

Body Image and Social Networking Interaction: Mediation by Social Interaction Anxiety

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The present study was aimed to investigate relationship among positive dimension of body image, social networking interaction, and social interaction anxiety. It was assumed that social interaction anxiety mediates the relationship between positive dimensions of body image and social networking interaction. Data was collected on Multidimensional Body Self Relations Questionnaire-Appearance Scale (Cash,1990), Social Networking Behavior Scale (Bumgarner, 2007), and Social Interaction Anxiety Scale (Mattick & Clark, 1998). Sample comprised of 424 university students from Rawalpindi and Islamabad age ranging from 18 years to 36 years with mean ($M=21.65$ years) and standard deviation ($SD=2.39$ years). Structural validity of instruments was assessed by Confirmatory Factor Analysis and reliability was estimated with Chronbach's Alpha. All three scales showed good structural validity and reliability indices. The mediation analysis was carried out by using structural equation modeling in AMOS. The latent variable positive body image appear to have a significant negative indirect effect on Social Networking Interaction through Social Interaction Anxiety (B Indirect = .15, $p < .01$). It is concluded that relationship between body image and social networking interaction is not simply straightforward rather other factors such as social interaction anxiety influences the relationship. It is recommended that these relationships shall also be explored with other personal and social factors relating to perception of self and communication with other people.

Keywords: mediation, social networking interaction, anxiety, latent variable model

As the saying of Aristotle goes, "Man is a social animal". Soon after an individual is born, a tendency to interact in social world is necessary for survival (Ong, 2002). Maslow (1970) described the "need to belong" as the basic and essential need for the livelihood of people in a society. Individuals cannot endure without the basic instinct of interaction and therefore they need to be loved and accepted in the social circle (Leary, Kelly, & Schreindorfer, 2001). It is proposed that the need to belong is a fundamental human motivation and is acquired by all individuals to form the basic interpersonal relationships (Baumeister & Leary, 1995).

The medium by which need to belong is satisfied is communication and social networking. Yet, in today's fast growing world, people find less time to interact and meet others on regular basis hence they are equipping themselves with the alternatives to satisfy the social belonging need. The conventional type of communication (face-to-face) has taken a massive shift in the past ten years and now the global world is just a click away from us. Communication via social networking sites (i.e., Facebook, Twitter etc) have emerged as an alternate of the letter and postal system along with the telephones (Pool, 1997). Facebook.com was created in 2004, initially for the facilitation of students at campus and now certainly occupies the position of well-liked and easiest means of online communication with billions of active users monthly (Zuckerberg, 2011). The present study is aimed to investigate correlates of social networking behavior specifically social interaction on facebook among young adults.

Conventional theories of relationship development are of the view that to develop social relationships, physical and geographical closeness and information about the physical appearance of individuals are essential conditions (Di Gennaro & Dutton, 2007). This point of view, also called as "cues filtered out" theory, was defied by later studies supporting the interpersonal side of computer-mediated communication (CMC). Users describe that they socialize, maintain relationships, play games and receive emotional support through online communication. Since there is lack of face to face characteristics in online communication such as physical proximity, frequent face-to-face interaction, and physical appearance, individuals can still decrease their

uncertainty about one another by frequently contacting each other. Online relationships formulation do not depend on physical proximity, rather the frequency of online contact is essential in such situations (McKenna, Green, & Gleason, 2002; Wellman & Gulia, 1999).

It is suggested that individual's experiences, perception, and understanding of the self and the world are greatly affected by technologies of communication (Thompson, 1995). Body image is ever changing and multidimensional aspect that influences an individual's life, cognitions, emotions, sensations, mood and physical experiences (Lightstone, 2001). The body image of an individual has long-lasting impression for others while considering socialization in our lives as everyone desires to be socially accepted, admired and praised (Becerra, 2008). In the present study we assumed positive body image as a predictor of social networking i.e., social interaction on Facebook.

Directly or indirectly, society sends a message about the inconsistency between self-perception and the socially ideal body image which may bring lower self-esteem and expanded social anxiety (Cash, Ancis, & Strachan, 1997). Social anxiety is characterized by the uneasy feelings and apprehension during any social interaction (Miller, 2009). It is proposed that the people high on social anxiousness may not possess attractive image about themselves as compared with others in the society (Schlenker & Leary, 1982). They have no intimate companionship, social immobility, less emotional disclosure and minimum self-disclosure (Erwin, Turk, Heimberg, Fresco, & Hantula, 2004). Socially anxious individuals may avoid the situations that increase their anxiety. And when they cannot refrain from such conditions, it results in decreased eye contact, less verbalization, getting aloof from gatherings and reduced chances of negative judgments and evaluations by others in the society (Rodebaugh, et. al., 2013). In such circumstances, social networking interaction may serve as a unique, diverse and safe alternative to fulfill the need of belongingness (Young, 1998).

Socially anxious individuals indulge more in networking behaviors for controlling and balancing social correspondence and search for signs of social approval in an acceptable manner (Lee & Stapinski, 2012). Studies showed that socially anxious individuals specially youth, spend undeniably considerable amount of time in online interactions of which Facebook is most noticeable (Valkenburg & Peter, 2009). It has been conceptualized as a wellbeing conduct as it provides an ease for the socially anxious individual to communicate in a relaxed manner with less image hazards and potential dangers of confronting any social situation (Wilson, Gosling, & Graham, 2012).

Method

Sample and Procedure

The study sample consisted of $N = 424$ students ($n = 210$ male, and $n = 214$ female) from different universities and institutes of Rawalpindi and Islamabad. The age of the participants ranged from 18 – 26 Years ($M \pm SD = 22.15 \pm 1.56$ Years). Purposive sampling technique was used for the study. Inclusion criterion for the sample was to include students' who are regular Facebook users. The minimum qualification for this research was intermediate i.e., students pursuing a four years bachelors degree (BS) were also included in the sample. After taking informed consent from students, questionnaires were individually administered. It took about 20-25 minutes for the participants to fill the questionnaires. After collecting responses on the questionnaires, further procedure for data analysis was carried out using IBM-SPSS V-21 and IBM-AMOS V-21. Statistical testing was conducted using bivariate correlation, t-test and structural equation modeling (SEM) for mediation analysis with a latent predictor. Along with demographic sheet, following instruments were used for data collection.

Instruments

Multidimensional Body Self Relations Questionnaire-Appearance Scale: The MBSRQ-AS inventory developed by Cash (1999) was used to measure participants' perception about their body. The scale consists of 34 items with five sub-scales consisting three positive and two negative dimensions. For the present study only three positive dimensions of the scale were administered. The two negative dimensions have shown low reliabilities repeatedly across samples. The three positive dimensions are composed of 28 items on a five point Likert type scale. The dimensions include Appearance Evaluation (overall satisfaction with appearance, 7 items), Appearance Orientation (overall investment in appearance, 12 items), and the Body Areas Satisfaction Scale (satisfaction with different aspects and areas of one's own body, 9 items). Alpha reliability ranges from .78 to .86 (Cash & Szymanski, 1995).

Social Interaction Anxiety Scale (SIAS). The SIAS developed by Mattick and Clarke (1998) intends to assess social interaction anxiety i.e., “distress when meeting and talking with other people”. It consists of 20 items on a five point Likert type rating scale ranging from 0 to 4 where 0 = not at all, and 4 = extremely. It is a uni-dimensional scale and has no reverse scored items. The scale has good psychometric properties as reported by satisfactory reliability indices. The internal consistency, determined by Cronbach’s alpha, ranged from $\alpha=0.88$ to $\alpha=0.93$ across samples, and test-retest reliability ($\alpha = 0.92$) is reported in literature (Mattick & Clarke, 1998).

Social Networking Behavior Scale. Social Networking Behavior Scale developed by Bumgarner (2007) consists of 21 items. It is a uni-dimensional scale and has no reverse scored items. The response categories includes 1 (never), 2 (sometimes), 3 (frequently), 4 (always). Alpha reliability for the scale is reported very high i.e., $\alpha = .93$ (Bumgarner, 2007). Score range of the scale is from 1 to 84 with a high score indicating extensive usage of social networking sites. The items of the scale were modified by specifying social networking sites into Facebook to specifically measure Facebook usage.

Results

Preliminary analysis was conducted for properties of variables to test their appropriateness for inferential statistics to test our hypotheses. Results showed that all variables have a normal distribution with skewness and kurtosis < 1 except income with a kurtosis = 26. Such an uneven distribution of income is expected in a developing economy. Chronbach’s alpha reliabilities showed that scales are internally consistent with a range of alpha from $\alpha = .62$ to $\alpha = .85$ for Body Image scales, $\alpha = .84$ for Networking Interaction scale, and $\alpha = .87$ for Social Interaction Anxiety scale for the study sample.

Pearson’s bivariate correlations showed that participants’ age significantly negatively correlated only with social interaction anxiety whereas no significant correlations appeared between income and study variables ($p > .05$). All three positive dimensions of body image appeared to significantly positively relate with each other ranging from $r = .25$ to $r = .48, p < .01$ and with total score of positive body image from $r = .73$ to $r = .77, p < .01$. As presented in Table 1, results also showed that Social Networking Interaction only significantly positively correlated with Social Interaction Anxiety $r = .15, p < .01$. Whereas Social Interaction Anxiety significantly negatively correlated with all dimension of positive body image ranging from $r = -.14$ to $r = -.28, p < .01$ except Appearance Orientation (i.e., $p > .05$).

Table 1
Bivariate Correlation between the Study Variables

SNo.	Variables	1	2	3	4	5	6	7	8
1	Age (in Years)	-	-.01	.07	-.06	.00	-.03	-.14**	-.04
2	Income (Thousands/Month)		-	.05	.05	-.02	.04	.08	.03
3	Appearance Evaluation			-	.48**	.42**	.73**	-.28**	-.02
4	Appearance Orientation				-	.25**	.77**	-.01	.07
5	Body Areas Satisfaction					-	.76**	-.20**	-.08
6	Positive Body Self Image						-	-.17**	.01
7	Social Interaction Anxiety							-	.15**
8	Social Networking Interaction								-
	<i>Mean</i>	21.65	93.51	21.30	33.66	33.45	96.91	27.32	42.08
	<i>SD</i>	2.39	92.66	4.13	6.98	6.95	13.85	12.97	9.79

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

Independent sample *t*-test was computed to check differences in study variables across gender. The results presented in Table 2 suggest significant yet trivial difference between age of male and female participants. Females appeared to be slightly older (i.e., Mean difference = .05 years) than their male counterparts. Significant mean difference appeared on one dimension of positive body image namely appearance orientation where females rated themselves high (i.e., Mean difference = 1.60, $p < .05$) than their

male counterparts. Contrary to that male participant reported a significantly high use of Facebook for socialization by scoring high on social networking interaction scale (Mean difference = 2.94, $p < .01$).

Table 2
Differences on study variables across gender

Variables	Male		Female		t	p	95% CI		Cohen's d
	M	SD	M	SD			UL	LL	
Age (in Years)	21.34	2.37	21.95	2.39	2.62	0.01	-0.15	-1.06	0.26
Income (Thousands/Month)	93.39	96.58	93.63	88.9	0.02	0.98	18.86	-19.34	0.00
Appearance Evaluation	21.04	4.43	21.56	3.80	1.31	0.19	-1.31	0.26	0.13
Appearance Orientation	32.85	7.04	34.45	6.84	2.37	0.02	-2.92	-0.27	0.23
Body Areas Satisfaction	33.07	6.96	33.81	6.93	1.10	0.27	-2.07	0.59	0.11
Positive Body Image	95.71	14.27	98.09	13.36	1.77	0.08	0.27	-5.05	0.17
Social Interaction Anxiety	28.45	13.04	26.21	12.85	1.78	0.08	4.71	-0.23	0.17
Social Networking Interaction	43.56	10.04	40.62	9.34	3.12	0	4.79	1.09	0.30

Finally, meditational analysis was conducted through structural equation modeling (SEM) using AMOS. With its three dimensions as indicators, a latent variables model was developed where positive body image was addressed as a latent construct with loading from appearance orientation ($\lambda = .55$), appearance evaluation ($\lambda = .85$) and body area satisfaction ($\lambda = .49$). As presented in Figure 1, social interaction anxiety was modeled as observed mediator along with an observed outcome i.e., social network interaction. The model was tested for both direct and indirect effects of positive body image on social networking interaction. Model fit indices are presented in Table 3. The model appeared to show a fair fit to the data with GFI, IFI, and CFI $> .90$ and RMEA = .09. The modification indices suggested error covariance between appearance orientation and social interaction anxiety. The model was revised with inculcation of the covariance parameter in the model which resulted in excellent fit of the model to the data with GFI, IFI, TLI, and CFI $> .95$ and RMSEA = .04. The $\Delta^2(df) = 14.18$ (1) appeared to be significant suggesting a significant improvement in the model.

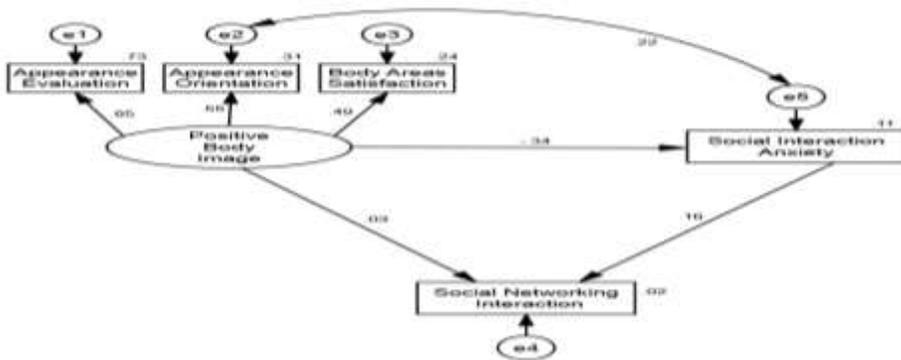


Figure 1. Latent variable model to test meditational role of social interaction anxiety.

The direct effect replicated correlation results with a significant negative association between positive body image and social interaction anxiety whereas a positive association between social interaction anxiety and social networking interaction. The results also showed a negative significant indirect effect (β indirect = $-.05$, $p < .01$) between positive body image and social networking interaction suggesting the positive body image significantly contributes in a decline in social networking interaction due to decreased interaction anxiety.

Table 3
Model fit indices for latent variable meditational model using structural equation modeling

	$\chi^2(df)$	GFI	IFI	TLI	CFI	RMSEA	$\Delta^2(df)$
Model 1	19.05(4)	0.98	0.93	0.84	0.93	0.09	
Model 2	4.97(3)	0.99	0.99	0.97	0.99	0.04	14.18 (1)

Discussion

The study was designed to investigate the dynamics of social interaction on social networking sites. The success of the emerging trend of using social networking sites to fulfill socialization needs of human may have some logical explanation other than just a fashion to be adopted by everyone. This study investigated a possible answer in figuring the underlying mechanism of excessive use of social networking sites for socialization. The main objective of the study was to test mediating role of social interaction anxiety for the relationship between positive body image and social network interaction.

The preliminary analysis showed the appropriateness of the data for inferential testing. The characteristics of the data suggested the stability and reliability of the conclusions drawn from the data of the study. The correlation analysis presenting a significant negative relationship between age and social interaction anxiety is logical. With experience and exposure, social interaction anxiety may decline as a result of development into maturity. It means that as an individual grows, he gets to be more adapted in society and dwells in management of better social relationship with others. The anxious feelings are overcome by the maturity and experience (Flin et. al., 2002). Positive Body Image is significantly negatively correlated with Social Interaction Anxiety. These findings are well deviled in the existing literature highlighting that the individuals with positive perception about their appearance and physical grooming get less anxious in social circumstances (Arkin, Appelman, & Burger, 1980).

Relation between social interaction anxiety and networking Interaction is significantly positive which indicates that the people with high social anxiety tend to get more involved in networking interaction through indirect medium i.e., social networking sites rather than face to face interaction (McKenna & Bargh, 2000) in order to fulfill their communication needs in society. The findings confirmed our assumption regarding underlying role of social interaction anxiety in excelling socialization on social networking sites.

Our results suggesting significant mean differences on appearance orientation are though against our assumption. The explanation lies within the sample characteristics. The competitive and comparative environment of university seems to play an active role particularly in females to be more concerned about their body shape. Additionally our results presenting that male are grave users of networking interaction as compared to females not only supports our assumptions, it is also in line with earlier empirical literature (Lenhart, Madden, & Hitlin, 2005).

Finally, the major contribution of this study in extending empirical knowledge consist of figuring the mediating role of social interaction anxiety for the relationship between positive body image and social networking interaction. Our results showed that apparently a non-significant relationship between positive body image and social networking interaction is rather a complex interplay of a chain relationship. Positive body image as was expected has a significant indirect role in decreasing socialization activity on social networking sites through a substantial decline in social interaction anxiety. An explanation may be that individuals having a positive body image still prefer face to face socialization rather socialization on social networking sites.

Conclusion and Future Recommendations

It is concluded that relationship between body image and social networking interaction is not simply straightforward rather other factors such as social interaction anxiety play their role to explain this relationship. It is recommended that the relationship shall also be explored with other personal and social factors relating to perception of self and communication with other people.

References

- Arkin, R. M., Appelman, A. J., & Burger, J. M. (1980). Social anxiety, self-presentation, and the self-serving bias in causal attribution. *Journal of Personality and Social Psychology*, 38(1), 23.
- Baumeister, R. F. & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.

- Becerra, E. P. (2008). Virtual Worlds Research: Consumer Behavior in Virtual Worlds. *The Influence of Body Image on the Use of Virtual Worlds*, 1(2).
- Bumgarner, B. A. (2007). You have been poked: Exploring the uses and gratifications of Facebook among emerging adults. *First Monday*, 12(11).
- Cash, T.F. (1999). The management of body image problems. In C.G. Fairburn & K.D. Brownell (2nd Eds.), *Eating Disorders and Obesity: Second edition* (pp. 599-103). New York, NY: The Guilford Press.
- Cash, T. F., Ancis, J. R., & Strachan, M.D. (1997). Gender attitudes, feminist identity, and body images among college women. *Sex Roles*, 36 (7/8), 433-445.
- Cash, T. F., & Szymanski, M. L. (1995). The development and validation of the Body-Image Ideals Questionnaire. *Journal of Personality Assessment*, 64(3), 466-477.
- Di Gennaro, C. & Dutton, W.H. (2007). Reconfiguring friendships: social relationships and the internet, *Information, Communication and Society*, 10(5): 591-618.
- Erwin, B. A., Turk, C. L., Heimberg, R. G., Fresco, D. M., & Hantula, D. A. (2004). The Internet: home to a severe population of individuals with social anxiety disorder?. *Journal of Anxiety Disorders*, 18(5), 629-646.
- Flint A., Bradwejn J., Vaccarino F., Gutkowska J., Palmour R., Koszycki D. (2002). Aging and panicogenic response to cholecystokinin tetrapeptide: an examination of the cholecystokinin system. *Neuropsychopharmacology*. 2002;27:663–671.
- Leary, M.R., Kelly, K.M., & Schreindorfer, L.S. (2001), *Individual Differences in the Need to Belong* (Unpublished Manuscript). Wake Forest University, Winston-Salem, NC.
- Lee, B. W., & Stapinski, L. A. (2012). Seeking safety on the internet: relationship between social anxiety and problematic internet use. *Journal of Anxiety Disorders*, 26(1), 197-205.
- Lenhart, A., Madden, M., & Hitlin, P. (2005). Teens and technology: youth are leading the transition to a fully wired and mobile nation. 2005. *PEW Internet and American Life Projects*: Washington, DC.
- Lightstone, J. (2001). *Improving Body Image*. Retrieved November 14, 2014 from: www.edreferral.com/body_image.htm.
- Maslow, A. H. (1950). Self-actualizing people: a study of psychological health. *Personality*.
- Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour research and therapy*, 36(4), 455-470.
- McKenna, K. Y., & Bargh, J. A. (2000). Plan 9 from cyberspace: The implications of the Internet for personality and social psychology. *Personality and Social Psychology Review*, 4(1), 57-75.
- McKenna, K. Y., Green, A. S., & Gleason, M. E. (2002). Relationship formation on the Internet: What's the big attraction?. *Journal of social issues*, 58(1), 9-31.
- Miller, S. (2009). *Terrorism and counter-terrorism: Ethics and liberal democracy*. Wiley-Blackwell.
- Ong, G. (2002) Social Media Awareness. (First published 1982). *Orality and Literacy: The Technologization of the Word*. London: Routledge.
- Pool, R. (1997). *Beyond Engineering: How Society Shapes Technology*. New York: Oxford University Press.

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- Rodebaugh, T. L., Shumaker, E. A., Levinson, C. A., Fernandez, K. C., Langer, J. K., Lim, M. H., & Yarkoni, T. (2013). Interpersonal constraint conferred by generalized social anxiety disorder is evident on a behavioral economics task. *Journal of Abnormal Psychology, 122*(1), 39.
- Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self-presentation: A conceptualization model. *Psychological Bulletin, 92*(3), 641.
- Thompson, J. B. (1995). *The Media and Modernity: A Social Theory of the Media*. Stanford: Stanford University Press.
- Valkenburg, P. M., & Peter, J. (2009). Social consequences of the internet for adolescents a decade of research. *Current Directions in Psychological Science, 18*(1), 1-5.
- Wellman, B., & Gulia, M. (1999). Virtual communities as communities. In M. A. Smith & P. Kollack (Eds.), *Communities in cyberspace*, (pp 167-194). London: Routledge.
- Wilson, R. E., Gosling, S. D., & Graham, L. T. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science, 7*(3), 203-220.
- Young, K. S. (1998). *Caught in the net: How to recognize the signs of internet addiction--and a winning strategy for recovery*. New York: John Wiley & Sons.
- "Zuckerberg at Ore. Facebook data center". *The Boston Globe*. Associated Press. April 16, 2011. Retrieved April 16, 2011.

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