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Original article

Influence of Facebook on Body Image and Disordered Eating in Kazakhstan and USA[1]

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Abstract

Women in the United States of America (USA) are ranked fourth heaviest in the world, while women in Kazakhstan are generally thin. This difference in average female weight leads to interesting questions regarding perceptions of beauty. Is there less negative body image in Kazakhstan given that, on average, Kazakh women are slimmer compared to American women? The “thin ideal” is pervasive in all genres of mass media and has been linked to negative body image, which in turn is a risk factor for eating disorders, and a significant predictor of low self¬-esteem, depression, and obesity. Young women spend an increasing amount of time with social media both in Kazakhstan and the USA, but the relationship between this growing exposure and body image is not fully understood. This study uses objectification to examine the relationship between time spent on Facebook and body image among Kazakh and American college women. Time on Facebook predicted BSQ and EAT-26 scores in Kazakhstan but did not in the USA, suggesting Facebook may have a more subtle effect in the USA. Time on Facebook predicted attention to appearance and negative feelings in both countries. Practical and theoretical implications are detailed.

Keywords: Facebook, Health of women, Healthy lifestyle, Health of nation, Negative influence of hypodynamia, Unrealistic media images, Obesity rate, Female weight, Anorexia, Disorders’ etiology.

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INTRODUCTION

Women come in all shapes and sizes, especially when comparing people from distant countries. For example, the average weight of women in Kazakhstan is 146.09 lbs. (Quilty- Harper, 2012) while it is 166.01 lbs. in the United States of America (USA)(Bloomberg, 2012). The average obesity rate in Kazakhstan is 12.2% (UN Data, 2014) compared to 34.9% in the USA (Centers for Disease Control and Prevention (CDC), 2014). Women in the USA are ranked fourth heaviest in the *world* (Bloomberg, 2012), while women in Kazakhstan are generally thin. This difference in average female weight leads to some interesting questions regarding perceptions of beauty and body image. For instance, is there less negative body image in Kazakhstan compared to the USA given that, on average, women are slimmer in Kazakhstan? In addition, would social media exposure's impact on body image differ depending on the average female weight in a respondent's country of origin? These are some of the questions that are the driving force behind this study.

In the USA, a young woman between the ages of 15 and 24 is 12 times more likely to die from anorexia nervosa than from all other causes (SCDMH, 2006). Since psychological and social factors are as much part of the disorders' etiology as genetics and biology, social scientists, and particularly media scholars, have an opportunity to contribute to the shared understanding. This study is a contribution in that direction as it examines how young women's psychological states are related to disordered eating, body image and social media use.

Mass media have been criticized for decades for selling to young women unrealistically thin images (Kilbourne, 1994). Exposure to unrealistic media images often results in increased weight concern and these effects may persist even with only passive exposure (Posavac et al., 1998). In recent years, scholars' attention has turned to social media and its relationship with women's body dissatisfaction (e.g. Kolpa and Moreno, 2011). This study continues the examination of social media and its relation to women's body image and possible dissatisfaction and focuses particularly on Facebook. This specific website was chosen because of its popularity among the target of study, college women.

Predictions about the participants are based on Objectification Theory. The pressure to be thin encourages bodily comparison for many women causing some to be "vigilantly aware" of their bodies (Tylka and Hill, 2004). Likewise, Western entertainment television/cable media have found a market in Central Asia, and so have social media outlets such as Facebook. Women become more self-aware than men and learn to objectify themselves on a regular basis (Tylka and Hill, 2004). As they grow more conscious of their bodies, the objectification becomes routine. Tylka and Hill (2004) proposed that body image refers to thoughts, attitudes, and feelings about one's body, and that body shame encompasses feeling embarrassed by one's body parts. Such feelings and behaviors may contribute to efforts to modify one's body by changing eating and exercise habits.

Kazakhstan adopted the policy of 'economy first and then politics,' which has dramatically changed the former communist and soviet state as one of the fastest developing and westernizing countries in Central Asia (Ismagulova, 2012; Knox, 2008). Since independence in 1991, Kazakhstan has had only one head of state, President Nursultan Nazarbayev, a former communist apparatchik who was appointed the first secretary of the Communist Party of Kazakhstan in 1989 and was elected president in 1990, emerging as the central figure in the country's politics (Isaacs, 2011). The country quickly adopted some political development policies in the first decade of its independence, starting with economic liberalization and adoption of a new constitution in 1995, instituting a more open capitalist and free liberalized society (Ismagulova, 2012). Girls and women are free to have an education, they engage in socioeconomic and political activities, and the government has invested money in women emancipation projects (Mishra, 2009). Hundreds of young college women are sponsored by the Kazakhstan Government with academic mobility bursaries and Presidential Scholarships to earn degrees in Europe and the USA. Based on some of the authors' experience and anecdotal evidence, Kazakh college women are free-spirited and a majority of these young women are adopting Western lifestyles of dressing and leisurely occupations.

This study advances our understanding of the possible relationship between the use of Facebook by college women and their body image and eating habits.

Objectification Theory

The theoretical premise of objectification stems from the observations of others that women experience during everyday life. These experiences, either through real life interactions or media exposure, seem to impact the views women shape about themselves. As observations are internalized, women begin to analyze their bodies as physical objects rather than a part of themselves. Essentially, the view of one's self develops into self-objectification: third-person awareness (Frederickson and Roberts, 1997). Once self-awareness is heightened, individuals continue to self-evaluate on a recurring basis and that has negative effects (Frederickson and Roberts, 1997).

With the development of social networking sites (SNS), self-objectification through a new media channel has become possible. Most importantly, these outlets flood consumers with images of peers. Facebook maintains a relatively easy way for people to evaluate themselves based on constantly refreshing information about their peers. Furthermore, it should be expected that photos posted to Facebook are chosen to best represent aspects of an individual that shesubjectively believes to be acceptable by society and peers (Siibak, 2010). Recent work by McLaughlin and Vitak (2011) demonstrated that college-aged women "untag" posted photos on Facebook that they believe do not ascribe to Western beauty ideologies. Hence, Facebook may continue to reinforce an "ideal self" that does not represent the individual (Gonzales and Hancock, 2011), but instead maintains a facade as an object rather than a person.

When an individual's perception of her own body fails to meet what she considers the mediated societal standard, body shame is instigated due to over-comparison to unrealistic images (Tylka and Hill, 2004). Feelings of body shame may perpetuate due to repetitive overexposure to these images and may influence women's desires to change their bodies. The distinct focus on one's image across SNS has been directly related to body surveillance (Vandenbosch and Eggermont, 2012). Observations of members of a social network may also influence body surveillance and influence the risk of developing disordered eating behaviors (Moradi & Huang, 2008). If bodily attributes are continually being evaluated through the combination of these mass media channels, more extreme methods may seem necessary for women to reach their idealized goal (Frederickson and Roberts, 1997) and that may include disordered eating. Through these processes, ideal attractiveness manifests components of self-objectification to Western standards of beauty.

Eating Disorders

Eating disorders often appear during the teenage years or in young adulthood, but may also develop in childhood or later in life (USDHHS, 2011). They include anorexia nervosa, bulimia nervosa and more recently binge-eating disorder. The problems associated with eating disorders, however, are not concentrated only among those who are diagnosed with them. Many people are far from a diagnosis but still exhibit behaviors which are cause for concern. Such behaviors often fall under the auspices of disordered eating. While an eating disorder is a mental illness, disordered eating can be defined as "an unhealthy relationship with food" (Disordered Eating vs. Eating Disorders, 2013). Disordered eating is much more common and may lead to further complications.

Often women do not see their actions as disordered, but they will identify performing the classified behaviors (Striegel-Moore et al., 1989). This discrepancy exists because disordered eating covers a wide range of behaviors from preoccupation with weight and eating, to "normalized discontent" of weight and body habits, and finally to the development of a clinical eating disorder (Striegel-Moore et al., 1989). "Normalized discontent" means that women are expected to be dissatisfied with their bodies. Thoughts of dieting and body image become engrained in women's minds from an early age and interfere with their happiness (Reba- Harreleson et al., 2009).

This study uses two different questionnaires to measure participants' body image (Body Shape Questionnaire) and eating attitudes (EAT-26). In the current study, the purpose of using these measures is to identify patterns of disordered eating and problems with body image, not to diagnose women with an eating disorder, which can only be done by medical personnel.

College Women and Their Body Image

Disordered eating and eating disorders occur among adults of all ages, but college-aged adults, and especially women, are particularly prone to engaging in disordered eating or developing an eating

disorder. The average age of onset of all three eating disorders is during the college years or shortly afterwards (Hudson et al., 2007). Further, 91% of college women regularly diet to control their weight (Shisslak et al, 1995). Therefore, college-aged women, are the prime targets for research and intervention on these issues.

In Kazakhstan and the USA, college women commonly talk about and bond over the size and shape of their bodies, often in negative terms. This behavior, known as "fat talk", is widespread throughout college campuses. Indeed, 93% of women report having engaged in fat talk with their friends (Salk and Engeln-Maddox, 2011). Fat talk has been linked to body dissatisfaction and disordered eating among women (Salk and Engeln-Maddox, 2011). For women who engage in disordered eating, their weight is often less of a trigger than their body image (Cooley & Toray, 2001). Women who were more dissatisfied with their body upon entering college generally continued to show worse behaviors over time (Cooley and Toray, 2001).

One proposed explanation for the high proportion of college women engaging in disordered eating is the increased pressures and competitions at the collegiate level (Ferrier & Martens, 2008). Entering college is a "critical" time for young adults because it sets a framework for the behaviors they will carry through the rest of their lives.

One specific pressure found on college campuses was that of thinness ideals. In recent years, frequent body comparisons to thinner and more attractive women on campus continually remind women that they should be working harder to achieve an image of beauty that they currently do not possess (Tylka and Sabik, 2010). Once again, women judge the bodies of their peers to determine their personal perceived attractiveness. The college environment and experience contribute to the need to fit in, and one of the most common ways to do that is by modifying one's body until it is acceptable to others.

Facebook Usage among College Students

As of August 2013, 89% of adults aged 18-29 use social networking sites such as Facebook, LinkedIn, or Google Plus (Brenner and Smith, 2013). Facebook has been the market leader among social networking sites for years. A majority of college students utilize it as a form of media, and most access the website at least twice a day (Sheldon et al., 2011). Facebook promotes individual autonomy, a means by which users can express themselves however they choose. More than expression of self, though, Facebook can allow for development of interpersonal closeness and other factors including social satisfaction, security, inclusion, and acceptance (Sheldon et al. 2011).

As a social media platform, Facebook also allows for self-expression with "friends" through media sharing (Stefanone et al., 2011). While Facebook is used for a wide range of activities, including web chatting, online gaming, and general networking, perhaps the most direct expression of one's self comes from the photographs users post. Online photo sharing allows for increased social presence of an

individual (Stefanone et al., 2011). Furthermore, young women tend to take and share more photos on their Facebook pages than older women or men (Stefanone et al., 2011). With women posting more pictures on the Internet than men, this compounds the problem of female body image standards and comparisons.

The interpersonal components of Facebook allow for commenting on or "liking" photos. This feedback works as a measure of one's physical appearance (Valkenburg and Schouten, 2006). Facebook thus develops as another way to objectify one's self and others. Gonzales and Hancock (2011) found that viewing one's profile may be related positively to self-esteem. The premise is that the individual could selectively self-present the attributes or photos they wanted to share.

The images they choose to present can raise self-esteem because they show the ideal person they want society to view. However, this can also create inner turmoil because individuals may develop assumptions that they are not as perfect as the image they present.

Facebook use also relates to issues of weight, body image and body comparison. A recent study found that women were 3.5 times more likely to make a Facebook post about their weight than men (Kolpa and Moreno, 2011). The majority of the commentary about weight was negative, including self-criticism, plans for exercise, or new dieting plans. Those who posted weight references on Facebook were also 4.6 times more likely to post references to depression and 3.9 times more likely to post about stress (Kolpa and Moreno, 2011). Since women are generally more active on Facebook than men and utilize its benefits to maintain close relationships, they also are more likely to notice and recognize the commentary about body image. Thus, though unintentional, Facebook sets a perfect arena for propagation of body image dissatisfaction and fat talk. The above research on women's use of Facebook and its relation to body dissatisfaction leads to the formation of the following hypotheses and research questions:

RQ: What is the relationship in college women between time spent on Facebook and how they feel about their body image in Kazakhstan and the USA?

H1 - For college women in Kazakhstan and the USA, days spent on Facebook per week will predict BSQ scores, while controlling for desired weight change.

H1a - For women who want to lose weight, spending more time on Facebook will predict BSQ scores.

H1b - For women who want to gain or maintain their weight, spending more time on Facebook will not predict BSQ scores.

H2 - For college women in Kazakhstan and the USA, days spent on Facebook per week will predict EAT-26© scores, while controlling for desired weight change.

H2a - For women who want to lose weight, spending more time on Facebook will predict EAT-26© scores.

H2b - For women who want to gain or maintain their weight, spending more time on Facebook will not predict EAT-26© scores.

H3 - For college women in Kazakhstan and the USA, spending more time on Facebook will predict paying more attention to physical appearance, while controlling for desire for weight loss.

H3a - For women who want to lose weight, spending more time on Facebook will predict paying more attention to physical appearance.

H3b - For women who want to gain or maintain their weight, spending more time on Facebook will not predict paying more attention to physical appearance.

H4 - For college women in Kazakhstan and the USA, spending more time on Facebook will predict negative feelings after viewing others' photos and posts, while controlling for desire for weight loss.

H4a - For women who want to lose weight, spending more time on Facebook will predict feeling more negative after viewing others' photos and posts.

H4b - For women who want to gain or maintain their weight, spending more time on Facebook will not predict feeling more negative after viewing others' photos and posts.

Method

The survey was conducted in two separate instances, first in the USA and later in Kazakhstan. College women were surveyed about their use of Facebook, body image, habits related to weight, dieting, and exercise.

At a major public university in the Midwest United States, participants were recruited via campus announcements, student organizations, and e-mail distribution lists and self-selected totake part in the study. A random sample of 2,400 undergraduate and graduate students received an e-mail invitation with a survey description and hyperlink. Participants had the opportunity to exit the survey at any point prior to its completion and were incentivized through the chance to win one of 15 gift cards valued at $25. The online survey was hosted on the commercial site Qualtrics. In Kazakhstan, however, a random sample of 550 undergraduate and graduate students participated in a face-to-face survey administered by trained field survey coordinators. Out of the 550 surveys, only 298 contained complete data. No financial incentives or otherwise were extended to participants in Kazakhstan.

The sample sizes for Kazakhstan and the USA are comparable because we considered the total population of citizens as well as the academic institutions in both cases before we considered the sample. For instance, there are fewer universities and college women in Kazakhstan than in the USA. The USA

has a total population of about 317 million people (Schlesinger, 2013) and there are over 4,500 degree-granting institutions (National Center for Education Statistics, 2013b) with a total of over 1.7 million female students (58.59%) (National Center for Education Statistics, 2013a). In Kazakhstan, however, the total population is 17.9 million people (Index Mundi, 2014) and there are only close to 58 institutions of higher education with 51% of the students being female ("Kazakhstan," 2007).

The survey instrument consisted of three main sections: questions about Facebook use, questions about eating habits and body image, and demographic questions. In the Facebook section, participants were asked about their frequency of visits to the website and time spent there, typical activities while there, and the relative time spent on activities. Specific questions concerning the attention paid to others' photos and the dressing style, body, and behavior portrayed in them were also asked.

The section on eating habits and body image included two established questionnaires from the literature on eating disorders: the Eating Attitudes Test (EAT-26)© by Garner, Olmsted, Bohr, and Garfinkel (1982) and the Body Shape Questionnaire (BSQ) by Cooper, Taylor, Cooper and Fairbum (1987). EAT-26 is one of the most widely used instruments to screen for disordered eating attitudes and behaviors and has been extensively validated across clinical and non-clinical samples from varied cultural backgrounds in the USA and internationally (Maiano et al., 2013). EAT-26 consists of 26 questions divided into three subscales: dieting (13 questions), bulimia and food preoccupation (6 questions), and oral control (7 questions).

The BSQ scale consists of 34 questions and measures concern about body weight and shape and is noted as a "relevant and practical measure of body image symptoms for persons with excessive concerns about weight and shape" (Rosen, Jones, Ramirez, & Waxman, 1996). BSQ explores additional body image symptoms, which are not measured by EAT-26, such as feelings about one's body shape in various situations or comparative to other women, and behaviors in public and private related to such feelings. For example, "Have you felt that it is not fair that other women are thinner than you?" or "When in company, have you worried about taking up too much room?" (Cooper et al., 1987).

The third section of the survey asked about demographics and included current weight, ideal weight, age, ethnicity, and class standing. In total, the survey contained 87 questions and required about 15 minutes to complete in pretest.

Results

A total of 298 college women completed the survey in Kazakhstan (KZ), Central Asia and 899 college women completed the survey in the United States of America (USA).

Undergraduate women comprised 88.3% (n = 263, KZ) and 77% (n = 679, USA) of the participants, graduate students made up the ining 11.4% (n = 34, KZ), and 23% (n = 203, USA). This

also is a close representation of the universe for the female student body in this major public university in Almaty.

The average age of respondents was 19.36 (SD = 1.56), ranging from 16 to 26 years old (KZ) and 23.83 *(SD* = 7.26), ranging from 18 to 60 years old (USA). For KZ, most respondents (87.5%, n = 260) were Kazakh, 3.7% (n = 11) were Mixed Race, 3.0% (n = 9) were Russian, 3.0% (n = 9) were Korean, 0.7% (n = 2) were Uzbekh, 2.0% (n = 6) identified themselves as other. For the USA, most respondents (87.4%, n = 770) were white, 4.3% (n = 38) were black, 4.1% (n = 36) were Asian, 2.5% (n = 22) were Hispanic and 1.6% (n = 14) identified themselves as others.

Mean weight was 124.75 pounds *(SD* = 19.64, n = 298, KZ) and 149.64 pounds *(SD* = 37.94, n = 879, USA). The mean weight in KZ was significantly lower than the mean weight in the USA, t(1175) = -10.82,$p < .05$. The mean ideal weight was 118.01 pounds *(SD* = 21.48, n = 298, KZ) and 130.65 pounds *(SD* = 19.20, n = 873, USA). The mean ideal weight was significant lower in KZ as compared to in the USA, t(1169) = -9.50,$p < .05$. It is interesting to note that the actual average weight in KZ is smaller than the average ideal weight in the USA.

Authors calculated a difference score by subtracting current weight from ideal weight, so that negative numbers would indicate respondents who wanted to lose weight. The mean desired weight difference was -6.73 pounds *(SD* = 13.79, n = 298, KZ) and -19.10 pounds *(SD* = 25.77, n = 870, USA). The average desired weight difference was significantly larger in the USA compared to in KZ, *t(1166)* = 7.93, $p < .05$, such that on average, respondents in KZ wanted to lose less weight than those from the USA. The majority of respondents (64.1%, KZ; 86%, USA) wanted to lose weight. About 15.8% (KZ) and 4.6% (USA) wanted to gain weight, whereas 20.1% (KZ) and 9.4% (USA) were happy with their weight. The variable "weight difference" was split into three categories: lose weight, gain weight, or stay the same. The "lose weight" category contained all negative values (-.01 or lower), "gain weight" contained positive values (.01 or higher), and "same weight" was populated by respondents whose difference between ideal and current weight was 0.

Meanwhile, 24.9% (n = 74, KZ) and 6.7% (n = 59, USA) of the sample indicated that they had been diagnosed with an eating disorder and 19.5% (n = 58, KZ) and 3.7% (n = 32, USA) reported that they had been treated for an eating disorder.

Respondents visited Facebook almost daily (M = 4.99, *SD* = 2.11, n = 213, KZ; and *M*=

SD = 1.61, *N* = 879, USA) and spent 157.89 (KZ) and 79 (USA) minutes there on average *(SD* = 107.510, n = 141, KZ; and *SD* = 78.98, n = 881, USA) on a typical day. Reading the newsfeed was the most popular activity for respondent in both KZ and the USA, as it took up the largest share of time on a typical visit (M = 33.03%, *SD* = 32.54, KZ; and *M* = 45.77%, *SD* =

USA). The second and third most popular activities were different for respondents from KZ as compared to the USA. Messaging or chatting with friends accounted for 23.59% *(SD* = 23.09, n = 146) of the time and was the second most popular activity while looking at photos, which took 11.67% of the time during a typical visit *(SD* = 12.82, n = 146) was the third most popular activity for respondents in KZ. However, for respondents in the USA, looking at photos was the second most popular activity and took 16.86% of the time during a typical visit *(SD* = 15.65, *N* = 881) while messaging or chatting with friends took 10.25% *(SD* = 14.88, *N* = 879) and was the third most popular activity.

Table 1. Correlations for all variables of interest in Kazakhstan

	1.	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
1.Days/Week on Facebook	1	-.190**	-.164**	.015	.189**	.123*	-.322**	-.324**
2. Weight		1	.779**	-.211**	.031	.034	.197**	.248**
3. Ideal Weight			1	.449**	.046	-.086	.074	.027
4.Weight Difference				1	.028	-.183**	-.200**	-.295**
5. Attention to Appearance					1	.390**	.076	.038
6.Feeling Negative						1	.327**	.512**
7. EAT scores							1	.812**
8. BSQ scores								1

Note: * $p < .05$, ** $p < .01$

Table 2. Correlations for all variables of interest in the USA

	1.	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**
1.Days/Week on Facebook	1	-.004	-.041	-.015	.185**	.111**	-.036**	.017
2. Weight		1	.790**	-.888**	-.135**	-.111**	.057	.289**
3. Ideal Weight			1	-.420**	-.149**	-.010	-.102**	.073*
4.Weight Difference				1	.091**	-.172**	-.163**	-.379**
5. Attention to Appearance					1	.451**	.242**	.271**
6.Feeling Negative						1	.509**	.639**
7. EAT scores							1	.777**
8. BSQ scores								1

Note: * $p < .05$, ** $p < .01$

RQ1 asked about the possible relationship between time spent on Facebook by college women and how they feel about their body image.

First, a reliability analysis on the EAT-26 scale was conducted to determine if it is consistent with the validated Garner et al (1982) scale. Overall, the scale was a reliable measure (a = .943, KZ and *a* = .882, USA). Another reliability analysis of the three EAT-26© subscales found that the 13-item dieting

subscale was reliable (a = .874, KZ and *a* = .868, USA), however, the subscale could have been improved with the deletion of item 26 (a = .916, KZ, and *a* = .882, USA). One possible explanation could be that this was the last and only reverse-coded item on the EAT-26© scale (Enjoy trying new rich foods). The 6-item bulimia and food preoccupation subscale was reliable (a = .889, KZ, and *a* = .769, USA). Finally, the 7-item oral control subscale was reliable with this sample in KZ (a = .828) but was not reliable with the sample in the USA (a = .578). The reliability analysis for the 34 BSQ items shows that this was a highly reliable measure (a = .980, KZ, and *a* = .976, USA).

To answer the research question, several criterion variables were used that indicate feelings about one's body image: BSQ, EAT-26, frequency of negative feelings about one's body after looking at others' photos and posts, and frequency of comparing one's body and weight to that of friends. Hypothesis 1 stated that for college women, days spent on Facebook per week will predict BSQ scores, while controlling for desired weight change. A hierarchical linear regression with BSQ scores as the criterion variable was conducted. The difference between ideal weight and current weight and days on Facebook per week were entered as predictor variables. For respondents in KZ, time spent on Facebook significantly predicted BSQ scores, *в* = - 322, t(221) = -5.33, *p* = .000. This model also explained a significant proportion of the variance in BSQ scores, R^2 = .184, *F(2*, 221) = 28.09,*p* < .000. This relationship, however, was not found for respondents in the USA, *p* = .655.

H1a stated that for college women who want to lose weight, spending more time on Facebook will predict BSQ scores, but H1b stated that for college women who want to gain or maintain their weight, this relationship will not exist. For KZ, results showed that days spent on Facebook significantly predicted BSQ scores for those that wish to lose weight *(fi* = -.291, t(141) = -3.78, *p* = .000) and those that wish to gain weight *(fi* = -.634, t(35) = -5.61, *p* = .000). Days spent on Facebook did not predict BSQ scores for those that wish to maintain their weight *(p* = .125). For the USA, results showed that days spent on Facebook did not significantly predict BSQ scores for those that wish to lose weight *(p* = .926), for those that wish to maintain their weight *(p* = .733) or for those that those that wish to gain weight *(p* = .417). Hypothesis 1a was supported in KZ but not in the USA; however, hypothesis 1b received partial support at KZ and full support in the USA.

Hypothesis 2 stated that for college women, days spent on Facebook per week will predict EAT-26 scores, while controlling for desired weight change. A hierarchical linear regression with EAT-26© scores as the criterion variable was also conducted. The difference between ideal weight and current weight and days spent on Facebook were entered as predictor variables. Days spent on Facebook did significantly predict EAT-26© scores in KZ, *fi* = -.339, t(201) = -5.21, *p* = .000. The model also predicted a significant amount of the variance in EAT- 26© scores in KZ R^2 = .16, F(2, 201) = 18.34,*p* < .000. However, there was no significant relationship found in the USA, *p* = .358. Therefore, support was found for H2 in KZ but not in the USA.

H2a stated that for college women in both countries who want to lose weight, spending more time on Facebook will predict EAT-26© scores, but H2b stated that for college women who want to gain or maintain their weight, this relationship will not exist. For KZ, results showed that days spent on Facebook significantly predicted EAT-26 scores for those that wish to lose weight *(в* = -.268, t(121) = -3.28,*p* < .01), gain weight *(fi* = -.536, t(32) = -3.81,*p* < .01), and stay the same weight *(fi* = -.300, t(43) = -2.06,*p* < .05). For the USA, results showed that days spent on Facebook did not predict EAT-26 scores for those that wish to maintain their weight *(p* = .313), lose weight *(p* = .238), or gain weight *(p* = .148). For KZ, Hypothesis 2a was supported however, hypothesis 2b was not, and in fact, the opposite was found. For the USA, Hypothesis 2a was not supported but hypothesis 2b was.

Hypothesis 3 stated that for college women, spending more time on Facebook will predict paying more attention to physical appearance, while controlling for desire for weight loss. The variable "paying attention to physical appearance" is derived by averaging responses to the question, "When looking at someone else's photos on Facebook, how much attention do you pay to the following ...?" The options given were 1) "how they dress" and 2) "their body." Women answered on a 7-point scale anchored by "no attention" and "very strong attention." A hierarchical linear regression was conducted with paying attention to physical appearance as the criterion variable and days on Facebook and weight difference as the predictor variables. Results show that days on Facebook significantly predicted paying attention to physical appearance while controlling for weight difference for those in KZ *(в* = .189, t(291) = 3.28, *p* = .001) and for those in the USA *(fi* = .189, t(867) = 5.68, *p* = .000). In addition, this model explained a significant proportion of the variance in attention to physical appearance in KZ, R = .030, *F(2*, 291) = 5.49,*p* < .01, and in the USA, R^2 = .042, F(2, 867) = 20.05,*p* < .000. The model was a worse fit in KZ compared to the USA, but the effect size was small in both sites suggesting that both models are explaining a comparable amount of the variance in paying attention to physical appearance. Thus, H3 was supported at both sites.

H3a stated that for college women who want to lose weight, spending more time on Facebook will predict paying more attention to physical appearance, but H3b stated that for college women who want to gain or maintain their weight, this relationship will not exist. First, the authors categorized all respondents as either wanting to lose weight, gain weight, or stay the same, as described earlier. Then they conducted a hierarchical linear regression on each of these groups with paying attention to physical appearance as the criterion variable and days on Facebook and weight difference as the predictor variables. Results for KZ show that days on Facebook significantly predicts paying more attention to physical appearance, while controlling for weight difference, for those that wish to lose weight *(fi* = .189, t(185) = 2.58, *p* < .05), and for those that wish to stay the same weight *(fi* = .300, t(57) = 2.38,*p* < .05). Days on Facebook did not significantly predict paying more attention to physical appearance, while controlling for weight difference, for those respondents who wish to gain weight *(p* = .674).

Results for the USA show that days on Facebook significantly predict paying more attention to physical appearance, while controlling for weight difference, for those that wish to lose weight *(fi* = .190, t(748) = 5.32,*p* < .000) and stay the same weight *(fi* = .244, t(76) = 2.19,*p* < .05). Days on Facebook did not significantly predict paying more attention to physical appearance, while controlling for weight difference, for those respondents who wish to gain weight *(p* = .814). For both sites, hypothesis 3b was partially supported in that there was no relationship for those that wish to gain weight, however, contrary to H3b, there was a significant relationship for those that wish to maintain their weight. Hypothesis 3a was fully supported.

Hypothesis 4 stated that for college women, spending more time on Facebook will predict negative feelings after viewing others' photos and posts, while controlling for desire for weight loss. A hierarchical linear regression was conducted with feeling negative after viewing photos and posts as the criterion variable and days on Facebook and weight difference as the predictor variables. Results show that days on Facebook did significantly predict paying attention to physical appearance while controlling for weight difference for those in KZ *(fi* = .128, t(286) = 2.22,*p* < .05) and for those in the USA *(fi* = .111, t(873) = 3.35,*p* = .001). In addition, this model explained a significant proportion of the variance in attention to physical appearance in KZ, R = .043, F(2, 286) = 7.48,*p* < .01, and in the USA, R^2 = .039, F(2, 873) = 18.89,*p* < .000. The model was a better fit in KZ compared to the USA, but the effect size was small in both sites. Thus, H4 was supported at both sites.

H4a and H4b predicted the relationship between time on Facebook and negative feelings after viewing others' photos and posts. Specifically, H4a stated that for college women who want to lose weight, spending more time on Facebook will predict feeling more negative after viewing others' photos and posts. H4b stated that for college women who want to gain or maintain their weight, spending more time on Facebook will not predict feeling more negative after viewing others' photos and posts. A hierarchical linear regression was conducted with feeling negative as the criterion variable and days on Facebook and weight difference as the predictor variables. Results from KZ show that days on Facebook significantly predicts feeling negative, while controlling for weight difference, for college women respondents who wish to lose weight, *(fi* = .197, t(181) = 2.68, *p* < .01). Days on Facebook does not significantly predict feeling negative, while controlling for weight difference, for women who wish to gain weight, *(p* = .681) or maintain their weight, *(p* = .878). Results from the USA show that days on Facebooksignificantly predicts feeling negative, while controlling for weight difference, for college women respondents who wish to lose weight, *(fi* = .111, t(754) = 3.09,*p* < .01). Days on Facebook does not significantly predict feeling negative, while controlling for weight difference, for women who wish to gain weight, *(p* = .368) or maintain their weight, *(p* = .879). Hypotheses 4a and 4b were supported at both sites.

Discussion

This study explored college women's use of Facebook, eating habits, and body image at two different universities, in Kazakhstan and the USA, to examine whether there is a relationship between time spent on Facebook and how they feel about their body image (results are summarized in Table 3).

Table 3. Summary of Regression Results for both Kazakhstan(KZ) and USA

Hypothesis	KZ	USA
1. Days on Facebook predicts BSQ index	Supported	Not supported
1a. Exits for lose weight	Supported	Not supported
1b. Does not exist for gain or maintain weight	Partial support	Supported
2. Days on Facebook predicts EAT index	Supported	Not supported
2a. Exists for lose weight	Supported	Not supported
2b. Does not exist for gain or maintain weight	Not supported	Supported
3. Days on Facebook predicts attention to appearance	Supported	Supported
3a. Exists for lose weight	Supported	Supported
3b. Does not exist for gain or maintain weight	Partial support	Partial support
4. Days on Facebook predicts negative feelings	Supported	Supported
4a. Exists for lose weight	Supported	Supported
4b. Does not exist for gain or maintain weight	Supported	Supported

We aimed to explore the possible relationship between time spent on Facebook and how participants feel about and treat their bodies in both Kazakhstan and the USA. Time spent on Facebook predicted BSQ and EAT-26 scores in Kazakhstan but did not in the USA. This finding may suggest that Facebook has a more subtle effect in the USA compared to Kazakhstan. The BSQ and EAT-26 are both measures of eating attitudes and behaviors, which are long-term outcomes; and it may be the case that feeling negatively about one's body and comparing to others' bodies could lead to disordered eating and body image problems later in life. Days spent on Facebook predicted how often women felt negatively about their bodies after looking at someone else's photos or posts and how often women compared their own bodies or weight to those of their friends in both Kazakhstan and the USA.

More time spent on Facebook was associated with more negative feelings and more comparisons to the bodies of friends in both Kazakhstan (with the average thinner college women) and in the USA.

This suggests that the bodily comparison that college womenconstantly partake in now extends into social media and may possibly even exacerbate it because one has access to more friends, more photos, and more updates than in offline life. Further, bodily comparison over social media occurs publicly, while offline comparison could often be private or between only two friends. Interestingly, this relationship was found in both countries even though the average weight and average ideal weight were significantly lower in Kazakhstan than in the USA. In addition, women in Kazakhstan had a mean weight that was even lower than the mean *ideal* weight for women in the USA; yet Facebook use still had an effect on perceptions of body image. This seems to suggest that social media use can predict perceptions of body image regardless of a woman's actual body shape and weight.

Findings also show that for women who want to lose weight, more time on Facebook lead to more attention being paid to physical appearance in both Kazakhstan and the USA. This included attention to one's body and how they are dressed. This heightened attention could be due to women's own sensitivity to their bodies because of the efforts or at least desire to lose weight. Such attention could serve as a motivator to lose the desired weight or could cause further negative feelings in addition of those related to the perceived need to slim down. More research is needed to determine the consequences of such attention.

Findings support the use of objectification theory in the context of social media and body image. Women who wanted to lose weight paid more attention to their friends' bodies and the way they were dressed. This type of heightened attention to just the body or even to specific body parts or clothes leads to objectification, as discussed earlier. Thus, social media provides an ample ground for college women to objectify one another, and especially for those women who want to lose weight, which is the majority. Such an online climate could trigger the development of body shame due to over-comparison to unrealistic images (Tylka and Hill, 2004). Although wefound no relationship between the time spent on Facebook and the BSQ and EAT-26© scales in the USA, this online environment does create the perfect breeding ground for the development of disordered eating and therefore poses as a risk factor, especially among the highly susceptible group of college women.

This study has important theoretical and practical implications. From a theoretical standpoint, it demonstrated that objectification theory applies also in a social media environment and that should be explored further by scholars. From a practical standpoint, public health professionals who work in the area of eating disorders and their prevention now have clear evidence of how social media relates to college women's body image and disordered eating.

The attention to physical attributes may be even more serious on social media than on traditional media because participants in social media are people we know. Therefore, these comparisons are much more relevant and hit closer to home. Yet, they may be just as unrealistic as the images we see on traditional media. Researchers have demonstrated that college women often present their "ideal self" on

Facebook (Gonzales & Hancock, 2011), but that may be far from the real self. Social media may be seen by some users as a more accurate representation of reality than mass media.

Limitations

A more diverse sample of respondents from various parts of Kazakhstan and USA would have enriched the study's data and increased its generalizability. However, the characteristics of the sample in terms of weight and ideal weight are similar to those of nationally representative samples. The survey in the USA was conducted in April-May and between January and March in Kazakhstan. This is a time when women probably have a heightened awareness of their bodies and imperfections with summer break ahead. Thus, the issues of dieting and body image may beat the forefront of their minds. More surveys conducted in these and other countries during different times of the year would provide a balance to the data. Finally, the EAT-26 and BSQ scales are psychological measures and mass communication scholars ought to invest in a similar scale development which relates to cognitive processes of communication behavioral measures.

Conclusion

The practical public health implications of these findings are significant because negative body image relates to low self-esteem, depression, and obesity (Gonzales and Hancock, 2011). In terms of future interventions, public health practitioners may find it beneficial to discuss with young women how some users tend to present their ideal self, not their real self, online. Hence, photos and posts may misrepresent users' looks or feelings about their bodies. Discussing this assumed versus actual realism of online content— in the United States and even in Kazakhstan or Central Asia where women are generally thin—is a good start in raising young women's social media literacy, and possibly in counterbalancing negative influences on body image. Finding ways to minimize the drive for comparison is another avenue for an intervention, as social comparison could be the mechanism behind the influences on body image. Finally, young Kazakh and American women may be encouraged to identify types of communication which would improve their body image or reduce constant pressures to be thin.

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