also been found to trigger motivation for gym use, as found in the study done by Stewart and Smith (2014). Incidents such as serious illnesses, family trauma, emotional distress, and bodily deterioration led participants in the study to develop a fitness lifestyle, with the majority of the participants having little interest in using the gym for self-improvement (Stewart & Smith, 2014). These findings imply that some gym users are forced to achieve a healthier lifestyle due to unexpected health and mental issues, which can change the attitudes they previously had towards fitness.

Additional factors that may influence the attitudes one has towards physical fitness include personality traits, which connected to the tendency one has to be dependent and involved in exercise. Miller and Mesagno (2014) found that narcissism and perfectionism were positively related to exercise dependence, independently and combined. The findings indicated that both of these personality traits may be important indicators of the level of fitness involvement one has, due to his or her self-oriented perfectionism and the need to have control of one's own body (Miller and Mesagno, 2014). Narcissism specifically can determine the amount of self-worth that individuals feel, and the actions that they take to inflate this self-worth. An example of inflating this self-worth and confidence is through exercise and the ability to change one's appearance. The ability to control one's physical appearance through weight loss, muscle gain, etc., can enhance one's narcissism with feelings of power and control. It was also found that narcissism and exercise dependence were gender specific, where females used exercise for weight management and males used exercise to achieve their ideal body image and took exercise to the extreme (Miller and Mesagno, 2014). This could be due to the fact that males were more likely to be narcissistic than females, which lead to their tendency to have the need to enhance their appearance and to obtain approval from others that they were physically attractive and fit (Miller and Mesagno, 2014). One form of narcissism that has recently grown into a culturally phenomenon are selfies and the appearance of them on social media.

## **Culture of the “Selfie” & Social Media**

It is evident that media platforms such as social media sites and smartphone applications have become intertwined with how adolescents and young adults establish their own identities, along with how they interact with others, which is why it is important to review how social media affects young people.

In addition to being able to communicate with others online, participants in social media also have the ability to share texts and photos with one another and with the public in general. Selfies have become a largely popular trend where individuals post photos online of themselves, alone or with others. These selfies can include a range of variations, from innocent self-portraits to provocative photos, which have led to dangerous trends such as sexting. It is essential to understand how becoming active in social media and being exposed online can have various effects on the individual.

A negative aspect that is associated with posting selfies online is reflected in the research of Mascheroni, Vincent, and Jimenez (2015) on girls’ posting semi-naked selfies online in order to receive “likes” on their photos. It was concluded that social media “likes” contributed to the identity construction of these young people, and that self-presentation was peer-mediated (Mascheroni et al., 2015). This implies that “liking” photos online is a form of validation and confirmation that the individuals are liked in real life and accepted by others. Along with this idea of self-presentation, it was shown in the research that individuals are constantly being represented online and validated because of the use of mobile communications. This constant connection to the online world can be both beneficial and detrimental to young people’s lives. In the instance of sexual selfies, females are more likely to position themselves for peer mediation and

pressure, where peers are more likely to intervene and to respond to these types of selfies. Furthermore, males blame females for positioning themselves as sexual in the first place (Mascheroni et al., 2015). The more connected individuals become to social media, the more they can subject themselves to others' negativity.

Comparing ones' self to others is also a significant concern when individuals subject themselves online because of the public display of photos and the exposure to others on various social media sites. Fardouly, Diedrichs, Vartanian, and Halliwell (2014) conducted a study on how the site Facebook can have a psychological impact on young women and their body image. It was found that women who spent more time on Facebook reported having a more negative mood, body dissatisfaction, and appearance discrepancies (Fardouly et al., 2014). Along with exposing oneself and becoming vulnerable, it is also necessary to consider how individuals are affected by their peers' activity online. A popular trend that has spread on the Internet, called "Thinspiration", has also had negative effects on women by portraying that the ideal body image for females is to be overly thin. Knobloch-Westerwick (2015) investigated the Thinspiration trend and found that there were two types of social comparisons that women engage in, including self-evaluation and self-improvement, which could explain the inconsistent findings and the paradoxical attraction to these thin-ideal messages (Knobloch-Westerwick, 2015). When presented with thin-ideal messages, a positive body satisfaction emerged where greater self-improvement increased this change, and greater self-evaluation reduced it (Knobloch-Westerwick, 2015). This implies that thoughts of self-improvement had a more positive effect on women than thoughts of self-evaluation.

Since social media use can be connected to the psychological well-being of individuals, much research has been conducted on how this can detrimentally affect young adults. Lee, Lee, Choi, Kim, and Han (2014) found that social media use for information about body image was negatively related to body satisfaction in Korea and the United States, while social media use for self-status seeking regarding body image is positively related to body satisfaction only in Korea (Lee et al., 2014). Cultural differences are also evident when collecting data on social media, and how different countries interpret and use these platforms, which is important to take into consideration. The authors also found that there were more similarities than differences when it comes to social media effects, one being the negative relationship between social media use for information and body image in both countries (Lee et al., 2014). Social media and what individuals post online can be a powerful tool for young adults and the types of information they access, which reflects how they feel about themselves mentally and physically.

Personality traits of people who do use social media have been linked to the amount of exposure they have online. Narcissism was one quality that has been highly correlated with taking and sharing selfies online. It has been found that since narcissistic individuals consider themselves to be physically attractive, they are more likely to post selfies in order to gain attention and admiration (Weiser, 2015). Similarly, posting selfies was also seen as a form of self-expression, rather than a vacuous activity, and gains much social and psychological meaning (Weiser, 2015). Further, past research has also related narcissism to selfie use and has correlated males' narcissistic tendencies to how much they post their selfies (Sorokowski et al., 2015). In the same study, females were found to

post more selfies but not to have narcissistic tendencies in comparison to males (Sorokowski et al., 2015). These gender differences that have been found in the past provide insight as to what types of males and females choose to participate in the selfie culture, and that there is a stronger correlation between narcissism and selfie use for males than females who post the same number, if not more, selfies, but may be more normative for females to post these types of images.

The factors involved in deciding to post a selfie online have also been recently researched in order to explain why individuals post these images, and how often it is done. Kim, Lee, Sung, and Choi (2016) investigated what makes people post their selfies on social networking sites, and found that the attitudes toward selfie-posting in general, subjective norms, narcissism, and perceived behavioural control were the main determinants of an individual's intention to post selfies on social networking sites (SNSs). Specifically, social relationships were considered to be the central motivational force since social influence played a key role in predicting these behavioural intentions of posting selfies (Kim et al., 2016). It was found by the researchers that receiving positive reactions online lead to higher levels of intention to post selfies. Furthermore, narcissism was also found to be significant in predicting an individual's intention to post selfies on SNSs due to the individual's inflated view of him or herself leading to an increase in selfie posting (Kim et al., 2016).

A similar study was also done by Sung, Lee, Kim, and Choi (2016), which investigated certain motivations that lead to selfie posting. The authors identified these four motivations, including: attention seeking, communication, archiving, and entertainment (Sung et al., 2016). Attention seeking entailed participants disclosing

content by and about themselves on social networking sites as a means of pursuing social validation goals, while communication entailed building and maintaining relationships within their social networking through posting selfies or indirectly through others' reactions to these photos (Sung et al., 2016). Archiving included using selfies as a way to document and record certain events or occasions, along with using them as memories. Lastly, entertainment was also a means for motivation in which individuals were simply bored and found selfies to be an escape and form of entertainment (Sung et al., 2016).

Further reasons why individuals may continuously post selfies online in association with narcissism include the idea of a self-reinforcement effect where narcissists take selfies more frequently over time, increasing the selfie production and feedback from others, which raises the levels of narcissism (Halpern, Valenzuela, & Katz, 2016). Past research has examined how taking selfies was actually an outlet for maintaining positive self-image and, in turn, increasing the levels of narcissism reported by users over time (Halpern et al., 2016). Therefore, it has been consistently found that there is a strong relationship between narcissism and the act of posting selfies online.

Gender differences have also been found to be significant when examining the patterns of posting selfies, and have been shown to have a large impact on the number of times that this occurs. Sorokowski et al. (2016) found that women in general posted more selfies online than men, which demonstrates how men and women differ in self-presenting behaviors on social media. Furthermore, men and women also differed in terms of selection of these pictures, where women were more concerned with the visual and self-reflecting aspects of their profile pictures. In terms of males posting selfies, it

was found that these types of males may differ from average male users of social media including narcissistic qualities (Sorokowski et al., 2016).

### **Research Questions of Current Study**

Past literature has shown that extensive research has been conducted on bullying and victimization, along with cyber bullying. In addition, there has been an increase in research conducted on social media but little has been done on the phenomenon of the selfie. Since technology is continuously developing and being integrated into the lives of individuals, it is necessary to investigate how trends such as selfies and, notably, fitness selfies are part of young adults' lives, and how being engaged and participating in this type of social media can be related to an array of psychological factors such as narcissism and self-esteem. As previously mentioned, the present study will examine the following research questions:

1. What are the differences between those who do take selfies compared to those who do not?
  - 1.1 In addition are there individual differences between those who engage in physical fitness compared to those who do not?
  
2. Are there individual differences between those who do take selfies compared to those who do not, in regards to narcissism, self-esteem, body image, emotionality, and honesty-humility?

3. Are females more likely to be inspired to match an ideal fitness selfie in terms of body shape?

3.1 In contrast, are males more likely to want to exceed this ideal body shape seen through a fitness selfie?

4. Are those involved in fitness more likely to have been previously victimized by bullies due to their previous body shape?

In addition, Table 1 outlines the variables that will be tested in order to determine if there are any significant correlations amongst selfie and social media use, physical activity, bullying experiences, cyberbullying experiences, narcissism, self-esteem, and body image.

Table 1.

*Predicted Independent Effects per Individual Variable*

<b>Variables</b>	<b>Selfie Use</b>	<b>Physical Activity</b>	<b>Bullying Experiences</b>	<b>Cyberbullying Experiences</b>	<b>Narcissism</b>	<b>Self-Esteem</b>	<b>Body Image</b>
<b>Selfie Use</b>				+	+	--	--
<b>Physical Activity</b>						+	+
<b>Bullying Experiences</b>					+		
<b>Cyberbullying Experiences</b>	+						
<b>Narcissism</b>	+		+			+	+
<b>Self-Esteem</b>	--						+
<b>Body Image</b>	--	+			+	+	

*Note.* +: Expected positive correlation, --: Expected negative correlation

## **Chapter 3: Methodology**

### **Overview**

In order to explore the phenomenon of the selfie in relation to bullying and victimization experiences, and fitness engagement, a mixed methodology approach was using incorporating both quantitative and qualitative methods of research. By using a mixed methods design, the comprehensiveness of the research was enriched and it was important to capture both the personal experiences of social media and fitness, along with measuring statistically the various personal attributes of the individuals. The two types of data analysis were examined separately to allow for comparison of findings across methods.

### **Participants**

Eighty-three male (n = 22) and female (n = 61) Brock University students participated in the study, ranging from 18 to 25 years of age. Participants had some knowledge of selfie usage and previous experience with physical fitness at some level.

### **Measures**

A series of questionnaires were compiled and answered by participants through an online database, Google Drive, designed to access bullying and victimization experiences, cyberbullying experiences, narcissism, honesty-humility and emotionality from the HEXACO model, selfie use and exposure, self-esteem, and physical fitness.

#### **Bullying & Victimization Measure (Farrell, Brook, Dane, Marini, & Volk, 2014)**

In order to obtain a general understanding of how often the participants have been involved in bullying, a bullying and victimization measure was used to determine how

many individuals were either bullies, victims, or bully-victims in the past. Questions included “how often have you been bullied by someone much stronger or more popular than you” and “how often have you taken part in bullying someone who was much weaker or less popular than you” (see Appendix A).

**Cyberbullying Form and Function Questionnaire (Marini & Dane, 2001)** The cyberbullying questionnaire measured the experiences of bullying through technology and electronic devices such as phones, texting, web posting, emailing, and social media use (Marini & Dane, 2001). The questionnaire contained two parts, which included actions done to the participants and actions participants have partaken in. Questions included “received mean and insulting comments on your Facebook wall”, and are answered on a scale that ranges from *never, a few times a year, a few times a month, a few times a week, to every day* (see Appendix B).

**HEXACO-PI-R Self-Report Form (Lee & Ashton, 2009)** The HEXACO Personality Inventory was used to determine specific dimensions of personality including honesty-humility and emotionality (Lee & Ashton, 2009). Questions included “people think of me as someone who has a quick temper” and are answered on a scale ranging from *strongly agree, agree, neutral, disagree, to strongly disagree* (Lee & Ashton, 2009).

*Honesty-Humility* is relevant to the research since it measures entitlement to social status and amount of self-importance, and is a suitable measure that relates to narcissistic tendencies when combined with extraversion (Book, 2016). Fearfulness and Anxiety scales were also used specifically to assess the tendencies to experience fear and worrying (Lee & Ashton, 2009), which combined can indicate the level of self-esteem

one has along with one's willingness to expose oneself to the public with confidence (see Appendix C).

**Dark Triad of Personality (Paulhus, 2013)** The Dark Triad of Personality scale was used to measure narcissism and the tendencies to express egotism, pride, and empathy, along with self-interest. Since taking photos of oneself is viewed as a narcissistic action, it is essential to take into consideration the levels of narcissism the individual has in general and how this may affect their level of activity in selfie posting.

Questions included statements such as "I have been compared to famous people" and "many group activities tend to be dull without me". Statements were rated on a scale ranging from *disagree* to *agree* (see Appendix D).

**Affect, Reason, and Involvement (ARI) Model (Sohn, 2009)** Sohn (2009) conducted a study based on the ARI model examining the impacts of social comparison on men and women and found significant gender differences in several key areas in the body image processes. It was concluded that the scale from the ARI model measuring body image involvement was found to be valid after conducting a convergent validity test (Sohn, 2009). Questions from the model include "I think that having an improved body image means a lot to me" and "I think that having an improved body shape will make me confident" (see Appendix E).

**Rosenberg Self-Esteem Scale (Rosenberg, 1965)** The self-esteem scale includes a list of statements that are answered on a Likert-type scale dealing with participants'

general feelings about themselves (Rosenberg, 1965). Questions included “at times, I think I am no good at all” and are answered on a scale that includes *strongly agree*, *agree*, *disagree*, and *strongly disagree* (see Appendix F).

Measuring the levels of self-esteem of the participants was required since the research revolves around body image and reasons why individuals become involved with physical fitness and changing their bodies. Self-esteem may predict how much physical activity occurs, and how much exposure a person has online via selfies and photo sharing since this involves levels of self-worth and confidence that one has.

**The Selfie Assessment (DiFonzo & Marini, 2014)** A questionnaire was developed for this study designed to assess the extent to which participants used selfie and social media sites. The activity of taking selfies is also measured and how often adolescents participate in posting photos online. Questions include “how often do you photo shop or filter your selfies before you post them”, and “how racy/sexual are the selfies you’ve seen”. Open-ended questions were also included such as “do you enjoy viewing other people's selfies, do they ever annoy you, and why” (see Appendix G).

Selfie use is necessary to inform the researchers of approximately how much the individuals are participating and being involved in social media, and if this has a large effect on their self-image and physical activity. Knowing the amount of social media use helps the researchers to understand how much young adults are being consumed by online activities and, specifically, within what age groups.

**Physical Fitness Assessment (DiFonzo & Marini, 2016)** A survey was created in order to assess and measure how much physical activity each participant is involved in. Questions include how often the individual attends the gym, and whether they post fitness selfies on social media (see Appendix G).

### **Procedure**

The design of the study was a mixed methodology, where both quantitative and qualitative datum were collected. Quantitative data were collected from the above measures and primarily measured on Likert-type scales, along with demographic statistics such as “amount of times one posts selfies” to “amount of times one goes to the gym”. Qualitative data comprised of five open-ended responses participants completed in the *Selfie Assessment* and *Physical Fitness Assessment* regarding participants’ personal views on the pertaining subject matter.

Once the study was granted REB clearance (see Appendix H), participants were recruited via posters displayed on the Brock University campus (see Appendix L), along with word-of-mouth and social media advertisement. Interested participants contacted the researchers through Brock email stating that they were willing to participate, and from there were sent a letter of invitation (see Appendix J), consent form (see Appendix I), and link to the online questionnaire. Paper and pencil procedures were also an option, but were not requested. Participants’ emails were then collected for a draw for 1 of 4 gift cards valued at \$25. Participants agreed to consent when accessing the survey document. Once participants accessed the Google Drive form, they anonymously submitted their responses by clicking “submit” at the end of the questionnaire. All results were stored

and accessed by the researchers through Google Drive. Participants would also receive a feedback letter if requested (see Appendix K).

## Chapter 4: Results

### Data Analysis

**Initial Analysis:** Data from participants were submitted through Google Drive, and in turn converted into an Excel spreadsheet and imported into IBM SPSS Statistics version 22, where statistical analysis was completed. Variables from the selfie assessment and physical fitness assessment were coded accordingly by giving numerical values to each response in order to be further analyzed. Measures that had Likert-type scales were made into composite variables so that the means could be obtained for each participant per measure. The reliability of the measures was checked through SPSS, and all were confirmed reliable with the Cronbach's alpha being between .60 and .90.

When conducting a first basic screening of the data, it was noted that participant 5 did not complete over half of the questions, and therefore was removed from the dataset resulting in a total population sample of 83 ( $N= 83$ ). A missing data analysis was also conducted to confirm that there was no pattern in the missing data, with variables ranging from 0% missing to 4.8% missing (selfie assessment question regarding negative comments from individual). There was no pattern in the missing data since 4.8% is under the cutoff of 5% for missing data in a dataset (Tabachnick & Fidell, 2007) and because it was important to keep the sample size ( $N = 83$ ) mean substitution was used to deal with the missing data. The new dataset was compared against the non-replaced data and there were no significant differences.

Variables used in the study were additionally scanned for issues of skewness and kurtosis. The variables that were initially flagged for these issues were the bullying demographic scale and cyberbullying scale, but with further investigation it was found

that this was due to a large range of participants who did not experience bullying versus some who did have experiences. Since it was necessary to keep both types of groups in the dataset (those who did experience and those who did not experience bullying), the participants and data were kept in the dataset in order to conduct further analysis on bullying and cyberbullying experiences.

**Descriptive analysis:** A descriptive analysis was conducted to obtain the overall percentages and frequencies of the sample ( $N = 83$ ) regarding certain demographic questions such as age and gender, as seen in Table 2. More females overall participated in the study ( $n = 61, 73.5\%$ ), whereas there was almost an equal amount of younger and older participants who were grouped between 17-20 ( $n = 40, 48.2\%$ ) and 21-25 ( $n = 41, 49.5\%$ ). Participants who identified as “other” and older than 25 consisted of 2.4% of the population ( $n = 2$ ). Table 2 displays the demographics and frequencies of the general use of selfies and physical fitness.

Table 2.

*Demographic Data: Sample Composition*

<b>N = 83</b>		
<b>Gender</b>	Males	22 (26.5%)
	Females	61 (73.5%)
<b>Age</b>	17-20	40 (48.2%)
	21-25	41 (49.5%)
	Other (older than 25)	2 (2.4%)
<b>Technological Devices Owned</b>	2 or less	34 (41%)
	3 or more	49 (59%)
<b>Social Media Applications</b>	0	2 (2.4%)
	1	3 (3.6%)

<b>Used</b>	More than 2	78 (94%)
<b>Hours Spent On Social Media Per Day</b>	0	1 (1.2%)
	1-3	68 (81.9%)
	More than 4	13 (15.7%)
<b>Post Selfies Online</b>	Yes	64 (77.1%)
	No	19 (22.9%)
<b>Selfies per Month</b>	1-3	59 (71.1%)
	4 or more	9 (10.8%)
	N/A (do not post selfies)	15 (18.1%)
<b>Times per Week Going to the Gym</b>	1-3 times	23 (27.7%)
	4-5 times	27 (32.5%)
	Everyday	8 (9.6%)
	Do not go to the gym	24 (28.9%)
<b>Motivated from Fitness selfies</b>	Yes	58 (69.9%)
	No	23 (27.7%)
<b>Extent of Viewing Revealing Fitness Selfies</b>	Fully Clothed	8 (9.6%)
	Partially Revealing	27 (32.5%)
	Almost/fully nude	48 (57.8%)

As mentioned previously, composite variables were created for the bullying and victim survey (separating the two), cyberbullying survey (also separating the victim and the bully), narcissism variable, self-esteem variable, body image, and personality scales separating honesty-humility and emotionality. Table 3 displays the means and standard deviations of the composite variables.

Table 4 shows the correlations among these composite variables in addition with how they correlate with the amount of selfie use and physical activity one engages in.

Table 3.

*Means and Standard Deviations for All Composite Variables*

Variable	<i>M</i>	<i>SD</i>
Bullying – Victim	2.22	1.03
Bullying – Bully	1.45	.55
Cyberbullying – Victim	1.27	.45
Cyberbullying – Bully	1.13	.19
Narcissism	2.89	.65
Self-Esteem	2.35	.67
Body Image	3.85	.68
Personality – Honesty-Humility	3.51	.52
Personality – Emotionality	3.60	.53

**Quantitative Analysis: Selfies and Social Media Use, Gender and Physical Activities**

Table 4 shows the correlations among these composite variables and how they correlate with the amount of selfie use and physical activity one engages in.

Table 4.

*Correlation Table of all Composite Variables plus Selfie Use and Physical Activity*

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Selfie Use	--	-.06	.12	-.05	.21	.06	-.04	.12	-.04	.10	.15
2. Physical Activity		--	.08	.06	-.06	-.11	-.20	.54**	.31**	-.39**	.22*
3. Bullying-Victim			--	.25*	.35**	.06	.31*	-.04	.13	-.08	.15

4. Bullying-Bully	--	.32**	.48**	-.02	.15	.02	-.25*	-.1
5. Cyberbullying-Victim	--		.56**	.09	.00	-.04	-.14	.07
6. Cyberbullying- Bully	--			.02	-.01	-.09	-.17	-.12
7. Self-Esteem	--				-.34**	.23*	-.05	-.01
8. Narcissism	--					.35**	-.32**	-.21
9. Body Image	--						-.20	.18
10. Personality- Honesty-Humility	--							.21
11. Personality- Emotionality	--							

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*Note.* Gender: 0 = male, 1 = female.  
Age: 0 = 17-20, 1 = 21-25, 2 = Other  
\*  $p < .05$ , \*\*  $p < .01$

**Gender and Age Differences.** Table 5 displays the frequency comparisons between genders in regards to physically activity and fitness selfies. In order to compare frequencies between genders, the dataset was split into “male” and “female” and from there a frequency analysis was conducted. It was necessary to analyze these gender differences in terms of engagement in fitness and fitness motivation. When asked what consisted of these workouts participants engaged in, 59.1% of males reported including both cardio and strength training, with 27.3% reporting only doing strength training. In comparison, 62.3% of females also incorporated both cardio and strength in their workouts, and only 31.1% did cardio.

Regarding gender differences in posting fitness selfies, 86.4% of males never have taken or posted a fitness selfie, whereas 67.2% of females also have never engaged in this

behavior. When asked how often the participants liked others' selfies in terms of fitness, 45.5% of males reported never whereas 36.1% of females reported both multiple times a week and once a month equally. When asked if participants were motivated to become physically active after viewing these fitness selfies, 59.1% of males reported no and 82% of females reported yes. In addition, 59.1% of males reported no sense of jealousy when seeing these photos and 75.4% of females did feel a sense of jealousy when viewing fitness selfies.

Table 5.

*Frequencies of Physical Activity and Selfie Engagement between Genders*

		Males (n = 22)	Females (n =61)
<b>What do your work outs consist of?</b>	Cardio	3 (13.6%)	19 (31.1%)
	Strength	6 (27.3%)	2 (3.3%)
	Both	13 (59.1%)	38 (62.3%)
<b>Have you ever posted a fitness selfie?</b>	Yes	3 (13.6%)	20 (32.8%)
	No	19 (86.4%)	41 (67.2%)
<b>How often do you like a fitness selfie?</b>	Multiple times/ day	3 (13.6%)	10 (16.4%)
	Multiple times/ week	5 (22.7%)	22 (36.1%)
	Once a month	4 (18.2%)	22 (36.1%)
	Never	10 (45.5%)	7 (11.5%)
<b>Have you ever been motivated to become physically active after viewing a fitness selfie?</b>	Yes	8 (36.4%)	50 (82%)
	No	13 (59.1%)	10 (16.4%)
	N/A	1 (4.5%)	1 (1.6%)
<b>Have you ever had a sense of jealousy after viewing a fitness selfie?</b>	Yes	9 (40.9%)	46 (75.4%)
	No	13 (59.1%)	15 (24.6%)

In order to examine any significant differences between age groups and genders, an analysis of variance was conducted for each grouping variable against all other factors. In terms of gender, bullying was significant between males and females,  $F(1, 81) = 5.503$ ,  $p = .02$ , where males had higher bully scores than females ( $M = 1.68$ ,  $SD = .80$ ), ( $M = 1.37$ ,  $SD = 1.37$ ). Narcissism was also significant,  $F(1, 81) = 5.388$ ,  $p = .02$ , where males scored higher on narcissism than females, ( $M = 3.16$ ,  $SD = .59$ ), ( $M = 2.79$ ,  $SD = .65$ ). Lastly, emotionality was significant,  $F(1, 81) = 20.600$ ,  $p = .00$ , where females had higher emotionality scores than males, ( $M = 3.74$ ,  $SD = .48$ ), ( $M = 3.20$ ,  $SD = .47$ ).

In terms of age differences, only victimization appeared as significant,  $F(2, 80) = 4.44$ ,  $p = .01$ . A post hoc Tukey test showed that the older age group who reported to be older than 25 years of age had higher victimization scores ( $M = 4.16$ ,  $SD = .23$ ) than both the 17-20 age group ( $M = 2.05$ ,  $SD = 1.01$ ), and 21-25 age group ( $M = 2.28$ ,  $SD = .98$ ).

**Selfie Use and Physical Activity: Individual Differences.** In order to determine any possible group differences in the frequency of taking selfies, an analysis of variance was conducted for all variables while using the range of selfie-taking as the grouping variable. A post hoc Tukey test showed that those who did not post selfies and those who posted at least once per month differed significantly on the emotionality scale,  $F(2, 80) = 3.81$ ,  $p = .026$ , where those who posted selfies at least once had higher emotionality. The group with the higher selfie taking behavior (over 4 per month) did not differ significantly from those who did not post selfies at all.

When examining possible group differences in the frequency of physical activity, narcissism proved to be significant among a number of groups. The post hoc Tukey test showed that those who worked out 1-3 times per week compared to the rest of the groups (those who do not work out, those who worked out 4-5 times per week, and those who worked out every day), scored highest in narcissism at  $p < .05$ . Furthermore, those who did not work out at all compared to those who did 4-5 times per week also scored higher on the narcissism scale at  $p < .05$ .

Body image was also deemed as significant between those who worked out 1-3 times per week and those who worked out every day,  $F(3,78) = 3.69$   $p = .04$ . The group that worked out consistently everyday scored higher on body image, meaning that they had higher concerns with their bodies and self-image.

**Qualitative Analysis.** Participants responded to a series of open-ended questions pertaining to their personal opinions and views of the trend of selfies along with their motivation to attend the gym or work on personal fitness. Responses were submitted online within the questionnaire, collected, and coded through the use of Microsoft Word. Common themes were coded by two levels from the statements given to each of the five questions, which allowed for insight into the participants' perceptions of the topics discussed regarding the current research. Open-ended questions included:

- 1) Why do you choose to post selfies online? If not, why do you not post selfies online?
- 2) Do you enjoy viewing other people's selfies? Do they ever annoy you? Why?
- 3) Do you think selfies will be a permanent or fading trend in social media? Why?
- 4) What goes into the decision-making process before you post a selfie? (I.e.

Characteristics of the photo)

5) What are your main reasons for going to the gym?

### **Question 1**

The first question regarding if the participant posted selfies was coded by two levels, the first being if the individual did or did not participate in selfie posting. After grouping the statements, a second level of coding was conducted based on common themes that arose or commonalities that the majority of participants agreed on. As shown in Table 6, the majority of participants did partake in posting selfies. Within the group that did post selfies, reasons as to why they posted these photos included *confidence boost*, *documentation of life events*, *conformity/ norm*, *connecting with others*, and *positive self-image/sense of purpose* (Table 6). Statements included:

“To [boost] self-confidence! To share my happiness when I am having a good day”

(response 1, female, 17-20 years of age)

“I want to document my emotions and how certain events made me feel” (response 38,

female, 17-20 years of age)

“It’s nice to see people like your selfies and see nice comments” (response 34, female,

21-25 years of age)

Participants who did post selfies found social media to be a positive outlet for self-expression, along with being able to obtain self-identification and validation from others. Individuals who engaged in posting selfies either already felt confident about the photo or wanted to gain additional confidence through views of and comments on the particular photo. In addition, a highlighted theme was that selfies were seen as a modern form of

documentation, where people once took photos and printed them as keepsakes now they are saved on social media platforms. This was seen as a way to update friends and family online about current events, which exemplifies how this type of technology is used as yet another form of communication. Some participants also noted how posting selfies gave them a sense of purpose and was a way to show others “that I am here”.

Within the group that did not post selfies, reasons as to why they did not included *thinking it was attention seeking*, and *feeling a sense of judgment or rebelled against concept* (Table 6). Statements included:

“I don’t post selfies because I find them to be self-centered and more about gloating/ego inflation and necessity rather than on actual pride or purpose” (response 4, male, 21-25 years of age)

“I feel that I will be looked at weirdly as a guy posting selfies” (response 16, male 21-25 years of age)

“I think people who post selfies are fishing for attention” (response 13, male, 21-25 years of age)

Table 6.

*Question 1: Why do you choose to post or not post selfies online? (n = 74)*

<b>Pro-Selfies (n = 62)</b>	<b>Anti-Selfies (n = 12)</b>
<i>Confidence boost</i>	<i>Attention seeking</i>
<i>Documentation</i>	<i>Sense of judgment</i>
<i>Conformity</i>	<i>Rebelled against concept</i>
<i>Connecting with others</i>	
<i>Positive self-image</i>	

## Question 2

The second question regarding the opinions of viewing others' selfies was also coded by two levels, the first being if the individual enjoyed or was annoyed by other people's photos, while the second coding were the reasons why participants had these specific attitudes towards selfies. It was difficult to clearly group the statements since almost all of the participants indicated that they both liked and disliked selfies for various reasons, mainly due to excessiveness of photos and if the selfies were from a friend or not. This caused mixed opinions and some participants were counted twice in Table 7. After grouping the responses, a second level of coding was conducted based on reasons why the individual did not enjoy viewing selfies. Among the group that did enjoy selfies, themes included *pure enjoyment* and *personal motivation* (Table 7). Statements included:

“Yes I enjoy viewing other people's selfies because it's nice to see when people feel confident enough to post pictures of themselves” (response 10, female, 21-25 years of age)

“I mostly enjoy it because I like seeing what my friends post” (response 9, female, 17-20 years of age)

“Yea because you wish to look like them” (response 64, female, 17-20 years of age)

“I do enjoy viewing other people's selfies, I love seeing how my friends and acquaintances and even people I don't know expressing themselves...” (response 17, female, 21-25 years of age)

There were also distinctions made by participants between viewing a friend's selfie versus viewing a stranger's selfie; selfies by friends were highly enjoyed and accepted whereas selfies from strangers were more likely to be irritating.

The majority of participants were typically annoyed by selfies. Within this group, reasons included the *excessiveness of photos, revealing photos, attention seeking, and deception* (Table 7). Statements included:

“People who post daily selfies can be annoying. It becomes repetitive and appears as though the individual is posting for gratification or attention” (response 1, female, 17-20 years of age)

“Other people's selfies annoy me because they generally seem to be 'likebaits' rather than meaningful posts. Often posted with empty/shallow captions, etc.” (response 4, male, 21-25 years of age)

“[When] they are extremely photo shopped and the person looks opposite in person” (response 40, female, 17-20 years of age)

“Sometimes they annoy me when I know the person in the picture at that moment in time was actually not as happy or real as they say” (response 67, female, 21-25 years of age)

It was frequently mentioned by participants that the excess of selfies was the main reason why they were annoyed by them in the first place. The “abuse” in selfie posting including posting too many photos within a day or week, revealing too much of one's self, and even noticing the deceiving physical looks due to filters, photo-shopping, make-

up, etc. These deceiving photos also created a sense of jealousy for select participants, to the point where they wanted to look or be them and therefore were annoyed by the selfie. Displaying certain emotions that the selfie-user was not currently feeling was also noted by individuals, such as showing happiness when the person was not actually happy at the time. This could have been reported by those who were close friends with the person and knew the selfie-user personally.

Table 7.

*Question 2: Do you enjoy viewing other's selfies or do they annoy you? (n = 81)*

<b>Enjoy selfies (n = 53)</b>	<b>Do not enjoy selfies (n = 64)</b>
<i>Pure enjoyment</i>	<i>Excessiveness of photos</i>
<i>Personal motivation</i>	<i>Revealing photos</i>
<i>Friend's Photos</i>	<i>Attention seeking</i>
	<i>Deception</i>

### **Question 3**

The third question addressing if selfies would be a permanent or fading trend was coded by two levels; those who believed that the selfie trend would be permanent and those who believed that it would be fading. Among the majority of the group who believed that selfies were permanent in society, reasons included due to its being a *form of validation, a new form of art, a self-obsession, a convenience, and due to an increasing use of technology* (Table 8). Statements included:

“Permanent – however I think there is a new trend with people having a social media page with an aesthetic. So individuals may switch from traditional selfies to a more artistic selfie” (response 1, female, 17-20 years of age)

“I think it will be a permanent trend in social media because everyone wants to be complimented or feel wanted by their friends [and] peers; the attention is addicting”  
(response 5, female, 21-25 years of age)

“Permanent, people will always like to show off what they’re doing, or what they’re wearing. Our society and economy thrive on narcissism and making oneself look better”  
(response 30, female, 17-20 years of age)

“I think they will be a permanent trend. When people like your photos and constantly comment on how attractive you are, it’s a great confidence booster and people want to hear that so they will keep posting them” (response 78, female, 17-20 years of age)

It was highly common that participants believed that taking selfies will always be a reoccurring trend with some people suggesting that selfies can be seen as an “addiction” and how society has become self-obsessed, feeding into the selfie trend. In addition, since selfies are convenient ways to self-express with many mobile phones now including front-facing cameras; this encourages the idea of the selfie that allows it to continue to grow.

Among those who felt that selfies would be a fading trend, limited reasons were given as to why they believed this to be true. Participants simply believed that since selfies

were a trend and that this would change over time. Some participants wanted to believe they would fade but knew that it would not. Statements included:

“I feel that selfies are already starting to diminish. They are not as common to see as they used to be on social media” (response 16, female, 21-25 years of age)

“Fade, something else will trend” (response 20, male, 17-20 years of age)

“Probably fading like everything else that ‘trends’. A lot of people are realizing that they are getting annoying” (response 36, female, 21-25 years of age)

“I hope they are a fading trend but I can see them as being permanent” (response 25, female, 17-20 years of age)

Table 8.

*Question 3: Do you think selfies will be a permanent or fading trend? (n=81)*

<b>Permanent Trend (n = 72)</b>	<b>Fading Trend (n = 7)</b>
<i>Self-validation</i>	<i>Changing trends</i>
<i>Form of art</i>	<i>Hope to fade</i>
<i>Self-obsession</i>	
<i>Convenience</i>	
<i>Increasing use of technology</i>	

#### **Question 4**

The fourth question addressing the decision-making process before posting a selfie was coded by two levels, the first being if the participant mentioned either physical

features or emotional features, and second being specific features of each trait. Physical features were characterized by *facial characteristics*, *body shape*, and *lighting/environment*. Emotional features were characterized by *personal satisfaction*, *validation from audience*, and *displaying happiness* (Table 9). Statements included:

“How I feel about the photo. Whether or not I think it is ‘normal’ or will be well accepted” (response 4, female, 17-20 years of age)

“Whether or not the lighting makes me look tanned or pale. Whether or not my eyes/make-up looks pretty. I sometimes admit, I try and guess how [many] likes I will get on my photo on Instagram or Facebook” (response 13, female, 21-25 years of age)

“I use to post at a certain time of day when most users were on (maximize likes), I still know people who do that” (response 39, male, 17-20 years of age)

“If I look happy/like I’m enjoying myself and have someone with me” (response 46, female, 17-20 years of age)

Having the best version of ones’ self was critical to participants when deciding to post a certain selfie, since it is an overall representation of the person and could be a first impression for some viewers. It was important to participants that all aspects of the face were flattering, including a clear face and happy expression. Only positive and “good” features were seen to be as the most important to show, and were the only ones mentioned by participants. Flaws of the person were also mentioned, and what the participants did to hide them in the selfie, including using certain lighting or filters on the photo in order to achieve more of a flawless look. Posing or positioning in order to hide

“double chins” and body shape was also mentioned, showing how weight and body image were also taken into consideration.

Timing of the photo being posted was interestingly pointed out in the decision-making process of selfie posting, and how it was important that the optimal number of people saw the photo, and some even posted at certain times in order to obtain a high amount of publicity.

Table 9.

*Question 4: What goes into the decision-making process before you post a selfie?*  
(n = 68)

<b>Physical Features (n = 57)</b>	<b>Emotional Features (n = 12)</b>
<i>Facial characteristics</i>	<i>Personal satisfaction</i>
<i>Body shape</i>	<i>Validation from audience</i>
<i>Lighting/ Environment</i>	<i>Displaying happiness</i>

**Question 5**

The final question based on reasons participants go to the gym or keep physically active was coded by two levels; the first being types of reasons, which included *physical improvement, mental wellness, personal health, and training*. The second stage of coding is listed in Table 10. Statements included:

“Decrease anxiety. Increase positivity and confidence. I need to train as an athlete”

(response 3, female, 17-20 years of age)

“Mental health/suicide prevention, increasing body weight from underweight to [a] healthy weight” (response 5, male, 21-25 years of age)

“I want to be strong. I am health conscious and fitness makes me feel better, stronger, and healthier” (response 32, female, 21-25 years of age)

“I don’t go to the gym but I join sports teams at school to work out and work on long distance running since I like to feel fit and healthy. It’s also a great feeling to see improvement on how you go and how much you can handle. It may be really hard and not so fun during the work out, but afterwards if you try hard, it feels very rewarding” (response 12, female, 17-20 years of age)

Physical activity, along with selfie-taking, was connected to the self-confidence of participants, and how this was yet another outlet to boosting self-esteem and striving for the best version of oneself. A high number of participants reported that improvement in physical appearance was why they engaged in physical fitness, and this was also paired with wanting to feel “good” about themselves and how having a healthy mental well-being was also a reason. Many participants listed multiple reasons why they attended the gym, which were charted in Table 10.

Table 10.

*Question 5: What are your main reasons for going to the gym? (n=77)*

Physical improvement (n = 54)	Mental health (n = 20)	Personal health (n = 11)	Training (n = 6)
<i>Lose/Gain weight</i>	<i>Reduce stress/anxiety</i>	<i>Longevity</i>	<i>Sports</i>
<i>Gain strength</i>	<i>Increase confidence</i>	<i>Maintain health</i>	<i>Careers</i>

**Bullying and Cyberbullying Experiences.** Using the bullying, victim, cyber bully, and cyber victim as the dependent variables, a multivariate analysis of variance (MANOVA) was conducted in order to analyze any significant relationships in comparison to selfie use, physical activity, self-esteem and body image. The test reported insignificant relationships among these variables.

Notably, there were significant positive correlations within the bullying, victim, cyber victim, and cyber bully variables. Victim experiences and bully experiences ( $r = .25, p < .05$ ), and victim experiences and cyber –victim experiences ( $r = .35, p < .01$ ) were positively correlated. Bully experiences were positively correlated with cyber –victim experiences ( $r = .32, p < .01$ ) and cyber –bully experiences ( $r = .48, p < .01$ ). Lastly, cyber-victim experiences were positively correlated with cyber-bully experiences ( $r = .56, p < .01$ ).

## **Chapter 5: Discussion**

The purpose of the current research was to investigate how selfies and social media influence the motivation and involvement in physical fitness, in addition to how past bullying and cyberbullying experiences were linked to the need to be physically fit. Since minimal research has been done on the selfie phenomenon itself due to the novelty of the concept, it was critical to gain a better understanding of how the culture of taking selfies impacts on young adults at a deeper level.

### **Selfie Use and Physical Activity: Individual Differences**

When exploring the demographics and frequencies of the present study, it was clear that social media and technology use were highly prevalent among the young adults who were collected in the sample. Fifty-nine percent of the participants owned more than 3 technological devices, while 94% had more than 2 social media applications on their mobile phones. When it came to taking selfies, 71.1% of the sample did in fact post their selfies online at least 1-3 times per month. With young adults and even younger generations becoming increasingly consumed with technology use, it is not surprising that the idea of the selfie has become a cultural norm, and why there are both benefits and consequences to exposing oneself online.

Through the themes that arose from the responses given about social media use and selfie exposure, many opinions were generally agreed upon including how posting selfies was a tool to gain confidence and validation from peers, which in turn continued the trend to be exposed online. This sense of gaining self-esteem seemed to have high importance for these individuals since this was a major theme that came across in their responses when posting selfies, yet selfie-taking and self-esteem did not correlate with one another

in the scales. One explanation that could be possible is that there may be a difference between confidence and self-esteem, where these individuals who are engaging in selfie-taking in fact already have a sense of self-esteem but want some sort of validation towards how they present themselves online.

The idea of establishing an identity and presence online also connects to how frequently a selfie user posts. One participant commented that a reason that she/her posted a selfie was simply to show “that I am here” and overall gave him/her a sense of purpose by appearing online. Being highly prevalent online, in contrast, was seen to be a negative concept among the participants, where over-exposure was categorized as being “annoying” when asked if selfies annoyed them. Within the sample, only 10.8% stated that they did post four or more selfies per month, implying that only a handful of individuals in the study over used and over exposed themselves online. Past research indicates that this frequency in posting selfies could be due to the positive feedback the individual receives and, in turn, that it creates a cycle of posting more in order to receive more positive commentary (Kim et al., 2016).

When it came to selfies that showcased physical fitness, there were also various costs and benefits that emerged when the whole body was involved in the selfie. This gave a different meaning to the term “overexposure” where certain selfies were overly revealing which also was commented on as being as annoying in the responses. Fifty-eight percent of participants claimed to have witnessed almost nude to fully nude fitness selfies online, which is a very high number and shows how individuals are presenting themselves when it comes to fitness. This area of posting sexual selfies, or sexting, was not specifically focused on but is an area of research that is related to how individuals represent

themselves online to the extremes of sexual exposure. At the same time, 69.6% were in fact gaining motivation from viewing these selfies but some also claimed to become jealous when these images of “fit” bodies appeared on their social media. These mixed emotions that appeared in both the responses and demographics is worth investigating, and how these feelings of jealousy could possibly promote this motivation for physical fitness. Depending on the definition of what “fit” is, this could have both positive and negative influences on the individual. Where some may gain motivation as shown in the current study, past research has shown the opposite effect where individuals, specifically females, would have lower self-esteem when presented with thin bodies online (Knobloch-Westerwick, 2015).

Motivation to be physically fit was found to be on a spectrum for the participants, ranging from physical improvement to basic training. The majority of participants stated that they wanted to change or improve their physical appearance, which can be categorized as an aesthetic reason to be physically fit. Participants wanted to change physically through either weight loss or even weight gain (muscle-building), and to overall gain strength through weight training. Through an evolutionary lens, being aesthetically fit could be adaptive in a sense that an individual wanting to improve physically also wants to be more physically attractive, which has become a new type of adaptation in today’s society. Past research has supported this claim by examining the relationship between sex-typical body shape and quality indicators (Sim, 2013). Sex-typical body shapes were defined as a man’s muscular physique and a women’s hourglass figure, which were outcomes that support evolutionary adaptations in reproductive fitness (Sim, 2013). These particular body shapes were highly desired for individuals of

opposing sexes since they conveyed information about gene quality, health, and fertility (Sim, 2013). A man's overly muscular stature could convey signs of success and ability to protect, while a woman's wider hips convey the fact that she can bear children well (Sim, 2013). In today's society, men and women still aspire to these body shapes and certain types of bodies are often idealized in the media, and now in new forms of social media. In the current research, only a few specifically defined what it meant to look "good"; the majority just simply stated the reason why they went to the gym or worked out was to "look good". This term was very broad and difficult to categorize, since this idea of looking good can vary from person to person. A specific trait a male participant identified was "first [it] was to get bigger and get girls, now it's mainly for confidence and feeling good about myself, plus I'm hooked on the pump, it's an addictive adrenaline feeling" (response 41, male, 17-20 years of age). This quote provides an excellent summary of the many reasons why males specifically engage in physical fitness, and how initially some aim for a muscular body in order to impress the opposite sex and to be overall bigger, but then gradually do it for themselves. This common theme of working out for one's self and to feel good was also quite common, which implied a possible development as to why people engage in physical activities, starting from self-absorption and perhaps ending by engaging in activities that benefit one's self. Narcissistic tendencies are even seen in fitness motivation, which shows how narcissism and physical fitness are closely related.

It was apparent, but less common, for participants to state that the purpose of physical activity was to simply maintain or improve their health and longevity, which coincides with the idea of evolutionary theory that being physical fit is a means to be able to obtain

resources, and health expectancies would be necessary for this (Orr, 2009). Due to the rise in mental health issues among university students in general, as had been expected one of the reasons for attending the gym within the current sample was due to addressing these issues such as a stress, anxiety, and depression which is common for young adults in university (Wahed & Hassan, 2016).

When investigating differences between those who consistently took and posted selfies and those that did not, it was found that those who engaged in posting selfies at least once had higher emotionality than those who did not post at all. This may be due to the fact that selfies are seen as a form of expression and validation, so those who need more emotional support and experience social anxiety may turn to social media as an outlet for receiving acceptance in that community. In addition, these feelings of anxiety that contribute to high emotionality may be triggered by being exposed online when posting the selfie. “Liking” photos online has become a powerful tool according to past research (Sherman, Payton, Hernandez, Greenfield, and Dapretto, 2016) and it was shown in the sample that the majority of participants did expect “likes” after posting their photo (79.5%), therefore possibly causing higher anxiety in the individual when anticipating these likes. Recent research has also investigated the power of the “like”, and how the number of likes can be quite influential when browsing through photos on social media platforms such as Instagram (Sherman et al., 2016). The Sherman et al. study conducted an MRI on participants while they viewed an Instagram-like platform. Individuals were more likely to “like” photos that already had a high number of likes, even when the photo displayed risky behaviours (Sherman et al., 2016). There was greater activity in the neural regions that implicated reward processing, imitation, and

attention (Sherman et al., 2016). Participants in this study were highly influenced by others as to what to like and not to like online, and how popularity plays a large role in how online participants view certain images.

When coding the responses regarding the decision-making process of posting-selfies, it was evident that much thought went into taking selfies before posting them online, which could also have an effect emotionally and cause greater anxiety due to these high concerns. Being “accepted” online was a common theme for participants, and being presentable and “good-looking” was essential in order to post the selfie in the first place. Aspects such as facial imperfections, body shape, and even the environment all had effects on whether the selfie was determined to be good enough to be posted. From an evolutionary perspective, being physically attractive online could serve the purpose of attracting mates since social media have also been used for dating and partner seeking. Emotional features were also mentioned in the open-ended responses interestingly enough, and how participants wanted to appear positive and happy even if they were not feeling those emotions in person.

Many significant differences appeared when comparing those who frequently engaged in physical fitness and those who did not at all. Narcissism varied between the groups, where those who engaged in fitness 1-3 times a week had higher narcissism scores than the other three groups, ranging from those not engaged in fitness at all to those who engaged in it 4-5 times per week. This could be connected to the idea that those who only engaged in fitness 1-3 times per week may in fact have just started being involved in fitness and getting into shape, and therefore have higher self-esteem initially due to the novelty of the lifestyle. In addition, those who did not work out at all had greater

narcissism than those who worked out 4-5 times per week, which was a surprising finding. This was because physical activity in general positively correlated highly with both narcissism and body image, meaning the more frequently one worked out the higher the narcissism and body image conscientiousness. One plausible reason for this is that these individuals who do not work out may not feel the need to in order to increase their confidence, and have other ways to heighten their narcissism such as their social status or other personality traits. This was also in comparison to only those who worked out between 4-5 times per week, and not any other group, which could be supported by the idea that those who engage in regular fitness may have a balanced sense of confidence, or use this physical fitness to compensate for a lack of self-esteem.

Body image appeared significant between groups who only worked out 1-3 times per week and those who consistently worked out every day, where there was greater body image conscientiousness among those who were engaged in fitness every day. Recent literature has also suggested that when people continuously focus on self-image and works towards improving themselves, they are more likely to develop body image issues or concerns. This could also potentially develop into more serious issues, such as body dysmorphia, in the future when these habits are taken more seriously. Furthermore, there were various individual differences between those who did take selfies compared to those who did not as previously discussed, along with those who engaged in physical fitness regularly compared to those who did not work out regularly throughout a week.

### **Gender and Age Differences**

Past literature has shown significant differences between males and females in regards to physical activity and various personality traits (Miller & Mesagno, 2014; Carroll,

1989; Fox 1997). In the present study, males and females were also shown to have significant differences among various traits, specifically bullying tendencies, narcissism, and emotionality. These results could imply that males are more engaged in physical fitness due to these higher rates of narcissistic traits. If people are more highly concerned about themselves and are self-centered, this could encourage more physical activity in order to improve and become stronger or bigger than their peers. Past literature has also examined these gender differences, specifically regarding exercise dependence. Miller and Mesagno (2014) found that narcissism uniquely predicted a greater preoccupation with appearance, even after controlling for perfectionism, which collectively indicated that women who are higher in narcissism are more likely to have a preoccupation with their body and therefore strive for an ideal appearance. This could also suggest why females are more likely to be involved in selfies if they have higher narcissism, since a selfie purely involves one's appearance. In terms of males, it was found that exercise dependence was taken to the extreme in order to achieve this ideal male body, and past researchers have identified a positive relationship between narcissism and bodybuilding (Carroll, 1989). Masculinity also played a factor in the amount of narcissism the individuals reported, which affected greatly if the male became involved in bodybuilding. The study also found that an exercise dependence and narcissism relationship persisted only for males (Carroll, 1989).

From an evolutionary perspective, this also supports the notion that males are more adaptively competitive with one another so that they can obtain more resources. This was highlighted in the open-ended responses where male participants stated that the reasons they worked out was so that they could develop more muscle and gain more strength, and

overall feel good about themselves. Working out and attending the gym could be seen as a means to gain confidence and to embody this hegemonic masculinity. Furthermore, the first hypothesis was not confirmed regarding if males engaged in more physical fitness than females, but there were significant differences in narcissistic traits. The lack of difference in physical fitness may have been due to the lack of representation of males in the study.

In regards to females, emotionality only appeared to be significant with females rated as having higher emotionality scores than males. This suggests that females experience more anxiety and need more emotional support from others, along with having a heightened maternal response. Past literature has shown that females in general express more emotions than males, which may explain why this appeared as significant in the data. Past literature has also examined how exercise could enhance one's self-worth, which researchers have defined as the academic, social, emotional and physical satisfaction one has with oneself (Fox, 1997). Self-worth in one study was viewed as an important benefit of exercise, but an inflated sense of self-worth can become maladaptive, which in turn manifests itself in the form of narcissism (Miller and Mesagno, 2014). Therefore, those high in narcissism may engage in physical activity in an attempt to enhance their sense of self-worth, which may explain why narcissism was highly correlated with engagement in physical activity, which will be further discussed. Females may also be less inclined to work out in a public space like a gym due to insecurities stemming from higher emotionality. In addition to examining emotionality as a dimension of personality, honesty-humility was noted as being negatively correlated with the physical activity, bullying, and narcissism variables, but there were no

significant differences in terms of gender or age. The correlations support past research of how those who have lower scores of honesty-humility feel a strong sense of self-importance (Ashton, Lee, & de Vries, 2014), relative to narcissism, bullying, and engaging in higher physical fitness.

It was also hypothesized that there would be a gender difference in how fitness selfies affected individuals in terms of motivation. It was theorized that females would more likely want to match these types of selfies, while males would more likely want to exceed this ideal image, meaning that higher levels of jealousy and envy would occur. This hypothesis was supported when asked “have you ever been motivated to become physically active after seeing a fitness-related selfie on social media?” 36.4% of males responded “yes” while 82% of females responded “yes”. This type of motivation can be seen as positive where females become more motivated to be in better shape and use these fitness exemplars as a positive tool by seeing that other females are accomplishing this certain body shape and/or lifestyle, and that they could also (Pritchard & Cramblitt, 2014). The higher percentage of males that reported not being motivated by these types of selfies could be due to a number of reasons including that males simply did not view these types of selfies and were not as engaged in social media as females were in order to be highly influenced. Furthermore, these males may view these types of selfies with jealousy or envy, which could influence them to want to exceed these ideal models. In addition, males may be more likely to have intrinsic motivation where their personal reasons for obtaining higher fitness was what motivated. This was highlighted when one male openly responded that he continued to work out due to the “pump” and adrenaline rush that was experienced each time. Females may be more likely to compare themselves

to one another as previously discussed, which is why they are more motivated by other individuals. Furthermore, when asked if the participants ever had a sense of jealousy after seeing a progress photo (photo comparing past and present body shape), 59% of males reported “no” while 75% of females reported “yes”. This statistic at the same time rejects the original hypothesis that females were more likely to want to match this ideal body image when viewing fitness selfies; a sense of jealousy to an extreme could have negative effects on the female such body dysmorphia and eating disorders, which need to be taken into consideration. Similarly, jealousy can equally motivate a female individual to pursue greater fitness in a positive light. Reasons why males were more likely to report that they did not feel jealousy could have been affected by their egos since the sample of males scored as highly narcissistic, and that they did not want to admit to this type of jealousy.

It is commonly seen in evolutionary theory that males compete with one another in order to obtain resources, and this includes being stronger and bigger than their opponents (Orr, 2009). Since the sample mainly consisted of females, it was important to examine how females could also engage in intrasexual competition, which could be viewed through an evolutionary lens. In the current study, many females did mention that being more “fit” and stronger was one of the reasons why they worked out, which was interesting and implies that the ideal female body is transitioning from “thin” to a curvier, muscular body. This motivation for improvement could also be caused by competition of others, or simply intrinsic pursuits. Similarly, some females still stated their need to lose weight or strive to be thinner which fits the typical idealization of the female body (Pritchard & Cramblitt, 2014). Past research has supported the idea that females also feel this sense of competition with other females (Wade and Abetz, 1997; Leenaars et al.,

2008). A study conducted by Sim (2013) suggested that the figure of a woman was their greatest ability to attract the “best” mates, and that women may feel their figures (which include thighs, hips, buttocks, legs, waist, and weight) compared to an unattractive female will enhance their competitive abilities. In addition, it has been found that women feel that their level of attractiveness and body type has to match that of the highly attractive males, which could be an underlying reason why more females are engaging in working out today and are more selective when it comes to choosing mates (Sim, 2013). These gender differences will be further discussed, as it is necessary to understand how both males and females compare in terms of physical fitness and additional personality traits.

In regards to bullying, there was found to be a significant difference between genders where males were more likely to be bullies according to the analysis of variance. This aligns with previous research that states how gender, specifically male, is a possible risk factor in the prevalence of acting as the bully (Khamis, 2015; Navarro, Larranaga, & Yubero, 2016).

### **Bullying and Cyberbullying Experiences**

Experiences with bullying and cyberbullying were reported at a rather low level in the present study, which may have contributed to the insignificant findings when compared to the rest of the other measures used. One reason why these experiences were underreported may be due to the age range of the study, where the youngest participants were 17 years of age. The ability to recollect and retrospectively respond to questions regarding bullying and victimization experiences from childhood could have been problematic for participants, which resulted in low scores for both measures. A second

reason why bullying and cyber bullying were underreported was that the definition of bullying in general, especially cyber bullying, may have been unclear to participants which led them to believe that they truly did not experience any sorts of these acts. Past research has acknowledged the fact that most college students do not have a clear understanding of the term cyberbullying and views the term as “outdated” (Crosslin & Golman, 2014). Due to this misunderstanding of what bullying and cyber bullying are still to this day, it is highly difficult to be able to measure these experiences among young adults in university where it may not be as prevalent, in addition to participants perhaps not being able to recollect memories of past bullying experiences. Recent research has attempted to solve this problem by focusing on creating new ways to measure these experiences accurately. Dogruer and Yaratana (2014) developed a bullying scale to be used among university students, which was accepted as valid and reliable for measuring both bully and victim behaviours. The measures and sample together could have been problematic for the current research, and further investigation should address this.

In addition, the concept of cyberbullying and being able to report these types of experiences could have also been inadequately reported since the definition and concept have been difficult to clarify in the past (Gahagan, Vaterlaus, & Frost, 2016). This was also indicated in the contrasting responses when asked if the participants had ever received a negative comment on their selfies (which would be a form of cyberbullying), along with if they had witnessed others receiving negative comments on their photos. Seventy percent reported not receiving these types of comments, while 69.9% similarly reported they have seen *others* receive negative comments on their selfies. This highly intriguing finding where an equal number of participants reported opposing experiences

could explain why cyberbullying is difficult to define; what one may not see as a form of bullying done to them could see this as bullying done to others. Experiencing cyber bullying versus witnessing cyber bullying was vastly different in the current sample, and further research should be conducted as to why this occurs. It also needs to be taken into consideration who these individuals are viewing online; if they are close peers who are receiving negative comments or famous personalities online who may have a larger audience, and therefore would more likely receive negative comments.

Further investigation of this finding that participants were more likely to report seeing others receive negative comments on their photos indicates that the sample could possibly be more likely to be bystanders due to the high percentage of witnesses of these incidents (69.9%). Past research has also supported this finding where in one study focusing on college student cyberbullying on social networking sites (SNS), only 19% reported being bullied through SNS while 46% indicated that they had witnessed cyberbullying on SNS. (Gahagan, Vaterlaus, & Frost, 2016). In addition, the majority of college students (61%) who witnessed cyberbullying on SNS did nothing to intervene. Overall the study concluded that there were two diverging themes that emerged which indicated that some college students believed their responsibility to intervene was circumstantial, and that individuals were more likely to intervene if the victim was a friend (Gahagan, Vaterlaus, & Frost, 2016). In relation to the current study, one limitation that will be further discussed is in regards to asking participants if they actually intervened in these negative comments that they witnessed online. One indication in the present study that relationships were important was when participants were asked if selfies annoyed them. As discussed previously, a large distinction was made between whether the selfie was

coming from a friend or from a stranger, which was a factor that influenced the determination of whether the overall selfie was considered to be annoying or acceptable. With this theme, it can be further predicted that participants may also feel the same way when deciding to intervene online.

It was hypothesized that those involved in fitness were more likely to have been previously victimized in childhood by bullies. This appeared insignificant in the data since bullying and cyberbullying experiences were underreported in the sample, and therefore it was difficult to conclude whether these past experiences influenced individuals to be more involved in fitness. In order to have some indication as to what influences participants to be physically active, the open-ended responses were referred to which asked what motivated those who went to the gym. Within the responses given, there was only one specific reference to childhood as a reason why the participant went to the gym. The participant stated that “I was a bigger kid and I don’t want to look like that again”. This single, but powerful statement demonstrates how this may be the underlying reality for those who go to the gym to lose weight. The overall improvement of one’s self and the need to lose weight and look “better” could be encouraged by an array of reasons that need to be further investigated. Those who simply stated that they wanted to make physical changes to their appearance could be motivated by past childhood experiences which are still unknown. Overall, the above statement given regarding being larger as a child gives some suggestion that weight loss motivation could be due to childhood body image issues. This area of interest has been recently researched and discussed, with findings including a significant association between body dissatisfaction and involvement in bullying (Holubcikova, Kolarcik, Geckova, Van Dijk, & Reijneveld, 2015). It was

found that adolescents reporting a negative body image (those considering they were too fat) were more likely to be victims and even bully-victims. For males specifically, self-reported thinness was associated with being a bully-victim (Holubcikova et al., 2015). This indicates how a larger body weight in childhood is a factor in how children are perceived in school and whether they become targets for bullying. Interestingly enough, males who were actually thinner were also bully-victims. This implies that the male ideal is to be more muscular and larger in size, and that thinness is a sign of weakness (Holubcikova et al., 2015). From an evolutionary perspective, this supports how males in general are needed to be larger and muscular in size in order to survive and to be able to obtain resources (Swami et al., 2013). This could also be expressed in childhood when these males are attacked through bullying due to their size, and can have future effects on their social and mental development.

### **Implications: Theoretical and Applied**

The findings from the current study seem to suggest that technology is continuously evolving and being integrated into young people's lives, from childhood to young adulthood. Social media sites have become the primary source for communication, networking, and self-expression through photo sharing and, specifically, selfie-taking. Researchers have increasingly felt the need to investigate how this can affect these individuals and it has been shown that factors such as narcissism, self-esteem, and emotionality are just a few of the many personality traits that can be both positively and negatively influenced by these social media platforms. Individuals have now adapted to the ways of technology, and these ways of communication online have impacted on the way people live their lives.

The lived experiences of younger generations need to be studied since younger and younger children are having easier access to technology, and this in turn can have even a deeper effect on their cognitive and social development. Growing up with technology versus only having technology later on in life can be greatly different in terms of how individuals grow to view themselves along with viewing and communicating with others. As the present study indicated, even new adaptations have evolved because of the increased use of technology such as innovative ways to attract mates along with increasing confidence, all through photo sharing online.

Overall implications should include that it needs to be recognized and accepted that children and youth will adaptively become more technologically savvy since they will be more exposed to these types of experiences and skills, and therefore future researchers should investigate ways in which more positive benefits can develop for these generations in order to minimize consequences such as cyber bullying, negative body image, and poor self-esteem. Social media does skew and distort how individuals perceive the world in general, and furthermore can have negative effects on younger generations.

### **Limitations & Future Research**

Barriers and limitations, as with any study, arose in the present research. Primarily, there was an unequal amount of males and females who participated in the study, which may have affected the overall results especially when comparing the two groups. Since this was conducted online, it was difficult to obtain a certain number of participants per gender. Females could have been more interested in the nature of the study and therefore there was a higher rate of them. A more equal distribution would have provided a better

comparison between males and females. In the future, additional data could be collected among sport teams and gyms outside of Brock University so that males could be more included in the study. Overall, a larger sample size could have improved the study. Incorporating a younger demographic below university level may have also altered the results; bullying and cyberbullying prevalence could have been higher since younger ages tend to report experiencing bullying at a higher rate (Balakrishan, 2015). For future research, a comparison could be conducted between a much younger age group and young adults so that more differences could appear as significant when comparing the two groups.

Additional questions could have also been asked in regards to physical fitness, making the overall measure stronger and more comprehensive. Questions could include if the individual participated in sports, what their race/culture was, and certain body measurements such as height and weight.

The lack of significant findings involving the bullying and cyberbullying measures, raises the question of whether there were possible methodological barriers in the study such as how participants were recruited and whether the demographics of people who were interested in the study were representative of the larger population. With the majority of participants rating low amounts of bullying, victim, and cyberbullying experiences, this could have been due to the fact that participants were asked retrospectively about their past experiences with bullying in their childhood. Collecting a younger sample between the ages of 12-16 could have changed the results and included more experiences of bullying since bullying may be more prevalent in the younger years. Alternatively, a different type of bullying measure could have been used in place of the

original bullying and victimization measure that only looked at childhood bullying. A recent study done by Dogruer and Yaratan (2014) looked at developing a bullying scale to use with university students specifically since the consequences of bullying in this area have yet to be a focus of study. Examining current bullying behaviours in the individual's present life may have been beneficial in the current study and may have given a different perspective on how young adults experience bullying. Using a measure that looked at how bystanders are present in social media also could have been a different approach to the study by examining more in depth how individuals are more likely to be bystanders and witnesses of large amounts of bullying online, yet take no action or think very little of it. This additionally could blur the definition of cyber bullying in which young adults may have contradicting views of what cyberbullying is, and how this has changed in present times.

Another limitation that may have affected the study was the fact that every participant completed the questionnaire online. As with any online study where there is no face-to-face interaction with the participant, it is unknown if the individual completing the study was affected by outside factors such as friends or if they actually completed the study alone. The benefit of having an online study was that participants were more likely to be involved and complete the study since it was done on their time in their own environment, but external factors could not be controlled.

Incorporating additional qualitative components in the study would have been beneficial since participants seemed to have strong views and opinions on the subject matter, which was shown less in the quantitative data. In addition, a content analysis of the technological environment also could have made the overall study stronger by

viewing first-hand public Instagram accounts that showcase fitness selfies, and examining the frequency of the photos along with any comments that are made on them. Fitness personalities on social media sites, such as Instagram, who have thousands of followers could be particularly examined in terms of frequency of posts along with what type of feedback they gain from it. This type of analysis could have provided more insight into the social media culture in general. As for qualitative questions that were asked in the study, questions could have been more directed towards fitness selfies since most participants discussed selfies in general. Differentiating between the two types of selfies would have been more beneficial for the study in general and better insight would have been gained on fitness selfies in particular.

Lastly, it would have been more beneficial if the sample population had been more integrated into the fitness lifestyle in order to obtain a better perspective of the trend of “fitness” selfies specifically, rather than selfies in general. Even though majority of participants did work out, there were a few who stated that they did not currently engage in physical fitness, which could have skewed the data. There was also a lack of fitness selfies actually taken by the participants, but this may have also been too novel a trend for the majority of individuals to be familiar with it. This may have resulted in a lack of fitness selfie participation, even though a high number of individuals did view and were motivated by these types of selfies. Additional research can specifically look at those who consistently take fitness selfies and are immersed in the trend, and how by being this active in social media could enhance certain aspects of personality such as narcissism and self-esteem, where there may be correlations between the use of selfies and the individuals’ reactions to this phenomenon.

Future research could entail possible experimental designs, where participants' levels of self-esteem and body consciousness could be measured in real-time before and after viewing fitness selfies. This focus would provide more scientific evidence of how selfies affect individuals' mentally. A study using functional magnetic resonance imaging (fMRI) would be highly beneficial to use on participants when viewing selfies in real-time in order to capture how neurological processes are affected by social media platforms. Recent literature has influenced this study design where adolescents underwent fMRI while viewing photos on a superficial Instagram (Sherman et al., 2016). This recent research is one of the few studies that conducted neurological testing in relation to social media, which suggests that understanding how social media in general, including selfies, is increasingly becoming recognized as essential knowledge in order to further understand children and adolescents. However, this line of research, while very interesting, is also very expensive.

Additional future directions could also examine more in depth the range of selfies that are commonly seen online, along with determining the types of people that are most likely to post a certain type of photos. Selfies could possibly range from innocent self-portraits to provocative photos, or even additional types of photos such as scenery or group photos. Redefining and expanding what the definition of a selfie is would be beneficial for future researchers. Investigating how the selfie trends longitudinally would also be beneficial in terms of if individuals in younger generations continuing to engage in social media, or if this decreases with age.

Since bullying and cyberbullying were reported at a rather low level in the present study, it is important to consider what future research could be done in this area in order

to gain a better understanding of whether and how cyber bullying is prevalent in social media. One aspect that appeared in the data was how participants may have been more likely to be bystanders than actually experiencing online bullying directly. Only a few questions were asked in the current study that discussed negative feedback about photos, including if it was experienced and from whom it was received. Further research could investigate if the negative comments were constant or occurred only once, how they felt about the negative comments, to whom the comments were targeted (friend, stranger), and if the participant intervened. Since the act of being a bystander was an unexpected finding in the present study, a much deeper analysis could be conducted on particularly bystanders online in social media, and how individuals view these types of acts along with what actions they take themselves if any. A separate measure evaluating actions of bystanders who only witness bullying acts could be appropriate for a future study.

Combining the measurements of bullying experiences with measuring general aggression could be beneficial in terms of comparing the two behaviours, and relating how being more aggressive in nature elevates the need for competition, and furthermore engage in physical fitness. Past research has also looked at this comparison between athletes and the need for competition, connecting the two (Maxwell, Visek, & Moores, 2009). Lastly, using general aggression could allow an examination of the relations amongst the other variables used in the study.

In addition to the measures that were used in the study, such as bullying, one aspect that could be examined is how civility and incivility are portrayed and displayed online. Polite or impolite comments and remarks on selfies, especially fitness selfies, could be examined and differentiated from bullying attacks. Positive comments and how they

affect factors such as self-esteem and personal image could be taken into consideration and future research could look at how positivity online, rather than negativity, affects individuals.

With social media platforms constantly growing and changing, examining newer and more prevalent sites could add to past research that has already discussed sites such as Facebook, Tumblr, and Instagram. Snapchat, which is a social platform where individuals can send real-time videos and photos to one another or public share them in a “story”, has increasingly become an easier and faster way to communicate online, and in some ways replaces texting and messaging. Since this platform uses only either videos or selfies, this more pictorial and visual way of communicating indicates how adolescents and young adults are communicating less through text and more through face-to-face interactions online.

## **Conclusion**

In conclusion, the goal of the present research was to examine how fitness selfies affect individuals in how they perceive themselves, along with factors such as narcissism, self-esteem, emotionality, and honesty-humility traits. In addition, what motivates young adults to be involved in fitness initially was examined, and how influences such as confidence, self-esteem, health, and past childhood experience can all play a role in what motivates the individual. Results indicate that there were gender differences in what motivates individuals to be physically fit, and how males were more likely to be narcissistic and be physically active, while females were highly motivated by others to attend the gym or workout. Furthermore, bullying and cyberbullying tendencies were not

as significant as initially hypothesized, which future research should continue to investigate using alternative measures and procedures.

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Appendix A – Demographic and Bullying History Survey

**Cyberbullying, Social Media, & Fitness Selfies: An Evolutionary Perspective**  
**Questionnaire**

**Part 1: Demographic and Bullying History**

1. How old are you?

\_\_\_\_\_

2. What grade are you in?

\_\_\_\_\_

3. Are you            male?            female?            (circle one)

4. What is your ethnic/racial background?

\_\_\_\_\_

5. Compared to the average Canadian, do you think your family is (circle ONE):

a lot less rich            less rich    about the same            more rich            a lot more rich

For the questions below, please answer with respect to your own personal experiences in the last year. Check the box that you feel is most appropriate for you. Don't forget to turn the page to finish all the questions and remember there are no right or wrong answers. Also remember that all answers are **confidential** and that no one outside your research will ever see your answers.

	Not at all	Only a few times this year	Every month	Every week	Many times a week
1. Overall, how often have you been bullied by someone much stronger or more popular than you?					
2. How often have you been physically bullied by being hit, kicked, shoved by someone who was much stronger or more popular than you?					
3. How often have you been verbally bullied by insults, put down or threatened by someone who was much stronger or more popular than you?					
4. How often have you been bullied by exclusion (being left out), rumours or someone getting others not to like you who was much stronger or more popular than you?					

5. How often have you been bullied by unwanted sexual jokes, comments or gestures aimed at you by someone who was much stronger or more popular than you?					
6. How often have you been bullied on the computer by using text messages, the computer or e-mail messages/pictures to threaten you or to make you look bad by someone who was much stronger or popular than you?					
	<b>Not at all</b>	<b>Only a few times this year</b>	<b>Every month</b>	<b>Every week</b>	<b>Many times a week</b>
7. Overall, how often have you taken part in bullying someone who was much weaker or less popular than you?					
8. How often have you taken part in physically bullying someone by hitting, kicking, shoving etc. someone who was much weaker or less popular than you?					
9. How often have you taken part in verbal bullying by insults, putting down or threatening someone who was much weaker or less popular than you?					
10. How often have you taken part in bullying by exclusion (being left out), rumours or getting others not like someone who was much weaker or less popular than you?					
11. How often have taken part in bullying by unwanted sexual jokes, comments or gestures aimed at you by someone who was much stronger or more popular than you?					
12. How often have you taken part in bullying on the computer by using text messages, computer or e-mail messages/pictures to threaten someone or make them look bad who was much weaker or less popular than you?					

## Appendix B – Cyberbullying Form and Function Survey

We are interested in finding out your experiences with using technology and electronic devices. This includes any communication device such as phones, texting, web posting, e-mailing, and using social media (e.g., Facebook). There are *no right or wrong answers*. Please, circle the answer that best describes your own experience

### **A. How often have these things been DONE TO YOU during the LAST SCHOOL YEAR?**

NEVER EVERYDAY (1)	A FEW TIMES A YEAR (2)	A FEW TIMES A MONTH (3)	A FEW TIMES A WEEK (4)			
(5)						
1. Received mean and insulting comments on your Facebook wall	1	2	3	4	5	
2. None of the members of your group would return your messages	1	2	3	4	5	
3. Someone you argued with posted embarrassing information about you on a web site	1	2	3	4	5	
4. To become popular, someone used your computer to download banned and forbidden pictures	1	2	3	4	5	
5. Someone copied private pictures and information from your computer	1	2	3	4	5	
6. A classmate posted rumours and untrue stories about you on a web site	1	2	3	4	5	
7. To get back at you, a classmate posted embarrassing pictures of you on Facebook	1	2	3	4	5	
8. To be cool, someone excluded a classmate from joining in an on-line computer game	1	2	3	4	5	
9. Because they were angry with you, someone downloaded personal and confidential information from your computer	1	2	3	4	5	
10. Being excluded from joining an online group	1	2	3	4	5	
11. Because they were mad at you, a classmate send you threatening and nasty e-mails	1	2	3	4	5	
12. To become more popular, someone posted on Facebook private information you shared with them	1	2	3	4	5	
13. To get even with you, a classmate posted an invitation to his party	1	2	3	4	5	

on Facebook, and left your name out

14. To get what they wanted, a classmate posted rumours and untrue stories about you on a web site 1 2 3 4 5

15. To be cool, a classmate ignored your requests for joining an online group 1 2 3 4 5

We are interested in finding out your experiences with using technology and electronic devices. This includes any communication device such as phones, texting, web posting, e-mailing, and using social media (e.g., Facebook). There are *no right or wrong answers*. Please, circle the answer that best describes your own experience

**B. How often have YOU DONE these things been during the LAST SCHOOL YEAR?**

NEVER (1)	A FEW TIMES A YEAR (2)	A FEW TIMES A MONTH (3)	A FEW TIMES A WEEK (4)	EVERYDAY (5)
1. Sent mean and insulting comments on someone's Facebook wall	1	2	3	4 5
2. Did not return messages from a member of your group	1	2	3	4 5
3. Posted embarrassing information about classmates because you argued with them	1	2	3	4 5
4. To become popular, you used a classmate's computer to download banned and forbidden information	1	2	3	4 5
5. Copied private pictures and information from someone's computer	1	2	3	4 5
6. Posted rumours and untrue stories about a classmate on a web site	1	2	3	4 5
7. To get back at them, posted embarrassing pictures of classmates on Facebook	1	2	3	4 5
8. To be cool, you excluded a classmate from joining in an on-line computer game	1	2	3	4 5
9. Because you were angry with them, you downloaded personal and confidential information from their computer	1	2	3	4 5
10. Excluded someone from joining an online group	1	2	3	4 5
11. Because you were mad at them, you send threatening and nasty messages to your classmates	1	2	3	4 5

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| 12. To become more popular, you posted on Facebook private information a classmate shared with you                   | 1 | 2 | 3 | 4 | 5 |
| 13. To get even with them, you posted an invitation to your party on Facebook, and left out the names of a classmate | 1 | 2 | 3 | 4 | 5 |
| 14. To get what you wanted, you posted rumours and stories about a classmate on a web site                           | 1 | 2 | 3 | 4 | 5 |
| 15. To be cool, you ignored a classmate's requests for joining an online group                                       | 1 | 2 | 3 | 4 | 5 |

## Appendix C – HEXACO Personality Scale

On the following pages you will find a series of statements about you. Please read each statement and decide how much you agree or disagree with that statement. Then write your response in the space next to the statement using the following scale:

- 5 = strongly agree
- 4 = agree
- 3 = neutral (neither agree nor disagree)
- 2 = disagree
- 1 = strongly disagree

Please answer every statement, even if you are not completely sure of your response.

- 1 \_\_\_\_\_ I would be quite bored by a visit to an art gallery.
- 2 \_\_\_\_\_ I plan ahead and organize things, to avoid scrambling at the last minute.
- 3 \_\_\_\_\_ I rarely hold a grudge, even against people who have badly wronged me.
- 4 \_\_\_\_\_ I feel reasonably satisfied with myself overall.
- 5 \_\_\_\_\_ I would feel afraid if I had to travel in bad weather conditions.
- 6 \_\_\_\_\_ I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
- 7 \_\_\_\_\_ I'm interested in learning about the history and politics of other countries.
- 8 \_\_\_\_\_ I often push myself very hard when trying to achieve a goal.
- 9 \_\_\_\_\_ People sometimes tell me that I am too critical of others.
- 10 \_\_\_\_\_ I rarely express my opinions in group meetings.
- 11 \_\_\_\_\_ I sometimes can't help worrying about little things.
- 12 \_\_\_\_\_ If I knew that I could never get caught, I would be willing to steal a million dollars.
- 13 \_\_\_\_\_ I would enjoy creating a work of art, such as a novel, a song, or a painting.
- 14 \_\_\_\_\_ When working on something, I don't pay much attention to small details.
- 15 \_\_\_\_\_ People sometimes tell me that I'm too stubborn.
- 16 \_\_\_\_\_ I prefer jobs that involve active social interaction to those that involve working alone.
- 17 \_\_\_\_\_ When I suffer from a painful experience, I need someone to make me feel comfortable.
- 18 \_\_\_\_\_ Having a lot of money is not especially important to me.
- 19 \_\_\_\_\_ I think that paying attention to radical ideas is a waste of time.
- 20 \_\_\_\_\_ I make decisions based on the feeling of the moment rather than on careful thought.
- 21 \_\_\_\_\_ People think of me as someone who has a quick temper.
- 22 \_\_\_\_\_ On most days, I feel cheerful and optimistic.

- 23 \_\_\_\_\_ I feel like crying when I see other people crying.
- 24 \_\_\_\_\_ I think that I am entitled to more respect than the average person is.
- 25 \_\_\_\_\_ If I had the opportunity, I would like to attend a classical music concert.
- 26 \_\_\_\_\_ When working, I sometimes have difficulties due to being disorganized.
- 27 \_\_\_\_\_ My attitude toward people who have treated me badly is “forgive and forget”.
- 28 \_\_\_\_\_ I feel that I am an unpopular person.
- 29 \_\_\_\_\_ When it comes to physical danger, I am very fearful.
- 30 \_\_\_\_\_ If I want something from someone, I will laugh at that person's worst jokes.
- 31 \_\_\_\_\_ I've never really enjoyed looking through an encyclopedia.
- 32 \_\_\_\_\_ I do only the minimum amount of work needed to get by.
- 33 \_\_\_\_\_ I tend to be lenient in judging other people.
- 34 \_\_\_\_\_ In social situations, I'm usually the one who makes the first move.
- 35 \_\_\_\_\_ I worry a lot less than most people do.
- 36 \_\_\_\_\_ I would never accept a bribe, even if it were very large.
- 37 \_\_\_\_\_ People have often told me that I have a good imagination.
- 38 \_\_\_\_\_ I always try to be accurate in my work, even at the expense of time.
- 39 \_\_\_\_\_ I am usually quite flexible in my opinions when people disagree with me.
- 40 \_\_\_\_\_ The first thing that I always do in a new place is to make friends.
- 41 \_\_\_\_\_ I can handle difficult situations without needing emotional support from anyone else.
- 42 \_\_\_\_\_ I would get a lot of pleasure from owning expensive luxury goods.
- 43 \_\_\_\_\_ I like people who have unconventional views.
- 44 \_\_\_\_\_ I make a lot of mistakes because I don't think before I act.
- 45 \_\_\_\_\_ Most people tend to get angry more quickly than I do.
- 46 \_\_\_\_\_ Most people are more upbeat and dynamic than I generally am.
- 47 \_\_\_\_\_ I feel strong emotions when someone close to me is going away for a long time.
- 48 \_\_\_\_\_ I want people to know that I am an important person of high status.
- 49 \_\_\_\_\_ I don't think of myself as the artistic or creative type.
- 50 \_\_\_\_\_ People often call me a perfectionist.
- 51 \_\_\_\_\_ Even when people make a lot of mistakes, I rarely say anything negative.
- 52 \_\_\_\_\_ I sometimes feel that I am a worthless person.
- 53 \_\_\_\_\_ Even in an emergency I wouldn't feel like panicking.
- 54 \_\_\_\_\_ I wouldn't pretend to like someone just to get that person to do favors for me.

- 55 \_\_\_\_\_ I find it boring to discuss philosophy.
- 56 \_\_\_\_\_ I prefer to do whatever comes to mind, rather than stick to a plan.
- 57 \_\_\_\_\_ When people tell me that I'm wrong, my first reaction is to argue with them.
- 58 \_\_\_\_\_ When I'm in a group of people, I'm often the one who speaks on behalf of the group.
- 59 \_\_\_\_\_ I remain unemotional even in situations where most people get very sentimental.
- 60 \_\_\_\_\_ I'd be tempted to use counterfeit money, if I were sure I could get away with it.

## Appendix D – Dark Triad of Personality Scale

Please rate your agreement or disagreement with each item using the following guidelines.

1 – Strongly Disagree

2- Disagree

3- Neither Agree nor Disagree

4- Agree

5- Strongly Agree

### Subscale 1:

1. It's not wise to tell your secrets.
2. Generally speaking, people won't work hard unless they have to.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people because they don't need to know.
8. Make sure your plans benefit you, not others.
9. Most people can be manipulated.

### Subscale 2:

1. People see me as a natural leader.
2. I hate being the center of attention.
3. Many group activities tend to be dull without me.

4. I know that I am special because everyone keeps telling me so.

5. I like to get acquainted with important people.

6. I feel embarrassed if someone compliments me.

7. I have been compared to famous people.

8. I am an average person.

9. I insist on getting the respect I deserve.

Subscale 3:

10. I like to get revenge on authorities.

11. I avoid dangerous situations.

12. Payback needs to be quick and nasty.

13. People often say I'm out of control.

14. It's true that I can be mean to others. (or I enjoy having sex with people I hardly know.)

15. People who mess with me always regret it.

16. I have never gotten into trouble with the law.

17. I like to pick on losers.

18. I'll say anything to get what I want

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## Appendix E – ARI Model

Please rate each statement on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree)

- 1) I think it is necessary to analyze the pros and cons of different ways of body improvement
- 2) I think it is important to know all the facts regarding body improvement
- 3) I think it is necessary to understand the arguments if it is possible to obtain an improved body shape
- 4) I think that there is a health risk to obtaining an improved body shape
- 5) I think that having an improved body shape is of concern to me
- 6) I think that having an improved image is a relevant issue to me
- 7) I think that having an improved body shape means a lot to me
- 8) I think I am using my cognitive skills to assess how my body looks
- 9) I feel that having an improved body shape will make me feel sexy
- 10) I feel that having an improved body shape will make me proud
- 11) I feel that having an improved body shape will make me happy
- 12) I feel that having an improved body shape will make me socially desirable
- 13) I feel that having an improved body shape will make me powerful
- 14) I feel that having an improved body shape will make me confident
- 15) I feel that having an improved body shape will make me secure
- 16) I feel that I am using my emotions when I assess how my body looks

## Appendix F – Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

- |  |           |
|--|-----------|
| 1) On the whole, I am satisfied with myself                                  | SA A D SD |
| 2) At times, I think I am no good at all                                     | SA A D SD |
| 3) I feel that I have a number of good qualities                             | SA A D SD |
| 4) I am able to do things as well as most other people                       | SA A D SD |
| 5) I feel I do not have much to be proud of                                  | SA A D SD |
| 6) I certainly feel useless at times   | SA A D SD |
| 7) I feel that I'm a person of worth, at least on an equal plane with others | SA A D SD |
| 8) I wish I could have more respect for myself                               | SA A D SD |
| 9) All in all, I am inclined to feel that I am a failure                     | SA A D SD |
| 10) I take a positive attitude toward myself                                 | SA A D SD |
-

## Appendix G – Selfie and Fitness Assessment

We would like to ask you few questions about your experience with the digital world, please answer the following questions to the best of your abilities

- 1) Age:  18-20       21-25       Others
- 2) Gender:     Male                       Female
- 3) Indicate all devices that you own:  Laptop               Tablet (ie. iPad)  
 Smartphone (ie. iPhone, Android, Blackberry)     Desktop computer
- 4) If you own a smart phone, does it contain a front-facing camera?  
 Yes     No     Do not own smart phone
- 5) How many social media applications do you have on your smart phone (ie. Facebook, Twitter, Instagram):     0     1     more than 2
- 6) How many hours approximately in a day do you spend on social media sites:  
 0     1-3     more than 5
- 7) Do you post self-images, or 'selfies' online:     Yes     No
- 8) If yes, how many 'selfies' in a week do you post online:     1-3     4 or more
- 9) Do you expect any likes or comments once you have posted a 'selfie':  Yes     No
- 10) When looking at others' selfies, do you look at the number of likes or comments it receives:     Yes     No
- 11) How often do you photoshop or filter your 'selfies' before you post them:  
 Never     Approximately half of the photos     Every photo
- 12) Have you ever received a negative comment on one of your 'selfies' before:  
 Yes     No
- 13) If yes, who was it from:  Friend     Acquaintance     Stranger
- 14) Have you ever seen others receive negative comments on their 'selfies':  
 Yes     No

15) Why do you choose to post 'selfies' online? If not, why do you not post 'selfies' online?

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16) Do you enjoy viewing other people's 'selfies'? Do they ever annoy you? Why?

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17) Do you think 'selfies' will be a permanent or fading trend in social media? Why?

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18) What goes into the decision-making process before you post a selfie?  
(Characteristics of photo)

### Physical Fitness Assessment

We would like to ask you a few questions regarding your level of physical activity and fitness experience, please answer the following questions to the best of your abilities.

1) How many times a week do you go to the gym?

\_\_\_ 1-3 times    \_\_\_ 4-5 times    \_\_\_ everyday

2) Where do you mostly workout?

\_\_\_ home    \_\_\_ gym    \_\_\_ both

2) What do your workouts consist of?

\_\_\_ Cardio    \_\_\_ Strength (weightlifting)    \_\_\_ Both

3) What are your main reasons for going to the gym?

4) Have you ever taken and/or posted a fitness selfie (selfie showcasing fitness goals, progress, etc.)

Yes  No

5) How often do you 'like' others' fitness selfies online?

6) Have you ever been motivated to become physically active after seeing a fitness-related selfie on social media?

7) Have you ever had a sense of jealousy after seeing someone's progress photo (photo comparing past and present body)?

yes  no

8) To what extent of a revealing selfie have you seen online?

fully clothed

partially revealing (shirtless male, female with sports bra)

almost-full nudity

## Appendix H – Brock University Ethics Clearance



Brock University  
Research Ethics Office  
Tel: 905-688-5550 ext. 3035  
Email: reb@brocku.ca

Social Science Research Ethics Board

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### Certificate of Ethics Clearance for Human Participant Research

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DATE: 3/28/2016  
PRINCIPAL INVESTIGATOR: MARINI, Zopito - Child and Youth Studies  
FILE: 15-223 - MARINI  
TYPE: Masters Thesis/Project STUDENT: Amanda DiFonzo  
SUPERVISOR: Dr. Zopito Marini  
TITLE: Cyberbullying, Social Media, & Fitness Selfies: An Evolutionary Perspective

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#### ETHICS CLEARANCE GRANTED

Type of Clearance: NEW

Expiry Date: 3/31/2017

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The Brock University Social Science Research Ethics Board has reviewed the above named research proposal and considers the procedures, as described by the applicant, to conform to the University's ethical standards and the Tri-Council Policy Statement. Clearance granted from 3/28/2016 to 3/31/2017.

The Tri-Council Policy Statement requires that ongoing research be monitored by, at a minimum, an annual report. Should your project extend beyond the expiry date, you are required to submit a Renewal form before 3/31/2017. Continued clearance is contingent on timely submission of reports.

To comply with the Tri-Council Policy Statement, you must also submit a final report upon completion of your project. All report forms can be found on the Research Ethics web page at <http://www.brocku.ca/research/policies-and-forms/research-forms>.

In addition, throughout your research, you must report promptly to the REB:

- a) Changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) All adverse and/or unanticipated experiences or events that may have real or potential unfavourable implications for participants;
- c) New information that may adversely affect the safety of the participants or the conduct of the study;
- d) Any changes in your source of funding or new funding to a previously unfunded project.

We wish you success with your research.

Approved:

A handwritten signature in black ink, appearing to read "K Maich", written over a horizontal line.

Kimberly Maich, Chair  
Social Science Research Ethics Board

**Note:** Brock University is accountable for the research carried out in its own jurisdiction or under its auspices and may refuse certain research even though the REB has found it ethically acceptable.

If research participants are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and clearance of those facilities or institutions are obtained and filed with the REB prior to the initiation of research at that site.

## Appendix I: Informed Consent Form

### Informed Consent

Date: January 13, 2016

Project Title: Cyberbullying, Social Media, & Fitness Selfies: An Evolutionary Perspective

Principal Investigator (PI): Zopito Marini  
Department of Child and Youth Studies  
Brock University  
905-688-5550, ext. 3178, [zmarini@brocku.ca](mailto:zmarini@brocku.ca)

Student Principal Investigator (SPI): Amanda DiFonzo  
Department of Child and Youth Studies  
Brock University  
[ad10za@brocku.ca](mailto:ad10za@brocku.ca)

#### INVITATION

You are invited to participate in a study that involves research. The purpose of this study is to investigate the relations between bullying and victimization experiences and one's motivation to take fitness selfies (photos of one's self), along with the occurrence of cyberbullying on social media platforms.

#### WHAT'S INVOLVED

As a participant, you will be asked to complete a questionnaire either online or in hard copy with questions regarding bullying experiences, a variety of personality traits, along with questions regarding selfie and social media use and the levels of engagement in fitness. Participation will take approximately 30 minutes of your time. Questionnaires wished to be accessed online will be emailed to the participant and submitted online; questionnaires wished to be completed through hard copy will be given and collected by the researchers in the Child and Youth Studies department.

#### POTENTIAL BENEFITS AND RISKS

Possible benefits of participation include by exploring how social media in today's society has affected their personal lives, along with what types of factors influence the decision to engage in social media or post a selfie. The current research should also benefit the academic community and society by contributing innovative knowledge within a field that has not fully been explored within adolescents and social media. Also, participants will be automatically included into the draw once emailing Amanda DiFonzo or Zopito Marini. The email used to contact about the study will be obtained and put into the draw.

There may be some risks associated with participation include triggering memories of past experiences of bullying or issues of body image. Risks can be managed and/or reduced by consenting to confidentiality of information to reduce embarrassment, along with providing necessary support systems such as Brock's personal counseling services and personal counseling hotlines. In addition, the study is completely voluntary and the participant is allowed to skip any question he/she may feel uncomfortable with.

Resources within Brock for mental wellness include:

#### Student Health Services

Located in the Schmon Tower  
ST400  
Counselors  
905-688-5550

#### Personal Counseling

Located in the Schmon Tower  
ST400  
Counselors

905-688-5550

**Campus Security**

Located in the Kenmore Centre (across from the Walker Complex)

905-688-5550 x3200 (crisis)

905-688-5550 x4300 (non-crisis)

Resources outside of Brock for mental wellness include:

**Niagara Distress Centre:** 905-688-3711 (support line)

**24 Hours Post-Secondary Student Hotline (Good 2 Talk):** 1-866-925-5454

**CONFIDENTIALITY**

All the information that you provide is considered confidential; your name will not be included or associated with the data collection in the study. Once you click to submit your survey responses will be anonymous. There will be no connection between your name and any of the responses in the survey once it is completed. In the analysis portion of the study and any oral/written representation of the data, no one's name or unique identifying characteristics will be associated with any data.

Raw data collected during this study will be stored under lock and key within Dr. Marini's lab in the Plaza Building of Brock University. The electronic data will be kept on a password-protected computer. The questionnaire will be done on Google Drive. Only Amanda DiFonzo will have access to the raw data. Dr. Marini and the thesis committee members will have access to the de-identified data. All individuals who have access to the data will sign confidentiality agreements.

The data will be kept for seven years after completion of the study and then will be deleted or shredded.

Access to this data will be restricted to either Dr. Zopito Marini or Amanda DiFonzo.

**VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled. Withdrawing from the study online can be done by exiting browser, while study done by hard copy can be returned to the researchers to be disposed of through shredding.

**PUBLICATION OF RESULTS**

Participants can obtain a one page summary feedback of the group findings by emailing Ms. DiFonzo. Beyond this study, it is quite likely that attempts will be made to present and publish the results. We also intend to use this data for secondary analysis, which means that in some cases it may involve allowing students or colleagues to reanalyze the data. We would need your permission to do so; you can grant us that permission by checking the appropriate box bellow.

I hereby give permission for my data to be reanalyzed \_\_\_\_

**Please check one of the followings**

I hereby do not give permission for my data to be reanalyzed \_\_\_\_

We will assign a different code to your protocol, depending on your decision. If you do not give permission to reanalyze the data we will assign a code of 1 (as a short hand indication of one analysis only). If you give permission to reanalyze the data we will assign a code of 2 (to indicate more than one analysis). Those protocols labeled 1 will be destroyed after the first wave of analysis, while the other protocols labeled 2 will be kept for further examination.

**CONTACT INFORMATION AND ETHICS CLEARANCE**

If you have any questions about this study or require further information, please contact Dr. Zopito Marini or Amanda DiFonzo using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University [insert file #]. If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, [reb@brocku.ca](mailto:reb@brocku.ca).

Thank you for your assistance in this project. Please keep a copy of this form for your records.

**CONSENT AGREEMENT**

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time. If I choose to participate online, I indicate my consent to participating in this study by going to the website: [insert online questionnaire link here] and completing the questionnaire. Since we will need a copy of this consent indicating your permission (or not) to have your data reanalyzed, please e-mail a copy of this consent form to Ms. DiFonzo ([ad10za@brocku.ca](mailto:ad10za@brocku.ca)).

Alternatively, requesting and filling out a paper questionnaire will signify my consent. To obtain a questionnaire in paper form, please email Ms. DiFonzo ([ad10za@brocku.ca](mailto:ad10za@brocku.ca)) to set up a meeting where the questionnaire can be obtained and returned, and a copy of the consent form checked indicating preference for the reanalyzing the data.

## Appendix J – Letter of Invitation

### Letter of Invitation

January 9, 2016

**Title of Study: Cyberbullying, Social Media, and Fitness Selfies: An Evolutionary Perspective**  
**Principal Investigator: Dr. Zopito Marini, Faculty Advisor, Child and Youth Studies, Brock University**  
**Student Principal Investigator: Amanda DiFonzo, Graduate Student, Child and Youth Studies, Brock University**

I, Amanda DiFonzo (MA candidate), and Dr. Zopito Marini, Faculty Advisor, from the Department of Child and Youth Studies, Brock University, invite you to participate in a research project entitled Cyberbullying, Social Media, and Fitness Selfies: An Evolutionary Perspective.

The purpose of this research project is to investigate the relations between bullying and victimization experiences and one's motivation to take fitness selfies (photos of one's self), along with the occurrence of cyberbullying on social media platforms. Should you choose to participate, you will be asked to complete a questionnaire either online or in hard copy with questions regarding bullying and victimization experiences, a variety of personality traits, along with questions regarding selfie and social media use and the levels of engagement in fitness. Self-esteem, narcissism, and cyberbullying experiences will also be measured.

The expected duration to complete the questionnaire is about 30 minutes of your time.

This research should benefit those involved by exploring how social media in today's society has affected their personal lives, along with what types of factors influence the decision to engage in social media or post a selfie. The current research should also benefit the academic community and society in general by contributing innovative knowledge within a field that has not fully been explored within adolescents and social media. Also, participants will be automatically included into the draw once emailing Amanda DiFonzo or Zopito Marini. The email used to contact about the study will be obtained and put into the draw.

This will be a single-site project only located within Brock University.

If you have any pertinent questions about your rights as a research participant, please contact the Brock University Research Ethics Officer (905 688-5550 ext 3035, [reb@brocku.ca](mailto:reb@brocku.ca))

If you have any questions, please feel free to contact me (see below for contact information).

Thank you,

**[Insert Principal Investigator's Signature]**

Dr. Zopito Marini  
Faculty Advisor  
905-688-5550 Ext. 3178  
[zmarini@brocku.ca](mailto:zmarini@brocku.ca)

Amanda DiFonzo  
Graduate Student  
289-214-8651  
[adifonzo@brocku.ca](mailto:adifonzo@brocku.ca)

This study has been reviewed and received ethics clearance through Brock University's Research Ethics Board **[insert ethics file number]**.

## Appendix K – Feedback Letter

### Feedback Letter

Dear Participant,

Thank you for completing the study on 'Cyberbullying, Social Media, & Fitness Selfies: An Evolutionary Perspective'. The purpose of the study was to examine how past bullying and victimization experiences have an effect on the selfie behaviors of individuals, specifically those who post fitness selfies online. In addition, how cyberbullying can arise from this and what certain characteristics contribute to the amount of involvement one has in posting fitness selfies.

We anticipate that there will be gender differences between the motives of being physically fit, along with differences in the amount of posts that are displayed along. We also expect that past bullying behaviors have an influence on one's motivation to become more physically fit as they grow older.

Your email address provided will be entered into a draw for a gift card, and you will be contacted if you have been chosen. If throughout completing the questionnaire there are any concerns, please refer to the resources below:

#### **Student Health Services**

Located in the Schmon Tower  
ST400  
Counselors  
905-688-5550

#### **Personal Counseling**

Located in the Schmon Tower  
ST400  
Counselors  
905-688-5550

#### **Campus Security**

Located in the Kenmore Centre (across from the Walker Complex)  
905-688-5550 x3200 (crisis)  
905-688-5550 x4300 (non-crisis)

Resources outside of Brock for mental wellness include:

**Niagara Distress Centre:** 905-688-3711 (support line)

**24 Hours Post-Secondary Student Hotline (Good 2 Talk):** 1-866-925-5454

The project has been reviewed by, and received ethics clearance through the Brock University Research Ethics Board., file# \_\_\_\_\_. If you would like to receive the results after the study has been completed, please email either Amanda DiFonzo at [ad10za@brocku.ca](mailto:ad10za@brocku.ca) or Dr. Marini at [zmarini@brocku.ca](mailto:zmarini@brocku.ca) for at the end of the year.

We really appreciate your participation, and hope that this has been an interesting experience for you.

