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## **“The Way She Makes Me Feel”: Examining The Effects of Celebrity Instagram Images on Body Satisfaction and self-esteem in Young Nigerian Women**

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**“The Way She Makes Me Feel”: Examining The Effects of Celebrity Instagram Images on Body Satisfaction and self-esteem in Young Nigerian Women**

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**Abstract**

Using an experimental method, we examined the effects of local female celebrity Instagram images on women’s body satisfaction and self-esteem among groups of young Nigerian women. Result showed that women reported the highest self-esteem and body satisfaction when viewing thin-ideal images, but self-esteem and body satisfaction decreased after viewing plump ideal images, followed by neutral images. Additionally, while state appearance comparison was found as a partial mediator of the effects of image type on body satisfaction and self-esteem, extent of celebrity worship fully mediated these effects. Nonetheless, the intensity of Instagram and other SNSs use did not mediate the effects observed in the study. These findings highlight the significance of how celebrity images and diverse body ideals to the ‘thin’ one can have negative effects in a non-Western sample. Study results and future research directions are discussed within the context of social comparison and agenda setting theories.

**Keywords: Ideal body, body image, agenda setting, Nigeria, plump**

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**Introduction**

Studies have reported deleterious effects of traditional media images on women's body image concerns (Groesz, Levine, & Murnen, 2002; Grabe, Ward, & Hyde, 2008; Tiggemann & McGill, 2004). More recent research attention has shifted to the impact of social networking sites (SNSs), such as Facebook, Instagram, and Twitter (Tiggemann, Hayden, Brown, & Veldhuis, 2018). The Nigerian Communication Commission (NCC) Statistics show that 55.5% of adults use social networking sites such as Facebook, Instagram, Whatsapp, Twitter and other platforms (Daily Sun, 2017). These internet-based applications, allow users to share photos, videos and information, and to form relationships and interact with other SNSs users (Tiggemann et al., 2018). These applications also give users the opportunity to put out as well as consume user-generated contents (UGC). Research on the effects of SNSs on body image and self-esteem concerns is a new area of research that is fast expanding. In their systematic review of this subject, Holland and Tiggemann (2016) concluded that SNSs use was associated with increased body dissatisfaction and disordered eating. The authors also concluded that appearance-based social comparison mediated the relationship between SNS use and body image. However, the authors noted that majority of the studies often investigated Facebook and were largely based on correlational research findings. They therefore called for more longitudinal and experimental methods in drawing firm causal conclusions concerning the relationships between SNS use and body image concerns.

One popular photo capturing and sharing SNS application is Instagram. It provides users an on the spot opportunity to capture and share their life moments with friends through a series of (filter manipulated) pictures and videos (Hu, Manikonda, & Kambhampati, 2014). Since its launch in 2010, it has attracted more than 1 billion active users, with over 100 million photos uploaded by users per day, and more than 40

billion photos and videos shared so far (West, 2019). The global growth of this platform continues, with many of its users being young women (Djafarova & Rushworth, 2017). As of April 2019, it was found that 52% of Instagram users were women between the ages of 18 to 24 (Statista, 2019). Instagram is also one of the most popular social networking platforms in Nigeria, especially among young women. In 2017, NapoleonCat.com reported that women constituted 40% of the 3.6 million Instagram users in Nigeria (NapoleonCat.com, 2017). So far, these numbers are quite significant for a society where the phenomenon of celebrity culture has become a reality. Indeed, studies have linked the western celebrity culture among Nigerian youths to multiple media exposure, which is fast catching up with their lived experience (e.g., Omenugha, Uzuegbunam, & Ndolo, 2016; Uzuegbunam, 2017). Few correlational studies have also investigated the media effect of celebrity body image on Nigerian women. Okodogbe (2013) found that media image of thin female celebrities was positively correlated with detrimental body image concerns among young Nigeria women relative to their Irish counterpart. However, as yet very few studies (e.g. Brown & Tiggemann, 2016; Khaled, Shockley, Qutteina, Kimmel, & Trung, 2018; Slater, Cole, & Fardouly, 2019) have experimentally investigated the effect of celebrity exposure on body image. The present study therefore adds to this list of experimental efforts attempting to understand the effect of exposure to celebrity images on women's body image.

As opposed to widespread reverence for slenderness in Western societies, contemporary Nigerian society has a unique preference for both plumpness and or thinness. While thinness, which is also referred to as '*Lepa*' ('pressed-thin figure') in the Nigerian sub-culture, represents certain beauty standard (Oloruntoba-Oju, 2007), plumpness (which is also referred to as '*Orobo*' [fleshy, robust and presentable]) in young women are also regarded as attractive. For example, in their qualitative study

about sexual subjectivities among young Nigerian and Sierra Leonean women living in Winnipeg, Canada, Dutfield-Wilms (2011) found that most participants expressed the importance of the buttocks and the hips and to a lesser extent the breasts as important identifiers of “black beauty.” They concluded that hourglass body shape, large buttocks and chest represent a general prescription for “black beauty” for Nigerian or Sierra Leonean women. The desires for both thin and or plump ideals are widespread in different parts of the country (Akande, 1993; Okoro et al., 2013; Oloruntoba-Oju, 2007). Oloruntoba-Oju (2007) has noted that both the popular plump figure of traditional female body image and the thin type make usual appearance in media projections and serve as basis for comparison.

Furthermore, while a number of studies have investigated the pattern of Instagram usage among young women in Nigeria, (e.g., Jimoh & Musa, 2016; Osazee-Odia, 2018; Bruijn & Glynn, 2018), none has examined its effects on them. To date, research of this nature has only focused on the effect thin-ideal images in traditional media have on young women’s body image and self-esteem. For example, Adekeye, Agoha, Adeusi, Adejumo, and Olowookere (2016) experimentally investigated the effects of exposure to television commercials and magazines on the perceived body image and self-esteem of female adolescents in Nigeria. The authors found that exposure to thin idealized TV images have a detrimental impact on body image and self-esteem. While it has been suggested that exposure to thin idealized images have deleterious effect on body image concerns among women, this has not been empirically studied with plump women. It is possible that Instagram or other media images of plus size women have similar or lesser damaging effect on how women perceive their bodies. Therefore, by focusing on the way Nigerian women perceive their body and rate their self-esteem following exposure to thin and plump idealized Instagram images, we

might begin to understand how diverse body ideals to the thin one on SNS might influence body image concerns in a Non-Western setting.

### **Theoretical Frameworks**

The social comparison and agenda setting theories were used to guide the study. Engaging social comparison as a theoretical concept is significant in the understanding of the perception of the female bodies through SNS experience. However, integrating the concept with the agenda setting theory, contributes to understanding how certain female celebrities use the SNSs such as Instagram to set the agenda about what should be regarded as an 'ideal' body image. As a result, the two theories are discussed as follows.

#### ***Social Comparison Theory***

A number of correlational studies have looked at the influence of Instagram images on women's body image anxieties (e.g., Cohen, Newton-John, & Slater, 2017; Fardouly, Williburger, & Vartaniana, 2017; Feltman & Szymanski, 2018; Wagner, Aguirre, & Sumner, 2016). However, few experimental studies showing the negative effects of Instagram on body image exist (e.g. Brown & Tiggemann, 2016; Casale, Gemelli, Calosi, Giangrasso, & Fioravanti, 2019; Lewallen, 2016; Tiggemann & Barbato, 2018; Tiggemann et al., 2018). The negative effects of media exposure have generally been explained by social comparison theory (Levine and Murnen, 2009; Want, 2009). Social comparison theory is often used as a theoretical framework for studies on body image (e.g. Brown & Tiggemann, 2016; Eckler, Kalyango, & Paasch, 2016; Fardouly et al., 2017) and self-esteem (e.g. Alperstein, 2015; Haferkamp & Kramer, 2011; Wilcox, & Liard, 2000). The theory argues that individuals evaluate their opinions and abilities by comparing them with the opinions and abilities of others and that to achieve this, they chose similar others with whom to compare (Goethals &

Darley, 1987). And for women who are frequent Instagram users, similar others who may serve as measures of comparisons are quite accessible. Therefore, by simply spending time on a SNS (such as Instagram), a woman allows herself numerous opportunities for comparisons (Eckler et al., 2016).

However, Festinger (1954), the proponent of the theory states that the holding of incorrect opinions and or inaccurate judgments of one's ability could be punishing or even fatal in several situations. Several findings have so far revalidated this statement. For example, Appel, Gerlach, and Crusius (2016) in their review found that Facebook indeed predicts different measures of social comparisons as well as envy and serve as mediators of a positive association between Facebook use and undesirable affective outcomes such as depression. These outcomes are perhaps based on a perceived feeling that others serving as measures of comparison are likely better off. Nevertheless, within the context of the present study, de Vries, Möller, Wieringa, Eigenraam, and Hamelink (2016) examination of the consequences of viewing strangers' posts on Amsterdam's university students showed that, depending on how much the viewer tends to engage in social comparison, viewing positive Instagram posts from strangers can reduce or increase positive affect.

Similarly, it has been pointed out that the positive or negative effects of comparison on an individual are largely dependent on her/his upward or downward comparison targets (Zuo, n.d). The concept of downward comparison was introduced in 1981 by Thomas Wills. According to the concept, persons can increase their subjective wellbeing through comparison with a less fortunate other (Wills, 1981, p. 245). On the other hand, upward comparison is experienced when individuals compare themselves with those they believe are better than them. In the context of media images, controlled exposure to thin-ideal images evokes body image concerns and stimulates comparison

processing in vulnerable women (Tiggemann & McGill, 2004). For Tiggemann and McGill, comparison to media images almost invariably represents an upward social comparison by which women find themselves lacking, thus leading to body dissatisfaction and negative mood. The authors further distinguish this state comparison process from the trait variable tendency to make social comparison. According to them, unlike the latter, the state comparison process is a responsive process that can be triggered by exposure to targets with conspicuous features, and by particular motivation the woman has for viewing the images.

Findings linking upward comparison to weight change and body dissatisfaction among women abound (e.g. Arroyo 2014; Fardouly, Diedrichs, Vartaniana, & Halliwell 2015; Myers, 2010). For instance in her study of the impact of social comparison on body dissatisfaction in the naturalistic environment, Myers (2010) found that women continued to engage in upward, appearance-related social comparisons frequently even when they have detrimental consequences, including body dissatisfaction. Myers concluded that these comparisons were related to subsequent thoughts of both dieting and exercising and that body dissatisfaction partially mediated both of these relationships. To this end, Arroyo (2014, p. 304) expresses the possibility of women automatically using fat talk to express dissatisfaction and incorporating aspects of social comparison if they believe they do not adequately meet the standards of beauty (e.g. “Look how skinny she is and I am so fat”). This theory once again brings to the fore, the imperativeness of conducting the present study (within the Nigerian context, where plumpness and or thinness can serve as the standards of beauty).

### ***Agenda Setting Theory***

Proposed by McCombs and Shaw (1972), agenda setting attempts to show how mass media influence the topics in public discourse through the covering and neglect of

certain topics in the news media. Agenda setting is based on the assumption that, whether consciously or unconsciously, the media set a particular image of reality and what is regarded as salient (McCombs & Shaw 1972). However, because the media landscape has changed so much so that an average citizen is able to 'set' agenda as a social media user, the original form of the concept has been extended to various dimensions. For example, Motseki and Oyedemi (2017) have noted that the emergence of new digital technologies has provided celebrities the avenue to leverage social media to influence ordinary people. Motseki and Oyedemi (2017) proved this notion in their study, which aimed to examine how celebrities present their bodies in the performance of beauty on social media and explored the messages that pertain to feminine beauty amongst young women in South Africa. The authors found that celebrity culture perpetuates the ideology that black beauty can be achieved through natural skin colour erasure, extended artificial weaves and a thin body frame. The study concluded that celebrities set an agenda for a specific type of body that is considered beautiful.

To better understand the core of the theory, scholars have included additional aspects into consideration (Slavnić, 2016). A significant emphasis is on audience activities and its capability to select from media and other sources to get more personalized agenda. This process is called agenda melding. Agenda melding can be defined as "the process by which audience members seek out and blend media agendas from various communication sources to fit their individual preferences and cognitions" (Shaw & Colistra, 2008, p. 11). While agenda setting centers on the ability of the media to set agenda, agenda melding focuses on the power of the audience to make informed choices about the messages sent. Put within the context of the present study, agenda setters who are considered as female celebrities (who have platforms on SNSs) and agenda meddlers who are regarded as the young female SNSs users are active players

who determine what ideal beauty standards are. For instance, if certain female celebrities present a 'thin' or 'plump' images of themselves on their Instagram pages, such trait may be perceived as requisite or appeared salient to young female followers.

Although research on celebrities as agenda setters is scanty, many of the studies have pointed at the undesirable consequences of celebrity culture on youths (Motseki & Oyedemi, 2017; Uzuegbunam, 2017). As an example, Uzuegbunam (2017) who stated that celebrities have the power to set agendas on issues and confer status on personalities in the societies in which they are found, revealed that celebrity lifestyles affect young Nigerian's confidence and determination to be successful in life, the way they dress, talk, and handle issues about relationships, and so on. Also, while many of the studies using agenda setting to explain the effects of celebrity culture on young people (especially women) in social media are correlational and ethnographic, there is a dearth of experimental research providing firm causal conclusion to the relationship; hence the need to approach this study with a second theory.

### **Objectives and Hypotheses of the Study**

We examined the effects of Instagram images on women's body satisfaction and self-esteem as well as how tendency for appearance comparison, intensity of Instagram and other SNSs use and the extent of celebrity worship among young Nigerian women mediate the effects of Instagram image type on how they feel about their bodies.

Based on the issues raised, we predicted that:

**H1.** Women will report a decrease in body satisfaction, following their exposure to thin-ideal or plump-ideal images of Nigerian female celebrities on Instagram relative to women who were exposed to neutral images,

**H2.** Women will report a decrease in self-esteem, following their exposure to thin-ideal or plump-ideal images of Nigerian female celebrities on Instagram relative to women who were exposed to neutral images,

**H3.** The extent of state appearance comparison will mediate the effect of image type on body satisfaction and self-esteem,

**H4.** The intensity of Instagram and other SNSs use will mediate the effect of image type on body satisfaction and self-esteem and,

**H5.** The extent of celebrity worship will mediate the effect of image type on body satisfaction and self-esteem.

### ***Method***

#### ***Design***

A pre-test/post-test experimental design was implemented with three levels of the independent variables (thin-ideal, plump ideal and neutral Instagram images of Nigerian female celebrities). The dependent variables were body satisfaction and self-esteem (while controlling for all baseline scores).

#### ***Participants***

Participants were 338 female undergraduate students attending Federal Polytechnic Nasarawa, Nigeria. They were enrolled in Mass Communication Classes and received extra credit points in exchange for participating in the study. Subjects reported a mean age of 22.14 (SD = 2.11) years, mean body mass index (BMI; kg/m<sup>2</sup>) of 20.11 (SD= 1.72) and mean Instagram and other SNSs (i.e., Facebook and Twitter) consumption of 8.23 (SD= 2.15). Self reported BMI for the women in the research were calculated using the recommended formula: weight (lb)/[height (in)]<sup>2</sup>×703 (Body Mass Index, 2015). Instagram and other SNSs consumption was operationalized as number of hours spent during the day using them. Most participants (73.4%) were ordinary

national diploma (OND) students. An additional 90 (26.6%) were higher national diploma (HND) students. To determine whether the sample was adequate, we conducted a priori power analyses with the G\*power program (Faul, Erdfelder, Buchner, & Lang, 2007). The parameters were set with power ( $1 - \beta$ ) at 0.90, 0.25 effect size  $f$ , and  $\alpha = .05$ . The results indicated that a total sample size of 338 participants was needed to detect statistical differences at the .05. There was no significant group differences in age,  $F(2,155) = 0.72$ ,  $p = .65$ , partial  $\eta^2 = .01$ , SNS use,  $F(2,155) = 0.22$ ,  $p = .80$ , partial  $\eta^2 = .01$ , and BMI,  $F(2,155) = 0.43$ ,  $p = .56$ , partial  $\eta^2 = .03$  for participants randomly assigned to the thin-ideal ( $n=113$ ), plump-ideal ( $n=113$ ) or control ( $n=112$ ) conditions.

### ***Materials***

For the thin-ideal condition, the participants were exposed to 10 set of Instagram images of Nigerian celebrities (e.g., Agbani Darego, Toke Makinwa, Makida Moka, and Ini Dima-Okojie, with followers ranging from 27,600 to 2.9 million) who are popularly known for their 'thin' figure. The same procedure was repeated for the plump ideal conditions, where 10 set of Instagram images of plump celebrities (e.g., Omotola Jalade Ekehinde aka "Omo Sexy", Daniella Okeke, Mercy Johnson, and Bimbo Oshin, with followers ranging from 45,000 to 5.9 million) who are popularly known for their plump figure was shown to them. The images were randomly selected on the celebrities Instagram handles. In addition, participants in control condition were exposed to 10 neutral Instagram pictures of architectural landscapes designs. Instagram pictures of this nature were deliberately selected to avoid any references to body image. As in the study of Tiggemann and Barbato (2018), each image was shown within the Instagram frame with the Instagram logo. Instagram pictures were presented to participants on a computer desktop through a PowerPoint slideshow for 10 minutes each.

### ***Procedure***

The local Institutional Review Board of the Federal Polytechnic approved this study. Prior to pre-test assessment, all students were informed of the study through in-class announcements and blackboard notifications. Only women, aged 18-32 years who had an Instagram account were eligible to take part. All participants were given consent forms to sign prior to their participation in the research. To prevent a potential bias, participants were told that the research was being carried out to understand the effects of consistent exposure to Instagram images on their fashion sense as well as how it influenced their willingness to replicate such fashion in their lives. Then participants completed a series of demographic questions (age, year in school, weight and height), favourite celebrity(ies) questions, Instagram and other SNS use questions and pre-exposure measures of body satisfaction, and self-esteem. After one week, participants were assigned to one of the three conditions. They were shown images associated with the conditions. Following a 10 minutes interval, post-exposure measures were elicited. Participants received course credit for their participation and were debriefed after completing the posttest instruments. Participants did not show any prior knowledge of the study objectives. Subsequently, misconceptions about the purpose of the study were corrected and participants were thanked for their participation.

### ***Measures***

#### ***Body Satisfaction Scale***

A Body Satisfaction Scale (BSS), which is a 16 item ( $\alpha = .80$ ) self-report questionnaire (Slade, Dewey, Newton, Brodie & Kiemle, 1990) was used to measure participants' body dissatisfaction. The BSS consists of a list of body parts, half involving the head (above the neck) and the other half involving the body (below the head) (e.g. head, face, jaw, teeth, nose, eyes, mouth, tummy, arms hands, legs, etc).

Participants were asked to rate their satisfaction/dissatisfaction with each of these body-parts on a seven-point scale (1-very unsatisfied to 7-very satisfied). Unlike Slade et al., we reversed the scaling of each items such that the lower the rating the more dissatisfied the women in the study. In this present sample, a reliable Cronbach's alpha ( $\alpha$ ) of .89 was obtained for the scale.

### ***Self-Esteem Scale***

A 10-item scale, which was designed by Rosenberg (1965) was used to measure global self-worth of participants in the study. The scale is uni-dimensional. All items were answered using a 4-point Likert scale (from 1-strongly disagree to 4-strongly agree). Some examples of the items are: "On the whole, I am satisfied with myself", "I feel that I'm a person of worth, at least on an equal plane with others", etc. In the present sample, scores for negatively worded items were later reversed after data were elicited. For this study, the scale showed excellent reliability ( $\alpha = .98$ ).

### ***State Appearance Comparison Scale***

A State Appearance Comparison scale (SACS) was used to measure participants' appearance comparison. As in previous experimental studies, this scale consists of three items aimed at assessing the amount of actual appearance processing and comparison in which participants engaged (Herbozo & Thompson, 2010; Tiggemann & McGill, 2004; Tiggeman & Slater, 2003). Using a 7-point Likert scale, participants rated the extent to which they thought about their appearance when viewing the Instagram images (1= no thought about my appearance, 7 = a lot of thought). Subsequently, participants rated the extent to which they compared their overall appearance and specific body parts, respectively, with those of the people they saw on their Instagram pages (1 = no comparison, 7 = a lot of comparison). Tiggemann and McGill, (2004) summed and averaged ratings of state appearance comparison to

produce a single composite measure resulting in high internal reliability ( $\alpha = .91$ ). A highly reliable Cronbach's alpha ( $\alpha$ ) of .86 was obtained after a composite measure of state appearance comparison was computed by averaging the scores for all three items described above. The scale was administered as a state measure only after exposure to Instagram images.

### ***The Celebrity Attitude Scale***

We used the 23-item Celebrity Attitude Scale (CAS), which was developed in an effort to measure people's views about famous persons (Maltby, Day, McCutcheon, Houran & Ashe, 2006). The scale is three subscales measure Entertainment-Social (ES; "To know my favourite celebrity is to love her"), Intense-Personal (IP; "My favourite celebrity is practically perfect in every way"), and Borderline Pathological (BP; "I have frequent thoughts about my celebrity, even when I don't want to"). All items were answered using a 5-point Likert scale (from 1-strongly disagree to 5-strongly agree). Result of internal consistency test showed that the measure is highly reliable (Cronbach's  $\alpha = .92$ ).

### ***Social Networking Activity Intensity Scale (SNAIS)***

We adopted the SNAIS, which is a scale developed to assess online social networking use intensity (SNUI) (Li et al., 2016). The 14 items in the scale were written as questions: "How often have you performed the following online social networking activities in the last month?" Participants rated the extent to which they have performed each of the SNS activities (e.g., "Browsed others' logs/photos/statuses/albums", "Commented on friends' status, logs, and photos", etc) on a 6 point scale (from 0-never to 5-always). Cronbach's alpha ( $\alpha$ ) was used to determine the reliability of this scale and result showed a highly reliable measure ( $\alpha = .84$ ).

### ***Manipulation Checks***

Participants responded to a number of questions aimed to check if they were correctly exposed to the manipulation as it was intended. Participants in the experimental conditions were asked to respond on a scale (ranging from (1) very 'thin'/'slim' to (4) very 'plump'/'curvy') to statements on perceived body size of Instagram images they were exposed to. Results of independent samples t test ( $t$ ) showed a significant difference in scores for participants in the plump ideal condition ( $M = 3.4$ ;  $SD = 0.1$ ) and thin-ideal condition [ $M = 2.5$ ;  $SD = 2.1$ ;  $t(155) = 21.17$ ,  $p = .003$ ]. Participants in the plump ideal condition rated the Instagram women images they followed heavier than did participants in the thin-ideal condition. Participants were also asked to rate their level of attraction to the celebrities they were exposed to on a 5 point scale (1- "I am not so attracted" to 5- "I am so attracted"). We performed an independent samples t test ( $t$ ) to ascertain the level of their attraction. Findings revealed no significant difference in scores for participants in the plump ideal condition ( $M = 4.4$ ;  $SD = 0.1$ ) and thin-ideal condition [ $M = 3.8$ ;  $SD = 1.2$ ;  $t(155) = 34.06$ ,  $p = .081$ ], with many participants scoring high on the attraction measure – an indication that the celebrities used in the study appealed to many of the young women.

### ***Analysis***

We analysed the data gathered, using both descriptive and inferential statistics. We employed the Statistical Package for Social Sciences (SPSS 23.0). We conducted a univariate ANCOVA to examine the between condition differences between women's pre and post Body Satisfaction and Self-Esteem scores, while controlling for all baseline scores. Furthermore, we conducted mixed between-within subjects ANOVA to determine effects of exposure to the different treatment conditions on level of body satisfaction, and self-esteem, state appearance comparison. A series of mediation

analyses was also performed to examine the effects of the mediating variables on image type and body image and self-esteem.

## **Results**

### ***Preliminary Analyses***

We tested the baseline equivalence of the experimental and the control groups using one way ANOVA. As shown in Table 1, we found no significant group differences in TBSS,  $F(2,155) = 0.61$ ,  $p = .55$ , partial  $\eta^2 = .01$ , and TSES,  $F(2,155) = 0.32$ ,  $p = .73$ . However, significant differences were observed in TBSS,  $F(2,155) = 60.0$ ,  $p < .05$  partial  $\eta^2 = .74$ , TSES,  $F(2,155) = 14.1$ ,  $p < .05$  partial  $\eta^2 = .40$ , and TSACS,  $F(2,155) = 20.5$ ,  $p < .05$  partial  $\eta^2 = .49$  at post intervention period.

### ***Main Analyses***

#### **Hypothesis 1**

First, we conducted univariate ANCOVA for hypothesis 1. After controlling for baseline scores, there was a significant difference in the three conditions on post intervention-scores on the Body Satisfaction Scale [ $F(2, 155) = 142.7$ ,  $p = .001$ ,  $\eta^2 = .47$ ]. Comparing the estimated marginal means showed that the most decrease in body satisfaction was reported in the thin ideal experimental group (mean = 33.79) relative to the plump ideal experimental group (mean = 49.56) and control group (mean = 55.45). A subsequent analysis showed a significant effect of Time x Group Interaction on body satisfaction [ $F(2,151) = 34.8$ ,  $p < .05$ ; partial  $\eta^2 = .52$ ]. Furthermore, while there was no significant main effect for time [ $F(1,155) = .58$ ,  $p = .45$ ; partial  $\eta^2 = .014$ ], we observed a significant main effect for group [ $F(2,155) = 25.5$ ,  $p < .05$  partial  $\eta^2 = .55$ ]. Result revealed that thin ideal experimental group reported a decrease in body satisfaction compared to the plump ideal experimental group and control group.

## Hypothesis 2

After controlling for baseline scores, univariate ANCOVA showed that changes in self-esteem over time were significantly different for the three groups, with thin ideal experimental group (mean= 14.56) showing the most decrease in self-esteem relative to plump ideal experimental group (mean= 17.86) and the control group (mean= 19.72) [ $F(2, 151) = 26.2, p = .001, \eta^2 = .57$ ]. Furthermore, analysis that directly tested the Time x Group Interaction revealed a significant effect on self esteem [ $F(2,155) = 11.4, p < .05$ ; partial  $\eta^2 = .35$ ]. Of note, there was no significant main effect for time [ $F(1,155) = 2.67, p = .11$ ; partial  $\eta^2 = .060$ ], while there was a significant main effect for group [ $F(2,155) = 6.0, p < .05$  partial  $\eta^2 = .22$ ]. In all, thin ideal experimental group reported a decrease in self-esteem compared to the plump ideal experimental and control groups.

## Hypothesis 3

A series of regression analyses was conducted to examine whether the observed effect of image type on body satisfaction and self-esteem was mediated by participants' state appearance comparison. Mediation analysis was conducted using the Macro Process in SPSS 23. Mediation is established when the effect of the predictor variable (here image type) on the outcome variable (here body satisfaction and self esteem) is less when the mediator variable (here state appearance comparison) is entered in the regression equation than when the predictor variable is entered on its own (Baron & Kenny, 1986). In conducting the analyses, all baseline scores were controlled for.

Findings showed that image type predicted body satisfaction ( $b = 2.5592, t = 3.918, p = .001$ ) and self-esteem ( $b = 3.5411, t = 5.290, p = .001$ ). The  $R^2$  shows that image type explains 21.8% and 1.6% of the variances in body satisfaction and self-esteem respectively. There was a direct relationship between image type and the measure of state appearance comparison ( $b = -0.7455, t = 5.329, p = .001$ ).

Additionally, the relationship between the state appearance comparison and body satisfaction ( $b = -1.0181, t = 4.108, p = .003$ ) and self-esteem were significant ( $b = -0.0292, t = -1.313, p = .006$ ). However, when the state appearance comparison measure was included in the model, image type did not have a significant effect on body satisfaction ( $b = -0.4523, t = 2.537, p = .254$ ) but had an effect on self-esteem ( $b = -0.5514, t = 2.456, p = .014$ ). This implies that the extent of state appearance comparison in which the women engaged does at least partially mediate the effect of image type on body satisfaction and self-esteem. The Sobel test for mediation was significant,  $z = 2.33, p = 0.001$  and the indirect effect ( $ab = .41$ ) had a 95% bootstrap CI [3.8157, 4.2253].

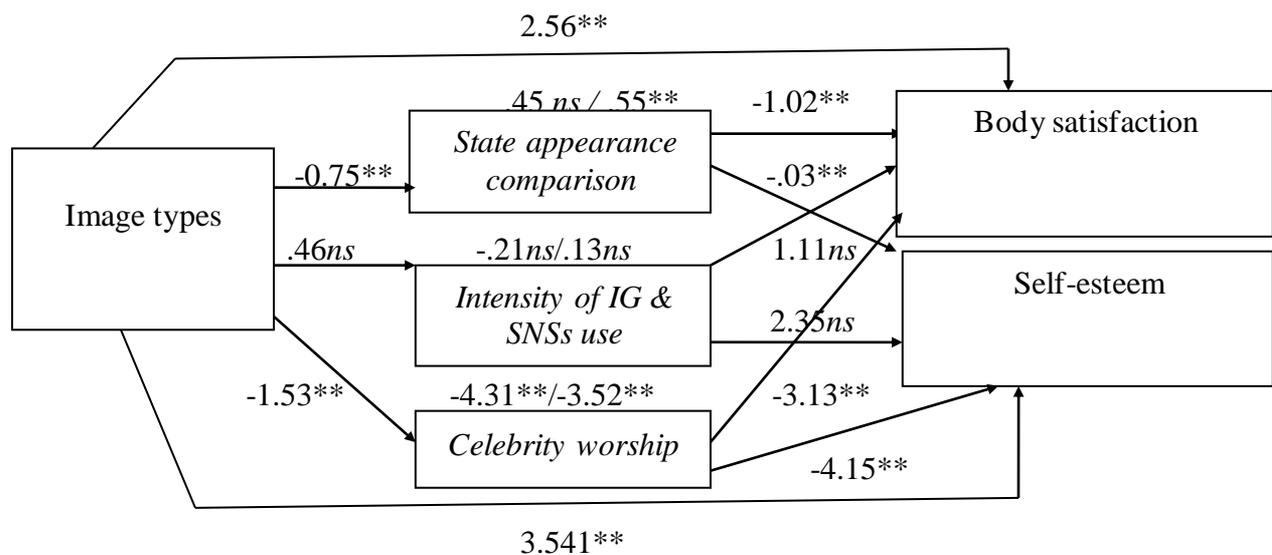
#### **Hypothesis 4**

Using similar steps in Hypothesis 3, a mediation analysis was performed (where in the extent of Instagram and other SNSs consumption). A direct relationships was not observed between image type and the intensity of SNS use ( $b = 0.4632, t = 1.136, p = .081$ ). Additionally, there were no direct relationships between intensity of SNS use and body satisfaction ( $b = 1.1112, t = 0.329, p = .076$ ) as well as self-esteem ( $b = 2.3480, t = 1.275, p = .081$ ). There was no significant effect of image type on body satisfaction ( $b = -0.2104, t = 5.122, p = .002$ ) and self-esteem ( $b = -0.1396, t = 2.456, p = .014$ ) when the intensity of SNS use was included as a mediator in the model. This result suggests that the intensity of SNS use did not mediate the relationship between image type and body dissatisfaction as well as self-esteem.

#### **Hypothesis 5**

Like hypotheses 3 and 4, a series of regression analyses were performed between image type and body satisfaction and self-esteem, with the extent of celebrity worship introduced as a mediator. Results showed a direct relationships between image

type and the extent of celebrity worship ( $b = -1.5329$ ,  $t = 4.148$ ,  $p = .001$ ). There was also a significant relationship between the extent of celebrity worship and body satisfaction ( $b = -3.1254$ ,  $t = 3.216$ ,  $p = .001$ ) as well as self-esteem ( $b = -4.1531$ ,  $t = 4.212$ ,  $p = .001$ ). When the extent of celebrity worship was included in the model, image type showed a significant effect on body satisfaction ( $b = -4.3114$ ,  $t = 3.648$ ,  $p = .001$ ) and self-esteem ( $b = -3.1124$ ,  $t = 3.523$ ,  $p = .001$ ). There was a negative relationship between image type and body satisfaction and self-esteem, when the extent of celebrity worship was present suggesting that high extent of celebrity worship led to lower body satisfaction and self-esteem. The Sobel analysis indicate a significant outcome,  $z = 3.43$ ,  $p = 0.001$  and the indirect effect had ( $ab = .30$ ) had a 95% bootstrap CI [2.7857, 3.2159].



**Figure 2. Mediation analyses outcomes for the effects of images on body satisfaction and self-esteem as mediated by state appearance comparison, intensity of IG & SNSs use and extent of celebrity worship. Note.  $^{**}p < .01$**

### Discussion

The major purpose of the present study was to examine the effects of Instagram images on women's body satisfaction and self-esteem in young Nigerian women. Consequently, the study has added to the experimental inquiry into the nature of social

media, especially Instagram and body image. First, as predicted, exposure to Instagram images of ‘thin’ Nigerian celebrities led to greater body dissatisfaction than exposure to neutral images. This result is consistent with prior studies indicating that exposure to Instagram images tend to increase body dissatisfaction among women (Brown & Tiggemann, 2016; Casale et al., 2019; Lewallen, 2016; Tiggemann & Barbato, 2018; Tiggemann et al., 2018). Almost similar effect was found for ‘plump’ ideal images. The outcome that plump ideal experimental group experienced a decrease in body satisfaction compared to their baseline could plausibly be explained by the equally widespread reverence for curvy body ideal in the Nigerian society. As an example, Dutfield-Wilms’ (2011) qualitative study of Nigerian and Sierra Leonean women living in Canada suggested that the women desired to have hour glass body shape, large buttocks and chest, which they believed represent a general prescription for “black beauty”.

The finding of the present study also confirmed our hypothesis that women in the thin and plump ideal experimental groups would report lower self-esteem following their exposure to thin ideal or plump-ideal images of Nigerian female celebrities on Instagram, relative to women in the control group. The finding is congruent with both experimental and correlation studies confirming that Instagram use may contribute to negative psychological outcomes and poor appearance-related self-perception (e.g. Lewallen, 2016; Sherlock & Wagstaff, 2018). As in the first hypothesis, the result that women in the thin ideal experimental group experienced the most decrease in self-esteem showed that thin ideal images could have greater influence on women’s self-esteem. It is also important to note that plump ideal Instagram images of female celebrities might affect young women’s self-esteem. Overall, by testing how plump ideal images impact on body image and self-esteem, this study extends the literature on

how diverse body ideals to the thin one can also affect young women. The result of this research differs from previous studies because it focused on Nigerian women in a typical African environment. This new insight could be useful in the understanding of how the desire to look like plump ('not too fat, not too thin') celebrities among black and other ethnic minority communities (e.g. Hispanic decent) outside the study setting (e.g., the U.S) could trigger body image concerns, since the desire for certain bigger body parts are products of cultural influence. For example, in their examination of surgical procedures for ideal buttocks in the U.S., Cuzalina and Retana (2019) found that Black female patients have a very consistent cultural request of a very large and round buttocks.

Furthermore, findings showed that the extent of state appearance comparison at least partially mediated the effect of image type on body satisfaction and self-esteem. These findings support previous experimental research highlighting social comparison as a significant connector between idealised media images and adverse outcomes for women (e.g., Bessenoff, 2006; Brown & Tiggemann, 2016; Tiggemann & McGill, 2004; Tiggemann & Polivy, 2010; Tiggemann & Zaccardo, 2015). As a result, social comparison offers useful insights into how different ideal body images (i.e., the thin and the plump) can impact on women's construction of the 'self', especially in a non-Western setting, where multiple cultural standards of attractiveness exist. These findings also accentuate the important role of SNSs' such as Instagram in influencing social comparison through image type accessed on such media.

Our fourth hypothesis that intensity of Instagram and other SNSs use will mediate the effect of image type on body satisfaction and self-esteem was not supported. This finding ultimately contradicts emerging studies (e.g., Ellison, Steinfield & Lampe, 2007; Trifiro, 2018) indicating that SNSs intensity served as a mediator in

regards to user effect, such as self-esteem and wellbeing. Thus, the contradiction regarding the mediating effect of SNSs intensity on users may be a consequence of intensity variation in different samples (Trifiro, 2018). Therefore, in the present study, it is likely that low SNSs intensity of users accounted for its non-significant mediating effects on body satisfaction and self-esteem.

Furthermore, findings revealed that the extent of celebrity worship mediated the effect of image type on body satisfaction and self-esteem. These findings add to the burgeoning list of experimental efforts (e.g., e.g. Brown & Tiggemann, 2016; Khaled et al., 2018) identifying celebrity worship as a crucial link between idealised media images and women's body image concerns. The findings from the present study suggest that idealizing celebrities irrespective of whether they are thin and or plump may have negative effect on women in the sample. Therefore, in a society like Nigeria, where obsession with 'rich' and famous celebrities is becoming widespread, uncontrolled emotional attachment to indigenous celebrities may help drive young women's desire to want to attain the exact body type of their favourite celebrities.

While this finding highlights the powerful role of female celebrities as agenda setters, it also revalidates in an interesting manner, the basic assumption of the agenda setting theory in a complex new media landscape. Agenda setting theory offers concepts that provide deep insights to questions about what the main issues in society are, what their meanings are and how different types of media participate in formulating them (Slavnić, 2016). As to the result of this study, the role that female celebrities play, the 'standard' female body type ("thin" and or "plump") defined (whether consciously or unconsciously) as 'beautiful' and the affordances that Instagram presents to young female followers can give appropriate answers to these questions. This finding puts agenda setting theory in a new light because it deviates from the old notion that only the

media (organisations and institutions) set a particular image of reality and what is regarded as salient. Therefore, depending on the context of the discourse, the nature and roles of agenda setters can be extended to various individuals and groups such as celebrities. On a wider note, compared to media organisations or governments, the amount of power that celebrities wedge in setting agenda on issues raises a major question and is subjected to empirical enquiry.

Bearing in mind that there was no significant difference in BMI scores across the three groups, we assumed that women who were exposed to thin ideal images may have perceived that the thin Instagram women they viewed were better off and thus tended to engage in upward appearance comparison. As a result, we believe that these perceptive processes are an indication that young women in the study played an active role in agenda melding (making informed choices on how they feel about the images seen). Furthermore, these findings are supported by the social comparison theory (Festinger, 1954) in that; it underscores the undeniable influence of others on individual opinions. In the context of this study, the theory explains how young women compare upwardly between images of celebrities they thought are similar or dissimilar to themselves. Because people often develop strong connections with celebrities and sometimes start to imagine having special relationships with them (Maltby, Giles, Barber, & McCutcheon, 2005), they tend to see them (celebrities) within their reach. Similarly, since Instagram provides unique platform for relatability between celebrities and fans, comparison is likely to set in.

In addition, the finding of a small-to-moderate effect sizes of exposure to thin, plump, and female celebrity media portrayals on young women's body image concerns in the present analysis is congruent with meta-analytic findings from media research in

related subject (Groesz et al., 2001; Grabe et al., 2008; Want, 2009). These therefore highlight the importance of both thin and plump ideal images on body satisfaction.

Since it is practically impossible to limit exposure to idealized and unrealistic body ideals on multiple SNS platforms, enlightening young women on the deleterious effects of unguarded exposure to unrealistic media images should be the right step to take. Women should also be educated about the potential consequences of exposure to celebrity images on SNSs. In consideration of Festinger's (1954) assertion that the holding of false opinions and or inaccurate judgments of one's ability could be punishing or even fatal in several situations, it becomes imperative that young women are made to understand that self assessment based on SNSs images as well as images of celebrities could be misleading and harmful in several ways. In addition, research has suggested that women could be at risk of diseases such as anorexia, bulimia etc especially when thin ideal internalization results to body image anxieties and eating disorders (Rukavina & Pokrajac-Bulian, 2006; Thompson & Stice, 2001). Interventions aimed at lowering these conditions should combat negative body image concerns resulting from social media use. Finally, female celebrities could play important role in educating young women about societal body standards and ideals that is not realistic for most people.

### **Limitations and Future Research**

Despite these findings, the current study should be considered in light of a number of limitations, which might also provide insight for future research. One of the limitations of the present study was that we did not assess women's level of thin ideal internalization. This could have had an impact on our results. Because this study focused on young women in a tertiary institution, we cannot ascertain the impact of thin or plump images on other categories of women who do not have access to this level of

education and exposure and who constitute the majority in Nigeria. Our small convenience sample may also limit the generalisability of our findings. As a result, our findings should be viewed with caution. One other limitation of the study is the absence of qualitative data, which could have provided deeper insights into how women in the region perceive thin and plump images on SNSs, its influence on the self as well as motivations for perception held. Lastly, our finding is limited because we only obtained a self-report measure of BMI and thus may not reflect the actual BMI measure that may have changed the outcome of the experiment. Future research should address these gaps.

### **Conclusion**

Media images could have powerful impact on the way women assess and feel about themselves. The present findings suggest that young Nigerian women experience body dissatisfaction and reduced self-esteem when exposed to thin ideal images of Nigerian celebrities to the same extent as their counterparts in Western industrialized societies. However, the study also suggests that in an environment where plumpness is ideal, plump images may have negative influence on young women's body image. Even though the study extends previous social media and body image research, it is the first in empirically linking SNSs exposure and body image anxieties for a Nigerian sample.

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