***The effects of Stress, Sleep, Social Media and Need of Belonging in connection to Body Appreciation***

**Abstract**

Body appreciation is linked with body image, self-esteem and represents a serious threat to teenagers or young adults. Statistically over 91% of women feel unhappy about their body and tend to choose unhealthy methods of coping.

Participants of this study have been only women because of their predisposition of low levels of body image.

These unhealthy methods of coping lead to different psychological or psychical issues, as obesity or depression and in some cases to suicidal thoughts or substance abuse.

The paper examines how social media, stress, quality of sleep and need of belonging can predict body appreciation. The aim of this study is to find valid predictors which cause low levels of body appreciation, so further research could be able to find improved solutions on it. Social media usage affects body perspective throughout social comparison theory. Depending on how stress is perceived, social media usage could accentuate it, and can play an important role in the body perspective.

Need of belonging will be examined assuming high levels could represent a strong need to be active in society physically or virtually, these high levels will influence how a social exclusion is perceived. Sleep will be examined considering the physical influences on the body and the neurological influences on the brain which affect body appreciation.

There were 60 female participants, all undergraduate from the University of Westminster. Participants took part of an online survey with 5 scales measuring the independent variables and the dependent one.

**1.Introduction**

In daily people lives there are many environmental factors which influence their idea of their body (e.g., US: Ata et al.2007; Australia: McCabe and Ricciardelli 2001).

Body appreciation has serious consequences on people health, affecting not only their perceived idea of their psychical body but also leading to mental issues. Statistically 33% of men experienced anxiety because of the way they looked, and 90% of women are unhappy with their body and how they look(reference). Body dissatisfaction is more prone to females than males, but it is more dangerous during adolescence, where self-consciousness, self-awareness, and preoccupation of body image is increased (Harter 1993). Dissatisfaction of body represents a serious threat for eating disorders, causing at the same time depression, or suicidal thoughts (Stice, 2002). The body appreciation is in correlation with prosocial values of how body should look like. Social media plays an important factor setting high level, unreal standards which are hard to acquire by adolescents. This represents a drive for thinness, big muscular masses but most importantly objectification of the body. Social media usage on how it affects body image, will be analysed based on the social comparison model, and the objectification theory.

**1.1 Social Media**

Social media does not only affect people that uses, but also creates prosocial values of what the body image should be.

Teenagers have a strong tendency in giving tips or valuing friends physical characteristics ((US: Jones and Crawford 2006; Ireland: Lawyer and Nixon 2011). Nowadays social media usage is statically arising with over 80% percent of the entire population having at least one social media account, and over 52% checking daily social notifications. The usage in social media is even higher in teenagers between 13-17, with a percentage of 91% having at least one account, and 52% using daily social platforms to interact (3).

Social media influencers tend to promote healthy lifestyle, strong gym usage, healthy diets, body thinness, big muscular mass, which do not always reflect reality. Posting only a picture to show actual body status or lifestyle status, creates an illusion because the pathway of getting there is not always easy and requires motivation and resilience.

Social media influence not only the person that use it, but also creates model in society of what the body should look like.

Usage of virtual social networks can lead to serious negative consequences when not used correctly. This could affect mood, influence body image, lead to depression, dysfunctional diets, obesity, or in some cases even to strong cosmetically procedures (Netherlands: Woertman and van den Brink 2009, reference for diets).

To hide effects and to be able to socially integrate on virtual networks people post only the best pictures of themselves, and in some cases, they even occur to editing this picture to become in trend (4). The context of editing pictures of them in circumstances where it doesn’t reflect their real self, could be interpreted in many ways. Identity development is a process of exploring different possible selves (5), in this case social media could play an important role (5). Identity is constructed throughout social interactions people have with the environment or with society. Feedback of pictures, or comments regarding edited pictures constructs a false idea of the self. Perceived identity is constructed throughout what people think others would think of them(reference).

In interaction with society, throughout virtual social networks, presenting a false body or false values, leads to creation of a false self, where the perception of the real self can be lost.

Social media upward model consists in people selecting their models based on upper models or on lower models seen on social networks (7). Users select this model on assumption of their body, or their presented values on social media. When not being able to reach their model targets a strong meaning of not being in the standardised perceived form of a prosocial body image appears. This threatens their perceived idea of their body (7), and here conditions and negative consequences start to appear.

All of this factors from not being able to reach targets of social models, or not being able to be at the same physical standards characteristics with persons in trend, predicts negative unhealthy behaviours as exercise dependence (UK:White and H alliwell 2010), unhealthy dietary forms (D. A. de Vries (\*)), or even cosmetically procedures.

Research showed that higher social media usage predicted body dissatisfaction in females, but body dissatisfaction was not a predictor for social media usage (8). This could mean that people with low body image are not in the search of social media, but social media influences the body image. The theory of social comparison model, along with the theory of the development throughout social interactions could lead to an infinite cycle where the person is continuously unsatisfied in not reaching his goal.

Considering the last situation with covid lockdown, that lead to a higher use of social media which was found to be correlated with lower self-esteem and body dissatisfaction (Cohen, Newton-John and Slater 2017; Fardouly and Vartanian 2016; Holland and Tiggemann 2016; Sherlock and Wagstaff 2019).

Similar possible scenario of lockdown could rehearse again, and results in low self-esteem and body unsatisfaction are expected to be negative strengthen with usage of socials.

**1.2 Perceived Stress**

Puberty, school, high school, pressure of looking in a certain way, friends’ comparison is just a small list of all the environmental stressing factors that teenagers face. It is certain that stress plays an important role in the mental health development of teenagers (8). The transition from children to teenager and from teenager to young adult come with different hormonal levels and could be positively associated to body and to behaviour development (8). Puberty and teenager phases consist of hormonal increases and are linked to emotional, cognitive, behavioural, and affective development (8). Body appreciation includes a range of physical, emotional, and cognitive evaluation of the body. Body appreciation does not represent just the size or the appearance but also the emotional understanding of it (10). Stress results from the inability to face or unable to cope with mental or emotional events.

Adolescent phase come with a multitude of new and different tasks and responsibilities from academic to emotional that represent higher stress intake (11). These stressors affect more the emotional and behavioural life (11) than the academic one, and this represent an increased risk factor for adolescents. Western females tend to follow as a body image model values as a thin waist, graceful and tend to report stressors from friends, life partners and even parents (12). Females are the ones more prone to it (11), because of their coping styles with stress. Females tend to cope with environmental stressors in unhealthy ways as internalising problems (11). Research in female adolescents showed that eating disorders and body dissatisfaction are associated with accumulated internalised stress of puberty and dating (12). Therefore, it could be possible to assume that what causes stress consequences on body are not the stressing factors, but the internalisation form of coping with it. Internalisation coping method leads to maladaptive behaviours which in this case can trigger eating disorders pathology, which are positively correlated to body satisfaction. Considering that life partners, friends represent a stress intake for females not being able to reach their wanted body image it is possible to assume that the root of the problem is the social-image females try to achieve, which is influenced by social media (thin waist, graceful, objectification). Social media accentuates levels of internalisation, clinical eating disorders and body dissatisfaction (13), by establishing a social body image model to be persuaded by society.

**1.3 Sleep**

An important aspect of teenager mental development is sleep, this helps them in having a clear understanding of their emotion, thoughts, feelings, and how they work from a conscious perspective. Statistics show that over 70% of teenagers have problem sleeping (16). Several studies confirm the correlation between quality of sleep and poor mental health (Tzichnsky & Shochat, 2011). Poor sleep is also correlated with various disorders, as eating disorder obesity, or depression, or even suicidal thoughts (George et al., 2013). Understanding how sleep influence and causes mental issues throughout teenagers could help them understand why sleep is important for their cognitive and emotional development.

Lack of sleep, have consequences on the physic appearance of a person, especially on the skin and the cutaneous body, but also on the brain neurological balance.

Tiredness and lack of sleep causes different face-characteristics changes as wrinkles, lines around the eyes, accelerate the process of ageing (19), and show negative effects on hair.

Cutaneous body image refers to how a person perceive their nails, skin, and hair (22). Studies have found out that cutaneous body of a person affects the perception of the body and influences the body appreciation (20). People with low quality sleep showed higher dissatisfaction of the cutaneous body appearance than people with more healthy sleep (20)

In the case of poor sleep, the neurotransmitter 5HT has been found out to be lowered, causing dysfunctional perceived idea of the body image.

**1.4 Need of belonging**

Considering the usage of social media networks, social networks can provoke different feelings of social exclusion.

Teenagers are highly sensitive to social exclusions especially in the development phases. In following, it will be explained how social exclusion affects people, what are the causes that make the consequences of the exclusions higher, how it is related to need of belonging and to social media. Need of belonging refers to the human emotional need to be socially accepted from the groups which want to be part, as work colleagues, or emotional relationships (23). The need to belong theory sustains that human have a fundamental need to be accepted by groups, therefore means that humans should establish and maintain different relationship throughout life.

When talking of social media, there are multiple cues that reflect social acceptance, and these cues help users fulfil their need of belonging. Acceptance cues on social media can be number of likes, popularity/trending, comments, emojis, or being tagged in pictures (24). Tagging represents mentioning someone’s name in a picture or in a comment, and all users can see the link created.

In real life, acceptance cues of a group can’t be understood easily, a person doesn’t know if has been liked by the other in-group persons, or if they really enjoyed the discussion, or jokes while in social media being tagged by a person could represent signs of acceptance in the relationship. Being tagged solves the uncertainty of social acceptance in a group and can have positive outcomes. Being tagged could make the person understand that is a valuable social interaction partners and at the same time could solve the uncertainty of being accepted or not by the group. This could improve the self-esteem and full-fill the need of belongings (25). At the same time being tagged makes even other social network users to see and this could be understood that the person is an interesting social friend (25).

Opposite being not tagged on social media have opposed consequences and can influence self-esteem negatively and affect the social acceptance and belongingness need (25). Analogous being untagged could represent social rejection. On social media, there exist the possibility to untag your own profile (for various reasons: as not wanting the picture to be on the profile, or picture is not attractive enough), from the perspective of the tagger this can break the social bond created leading to feelings of rejection (25). The need to belong describes the need to be socially accepted in a relationship or groups by the others. Levels of belonginess refer to the importance attributed to be socially accepted, higher levels would mean the person gives higher importance while low levels the opposite. People with higher need of belonging would attribute high importance to all possible social interactions, this including social media. There are multiple causes of why a person is not tagged or is even untagged from a picture or from a commentary. The difference between a person with high or low need of belonging is the difference on which the event of being socially excluded is being perceived. Persons with high levels of need to belong have a certain sensitivity to experiences correlated to social exclusion (25), and they have different reactions to experiences regarding social exclusions (25).

Considering that a person with higher levels of need of belonging gives more importance to being socially accepted, a social exclusion by being untagged could be perceived more importantly and could present a serious self-esteem threat than a person with low levels of need of belonging.

To face being rejected by a group a person can socially conform to the values of the group. Conformation represents a process in which people because of the pressure from groups, will change their behaviour and look to be more admired and confirmed by others (26).

Social rejection and social acceptance play an important role In shaping body appreciation, and in concordance with high levels of belonging a rejection affects negatively body appreciation. Studies found out that conformity is more visible is persons with high need of belonging (26).

**1.5 Aims of study**

Theories study is trying to validate:

\*Social media influences body appreciation throughout social comparison theory, in which high standards of body image are targeted. Methods of reaching them as unhealthy and extreme diets affect negatively body appreciation.

\*Internalisation method of coping with stress leads to clinical eating disorders which affect body appreciation.

\*Sleep and Stress individually lowers 5HT levels which affect idea of body perceived image.

\*Lack of sleep has negative effects on body appreciation because of its psychical consequences.

\*Need of belonging levels relate to how a social exclusion is perceived, which in cases of high levels represent a threat to self-esteem and body appreciation.

**2.Methods**

**2.1 Design**

The study is a quantitative research based on a survey with 5 measuring scales. In order to find the equation of prediction and correlation of each predictors a multiple linear regression will be used with SPSS software. The linear regression used will be an enter method where all predictors will be analysed at the same time. The Independent Variables are Stress, Quality of sleep, social media usage, and need to belong to a group while the predicted variable is body appreciation.

**2.2 Participants**

Participants in the study are all females. Female participants are more prone to internalisation, social media comparison which are expected to be predictors to body appreciation. Female participants were selected throughout mail advertising, and they must be over 18 years old, and part of the Undergraduate course of University of Westminster. Participants being part of student phase of life allows the key theories of the study to be in concordance with the ages in which the effects are more statistically popular.

The sample of this study is convenience sample, and the sample size is of 85 participants (number of predictors: 4, power: 0.8, a err prob: 0.05, effect size : 0.15).

**2.3 Materials**

For measuring the variables, the study used an online survey on Qualtrics. The survey contains a section of the participant approval, section of which are conditions of participating (female & 18 years over) and 5 section each measuring each variable.

**2.3.1 Stress Scale Measure**

Stress was measured with the Perceived Stress Scale (Sheldon Cohen, 1993). The scale has been shown valid in measuring levels of perceived stress. It contains 10 items with five responses ranged from strongly disagree (0) to strongly agree (4). The Cronbach alpha of the scale is .418.

**2.3.2 Sleep Scale Measure**

Sleep was measured with the Sleep Quality Scale (C.Shin, YI 2006). The scale measures the perceived quality of the sleep of the participant, along with evaluations of the outcomes of poor sleep. The scale contains 10 items with scores ranged from strongly disagree (0) to strongly agree (4). The Cronbach alpha of the scale is .695.

**2.3.3 Need of Belonging Scale Measure**

Need of belonging was measured with the Need to Belong Scale (Leary, M.R,2013). The scale measures is associated with measuring the desire for being socially accepted and belonging to a group. The scale contains 10 items with scores ranged from strongly disagree (0) to strongly agree (4). The Cronbach alpha of the scale is .584.

**2.3.4 Social Media Usage Scale Measure**

Social media usage was measured with the Social Media Usage Scale (Jenkins-Guarnieri et al, 2013). The scale measures the importance and the need of social media in daily lives of participants. The scale contains 10 items with scores ranged from strongly disagree (0) to strongly agree (4). The Cronbach alpha of the scale is .796.

**2.3.5 Body Appreciation Scale Measure**

Body appreciation was measured with the Body Appreciation Scale. The scale measures the perceived idea of the body and of the feelings associated with it. The scale contains 13 items with scores ranged from never (0) to always (4). The Cronbach alpha of the scale is .796.

|  |  |  |
| --- | --- | --- |
| Scale | Items | α |
| Perceived Stress Scale | 10 | .418 |
| Quality of Sleep | 11 | .695 |
| Need of Belonging | 10 | .584 |
| Social Media Usage | 10 | .796 |
| Body Appreciation Scale | 13 | .931 |

**2.4 Procedure**

Ethics approval was obtained from the University of Westminster.

Participants have been recruited throughout advertised emails to University of Westminster students. Participants had the possibility to forward the e-mail message towards other students at University of Westminster. The e-mail contained a link towards a Qualtrics survey.

Participants after entering the link will have the following path. Possible participants in the mail will be informed about their anonymity and data published will not be identifiable with them.

Participants firstly will be asked to sign the tick boxes, where they will confirm their consent followed by their gender and age. As already mentioned in the e-mail, gender box will exist on the survey website and only females will proceed. In order to continue all boxes of the participation consent must be ticked. In the case of not ticking every box of the consent form, participants will not be able to continue.

Data will be fully anonymous, and after analysed the data will be stored password protected. Data will be protected by an encrypted password file on personal computer. The survey has a duration approximate of 8-12 minutes. and represents no harm to the participant. The participant has the right to close and to leave at any moment the website and their results will be immediately deleted. The participants have the right to withdraw from the study at any moment.

**3.Results**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| (1) Body Appreciation |  | -.084 | -.077 | -.234 | .467 |
| (2) Social Media Usage |  |  | .203 | .548 | -.364 |
| (3) Quality of Sleep |  |  |  | .116 | -.270 |
| (4) Need of Belong |  |  |  |  | -.172 |
| (5) Perceived Stress |  |  |  |  |  |
| Mean | 42.6 | 31.13 | 31.16 | 33.68 | 32.15 |
| SD | 11.17 | 7.27 | 6.12 | 5.11 | 4.21 |

To examine the variables a multiple linear regression using the enter method was used. In the regression we entered as predictors, perceived stress, social media usage, quality of sleep, need of belonging. The predicted variable is body appreciation. Results showed that the regression was significant (F (4,55) – 5.541, p < .001). The model explains 28.7% of variance in one variable explained by the other (R^2 = .287). The R^2 value is moderate.

The table of coefficients show that only Perceived Stress is a significant predictor having sig p<.001.

Table Regression Coefficients

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B | SE | β | t | p | Tolerance | VIF |
| (constant) | 4.454 | 17.12 |  | .260 | .796 |  |  |
| Social Media | .393 | .222 | .256 | 1.769 | .082 | .619 | 1.615 |
| Quality of sleep | .084 | .217 | .046 | .387 | .700 | .914 | 1.094 |
| Need of Belonging | -.632 | .297 | -.289 | -2.125 | .038 | .698 | 1.432 |
| Perceived Stress | 1.386 | .332 | .523 | 4.178 | .001 | .826 | 1.211 |

**4.Discussion**

Although we considered social media to be a strong predictor to body appreciation, results showed to have a weak negatively correlation with body appreciation, and moderate strength levels of prediction. In examining the effects of social media on body appreciation, the study sustained its hypothesis based on the social comparison theory(reference). What the paper proposed to be more threatening to body appreciation, is the standards of body image which social network creates. Overall, several research sustains the effects on social media usage, and how it is associated to body image(reference). Statics prove that social networks are arising throughout teenagers and adults, and the effects of exposure could strengthen over time. What is not clear in the results of the study, is what exactly of social media influences body image. For example, comparison to other attractive users could affect in a certain and different way than seeing specific content of social media(reference).

Our results showed that the only significant predictor in the equation of prediction is perceived stress. The scale measures levels of stress. This study results validates as being a strong predictor for negative body appreciation. The significant predictor validates it.

The paper based its assumptions of stress on the internalisation behaviour of females in coping with stress. On the other hand, externalisation relates to the strategies adopted to achieve certain muscular targets. These is typical to males in adolescence (Cafri et al., 2005). We could consider as a limitation of this study in measuring stress, not measuring also coping strategies to it and what are the stressors factors. Research showed that in western countries females tend to be more under pressure from peers regarding body factors(reference). But academic stress also has been found out to be a significant strong predictor in body image problems affecting body image in a different way than pressure from peers(reference). For better validity of the outcomes of stress, further research will have to consider strongly measuring causes of the ongoing stress, and differences from gender in stress related to body image. Socio economic status was not taken in calculus in the assumption of stress and findings found out that financial situation represents a threat for mental health especially throughout adolescence(reference Kosovo).

As well, what could help understand how social media along with stress influence body image, would be to understand in what proportion social ideas of body standards are related to social media attractive models.

A considerable strength of the present study is that it is the first to investigate the role of adolescent stress in body image. This study can inform universal school-based programs to improve body image and prevent the onset of eating disorder pathology (McVey & Davis, 2002; McVey et al., 2004; McVey et al., 2007). The findings of the present study may help to enhance the long-term efficacy of these programs by targeting dimensions of stress relevant for body image problems in males and females.

The present study identified a strong relationship between adolescent stress and body image, and highlighted the importance of self-esteem and gender in this process. By contributing to the theoretical framework of poor body image in females and males, stress may prove to be a missing link in effective early identification, prevention and intervention.

Consistent with prior research, higher levels of electronic use at sleep time are associated with higher levels of psychological distress (Tao et al., [2017](https://www.tandfonline.com/doi/full/10.1080/02673843.2018.1450272?scroll=top&needAccess=true); Wheaton et al., [2013](https://www.tandfonline.com/doi/full/10.1080/02673843.2018.1450272?scroll=top&needAccess=true)). Sleeping disturbances, bedtime fears and insomnia, similar to prior research findings, were also associated with higher levels of psychological distress (Ivanenko et al., [2006](https://www.tandfonline.com/doi/full/10.1080/02673843.2018.1450272?scroll=top&needAccess=true); Jenaro et al., 2007; Yen et al., 2009; Beranuy et al., 2009; cited in Tao et al., [2017](https://www.tandfonline.com/doi/full/10.1080/02673843.2018.1450272?scroll=top&needAccess=true)).

Furthermore, higher self-esteem was related to lower levels of psychological distress, which was consistent with prior research findings conducted within the field. Lower self-esteem has been considered an indicator of increasing levels of psychological distress, whereas higher self-esteem has been considered a protective factor (Mann et al., [2004](https://www.tandfonline.com/doi/full/10.1080/02673843.2018.1450272?scroll=top&needAccess=true); Orth et al., [2009](https://www.tandfonline.com/doi/full/10.1080/02673843.2018.1450272?scroll=top&needAccess=true)).

Additionally, the findings from this study, as expected, show that when family income is perceived as worse than other families, this seems to increase the likelihood of experiencing psychological distress among adolescents.

Finally, the findings from this study provide the first evidence that sleep-related issues represent a vital and exciting factor for exploration with regard to their relationship with psychological distress. The correlational analysis of this study showed that insomnia, sleep duration, electronics use at the sleep onset and bedtime worries and fear are all correlates of mental distress. These findings provide firm ground for the development of prevention and intervention strategies with regard to sleep habits, sleeping hygiene and sleeping behaviors when working with adolescents.

Specifically, the findings from this study may serve as a baseline for public health institutions, mental health workers and education systems involved with children and youth development to promote awareness and design intervention programs that address mental health, healthy sleeping behaviors and other associated factors related to psychological distress among Kosovar children and adolescents.

The results of the present study confirm that COVID-19-related stress and anxiety are associated with more negative body image, over-and-above the variance explained by perceived stress, stressful life events, and trait anxiety, which is consistent with earlier scholarly commentary ([Cooper et al., 2020](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0020); [Rodgers et al., 2020](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0090)). Although our data cannot speak to mechanistic pathways, it is possible that COVID-19-related stress and anxiety diminish coping resources to manage threats to body image, increase exposure to thin/athletic ideals via media messaging (e.g., given increased screen-time under lockdown; see [Pietrobelli et al., 2020](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0080)), and heighten concerns about weight and/or shape changes that occur during conditions of lockdown (e.g., because of decreased physical activity) ([Cooper et al., 2020](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0020); [Rodgers et al., 2020](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0090)). COVID-19-related stress may also be associated with greater frequency of negative body ruminations that lead to a preoccupation with body shape and/or weight and desire to reassert a degree of control through body work ([Ruggiero et al., 2008](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0095)).

In women, greater COVID-19-related anxiety (but not stress) was significantly associated with body dissatisfaction, whereas both COVID-19 anxiety and stress were associated with greater drive for thinness. It is possible that these findings are reflective of women's lived experiences under conditions of lockdown. Anxiety-inducing fear-mongering over weight-gain due to changes to routine during lockdown (e.g., poorer diets, less frequent exercise), greater pressure to conform to traditionally feminine roles and norms, and messaging about self-improvement may lead women to feel dissatisfied with their bodies, but more importantly to increase restriction and weight control ruminations that are central to drive for thinness. To the extent that women act on such ruminations (e.g., by increasing unhealthy weight control behaviours to reduce the risk of weight gain), it may function to regulate the anxiety, stress and uncertainty associated with the COVID-19 pandemic (e.g., see [Brown et al., 2017](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7539826/#bb0010)).

Social media motivates the internalisation and predicts eating disorders. Stress and social media could have stronger negative results because both predictors influence in the same way the causes of what leads to body depreciation.

From a neurological perspective stress affects the 5HT neurotransmitter which leads to body depreciation. The same neurotransmitter is negatively correlated with both stress and sleep, having a stronger consequences together on body appreciation.

**Reference**