Celebrity Worship and Body Image Concern: Mediating Role of Cognitive Flexibility

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Celebrity worship as a multifaceted issue, can affect the body image. In relationship between celebrity worship and body image concern, cognitive flexibility can play a remarkable role. Accordingly, the present study aimed to investigate the mediating role of cognitive flexibility in the relationship between celebrity worship and body image concern. The research design was descriptive and correlational. The statistical population of the study consisted of students of faculty of art and architecture of Guilan University in 2018, among which 300 students (150 females and 150 males) were recruited through convenience sampling method. The research measures consisted of Celebrity Attitude Scale (McCutcheon, Lange & Houran, 2002), Body Image Concern Inventory (Littleton, Axsom & Pury, 2005) and Cognitive Flexibility Inventory (Dennis & Vander Wal, 2010). Data were analyzed by correlational

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and structural analyses. The results revealed that there are significant correlations between celebrity worship, body image concern, and cognitive flexibility. In addition, the proposed model had appropriate goodness of fit. According to the results, the indirect effect of celebrity worship through the cognitive flexibility on the body image concern was significant. The findings of this study clarified the prominence of cognitive flexibility in the relationship between celebrity worship and body image concern. Due to the mediating role of cognitive flexibility, it is possible to reduce the body image concerns that account for celebrity worship by implementing interventions based on the improvement of cognitive flexibility.

Keywords: celebrity worship, body image concern, cognitive flexibility

Nowadays, there are increasing signs of celebritization of the society and culture. Meanwhile, celebrities have become prominent in the 21st century news media. From newspaper to television programs, celebrity news has indicated its importance, prominence, and effectiveness (Turner, 2010). Researchers talk about a real hunger and insatiable appetite for celebrities (Alexander, 2010) which can appear as an obsession. It is an obsession with one or more celebrities (Maltby, Houran & McCutcheon, 2003), where shortcomings, inconsistencies, and frailties of celebrities are ignored or rationalized (Aruguete, Griffith, Edman, Green & McCutcheon, 2014) and parasocial interactions are developed (McCutcheon et al., 2002). This type of obsession and developing parasocial interaction with celebrities are known as celebrity worship (Maltby et al., 2003).

Celebrity worship is a penetrating phenomenon which can be correlated with different aspects. Researchers have indicated the relationships of celebrity worship with a wide range of variables such as mental health (Maltby,

Day, McCutcheon, Gillett, Houran & Ashe, 2004), wellbeing (Maltby, McCutcheon, Ashe & Houran, 2001), identification (Brown, 2015), personality (Maltby et al., 2004), empty self (Reeves, Baker & Truluck, 2012), self-esteem (North, Sheridan, Maltby & Gillett, 2007), cognition (McCutcheon, Ashe, Houran & Maltby, 2003), attributional style (North et al., 2007), dissociation and fantasy proneness (Maltby, Day, McCutcheon, Houran, Ashe, 2006), materialism (Reeves et al., 2012), religious orientation (Maltby et al., 2002), loneliness and shyness (Ashe & McCutcheon, 2001), addiction and criminality (Sheridan, North, Maltby & Gillett, 2007), and even involvement and destination perception (Lee, Scott & Kim, 2008). All these indicate the importance of celebrity worship as well as significance of describing, evaluating, and studying it.

"When a person's obsession with a celebrity becomes the central focus of his or her life, dysfunction may ensue" (Ang & Chan, 2018, p. 139). In line with absorption-addiction model (McCutcheon et al., 2002), worshiping celebrities can prompt malfunctions and impairments. Body image is one of the variables that can be related to the celebrity worship. Body image, which is not merely restricted to the physical dimension, also involves psychological aspects. Body image refers to body-related self-perception and self-attitude which include thoughts, beliefs, feelings, and behaviors (Cash, 2004). Individuals affected by various factors can have concerns about their own body image. Dysmorphic concerns are severe concerns about perceived defects in

appearance which appear as intensive checking, disguising defects, social avoidance, and reassurance seeking (Littleton et al., 2005).

Celebrity worship is one of the factors that might be related to body image. Most of the individuals evaluate celebrities based on their physical attributes and this engagement with celebrities may lead to idealization of favorite celebrities' bodies. Due to the special attributes of idealized body, celebrity worshippers may be unable to correct their real or unreal defects and might remain in the vicious cognitive cycle of poor body image and obsession and compulsion of body alteration (Aruguete et al., 2014). Maltby, Giles, Barber and McCutcheon (2005) evaluated the association between celebrity worship and body image within the theoretical perspective of intense parasocial relationships with celebrities. They found that there were significant relationships between attitudes toward celebrities and body image among female students where intense-personal subscale of the celebrity worship could predict body image. Swami, Taylor and Carvalho (2009) found significant correlations between acceptance of cosmetic surgery and celebrity worship. The results of multiple regressions indicated the importance of attitude toward celebrities, especially intense-personal subscale of the celebrity worship, in accepting cosmetic surgery. Maltby and Day (2011) stated that after controlling for several known predictors of elective cosmetic surgery, intense-personal subscale of the celebrity worship predicted the incidence of elective cosmetic surgery within an 8-month period. Further, Aruguete et al. (2014) confirmed the correlations between body image and

celebrity admiration. In line with previous studies, Brown and Tiggemann (2016) reported that exposure to attractive celebrity and peer images can be effective on women's body image where the celebrity worship moderates an increased effect of celebrity images on body dissatisfaction. According to different studies, celebrity worship can be an influential factor which can affect the body image and related concerns.

Many factors can influence the relationship between celebrity worship and body image, and this relationship cannot be considered as a direct relationship. Different studies have suggested a relationship between certain cognitive variables and celebrity worship (Maltby, Day, McCutcheon, Martin & Cayanus, 2004). Because of extensive parasocial interaction, celebrity worship is similar to an erotomanic type of delusional disorder (Maltby et al., 2003). Fuji, Ahmed & Takeshita (1999) reported that erotomania may be associated with deficits in cognitive flexibility, associative learning, as well as verbal and visuospatial skills. According to the similarity of erotomania and celebrity worship, cognitive deficit can also be considered in celebrity worship. Also, specific studies on celebrity worship have confirmed the importance of cognitive dimensions in celebrity worship. Levy (1979) noted the negative correlation between parasocial relationship and education. Also, McCutcheon, et al. (2003) remarked the significance of cognition in celebrity worship. They observed that individuals with higher cognitive functioning were protected from becoming absorbed in fantasies about celebrities. In this

regard, cognition is associated with the attitude toward celebrities, where cognitive flexibility as an important cognitive ability can be influential in celebrity worship. The ability of changing cognitive sets to adjust to varying environmental stimuli is considered as the core component for definition of cognitive flexibility (Dennis et al., 2010). Indeed, it is defined as the ability to adapt to changing task demands effectively and it is a notable aspect of executive function which is vital for survival (Darby, Castro, Wasserman & Sloutsky, 2018). In other words, cognitive flexibility involves individual's awareness of alternatives, willingness to be flexible and adjust to circumstances, and self-efficacy in being flexible (Martin & Rubin, 1995). Martin, Cayanus, McCutcheon & Maltby (2003) found that cognitive flexibility was negatively correlated to intense-personal and borderline-pathological celebrity worship. Maltby et al. (2004) examined the association between attitude toward celebrities and cognitive flexibility. They concluded that cognitive flexibility could predict unique variance of celebrity worship. According to these studies, cognitive flexibility can be considered as an effective and mediating factor in the relationship between celebrity worship and body image concern which should be studied and evaluated further.

In this regard, celebrity worship as a widespread, complex, and multifaceted phenomenon which can trigger many negative consequences should be studied along with its association with important variables such as body image concern and cognitive flexibility. It should also be examined whether cognitive flexibility can play a

mediating role in the relationship between celebrity worship and body image concern. Accordingly, the purpose of this study is to investigate the relationship between celebrity worship and body image concern with the mediating role of cognitive flexibility.

Method

The research design was descriptive and correlational. The statistical population of the study consisted of students of faculty of art and architecture of Guilan University in 2018, out of which 300 students (150 females and 150 males) were recruited through convenience sampling method. For determining the sample size, Cochran's sample size formula was used. According to the results, 280 participants were sufficient, but 300 participants were recruited for increasing the validity of findings. The mean age and SD of the participants was 20.40 (2.17) years. Exclusion criteria included the presence of significant physical or mental disorders, being on any medication, and personal dissatisfaction. The research measures consisted of Celebrity Attitude Scale (McCutcheon et al., 2002), Body Image Concern Inventory (Littleton et al., 2005), and Cognitive Flexibility Inventory (Dennis et al., 2010). Finally, the purposes of the research were explained to them and participants gave their consent for their participation. Eventually, data were analyzed by correlational and structural analyses.

The following measures were used to obtain the required information:

23-Item Celebrity Attitude Scale

Celebrity attitude scale was developed by McCutcheon et al. (2002). Celebrity attitude scale is used to identify individuals who are addicted or absorbed to celebrities. In this instrument, the respondents are asked to indicate their attitude toward their favorite celebrity, with the items being rated and responded on a 5-point scale (1=strongly disagree, 5=strongly agree). Originally, CAS is a 34-item measure, but its 23-item and 22-item scales are also available (Sansone & Sansone, 2014). In the present research, 23-item scale was used. The celebrity attitude scale has three subscales including entertainment-social, intense-personal, and borderline-pathological subscales. Research has indicated the appropriate reliability and validity of the 23-item version of the CAS. Reeves et al., (2012) proposed high internal consistency (Cronbach's alpha) for CAS (α=.92) and its subscales including entertainment-social (α=.89), intense-personal (α=.81) and borderline-pathological (α=.46). In the research conducted by McCutcheon, Gillen, Browne, Murtagh, and Collisson (2016), the internal consistency of the CAS was assessed using Cronbach's alpha method, which was .89, .77, .87, and .58 for the CAS, entertainment-social subscale, intense-personal subscale, and borderline-pathological subscale, respectively. In Iran, alpha in the study of Shabahang, Besharat, Nikoogoftar and Bagheri Sheykhangafshe (2019) was .92. In the present study, internal consistency was acceptable for the CAS (α=.88).

Body Image Concern Inventory

The body image concern inventory developed by Littleton et al. (2005) is a self-report measure on dysmorphic appearance concern. The BICI includes 19 items for each of which, the respondents indicate how often they experience the described feeling or perform the described behavior on a 5-point Likert scale (1=never, 5=Always). Factor analysis confirmed two factors of dysmorphic appearance concerns and interference in functioning due to appearance concerns. The results indicated the appropriate internal consistency of the BICI and its subscales, with Cronbach's alpha of .93 for BICI, and .92 as well as .76 for dysmorphic appearance concerns and interference in functioning due to appearance concern, respectively. Further, strong correlations of BICI with other dysmorphic appearance concern measures such as Padua and EDI, supported the validity of BICI (Littleton et al., 2005). The reliability of the BICI was examined by Mohammadi and Sajadinejad (2007) via Cronbach's alpha. The results showed that the Cronbach's alpha for BICI, dysmorphic appearance concerns, and interference in functioning due to appearance concern were .84, .84, and .74, respectively. In this research, internal consistency was appropriate for BICI (α=.89).

Cognitive Flexibility Inventory

The cognitive flexibility inventory by Dennis et al. (2010). is a brief self-report measure of cognitive flexibility type which is essential for individuals to cope

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and replace maladaptive and unfunctional thoughts with more appropriate and adaptive thinking. The CFI measures three facets of cognitive flexibility including the tendency to perceive plights as controllable, the ability to perceive multiple alternative explanations, and the ability to generate multiple alternative solutions for difficult circumstances. Dennis et al. (2010: 247) demonstrated the appropriate reliability and validity of the scale. The results revealed a good to excellent reliability for CFI (Time 1= .90; Time 2= .91), alternatives subscale (Time 1 and 2= .91) and control subscale (Time 1= .86; Time 2= .84). Support for the concurrent criterion validity of the CFI and its subscales were obtained via its significant inverse correlations with the BDI-II. Also, CFI and its subscales' significant correlation with the CFS indicated the convergent construct validity of CFI. In Iran, Shareh, Farmani, and Soltani (2013) demonstrated good psychometric attributes of the Iranian version of the CFI. The internal consistency of the CFI in present study was good (α= .84).

Results

Table 1 presents the descriptive indices of variables including mean, standard deviation, skewness and kurtosis, as well as the correlation coefficients. Kline (2011) proposed that the distribution of variables should be normal in causal modeling. Kline (2011) suggested that the degree of skewness and kurtosis should not be greater than 3 and 10 respectively. According to Table 1, the degree of skewness and kurtosis of all variables are less than the values proposed by Kline (2011). Therefore,

the normal distribution of variables as the presumption of causal modeling is permissible.

Table1

Descriptive Indices of Celebrity Worship, Body Image Concern, and Cognitive Flexibility

Variable	M±SD	Skewness	Kurtosis	1	2	3
1. Celebrity worship	2.67± .34	-.68	-.24	1		
2. Body image concern	2.16± .64	.51	-.79	.283**	1	
3. Cognitive flexibility	5.08± .87	-.65	1.49	-.443**	-.323**	1

*p <.05; **p <.01

The results of Table1 revealed that celebrity worship was positively and significantly correlated with body image concern ($p<.01$; r=.28). On the other hand, celebrity worship was negatively and significantly correlated with cognitive flexibility ($p <.01$; r=-.44).

Maximum likelihood method for path model test and its fitting with collected data were used. The use of this method requires the removal of overlapping data, multivariate normalization, rational sample size, and sampling adequacy. The Mahalanobis distance index was used to evaluate the multivariate outlier data. The values of the Mahalanobis distance are calculated for each sample by AMOS software which reports two significance levels (p-value1 and p-value2). When both

significance levels for the Mahalanobis index for each sample are less than .01, it can be concluded that the responses of this sample are significantly different from those of other respondents. In this analysis, 11 overlapping data sets were discarded from the path analysis and the analysis were performed based on the remaining samples. In this study, Mardia's normalized multivariate kurtosis values were employed for evaluating multiplicity of normalization. The result obtained from the formula p (p+1) has been -.580 which is less than 15. In this formula, p is equal to the number of research variables which has been 3 in this study (Theo and Noyes, 2012). The KMO test was used to calculate the statistical power and to verify the adequacy of the sample size before factor analysis, which has been greater than .70 for all variables. So, the sample size is good for performing path analysis.

In order to assess the model fit, Gefen, Straub, and Boudreau's indices (2000) were used. These indicators consisted of χ^2/df, goodness of fit index (GFI), comparative fit index (CFI), adjusted goodness of fit index (AGFI), parsimony fit index (PFI), and root mean square error of approximation (RMSEA) as represented in Table 2.

Table2
The Goodness of Fit indices For Tested Model

| χ^2/df	GFI	CFI	AGFI	PNFI	RMSEA
1.65	.911	.923	.876	.651	.04

According to Table 2, the values of CFI, AGFI, GFI, and PNFI indices are larger than those proposed by Gefen et al. (2000). On the other hand, the values of RMSEA and χ^2/df are lower than those suggested by Gefen et al. (2000). As reported by Gefen et al. (2000), these findings suggest that the model has appropriate fitness. Table 3 reports the direct effects, indirect effects, total effect, and explained variance.

According to Table 3, the direct effect of celebrity worship on body image concern (.40, $p<.01$) and its indirect effect on it (.253, $p<.05$) were significantly positive. The total effect was also significantly positive (.655, $p<.01$). Similarly, the direct effect of celebrity worship on body image concern (.31, $p<.01$) and the direct effect of celebrity worship on body image concern (.40, $p<.01$) were also significantly positive. Therefore, it can be concluded that the cognitive flexibility variable has a mediating role in the relationship between celebrity worship and body image concern.

Table 3
Direct Effects, Indirect Effects, Total Effect, and Explained Variance of Variables

Variable	Direct effect	Indirect effect	total effect	Explained variance
On Body image concern form	.403**	.253*	.656**	.46
Celebrity worship	-.31**	-	-.310**	-
Cognitive flexibility	-.82**	-	-.82**	.68

*p <.05; **p <.01
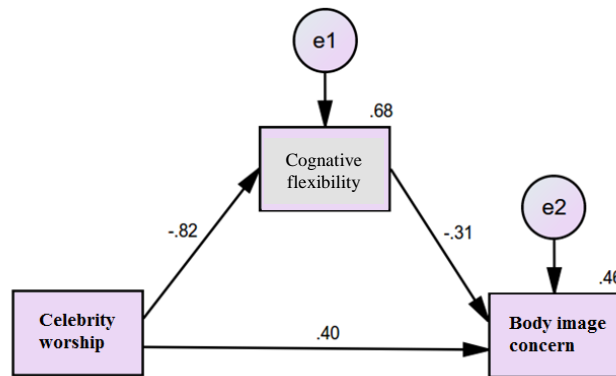
The results of mediating relations are demonstrated using bootstrap test in Preacher and Hayes (2008) SPSS macro program for testing the mediator routes in Table 4.

Table 4

Bootstrap Test Results for the Indirect Effect Path of the Proposed Model

Variable	Data	Boot	Bias	Standard error	Minimum	Maximum
The effect of celebrity worship on body image concern with mediating role of cognitive flexibility	-.2558	.2005	-.0052	.0721	.0526	.3394

The confidence interval for the contents of Table 4 implies the absence of zero in the confidence interval between the indirect paths of the celebrity worship effect on body image concern through cognitive flexibility.

Discussion

The present study was conducted to investigate the relationship between celebrity worship, body image, and cognitive flexibility. Also, it aimed to show whether cognitive flexibility can play a mediating role in the relationship between celebrity worship and body image concern.

According to the results, body image concern and its subscales have been positively correlated with celebrity worship, while cognitive flexibility and its subscales have had negative correlation with it. Also, the indirect effect of celebrity worship through the cognitive flexibility has been significant on the body image concern. Therefore, it

can be concluded that the cognitive flexibility variable in the relationship between the celebrity worship and the body image concern plays a mediating role.

Celebrity worship is defined as obsessive-like behaviors, whereby individuals with healthy identities are enthusiastic about one or more renowned celebrities (Maltby et al., 2003). Celebrity worship, as a process of absorption and addiction to the celebrities (McCutcheon et al., 2002), can be associated with a wide range of variables and results in extensive corrosive effects and negative consequences.

Body image as an attitude toward the body, consisting of thoughts, feelings and behaviors related to the body (Cash, 2004) is among the phenomena that can be affected by celebrity worship. Physical attributes of celebrities as a significant facet can be appealing for individuals and may cause idealization of celebrities' physical attributes (Aruguete et al., 2014). According to absorption-addiction model (McCutcheon et al., 2002), it is possible to propose that celebrity worshippers who are absorbed in celebrities idealize the physical attributes of their favorite celebrities. Also, due to inability in correcting their real or unreal defects, they get stuck in the vicious cycle of poor body image and obsession and compulsion of body alteration (Aruguete et al., 2014). Indeed, the association between celebrity worshippers and their favorite celebrities can lead to less satisfaction with the body. In other words, celebrity worshippers compare their body with the body of celebrities and make a great deal of effort to reach the ideal body. Given that this goal is almost unreachable, it will result in distress about the

body image and physical attributes. Studies by Maltby et al., (2005), Swami et al., (2009), Maltby and Day (2011), Aruguete et al., (2014), and Brown and Tiggemann (2016) verify the association between celebrity worship and body image. In line with previous research, the results of present study indicated that body image concern is positively correlated with celebrity worship. Also, the direct effect of celebrity worship on body image concern at the significant level of .01 and the indirect effect of the celebrity worship on the body image concern at the significant level of .05 were positively significant. This suggests the importance of celebrity worship in the body image concern. Therefore, according to previous studies and the results obtained here. Worshiping celebrities can be considered as an influential factor in the individuals' concerns about their body image.

Note that the link between celebrity worship and body image concern is not straightforward, and many variables can affect it. One of the important aspects of celebrity worship is cognition (Maltby et al., 2004). Fuji et al., (1999), Levy (1979), and McCutcheon et al., (2003) remarked the significance of cognitive factors in celebrity worship. As a remedy, higher cognitive functioning can play a protective role. In other words, it is foreseeable that individuals with lower cognitive functioning are more likely to be celebrity worshippers. In contrast, high cognitive performance can predict a lower probability of worshiping celebrities. Therefore, cognition is associated with attitude toward celebrities, whereby cognitive

flexibility as a vital cognitive ability can offset celebrity worship.

Cognitive flexibility as the ability to change cognitive sets, helps individuals to adapt to environmental stimuli (Dennis et al., 2010). This flexibility can play a noticeable role in the relationship between celebrity worship and body image concern. Studies of Martin et al., (2003) and Maltby et al., (2004) illustrated the efficient role of cognitive flexibility in celebrity worship. The results of the present study revealed a negative correlation between cognitive flexibility and the celebrity worship as well as body image concern. Also, considering the significant indirect effect of worship of celebrities through cognitive flexibility on the physical image concern, it can be concluded that cognitive flexibility plays a mediating role between the celebrity worship and the body image concern.

Generally, celebrity worship is associated with body image and concerns over it, which could be mediated by cognitive flexibility and its problems. Indeed, this flexibility is effective in modifying this relationship. Therefore, use of strategies to enhance cognitive flexibility can play an important role in reducing the celebrity worship and concerns over body image.

Finally, it must be stated that the present study had some limitations, among which we can mention self-report scales. Therefore, it is suggested that more precise and extended methods be used in future studies. Also, factors such as social, cultural, and economic conditions of the participants in the present study were not completely controlled. In the same vein, it is suggested

that future research be performed by controlling and evaluating the above variables. Experimental studies on celebrity worship, body image concern, and cognitive flexibility can provide more specific information. Accordingly, it is recommended that experimental studies be conducted in this regard. At the end, it is suggested that the relationship between celebrity worship, body image concern, and cognitive flexibility be analyzed across various populations and with a higher number of participants to better clarify these associations.

Acknowledgements

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