Celebrity worship in the United Arab Emirates: An examination of its association with problematic Internet use, maladaptive daydreaming, and desire for fame

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Abstract

Previous research has demonstrated a relationship between obsessive fascination with celebrities and an increased frequency of mental health difficulties. The present study examined the association of celebrity worship with desire for fame, problematic use of the Internet (PIU), maladaptive daydreaming, and self-efficacy. A sample of 316 participants resident in the United Arab Emirates (M_{age} = 21.7, SD = 11.7) completed the Celebrity Attitude Scale (CAS) and assessments of the four additional variables. Results indicated that celebrity worship was highly prevalent in this sample, particularly the pathological variety, and participants expressed a high degree of emotional connectedness with their favourite celebrity. Celebrity worship was consistently correlated with and predictive of an increased desire for fame, increasingly compulsive use of the Internet, and a proclivity for maladaptive daydreaming. These results held following both correlational and regression analyses and were the case across the three dimensions of the CAS. Self-efficacy, however, appeared to be unrelated to celebrity worship.

Public Policy Relevance Statement:

This study broadened our understanding of the psychological nature of celebrity worship. Specifically, it is the first study to investigate the subject in this region of the world and this initial investigation suggests that it may be a substantial issue in this locale. Moreover, this study's results suggest that two potential reasons for individuals' engagement in celebrity worship may be their desire to attain fame by association to the celebroty or as a result of their need to establish an idealised fantasy world away from the reality of the real-world.

Celebrity Worship in the United Arab Emirates: An Examination of its Association with Problematic Internet Use, Maladaptive Daydreaming, and Desire for Fame

A burgeoning body of research has recently developed that has sought to investigate individuals' interest in and devotion towards celebrities (Maltby, Day, McCutcheon, Gillett, Houran, & Ashe, 2004; Sansone & Sansone, 2014; Zsila, McCutcheon, & Demetrovics, 2018). The literature suggests that individuals' interest in and feelings about famous individuals, referred to as celebrity worship, occurs on a continuum, an interest that can range from a healthy appreciation at one end of the spectrum to an obsessive preoccupation at the other end, the latter posing several deleterious consequences for the person's psychological, occupational/educational, and social functioning (Maltby, Houran, & McCutcheon, 2003; McCutcheon, Lange, & Houran, 2002; McCutcheon, Maltby, Houran, & Ashe, 2004; Sansone & Sansone, 2014). The phenomenon of celebrity worship presents predominantly among adolescents and young adults compared to older individuals (Ashe & McCutcheon, 2001; Giles, 2002; Larsen, 1995).

McCutcheon et al. (2002) proposed an 'absorption-addiction' model which posits that some individuals who possess a compromised identity structure may engage in psychological absorption with a celebrity (including their life, personality, and career) as an attempt to institute a complete identity and achieve a sense of fulfilment. Maltby et al. (2004) describe this absorption process as the establishment of a 'parasocial relationship', one that has the potential to acquire an addictive quality and result in extreme, potentially delusional, attitudes and behaviours to maintain the relationship.

A number of studies that have employed the Celebrity Attitude Scale (CAS; Maltby et al., 2002; 2004; McCutcheon et al., 2002; 2004) provide empirical support for the validity of this model and suggest that the obsessive fascination that some individuals espouse towards

celebrities is comprised of three dimensions. The first dimension referred to as the 'entertainment-social' dimension is reflective of a low level of celebrity worship and is typically characterized by a healthy motivation to read about one's favourite celebrity, their life, and their career for the purpose of their perceived entertainment value. The individual may listen to or view the works of the particular celebrity and share this information and enthusiasm about the celebrity with their friends or family (Griffith, Aruguete, Edman, Green, & McCutcheon, 2013). This dimension comprises attitudes and behaviours such as 'My friends and I like to discuss what my favourite celebrity has done' and 'Learning the life story of my favourite celebrity is a lot of fun' (Maltby et al., 2004).

Then, individuals positioned in the 'intense-personal' dimension demonstrate an intermediate level of celebrity worship, experience intense feelings towards their favourite celebrity, and frequently report an inability to control their thinking which invariably drifts towards thoughts of the celebrity (McCutcheon, Aruguete, Jenkins, McCarley, & Yockey, 2016). This dimension is reflected in attitudes and thoughts such as 'I consider my favourite celebrity to be my soul mate' and 'I have frequent thoughts about my celebrity, even when I don't want to' (Maltby et al., 2004).

The 'borderline-pathological' dimension, reflective of the most extreme expression of celebrity worship, comprises attitudes about the celebrity that are maladaptive and dysfunctional as exemplified by items such as 'If someone gave me several thousand dollars to do with as I please, I would consider spending it on a personal possession (like a napkin or paper plate) once used by my favourite celebrity' and 'If I were lucky enough to meet my favourite celebrity, and he/she asked me to do something illegal as a favour I would probably do it' (Maltby et al., 2004). Attitudes at this end of the spectrum negatively impact the person's life and functioning (Sheridan, North, Maltby, & Gillett, 2007), and are associated with maladaptive personality traits (Ashe, Maltby, & McCutcheon, 2005), an increased

tendency towards mental health difficulties (Maltby et al., 2003, 2004), and antisocial behaviour (McCutcheon et al., 2016).

The prevalence rates of individuals who engage in celebrity worship remain largely undetermined. Despite the availability of some preliminary data, these are likely unreliable given that the assessment measures that tend to be used generally lack cut-off scores for determining which individuals fall in the pathological range for celebrity worship. Moreover, the samples employed in celebrity worship studies tend to be samples of convenience and are typically limited in terms of sample size. Some studies have sought to identify pathological celebrity worshippers using the middle score of the measure as the cut-off point (Stever, 2011) but it remains undetermined as to whether this is a psychometrically sound method to adopt. Stever (2011), in two separately reported samples, reported that 15% and 58% could be considered celebrity worshippers of Star Trek and Josh Groban, respectively. However, the sample sizes employed in this study were small (87 and 105 participants, respectively). Moreover, the convenience sampling method employed and the decision to query only two very specific interests, render the findings of this study unlikely to be representative and reliable. In a sample of young adults, Maltby and Day (2011), report demonstrated levels of celebrity worship of 2.5% and 8% for attitudes in the intense-personal and borderline-pathological dimensions, respectively. Furthermore, Maltby et al. (2003) found that 36% of their college-aged sample produced elevated scores reflective of general celebrity worship and 27% across the two maladaptive dimensions.

While these studies may possess potential methodological issues, the literature appears unequivocal regarding the association of celebrity worship and the occurrence of poor psychological well-being. For example, researchers examined the relationship between an increased tendency towards celebrity worship and self-reported mental health in an adult sample resident in the United Kingdom and found evidence suggestive of mental health

difficulties and social dysfunction among celebrity worshippers (Maltby, McCutcheon, Ashe, & Houran, 2001). Specifically, the entertainment-social dimension of the CAS showed a significant association with depression and social dysfunction and the intense-personal dimension was associated with depressive and anxious symptoms (Maltby et al., 2001). The authors posited that this association between celebrity worship and poor psychological outcomes examined followed from the individuals' primarily failed attempts to either escape from, cope with, or else, enhance their daily lives.

Celebrity Worship and Internet Use

While the literature has frequently suggested individuals' obsessive fascination with celebrities is, to some extent, related to media given this is typically the primary means of accessing information about the celebrity, this contention is primarily anecdotal (Giles & Maltby, 2004; Martin, McCutcheon, & Cayanus, 2015). With the exception of a handful of correlational studies, empirical research is yet to thoroughly investigate the media use of those who engage in celebrity worship. Two notable examples of studies that have identified associations at the correlational level found that individuals' television-viewing motives and their scores on the three celebrity worship dimensions were significantly associated (Martin et al., 2015), and in Reeves, Lemons, Clements, Gountas, and Gountas (2013), a strong association between celebrity worship and social media use was evident. Only Zsila et al. (2018) provide evidence that individuals' problematic use of the Internet, typically referred to as Internet addiction in some texts, and their desire for fame predicted their tendency towards celebrity worship.

Celebrity worship and problematic Internet use (PIU) are similar in that both constructs are associated with poor mental health outcomes. PIU is defined as an inability to control one's excessive and unhealthy use of the Internet, which can result in immense distress and impair the individual's functioning (Billieux et al., 2017). A wealth of research

evidence demonstrates an association between PIU and elevated levels of depression and anxiety, diminished self-esteem, lowered well-being and life satisfaction, a deterioration in social and interpersonal functioning, and functional impairment at work or, in the case of children, at school (Balhara et al., 2019; Ioannidis et al., 2018; Laconi et al., 2019). Early investigations of PIU proposed that the duration of time spent online would predict engagement in PIU, but this contention has not been supported by the emerging evidence base (Demetrovics & Király, 2016). For similar technology-related problematic behaviours (e.g., problematic gaming), studies suggest that, rather than the amount of time spent engaged in the behaviour, the problematic behaviour is best predicted by co-occurring psychiatric symptoms and/or mental health outcomes (Brunborg et al., 2013; Király, T´oth, Urbán, Demetrovics & Maraz, 2017; Skoric, Teo & Neo, 2009). Therefore, in assessing Internet use in the current study, we elected to measure both variables, time spent online as well as assessment via an empirical measure of PIU based on psychiatric symptomology. Based on the aforementioned studies, we hypothesize that participants' self-report of the amount of time they typically spend online will not be positively correlated with celebrity worship.

Celebrity Worship and Daydreaming

We hypothesize that individuals' tendency to engage in maladaptive daydreaming will be positively correlated with celebrity worship given that the psychological determinants of these two constructs are similar. Maladaptive daydreaming is defined as an "extensive fantasy activity that replaces human interaction and/or interferes with academic, interpersonal or vocational functioning" (Somer, 2002, p. 199). Additionally, those who engage in maladaptive daydreaming similarly experience a decline in social functioning and evidence higher rates of psychopathology compared to controls; and attention deficit, obsessive-compulsive, and dissociation symptoms have been noted (Bigelsen, Lehrfeld, Jopp, & Somer, 2016). It is interesting to note that in Bigelsen et al. (2016), maladaptive daydreaming was

associated with a tendency towards fantasizing, a construct that has previously been shown to be associated with celebrity worship (Maltby et al., 2006; McCutcheon, Aruguete, McCarley, & Jenkins, 2016). Zsila et al. (2018) suggest that, while there may be evidence of a statistical association between these two constructs, they are conceptually and theoretically distinct. Engagement in fantasizing reflects an immersive and uncontrollable involvement in out-of-body, religious, and paranormal experiences (Merckelbach, Horselenberg, & Muris, 2001). Conversely, maladaptive daydreaming reflects a compulsive engagement in fantasy activity (Somer, 2002) and, similar to celebrity worship, compromises the individual's social and occupational functioning (Maltby et al., 2003, 2004). Zsila et al. (2018) provide preliminary evidence of a relationship between celebrity worship and maladaptive daydreaming. These authors found evidence of a moderate correlational relationship ($r = .44$, $p < .001$) and, following regression analyses, maladaptive daydreaming significantly predicted celebrity worship ($\beta = 0.27$, $p < .001$).

Celebrity Worship and Desire for Fame

A further potential correlate of celebrity worship for which investigation is warranted is desire for fame. Desire for fame is an extrinsic need held by some individuals that, more often than not, hinders the individual's personal growth and may negatively impact their physical and mental health (Gountas, Gountas, Reeves, & Moran, 2012). Research has shown desire for fame to be negatively associated with self-acceptance and positively with social recognition and materialism (Gountas et al., 2012). Preliminary findings suggest a positive relationship between celebrity worship and desire for fame is likely (Reeves et al., 2013; Zsila et al., 2018).

Celebrity Worship and Self-efficacy

We further hypothesize that individuals who engage in celebrity worship will evidence lowered levels of self-efficacy. This is a reasonable hypothesis given the following.

Celebrity worship impedes well-being, promotes distress, and hampers the successful pursuit of life goals and daily functioning (Maltby et al., 2003; 2004), while self-efficacy, well-being, and competence in various aspects of life have frequently been shown to be positively correlated (Stajkovic & Luthans, 1998). Thus, we hypothesize that self-efficacy will negatively predict celebrity worship.

Rationale for the Conduct of this Study

The Middle East has witnessed exponential social, economic, and infrastructural development in recent years. This has been most profound in the United Arab Emirates (UAE), the location of the present study. A number of additional factors have culminated here that have resulted in an ever-increasing number of individuals gaining access to the Internet, often high-speed access at relatively low cost (Global Media Insight, 2018). Additionally, the steadily decreasing cost of smartphones and the commensurate surge in the sophistication of the country's telecommunications infrastructure have rapidly driven rates of smartphone ownership. Of the approximately 9.61 million residents in the UAE, 99.1% (approximately 9.52 million people) are active social media users. There are 19.23 million unique mobile phone users in the UAE. This translates to approximately 2 devices per resident and is the result of a growth rate of 1.2% per year in the number of unique users, which equates to an increase of approximately 219,000 users per year (Global Media Insight, 2018). Thus, given this context, it is unsurprising that research conducted in this region of the world reports that problematic mobile phone use is highly prevalent, so too is problematic Internet use and disordered gaming, phenomena that have all shown strong correlations with an increased incidence of psychopathology and a reduction in adaptive coping ability (Balhara et al., 2019; Stevanović et al., 2019; Vally & El Hichami, 2019). Studies that endeavour to investigate the causes and additional correlates of PIU in this locale have yet to be conducted. The phenomenon of celebrity worship is therefore a worthwhile avenue to

explore given its demonstrated association with PIU and the detrimental mental health outcomes both these constructs appear to carry.

Aims and Hypotheses

This study was guided by two aims. First, to investigate the potential association of celebrity worship with PIU and the duration of time spent online. Second, in an attempt to expand upon previous studies that have explored the psychological correlates of celebrity worship, we examine the association of celebrity worship with maladaptive daydreaming, desire for fame, and self-efficacy.

In pursuit of these aims, the following hypotheses are proposed and were formulated based on the existing literature.

Hypothesis 1a (H1a): Celebrity worship is positively associated with formal measurement of PIU.

Hypothesis 1b (H1b): Celebrity worship is not significantly associated with duration of time spent online.

Hypothesis 2a (H2a): Celebrity worship is positively associated with maladaptive daydreaming.

Hypothesis 2b (H2b): Celebrity worship is positively associated with desire for fame.

Hypothesis 2c (H2c): Celebrity worship is negatively associated with self-efficacy.

Method

Participants and Procedure

Participants were recruited using a number of strategies. First, students enrolled at the authors' institution were invited to participate in the study, both via in-class announcements across various faculties and using recruitment in public spaces. A team of research assistants approached potential participants in libraries, cafeterias, and student hostels and used electronic handheld devices on which participants completed the surveys. Participants were

approached and informed that the study was about their use of the Internet. We also posted the survey link on social media platforms, blogs, and websites typically used by young adults. We specifically targeted recruitment of young adults given that some previous studies of celebrity worship have found the phenomena to occur more frequently among older adolescents and young adults (Ashe & McCutcheon, 2001). Moreover, PIU, one of this study's primary variables of interest has also been shown to occur more frequently in this age group (Anderson, Steen, & Stavropoulos, 2017). The battery of surveys was administered using an electronic portal (*Survey Monkey*). All participants were provided with a link to access the survey. The first page presented information pertaining to the study, its purpose, what participation would involve, participants' rights, and issues related to the ethical responsibilities of the research team. This page also contained contact details for the principal investigator. If participants were agreeable to participating, they provided electronic consent by clicking ahead to the next page.

While 372 participants logged in to the survey, 56 of these participants failed to complete most of the survey. Following suit with the practice of Pontes, Macur, and Griffiths (2016) in dealing with large proportions of missing data, we elected to exclude these participants from further analysis (note that for these non-completing participants, more than 50% of responses were missing). The final sample therefore consisted of a total of 316 participants (M_{age} = 21.7 years, SD = 11.7) of which the majority were females (79.1%, n = 250) and the remaining 20.9% were males (n = 66). The majority of the sample, more than half, had completed at least an undergraduate degree (n = 188), a third of the sample, approximately 34%, had attained a high school certificate level of education, and a small minority, approximately 7%, had completed a postgraduate university degree. All participants identified themselves as Arab in terms of ethnicity, were Emirati nationals, and reported being practicing Muslims.

Ethics

This study received ethical approval for its conduct from the Social Sciences Research Ethics Committee at the authors' institution (Reference number: ERS_2019_5925). The study was conducted in accordance with the Declaration of Helsinki.

Assessment Measures

A demographic questionnaire queried the following demographic characteristics: gender, age, educational level, and details of current studies or work experience. This allowed for analysis of differences in celebrity worship between subgroups stratified by demography and for investigation of their potential association to celebrity worship.

Information about favourite celebrity. Participants were asked four questions about their favourite celebrity: (1) name of the favourite celebrity [a *none* option was provided for those who did not have a favourite celebrity], (2) the celebrity's primary field of expertise [we provided the following options from which to choose: acting, music, author, artist, video-making (e.g., vlogger and YouTuber), radio/TV presenter, news, science, sports, medicine, modelling, politics, religion, and an other category], (3) the length of time that they had been a fan of their chosen celebrity (the following answer options were provided: less than 1 year, 1–2 years, 3–5 years, and more than 5 years), and (4) as a measure of emotional connectedness to the favourite celebrity, participants were asked to indicate how strongly they felt about the celebrity using a Likert scale from 1 (very weak) to 7 (very strong). These questions and response options were previously employed by Zsila et al. (2018).

Celebrity worship. The 23-item version of the Celebrity Attitude Scale (CAS; Maltby et al., 2002) was used to assess participants' attitudes towards their favourite celebrity. The CAS assesses three dimensions of celebrity worship that capture increasing levels of pathology in relation to the individual's attitudes towards their favourite celebrity. The Entertainment-Social dimension consists of 10 items (example item: "I love to talk with

others who admire my favourite celebrity"), the Intense-Personal dimension is comprised of 9 items (example item: "I share with my favourite celebrity a special bond that cannot be described in words"), and the Borderline-Pathological dimension consists of 4 items (example item: "If someone gave me several thousand dollars to do with as I please, I would consider spending it on a personal possession (like a napkin or paper plate) once used by my favourite celebrity"). Participants indicate their level of agreement with each statement using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). This measure has been shown to be psychometrically sound (Griffith et al., 2013; McCutcheon et al., 2004). Internal consistency for the total scale typically ranges from .84 to .94 (McCutcheon et al., 2004; Zsila et al., 2018). In the current study, internal consistency was similarly excellent (α = .95).

Internet use. Participants' Internet use habits were assessed using two measures. First, participants were asked to indicate how many hours, on an average weekday and weekend day, they used the Internet. We provided five options from which to choose (1 = less than 1 hr a day, 2 = 1 – 2 hours per day, 3 = 3 – 4 hours per day, 4 = 5 – 6 hours per day, and 5 = more than 6 hours a day). While we acknowledge that participants' self-report of Internet use may be limited by response bias or their accurate recall, it is not uncommon to adopt this approach in studies of PIU (e.g., Balhara et al., 2019; Vally, 2019) and this method of assessment has also previously been employed in the study of Internet use and celebrity worship (Zsila et al., 2018). Moreover, real-time longitudinal collection of Internet use data, which we recognize would be preferable, was not possible on this occasion. Second, we assessed PIU using the 6-item version of the Problematic Internet Use Questionnaire (PIUQ; Demetrovics et al., 2016). The PIUQ assesses three dimensions reflective of problematic Internet use: obsession, neglect, and control disorder. The obsession dimension measures individuals' tendency to engage in obsessive thinking in relation to the Internet (e.g., daydreams and fantasies) and the experienced results of abstaining from Internet use (e.g.,

withdrawal symptoms). The items in the neglect dimension capture whether in the individuals tends to neglect essential everyday activities in favour of engaging in PIU. The control disorder dimension consists of items that measure whether the individual has attempted to control their Internet use and the subjectively experienced result thereof. Participants are asked to indicate how often they experience a range of mental health symptoms related to PIU using a 5-point Likert scale ranging from 1 (never) to 5 (always). Internal consistency in the present study was satisfactory (α = .74).

Maladaptive daydreaming. We also assessed participants' engagement in maladaptive daydreaming and the subjective perception of this being dysfunctional and impairing. This variable was assessed using the 16-item Maladaptive Daydreaming Scale (MDS-16; Somer, Soffer-Dudek, Ross, & Halpern, 2017) (example item: "Some people have the experience of their daydreaming interfering with their academic/occupational success or personal achievements. How much does your daydreaming interfere with your academic/occupational success?"). Participants rate responses to the items using an 11-point scale reflecting varying frequencies of the identified experience from 0% to 100%. In the present study, the MDS-16 evidenced excellent internal consistency (α = .92).

Desire for fame. We assessed desire for fame using the 6-item Desire for Fame Scale (DFS; Gountas et al., 2012). Participants rate each item that assesses their level of desire for fame and its perceived potential benefits using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Example item: "If I were famous, I would be happier."). An overall score was computed by averaging the items and higher scores were indicative of a higher level of desire for fame. Internal consistency in the present study was excellent (α = .89).

Self-efficacy. General self-efficacy was assessed using the 8-item New General Self-Efficacy Scale (NGSE; Chen, Gully, & Eden, 2001). Participants were requested to provide a

rating for each statement (e.g., "I will be able to achieve most of the goals that I have set for myself") using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). An overall score for the measure was calculated by averaging the responses to all the items. Higher scores reflected a higher level of perceived self-efficacy. In the present study, the NGSE was found to be internally consistent ($\alpha = .86$).

Data Analysis Plan

The data were first investigated by reporting descriptive statistics for all variables. Males and females were compared across all demographic and psychological variables using either chi-squared analyses or t-test computations for categorical or continuous variables, respectively. The associations between all outcome variables, on a correlational level, were investigated using Pearson's correlations. For the celebrity worship variable, scores were calculated for the three subscales and theoretical midpoints used as cut-off scores to determine the proportion of participants falling into the high category for the three subscales of the CAS. These were implemented using Maltby et al.'s (2003) recommendations. Thus, participants who produced scores of 30 or above on the Entertainment-Social subscale, 27 or above on the Intense-Personal subscale, and 3 or above on the Borderline-Pathological subscale were considered high on that particular dimension. Four separate sets of hierarchical linear regression analyses were employed to investigate whether the overall CAS score and each of its three dimensions (Entertainment-Social, Intense-Personal, and Borderline-Pathological) were predicted by sex, age, Internet use habits, maladaptive daydreaming, desire for fame, or self-efficacy. Analyses were conducted by entering the predictor variables using predetermined blocks. The demographic variables (sex and age) were entered in block 1, the two Internet use variables (problematic Internet use and daily duration of online time) comprised block 2, and the three psychological variables (maladaptive daydreaming, desire

for fame, and self-efficacy) were entered into block 3. We report changes in variance and R^2 for each consecutive block of predictor variables.

Results

Descriptive Results

The sample reported favourite celebrities that spanned across a great number of varied fields (see Table 1). The fields of celebrity expertise most frequently reported were music (35.4%), acting (23.4%), politics (11.4%), and sports (8.2%). Approximately half of the sample ($n = 146$) reported being a fan of their chosen celebrity for more than 5 years, while 24% had been a fan for a period of 3 to 5 years, and a much smaller proportion, 11.4%, reported having been a fan for less than 1 year. In terms of reported emotional connectedness, participants reported feeling very strongly about their favourite celebrity ($M = 5.57$, $SD = 1.53$). Using the 7-point Likert scale, the majority of the sample self-reported the strength of their perceived emotional connectedness in the moderate to very strong range (78%, $n = 248$).

We computed descriptive statistics (means and standard deviations) for all the primary study variables and examined gendered differences for each variable. Males more frequently reported being fans of their favourite celebrities longer than 5 years ($\chi^2(3) = 10.10$, $p < .05$, Cramer's $V = .18$); males evidenced higher rates of PIU compared to females ($t(314) = 2.21$, $p = .03$, $d = .30$); and desire for fame was higher among females than males ($t(314) = -5.44$, $p < .001$, $d = .83$). All other variables, including the total CAS score and each of its three factors, were not significantly different.

The proportion of participants who scored at or above the theoretical midpoints on the three subscales of the CAS were calculated (see Table 2). Celebrity worship was highly prevalent across all three subscales, but particularly so in the two pathological dimensions. When the total sample was examined, 22.2% scored highly on the entertainment-social dimension, more than half of the sample (55.7%) endorsed high scores on the intense-

personal dimension, and a staggering 99.4% scored highly on the borderline-pathological dimension (on this last dimension, this was all but two participants). We further stratified the sample according to gender and re-examined the proportion of participants at and above the midpoint scores. While the size of the male and female subsamples differed substantially (66 vs 250), when the proportions of high CAS-endorsing participants were compared using chi-squared analyses, the difference in these proportions were not statistically significant, with the exception of the borderline-pathological dimension ($\chi^2 = 7.62$, $p < .05$, Cramer's $V = .16$) where females more frequently fell into this category.

Correlational Analyses

Bivariate correlations were computed between all the primary variables (see Table 3). The total CAS score was significantly associated with each of its three subscales and the magnitude of the associations were large (all r values above .8 and $p < .001$). Additionally, the three subscales of the CAS were all significantly associated with each other ($p < .001$).

H1a predicted a significant and positive association between celebrity worship and the formal measure of PIU. Results revealed that the total PIUQ score was positively correlated with the total CAS score ($r = .27$, $p < .001$), as well as with each of the three CAS subscales (r values ranged from .22 to .26, $p < .001$). Furthermore, H1b predicted that celebrity worship was not associated with duration of daily Internet use. Results revealed that duration of Internet use was not significantly associated with the total CAS score ($r = -.04$, $p > .05$), nor with any of its subscales (r values ranged from -.02 to -.07, all $p > .05$).

H2a predicted a significant and positive association between celebrity worship and maladaptive daydreaming. The computed correlational analyses revealed positive associations between the MDS score and the total CAS score ($r = .36$, $p < .001$) as well as each of its three subscales (r values ranged from .22 to .45, $p < .001$). H2b predicted a positive association between celebrity worship and desire for fame. Our results indicated

statistically significant and positive associations for all four measurements of the CAS, its total score and the three subscale dimensions (*r* values ranged from .37 to .42, all $p < .001$). H2c hypothesized that celebrity worship would be negatively associated with perceived self-efficacy. Results revealed no significant associations across the four measurements provided by the CAS (all $p > .05$).

Hierarchical Regression Analyses

Four sets of hierarchical linear regression analyses were conducted to determine which factors were predictive of celebrity worship. The data met the required assumptions of a linear regression analysis: a linear relationship between the dependent and independent variables was present (determined by inspection of a scatterplot), absence of multicollinearity (all variance inflation factor values ranged from 1.01 to 1.27), independence of observations (all Durbin-Watson values were less than 2.09), homoscedasticity, and the residuals of the regression lines were approximately normally distributed. Separate regression analyses were conducted using each of the three subscale scores and the total CAS score as outcome variables. The demographic variables (age and sex), Internet use variables (duration of daily use and total PIUQ score), and the psychological variables (MDS-16, DFS, and NGSE total scores) were inserted as predictor variables. The results of each regression analysis are reported, in turn, below (see Table 4).

For the first regression which used the total CAS score as the outcome variable, model 1 was not significant as neither of the two demographic variables were statistically significant predictors of overall celebrity worship ($F(2, 313) = 1.12, p > .05, R^2 = .007$) and predicted only 8% of the variance. However, with the insertion of the two Internet use variables in model 2, a significant predictive relationship emerged ($\Delta F(2, 311) = 15.46, p < .001, \Delta R^2 = .09$) with the total PIUQ score emerging as significant ($B = 1.06, \beta = .32, p < .001$), providing additional support for H1a. When the third set of predictors were included,

the model remained significant ($\Delta F(2, 308) = 28.93$, $p < .001$, $\Delta R^2 = .20$) and predicted 54% of the variance with both maladaptive daydreaming ($B = -1.08$, $\beta = -.31$, $p < .001$) and desire for fame ($B = 1.12$, $\beta = .36$, $p < .001$) emerging as significant predictors of overall celebrity worship. These results support H2a and H2b, respectively.

When potential predictors of the entertainment-social dimension were tested, the variables in model 1 were not significant and explained only 1% of the variance; conversely, models 2 and 3 were both significant ($p < .001$) and explained 7% and 21% of the variance, respectively. In model 2, the change in variance was substantial and significant ($\Delta F(2, 311) = 9.68$, $p < .001$, $\Delta R^2 = .06$) and the total PIUQ score emerged as a significant predictor ($B = .37$, $\beta = .25$, $p < .001$ [H1a]). Model 3 was similarly significant and resulted in an even larger change in variance ($\Delta F(3, 308) = 18.00$, $p < .001$, $\Delta R^2 = .14$) with both maladaptive daydreaming ($B = -.04$, $\beta = -.14$, $p = .01$) and desire for fame ($B = .49$, $\beta = .37$, $p < .001$) emerging as significant predictors (H2a and H2b, respectively).

The models predicting the intense-personal dimension obtained similar results to the preceding analyses. Specifically, model 1 was not significant ($F(2, 313) = .53$, $p > .05$, $R^2 = .003$), while models 2 ($\Delta F(2, 311) = 14.25$, $p < .001$, $\Delta R^2 = .08$) and 3 ($\Delta F(3, 308) = 25.14$, $p < .001$, $\Delta R^2 = .18$) were significant. The change in variance in models 2 and 3 were large and explained 30% and 52% of the variance, respectively. The following predictor variables emerged as significant: PIUQ ($B = .49$, $\beta = .31$, $p < .001$ [H1a]), maladaptive daydreaming ($B = -.09$, $\beta = -.34$, $p < .001$ [H2a]), and desire for fame ($B = .44$, $\beta = .30$, $p < .001$ [H2b]).

For the borderline-pathological dimension, results were again similar to those of the preceding three sets of analyses. Model 1 was not significant as neither age nor sex were significantly associated with the outcome variable. Both models 2 and 3 were significant with large and significant changes in variance noted. As with the preceding regressions, PIUQ ($B = .18$, $\beta = .34$, $p < .001$ [H1a]), maladaptive daydreaming ($B = -.04$, $\beta = -.41$, $p < .001$ [H2a]),

and desire for fame ($B = .15$, $\beta = .31$, $p < .001$ [H2b]) emerged as significant predictors of this dimension of celebrity worship.

Thus, on the basis of these analyses, hypotheses H1a, H1b, H2a, and H2b are supported by our results. However, age, sex, and self-efficacy (H2c) appear unrelated to celebrity worship.

Discussion

The aim of the present study was to contribute to the literature on celebrity worship by investigating the potential predictive associations between the phenomenon and a range of additional variables, those related to both individuals' use of the Internet and a number of psychological variables; specifically, their desire for fame, their tendency for daydreaming, and perceived self-efficacy.

Celebrity Worship: Prevalence and Demographic Correlates

Celebrity worship was highly pervasive in this sample as large proportions of the sample endorsed many of the behaviours assessed by the CAS. Moreover, significant numbers of participants yielded high scores on each of the CAS dimensions (i.e., entertainment-social, intense-personal, and borderline-pathological). The proportions, in fact, notably increased in magnitude with each subsequent dimension. For the first dimension, only 22% scored highly but for the two subsequent dimensions, those assessing the problematic traits, substantial proportions of the sample fell into the higher categories, 55.7% and 99.4%, respectively. These figures are substantially higher than those previously reported in the literature. In Maltby et al. (2003), 37% of their sample scored highly on the two problematic dimensions and in Maltby and Day (2011), 2.5% and 8% scored high on these latter dimensions. The inequitable gender distribution in the current sample may potentially explain our elevated results. Some studies have previously reported that pathological interest in celebrities is more frequently reported by females than males (e.g., Reyes et al., 2016;

Swami et al., 2011). Thus, the substantially larger number of females, compared to males, in our study may possibly be skewing the results. A second potential explanation relates to the cut-off scores used to make determinations of high versus low exemplars of celebrity worship. While, in this study, we followed suit with the prevailing literature and used the recommended scores to categorize participants (Maltby et al., 2003), there exists the possibility that these scores may be overly sensitive, particularly for the borderline-pathological dimension. Given that this dimension comprises 4 items with a potential total score of 20 (a maximum of 5 per item), the recommended cut-off score of 3 seems comparatively low. Additional studies to investigate the validity of these cut-off scores, particularly with samples that are divergent from the one on which the measure was initially developed, are needed. Moreover, we recommend caution when interpreting the current prevalence finding on the borderline-pathological dimension.

With regard to the demographic characteristics of the sample, our analyses revealed no association between either of the assessed variables and celebrity worship. This was the case following both correlational and regression analyses. Moreover, for the CAS and its three dimensions, none of these phenomena appeared more prevalent amongst any demographic grouping. Specifically, participant age was unrelated to celebrity worship. This concurs with much of the literature which has, to date, found no relation between age and celebrity worship (Maltby et al., 2004; 2006) or, where a significant relationship was evident, this was minimal in terms of magnitude (Maltby et al., 2003; Swami et al., 2011; Zsila et al., 2018). We also found no evidence of gendered differences, a finding that echoes that of the majority of studies that have found no differences between males and females when celebrity worship was assessed as an overall construct (e.g., Maltby et al., 2003, 2004; McCutcheon, Scott, Aruguete, & Parker, 2006). Some though have reported that for the entertainment-

social dimension, women have tended to score higher than men (Reyes et al., 2016; Swami et al., 2011; Vega et al., 2013).

Celebrity Worship and Internet Use

The present study also examined the association of celebrity worship with Internet use. Specifically, we assessed Internet use in two ways, duration of daily time spent online and a formalized measure of PIU and formulated two hypotheses regarding their association. H1a predicted that the total score of the PIUQ would be positively associated with celebrity worship, while H1b held that duration of Internet use would show no significant association. On the basis of both correlation and regression analyses, duration of Internet use was not associated with celebrity worship but the PIUQ total score was statistically associated with celebrity worship. This relationship was evident both for the total CAS score as well as the three dimensions of celebrity worship, results that were consistently moderate in terms of magnitude (r ranged from .22 to .27 and β ranged from .24 to .34). Individuals who more strongly engaged in celebrity worship were also more likely to engage in excessive use of the Internet and experience the psychopathological effects of this behaviour. These results are consistent with the prevailing view that PIU tends to be more strongly associated with psychopathological variables than duration of Internet use (Demetrovics et al., 2016; Vally, 2019). Moreover, our measure of daily usage was based on self-report. The subjective nature of the question is open to misrepresentation, and participant responses may be the result of an attempt to avert social judgement or the result of a failure to accurately recall the information (Araujo, Wonneberger, Neijens, & de Vreese, 2017; Chung & Monroe, 2003). Future studies that wish to include a measure of Internet use should consider real-time, in vivo methods of data collection (e.g., diaries or mobile phone applications to facilitate immediate collection of data). This would substantially strengthen the design of such a study.

Celebrity Worship, Desire for Fame, Maladaptive Daydreaming, and Self-Efficacy

We further assessed three additional psychological variables whose relationship to celebrity worship have rarely been investigated; namely, desire for fame, maladaptive daydreaming and self-efficacy. First, examination of the relationship between celebrity worship and desire for fame obtained a positively significant relationship. Individuals who more strongly indicated a desire to be famous and subjectively perceived this to be accompanied by increased recognition and happiness were more likely to worship celebrities. This finding provides support for the proposed contentions of the absorption-addiction model (McCutcheon et al., 2002). The model posits that some individuals possess a compromised sense of self. It is likely that these individuals may strongly desire fame given the perception that to attain the desired fame may allow the compromised identity to attain a strengthened identity structure. Moreover, excessive celebrity worship may act as a compensatory behaviour as these individuals engage in overidentification with a celebrity whom they perceive to possess the traits and attributes that they so strongly desire.

Maladaptive daydreaming was also significantly associated with celebrity worship across all the tested analyses (i.e., total CAS score, its three dimensions, and both correlation and regression analyses). Thus, individuals who display a tendency to avert their focus from the real-world and engage more overtly in a fantasy world were more likely to worship celebrities. This is, in many respects, unsurprising as individuals who worship celebrities to a pathological degree may create a perceived relationship with the identified celebrity, based entirely on their subjectively conceived fantasy. Moreover, the absorption-addiction model would contend that this parasocial relationship is of paramount importance for the individual, their identity is dependent on maintaining and cultivating this connection. Thus, doing so to the complete exclusion of the external world in favour of an internal world is plausible. Our analyses suggest that maladaptive daydreaming is associated with all dimensions of celebrity

worship, but for the two problematic dimensions, this predictive association is substantially stronger.

Conversely, self-efficacy was not associated with celebrity worship. While self-esteem has previously been shown to be associated with celebrity worship, particularly the two problematic dimensions (Ashe et al., 2005; North, Sheridan, Maltby, & Gillett, 2007), this construct is distinct from self-efficacy. In fact, individuals who engage in pathological celebrity worship tend to display elevated levels of self-esteem. The perceived connection with the idealized celebrity serves to bolster the individual's sense of self. Therefore, they may not be aware of the negative consequences of their celebrity worship or experience this as negatively impacting their sense of competence and control.

Implications

This study's findings contribute to furthering our understanding of the psychological difficulties that appear to accompany pathological worship of celebrities. Specifically, in this sample, celebrity worship appears to be highly prevalent and is associated with a number of maladaptive psychological constructs. This lends credence to the contention that pathological worship of celebrities holds the potential to negatively impact individuals' view of their world, themselves, and more generally, their functioning.

Of particular note, the Internet, which in contemporary society serves as the conduit for connecting people to their celebrities appears to hold a very particular relationship to celebrity worship. Specifically, the duration of time spent using the Internet may not necessarily be problematic. Rather, the specific functions for which the Internet is used, for example, to follow and immerse oneself in the lives of one's favourite celebrities, may be more closely related to the development of pathology.

Lastly, this study's findings suggest that two of the potential motivators driving engagement in PIU for the purpose of celebrity worship is a subjective desire to attain fame,

and achieve the happiness and satisfaction this is perceived to bring, as well as an aversion of the real-world in favour of a preference for the creation of an idealized internal world to inhabit.

Limitations

First, the cross-sectional nature of the study limits conclusions about the temporal nature of the relationships between the examined variables. Second, we conducted this study with a very specific sample. It was our intention to examine these variables within this specific sample for which we hypothesized the variables would be especially prevalent. But, the population of the Gulf region are not homogenous and thus our findings cannot be generalized to the wider population of the region. The use of theoretical midpoints, despite following the recommendation of the literature, is a significant limitation. Empirically derived cut-off points for the CAS are needed. Third, the comparatively larger proportion of females than males in this sample may have, potentially, impacted the obtained results. This is especially relevant given that previous studies have found interest in celebrities to differ considerably between men and women (e.g., Reyes et al., 2016; Swami et al., 2011). Future studies should attempt to recruit more widely and include equivalent samples of men and women.

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