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Media, Technology Use and Attitudes: Associations with Physical and Mental Wellbeing in Youth with Implications for EBP

Abstract

Background: Previous research has shown that the use of technology and media, in their different available forms, may have detrimental effects on the physical and mental wellbeing of adolescents and young adults. *Aim:* The present study aimed to investigate the use of different types of technology and media, attitudes towards them, and how they relate to physical and mental wellbeing in Lebanese university students. *Methods:* A descriptive, correlational cross-sectional design was used. A sample of 244 undergraduates completed a self-report measures of media and technology use and attitudes, eating-related variables (e.g., healthy eating, body image dissatisfaction and eating disorders risk), trait emotional intelligence (TEI), and psychopathology indicators (stress, anxiety and depression). *Results:* Using mobile phone multimedia (music, pictures and videos) correlated with unhealthy eating and stress. Social media use was associated with body image dissatisfaction, eating disorders risk and the self-control construct of TEI. Anxiety of separation from technological devices and dependence on them was associated with increased body image dissatisfaction, eating disorders risk, depression and anxiety. *Linking Evidence to Action:* Practical implications are discussed in terms of setting limits and boundaries on technology use during childhood and adolescence, and encouraging healthy eating and physical activity at home and on college campuses. Moreover, social media could be used as a platform for intervention and prevention programs to decrease body image dissatisfaction, eating disorders, depression and anxiety.

Key Words: technology, social media, wellbeing, mental health, body image, eating disorders, trait emotional intelligence, healthy eating, depression, anxiety

I. Introduction

Information and communication technology (ICT) have greatly improved the living standards of people around the world. However, the time people spend on their smartphones, on social networking sites, behind their computer screens, playing video games or simply watching TV may have significant effects on their physical and mental health (e.g., Dalky, Almomani, Al-Drabaah & Jarrah, 2016).

A number of systematic reviews have been conducted to synthesize current empirical research on the effects of media and technology amongst young people, revealing evidence of both beneficial and harmful effects. In one review, the benefits of using online technologies were reported as increased self-esteem, perceived social support, increased social capital, safe identity experimentation and increased opportunity for self-disclosure; while the harmful effects were reported as increased exposure to harm, social isolation, depression and cyber-bullying (Best, Manktelow & Taylor, 2014). Another review highlighted the potential for addiction and the detrimental effects of excessive use on health, such as quality of sleep, body composition, mental well-being, and engaging in risky sexual behaviors; while also reporting the tremendous potential for technology use to promote adolescent health (Bilgrami, McLaughlin, Milanaik, & Adesman, 2017). Likewise, a recent review by Marchant et al (2017) showed that self-harm/suicidal behavior was particularly associated with internet addiction, high levels of internet use, and websites with self-harm or suicide content. Conversely, it was discussed that internet use has the potential for isolation reduction, outreach and may be a source of help and therapy.

Weight-related correlates of technology use and attitudes

Increased technology use may lead to unhealthy eating habits. In a recent study conducted in Jordan, a higher intake of calorie-dense beverages was reported in adolescents who watched TV for several hours per day, compared to adolescents who did not use technologies while eating (Dalky et al., 2016). It was suggested that the use of technology increases the risks of being obese not only because of the associated intake of poor quality food, but also because technology use limits physical movement compared to other daily activities (Dalky et al., 2016).

Technology use was also shown to have detrimental effects on body image. Body image dissatisfaction (BID) occurs when there are negative thoughts about one's self-image and perceived discrepancies between one's real and ideal body (Tiggemann & Pickering, 1996). There is a growing body of literature that shows that mass media has a strong influence on adolescents' self-image (e.g., Legenbauer, Rühl & Vocks, 2008). Media content often portrays an ideal body as being thin and associates being overweight with negative connotations (Lawrie, Sullivan, Davies, & Hill, 2006).

Recently, research has been carried out to study specifically the influence of social networking sites (SNS) on body image dissatisfaction in adolescents. Recent work by Holland and Tiggerman (2016) concluded that there is a positive relationship between general social networking site use and body image dissatisfaction. Similarly, it was shown that the use of Facebook was associated with increased body image concerns in adolescents (Fardouly & Vartanian, 2015; Tiggemann & Slater, 2013). This may be because adolescents who spend a lot of time on Facebook tend to compare their appearance more to celebrities and peers, compared to those who spend less time on Facebook and other social media platforms (Vartanian & Dey, 2013). Another recent study also concluded that images of celebrities and peers via Instagram can be

detrimental to women's body image (Brown & Tiggemann, 2016). Specific social networking site activities, such as viewing and uploading photos and seeking negative feedback via status updates, were identified as particularly problematic as they are associated with increased body image dissatisfaction and disordered eating (Holland & Tiggerman, 2016).

The role of media, in its various forms (TV, magazines and internet), has also been pivotal in predisposing individuals towards adopting disordered eating attitudes and behaviors (e.g., Holland & Tiggerman, 2016). It was shown that TV exposure and engagement in different social networking sites increase the risk of developing eating disorders (ED) in adolescents (Martínez-Gómez et al., 2015; Becker, 2011). Therefore, previous findings have revealed that media has a negative impact on body image dissatisfaction and disordered eating, and can potentially contribute to eating disorders.

Psychological correlates of technology use and attitudes

There is a growing body of evidence showing that individual media use patterns are influenced by personality and emotion-related variables. In turn, media exposure can affect individuals' emotional functioning and mental health. As a matter of fact, there is a growing body of research studying the psychological profile of internet and phone over-users and the impact of web and phone usage on well-being (e.g., Berauny, Oberst, Carbonell, & Chamarro, 2009).

Trait emotional intelligence (trait EI) is conceptualized as a constellation of emotion-related self-perceptions located at the lower levels of hierarchical personality structures (Petrides, Sanchez-Ruiz, Siegling, Saklofska & Mavroveli, 2017). An ever-increasing body of research has linked trait EI with a myriad of factors relating to individuals' psychosocial (e.g., Di Fabio & Saklofske, 2014), emotional (Malouff, Schutte, & Thorsteinsson, 2014), and behavioural well-being (Athota & O'Connor, 2014). Research shows that trait EI moderates the impact of unhealthy

habits on overall health (Mikolajczak et al., 2015). In particular, trait EI has been associated positively to physical activity and healthy diet (e.g., Saklofske et al., 2007), and negatively to unhealthy habits such as drug use, smoking, and self-harming behaviors (e.g., Schutte, Malouff & Hine, 2011). Despite the long recognized psychological vulnerability of college students to the use of technology, especially internet (Kandell, 1998), and the importance of emotion regulation in this context (Takao, Takashashi, & Kitamura, 2009), potential protective factors such as trait EI have been relatively overlooked. Investigating systematically the construct of trait EI, which offers an ample coverage of emotional dispositions related to sociability, emotionality, wellbeing and self-control (Petrides, 2010), could shed light into the complex links between emotional functioning and technology use and attitudes.

Among the emotion-related variables, this study explored anxiety, depression and stress as psychopathology indicators and potential correlates of technology use and attitudes. In fact, there is increasing interest in examining the impact of technology use on psychological health. Previous research studies have reported a link between internet use, depression and anxiety (e.g., Shelfhout et al., 2009). In particular, internet users who spend more than two hours online were more likely to be depressed than their counterparts who spend an average of two hours (Morrison & Gore, 2010). In addition to the time spent on social media, Blease (2015) argues that the frequency of use, number of virtual friends, and bragging content of the posts read could explain the negative relationship between internet use and depression. Mobile phone use has also shown to be a risk factor of mental health outcomes, in particular stress, anxiety, sleep disturbances and depressive symptoms (Thomé, Härenstam, & Hagberg, 2011).

Taken together, results from the literature suggest that pathological attitudes towards technology, as well as technology use, could be contributing differentially to decreased physical

and mental well-being. The main purpose of the present study was therefore to investigate the relationship between the use of different types of technology and media on body image dissatisfaction, eating disorders risk and healthy eating. Another aim was to investigate the relationship between media/technology usage and attitudes and trait EI as personality variables, as well as stress, anxiety and depression, as psychopathology indicators. This paper is a valuable contribution to the existing body of knowledge because: a) it examines a wide variety of weight-related and personality and mental health variables in relation to both media/technology use and attitudes towards them, b) it discriminates among different types of technology, rather than focusing on one in particular as in the case of previous research (e.g., Facebook; Blease, 2015), and c) presents an adaptation of the Media and Technology Usage and Attitudes Scale (Rosen et al., 2013) to the Lebanese population.

Methods

Participants

Participants were recruited from a Lebanese university with campuses in different areas in the region. The sample consisted of 244 undergraduates (156 females) aged from 16 to 21 years old ($M = 18.10$; $SD = 0.64$), with the majority being 17 (9.4%); 18 (73.8%) and 19 year-olds (12.7%).

Procedure

After obtaining the ethical approval of the university IRB, which is constituted in accordance with the US Code of Federal Regulation (45CFR 46.107, 21CFR 56.107), and Good Clinical Practice ICH (Section 3), a convenient sample of undergraduates was asked to voluntarily participate in the study. Data was collected during class time and testing sessions lasted around 20 minutes. Students

were recruited from introductory English classes, since these classes include a variety of Freshman and Sophomore students who are enrolled in all the different majors offered at the university.

Measures

Media and technology usage was measured through the Media and Technology Usage and Attitudes Scale (MTUAS; Rosen et al., 2013). It originally consists of 11 usage subscales and four attitude subscales that are rated on a 10-point likert scale ranging from 1 ('never') to 10 ('all the time'). This scale was not validated in Lebanon or the region, therefore one of the aims of the present study was to adapt and validate it.

Weight-related variables

Dietary Behavior was measured through an adapted version of the Arab Teens Lifestyle (ATLS) Questionnaire which was developed in Saudi Arabia (Al Hazzaa et al., 2010), of which 10 items assessed healthy/unhealthy eating, rated on a 8-point scale ranging from 1 ('none') to ≥ 7 ('7 times or more'). This scale was previously validated in Bahrain with a reliability of 0.82 (Musaiger, Bader, Al-Roomi & D'Souza, 2011). The internal consistency of this scale in our sample was 0.72.

Eating Disorder risk was measured with the SCOFF screening (Morgan, Reid & Lacey, 1999). It consists of 5 Yes/No items. The SCOFF was previously validated in Lebanon, with the best diagnostic threshold being at 2 positive answers with a sensitivity of 80.0%, a specificity of 72.7% and an area under the curve of 80.0% (Aoun et al., 2015).

Body image dissatisfaction was measured through the Body Shape Questionnaire (BSQ-8c) shortened form (Evans & Dolan, 1993). Each item is scored from 1 (Never) to 6 (Always). As score below 19 indicates no concern with shape, 19 to 25 a mild concern, 26 to 33 a moderate

concern and over 33 would indicate a marked concern with shape. The internal consistency of this scale in our sample was 0.90.

Trait Emotional Intelligence was measured through the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2009). The TEIQue consists of 30 items rated on a 7-point Likert scale ranging from 1 (*‘Completely Disagree’*) to 7 (*‘Completely Agree’*). The TEIQue also provides scores on four broad factors (i.e., well-being, emotionality, sociability, and self-control) and 15 facets. The TEIQue has shown excellent psychometric properties in a variety of youth samples internationally (e.g., Sanchez-Ruiz et al., 2013) and is in the process of being validated in Lebanon (Sanchez-Ruiz, AbiHabib, & Tohme, in progress). In our sample, the internal consistency was 0.82 for global trait EI.

Depression, Anxiety and Stress were measured through the Depression, Anxiety and Stress Scale (DASS 21; Henry & Crawford, 2005). It consists of a 21 item self-report questionnaire designed to measure the severity of a range of symptoms common to both depression and anxiety with scores that range from 0 (did not apply to me) to 3 (applied to me most of the time). In our sample, the internal consistencies of the DASS were as follows: 0.87 for depression, 0.83 for stress and 0.82 for anxiety.

Statistical Analysis

Analysis was performed using SPSS 21 and STATA 13. Data reduction techniques were employed to explore the technology usage and attitude scale. Exploratory factor analysis, using Principle Component Analysis with Varimax rotation, was used to derive the set of factors and to maximize the variance of the factor loading. Kaiser-Guttman criterion (eigenvalues ≥ 1.0) was

used to decide on the number of factors that would be retained. A factor loading of at least 0.55 was used to decide on factors' associated items.

Pearson's correlations were used to examine the relationship between demographic characteristics, the main study variables, global trait emotional intelligence and its subscales, DASS subscales, body image dissatisfaction scores, SCOFF, total conscientiousness and technology usage and attitude subscales.

II. Results

Exploratory factor Analysis

The principle component analysis of the 31 media usage items yielded 8 factors which accounted for 66.745% of the variance (Table 1). 10 items failed to meet the 0.55 threshold criterion and were not included in any factor. The 8 daily media uses included email (3 items; 7.376%), text and Whatsapp messaging (2 items; 5.121%), mobile phone multimedia – music, pictures, video (3 items; 6.508%), technology use during work or school (2 items; 3.540%), internet searching (3 items; 9.406%), social media use (4 items; 25.704%), social media posting (2 items; 5.277%), friends and followers (2 items; 3.814%).

The principle component analysis of the 12 attitudinal items resulted in 3 factors accounting for 57.43 % of the variance (Table 2). The first factor included 6 items related to positive attitudes towards technology (32.15%). The second factor included 3 items reflecting anxiety attitudes towards technology (13.99%). The third factor included 3 items related to negative attitudes towards technology (11.29%).

Table 3 displays the means, standard deviations, skewness and Cronbach's alpha coefficients of all 11 subscales. All media subscales had acceptable to excellent reliabilities.

Gender differences

In order to test for gender differences, independent sample *t*-tests were carried out to compare the mean scores on the technology usage and attitude scale. Results were not significant, thus the sample was not split by gender.

Body Image dissatisfaction (BID)

Table 4 displays the correlations between BID score and social media subscales. Higher BID scores were positively correlated with use of text and Whatsapp messaging ($r = 0.19, p < 0.01$), internet search ($r = 0.13, p < 0.05$), social media use ($r = 0.18, p < 0.01$), and anxiety attitude ($r = 0.14, p < 0.05$) towards technology.

Eating Disorder (SCOFF) score

Table 5 displays the correlations between SCOFF score and social media subscales. Higher SCOFF scores were positively correlated with use of text and Whatsapp messaging ($r = 0.14, p < 0.05$), technology use ($r = 0.15, p < 0.05$), social media use ($r = 0.16, p < 0.05$), and anxiety attitude ($r = 0.14, p < 0.05$) towards technology.

Unhealthy Eating

Table 6 displays the correlations between total unhealthy score and social media subscales. Higher scores were positively correlated with mobile phone multimedia ($r = 0.21, p < 0.01$) and technology use ($r = 0.16, p < 0.05$). Unhealthy eating score was not correlated with technology attitudes.

Trait Emotional Intelligence

Table 7 displays the correlations between global trait EI, its subscales and social media subscales. Global trait EI and its subscales emotionality and sociability were positively correlated with friends and followers subscale ($r = 0.15, p < 0.05$, $r = 0.19, p < 0.01$, and $r = 0.17, p < 0.05$). Wellbeing and sociability subscales were both positively correlated with text and Whatsapp subscale ($r = 0.19, p < 0.05$ and $r = 0.15, p < 0.05$, respectively). The self-control factor was negatively correlated with technology use ($r = -0.17, p < 0.05$) and social media use ($r = -0.16, p < 0.05$). The Emotionality factor was negatively correlated with internet search ($r = -0.15, p < 0.05$). Neither global trait EI nor its factors were significantly correlated with technology attitudes.

Stress, anxiety and depression

Table 8 displays the correlations between DASS subscales and social media subscales. Stress was positively correlated with several subscales including mobile phone multimedia ($r = 0.14, p < 0.05$), internet search ($r = 0.17, p < 0.01$). Stress was also associated with positive ($r = 0.22, p < 0.001$), negative ($r = 0.26, p < 0.001$) and anxiety ($r = 0.30, p < 0.001$) attitudes towards technology. Anxiety and depression were both positively correlated with negative ($r = 0.20, p <$

0.001 and $r = 0.18$, $p < 0.01$ respectively) and anxiety attitudes towards technology ($r = 0.22$, $p < 0.001$ and $r = 0.18$, $p < 0.01$).

III. Discussion

The present study aimed at investigating the relationship between media and technology usage and attitudes as well as physical and mental wellbeing in youth. More precisely, the focus was on eating-related variables (healthy eating, body image dissatisfaction and ED risk), trait EI, and psychopathology indicators (stress, anxiety and depression).

Both higher body image dissatisfaction and SCOFF scores were positively correlated with the use of text and Whatsapp messaging, social media use, and attitudes that reflect anxiety and dependence on technology. This result is in agreement with a recent meta-analytic review which found a positive association between extent of use of social networking sites and extent of internalization of a thin ideal, suggesting that the ability to interact with appearance-related features online and be an active participant in media creation is associated with body image dissatisfaction (Mingoia, Hutchinson, Wilson & Gleaves, 2017). In addition, recent findings showed that viewing thin body images on Facebook predicted higher baseline body image dissatisfaction and was associated with higher eating disorders risk compared to viewing the same images on conventional media in female university students (Cohen & Blaszczyns, 2015). Similarly, research has shown that young adolescent Facebook users had significantly higher body image concern compared to non-users (Tiggeman & Slater, 2013) and Facebook use was associated with the maintenance of weight/shape concerns and state anxiety compared to alternate internet activities (Mabe, Forney & Keel, 2014). This may be explained by the Social Comparison theory which postulates that people are more likely to compare themselves to similar others. Since

social media forums such as Facebook or Instagram involve one's peers, they may therefore have more impact on body image dissatisfaction and the development of eating disorders compared to other forms of media. Moreover, the fear of negative feedback from peers and family, and the anxiety towards how one is perceived by the society were shown to be the most contributing factors to the development of eating disorders (Haworth-Hoepfner, 2000). This might in turn explain the higher SCOFF scores in social media users. In fact, more frequent Facebook use was found to be associated with greater disordered eating in women (Mabe, Forney & Keel, 2014) and Instagram use was linked to increased symptoms of orthorexia nervosa (Turner & Lefevre, 2017). Together these results emphasize the important aspect of appearance comparison in social media images, which may trigger or worsen body image dissatisfaction and eating disorders.

The correlations between body image dissatisfaction and SCOFF scores and the use of text and Whatsapp messaging might be explained by the concept of self-esteem. Research has shown that individuals with low self-esteem use instant messaging more frequently (Ehrenberg, Juckes, White & Walsh, 2008) and have higher body image dissatisfaction scores (Tiggemann, 2005) and ED risk (Gual et al., 2002) compared to those with high self-esteem.

Unhealthy eating habits were positively correlated with technology use in general, and more particularly mobile phone multimedia use (music, pictures and video). These results concur with numerous studies in which screen time was associated with poor eating habits (Rosen et al., 2013; Cox, Skouteris, Rutherford, Fuller-Tyszkiewicz & Hardy, 2012, Pagani et al., 2010, Kenney & Gortmaker, 2017). Previous findings, similar to ours, have shown that using smartphone and tablets for more than five hours a day is associated with increased sweet beverage consumption in adolescents (Kenney & Gortmaker, 2017) and high mobile phone use was associated with consumption of sweets (Delfino et al., 2017).

Correlations between trait EI and social media subscales were weak but significant as expected. While global trait EI only related to friends and followers subscale, trait EI factors correlated with different subscales. As anticipated, self-control was associated with technology and social media use. This is in line with the idea that poor emotional regulation and impulsiveness are at the roots of excessive technology use (e.g., Cao, Su, Liu, & Gao, 2007). An explanation of the positive relationship found between emotionality and friends and followers is that this trait EI factor encompasses empathy, relationships, in addition to perception and expressions of emotions, which are all key factors when communicating with friends. Sociability was also positively related to friends and followers, as well as with text and Whatsapp subscales, which is consistent with the idea that individuals who prefer social connections, networking, and are adamant at emotion management of others might benefit from online friendship and communication. It might be the case that emotionality is linked to close online friendships and high quality of interaction, while sociability relates to having more online friends and followers as well as greater text and Whatsapp use. Taken together, these results contradict previous findings that point out that some of the underlying factors of smartphone use are poor social skills, social anxiety, and loneliness, even though these factors have been recognized in the literature as correlates of smartphone addiction (e.g., Darcin et al., 2016). Well-being was also positively related to text and Whatsapp subscales. Self-esteem is one of the aspects covered by this factor, thus this finding somehow challenges the idea that individuals with low self-esteem use instant messaging more frequently (Ehrenberg, Juckes, White & Walsh, 2008). Other well-being facets are happiness and optimism, which could be encouraging individuals to share through texts and Whatsapp messages. Taken together, these findings suggest there is an intricate relationship between trait EI and technology use, depending on the trait EI factors and specific subscales considered.

Stress positively correlated with using mobile phone multimedia (music, pictures and videos) and internet search subscales. Individuals under stress could engage in these activities somehow compulsively, as they may lack self-regulatory skills to cope differently. For example, in a study conducted by Jun and Choi (2015), adolescents' academic stress was related to Internet addiction through negative emotions. It is also possible that internet overuse predisposes individuals to experiencing higher stress levels (e.g., Akin & Iskender, 2011). Surprisingly, depression and anxiety did not significantly relate to any of the technology use subscales, but they correlated positively with anxiety attitudes towards technology, which could potentially explain many aspects of internet overuse (Tsai & Lin, 2004). However, they also related to negative attitudes towards technology and stress in particular was also linked to positive attitudes. These links between psychopathology indicators and both adaptive and maladaptive attitudes towards technology emphasize the complexity of such relationship.

Limitations and recommendations for future research

One of the limitations of the present study is that it is correlational in nature, therefore it is not possible to determine causality. A key role of forthcoming studies is to investigate the directionality of the relationship between technology use and physical and mental wellbeing, ideally through longitudinal and experimental designs. Even though we explored the participants' attitudes towards technology, the subscale anxiety towards technology is not sufficient to capture the complexity of an unhealthy use of technology, which can be characterized by intrusive thoughts about online activity, withdrawal symptoms, technology-related impulsiveness, etc. Thus future studies could further study the role of psychological dependence in pathological technology use.

To capture the full complexity of adolescents' technology usage, future work can investigate parental views of their adolescent's technology usage and study other communities,

such as families. It may also be worthwhile to ask adolescents about the location of their technology usage.. This will help determine where addicted adolescent users are spending the time they dedicate to technology usage and how that behavior can be controlled.

Conclusions and implications for practice

The present study adds to the growing evidence supporting a significant impact of technology use on physical and mental wellbeing. Using mobile phone multimedia (music, pictures and videos) correlated with unhealthy eating and stress. Social media use correlated with body image dissatisfaction, eating disorders risk and self-control. In addition, anxiety and dependence towards being without technology correlated with body image dissatisfaction, eating disorders risk, depression and anxiety.

The present results warrant the adoption of strategies to reduce the deleterious effects of technology use and dependence among youth. **Public health and community nurses might play a major role in teaching adolescents more adaptive ways of using social media or reducing exposure to it.** Previous work has shown that setting limits and boundaries on technology use during childhood and adolescence was associated with lower levels of depression (Bickham, Hswen & Rich, 2015).

Our results showed that self-control was associated with technology and social media use. This is in line with the idea that lack of emotion regulation and impulsiveness are at the roots of technology use and individuals who are impulsive and have difficulties in regulating their emotions tend to over-use technology (e.g., Cao, Su, Liu, & Gao, 2007). Therefore, **psychiatric nurses and college nurses need may create awareness campaigns and** develop programs in university and school settings that teach adolescents how to regulate themselves, how to follow directions, how to develop their planning abilities, and how to foster self-discipline; and to create an environment

where self-control is consistently rewarded. Furthermore, nurses might play a vital role in training health professionals and health personnel in raising awareness about the effects of technology on physical and mental wellbeing among youth, especially in the current context.

Our findings illustrate the need for professional nurses to understand the influence of the media on adolescents' views of their body image and to incorporate protocols for assessment, education, and counseling of adolescents on the healthy usage of media into their pediatric clinical practice. Nurses also need to educate parents to be aware of the potentially harmful effects of technology and help them implement strategies among their children to reduce their overall screen time.

Professional nurses need to join efforts with their colleagues from other disciplines, such as nutritionists and psychologists, to accommodate the complexity of the problem in preventing, detecting, assessing, and treating technology dependence-related concerns. Furthermore, targeting social media as a platform for intervention and prevention programs to decrease body image dissatisfaction, eating disorders, depression and anxiety may be helpful. In fact, as such, technology may become part of the solution rather than part of the problem.

References

- Akin, A., & Iskender, M. (2011). Internet addiction and depression, anxiety and stress. *International online journal of educational sciences*, 3(1), 138-148.
- Al-Hazzaa, H. M., Musaiger, A. O., & ATLS Research Group. (2011). Arab Teens Lifestyle Study (ATLS): objectives, design, methodology and implications. *Diabetes, metabolic syndrome and obesity: targets and therapy*, 4, 417. DOI: 10.5539/gjhs.v8n1p107.
- Aoun, A., Azzam, J., El Jabbour, F., Hlais, S., Daham, D., El Amm, C., ... & Déchelotte, P. (2015). Validation of the Arabic version of the SCOFF questionnaire for the screening of eating disorders. *Eastern Mediterranean Health Journal*, 21(5), 326. PMID: 26343121.
- Athota, V. S., & O'Connor, P. J. (2014). How approach and avoidance constructs of personality and trait emotional intelligence predict core human values. *Learning and Individual Differences*, 31, 51-58. DOI: 10.1016/j.lindif.2013.12.009.
- Becker, A. E., Fay, K. E., Agnew-Blais, J., Khan, A. N., Striegel-Moore, R. H., & Gilman, S. E. (2011). Social network media exposure and adolescent eating pathology in Fiji. *The British Journal of Psychiatry*, 198(1), 43-50. DOI:10.1192/bjp.bp.110.078675.
- Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. *Children and Youth Services Review*, 41, 27-36.
- Bickham D.S., Hswen Y., Rich M. Media use and depression: exposure, household rules, and symptoms among young adolescents in the USA. *International Journal of Public Health*, 60(2), 147–155. DOI: 10.1007/s00038-014-0647-6.

- Bilgrami, Z., McLaughlin, L., Milanaik, R., & Adesman, A. (2017). Health implications of new-age technologies: a systematic review. *Minnerva Pediatrica*, 69(4), 348-367. DOI: 10.23736/S0026-4946.17.04937-4.
- Blease, C. R. (2015). Too many 'friends,' too few 'likes'? Evolutionary psychology and 'Facebook depression'. *Review of General Psychology*, 19(1), 1. DOI: 10.1037/gpr0000030
- Blease, C. R. (2015). Too many 'friends,' too few 'likes'? Evolutionary psychology and 'Facebook depression'. *Review of General Psychology*, 19(1), 1.
- Brown, Z., & Tiggemann, M. (2016). Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. *Body image*, 19, 37-43. DOI: 10.1016/j.bodyim.2016.08.007.
- Burke, M., Marlow, C., & Lento, T. (2010, April). Social network activity and social well-being. In Proceedings of the SIGCHI conference on human factors in computing systems (pp. 1909-1912). ACM. DOI: 10.1145/1753326.1753613
- Cao, F., Su, L., Liu, T., & Gao, X. (2007). The relationship between impulsivity and Internet addiction in a sample of Chinese adolescents. *European Psychiatry*, 22(7), 466-471. DOI: 10.1007/s40519-014-0150-3.
- Çelik, Ç. B., Odacı, H., & Bayraktar, N. (2015). Is problematic internet use an indicator of eating disorders among Turkish university students? *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, 20(2), 167-172. DOI: <https://doi.org/10.1007/s40519-014-0150-3>.

- Cohen, R., & Blaszczynski, A. (2015). Comparative effects of Facebook and conventional media on body image dissatisfaction. *Journal of eating disorders*, 3(1), 23. DOI:org/10.1186/540337-015-0061.3.
- Cox, R., Skouteris, H., Rutherford, L., Fuller-Tyszkiewicz, M., & Hardy, L. L. (2012). Television viewing, television content, food intake, physical activity and body mass index: a cross-sectional study of preschool children aged 2-6 years. *Health Promotion Journal of Australia*, 23(1), 58-62. PMID: 22730942.
- Dalky, H. F., Al Momani, M. H., Al-Drabaah, T. K., & Jarrah, S. (2016). Eating Habits and Associated Factors Among Adolescent Students in Jordan. *Clinical Nursing Research*, 1-15. DOI:10.1177/1054773816646308
- Delfino, L. D., Dos Santos, S. D., Tebar, W. R., Zanuto, E. F., Codogno, J. S., Fernandes, R. A., & Christofaro, D. G. (2017). Screen time by different devices in adolescents: association with physical inactivity domains and eating habits. *The Journal of sports medicine and physical fitness*. DOI: 10.23736/S0022-4707.17.06980-8.
- Di Fabio, A., & Saklofske, D. H. (2014). Promoting individual resources: the challenge of trait emotional intelligence. *Personality and Individual Differences*, 65, 19-23. DOI: 10.1016/j.paid.2014.01.026
- Ehrenberg, A., Juckes, S., White, K. M., & Walsh, S. P. (2008). Personality and self-esteem as predictors of young people's technology use. *Cyberpsychology & behavior*, 11(6), 739-741. DOI:10.1089/cpb.2008.0030.

- Enez Darcin, A., Kose, S., Noyan, C. O., Nurmedov, S., Yilmaz, O., & Dilbaz, N. (2016). Smartphone addiction and its relationship with social anxiety and loneliness. *Behaviour & Information Technology*, 35(7), 520-525. DOI: 10.1080/0144929X.2016.1158319
- Evans, C., & Dolan, B. (1993). Body Shape Questionnaire: derivation of shortened “alternate forms”. *International Journal of Eating Disorders*, 13(3), 315-321. DOI: 10.1002/1098-108X(199304)13:3<315::AID-EAT2260130310>3.0.CO;2-3
- Fardouly, J., & Vartanian, L. R. (2015). Negative comparisons about one's appearance mediate the relationship between Facebook usage and body image concerns. *Body image*, 12, 82-88. DOI: 10.1016/j.bodyim.2014.10.004.
- Gual, P., Pérez-Gaspar, M., Martínez-González, M. A., Lahortiga, F., Irala-Estévez, J. d. & Cervera-Enguix, S. (2002). Self-esteem, personality, and eating disorders: Baseline assessment of a prospective population-based cohort. *International Journal of Eating Disorders*, 31, 261–273. DOI:10.1002/eat.10040
- Haworth-Hoepfner, S. (2000). The critical shapes of body image: The role of culture and family in the production of eating disorders. *Journal of Marriage and Family*, 62(1), 212-227. DOI: 10.1111/j.1741-3737.2000.00212.x.
- Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British journal of clinical psychology*, 44(2), 227-239. DOI: 10.1348/014466505X29657.

- Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body image, 17*, 100-110. DOI: 10.1016/j.bodyim.2016.02.008.
- Jun, S., & Choi, E. (2015). Academic stress and Internet addiction from general strain theory framework. *Computers in Human Behavior, 49*, 282-287. DOI: <http://dx.doi.org/10.1016/j.chb.2015.03.0010747-5632/>.
- Kandell, J. J. (1998). Internet addiction on campus: The vulnerability of college students. *Cyberpsychology & behavior, 1*(1), 11-17.
- Kenney, E. L., & Gortmaker, S. L. (2017). United States adolescents' television, computer, videogame, smartphone, and tablet use: associations with sugary drinks, sleep, physical activity, and obesity. *The Journal of pediatrics, 182*, 144-149. DOI: 10.1016/j.jpeds.2016.11.015.
- Lawrie, Z., Sullivan, E. A., Davies, P. S. W., & Hill, R. J. (2006). Media influence on the body image of children and adolescents. *Eating Disorders, 14*(5), 355-364. DOI: 10.1080/10640260600952506.
- Legenbauer, T., Rühl, I., & Vocks, S. (2008). Influence of appearance-related TV commercials on body image state. *Behavior Modification, 32*(3), 352-371. DOI: 10.1177/0145445507309027.
- Mabe, A. G., Forney, K. J., & Keel, P. K. (2014). Do you “like” my photo? Facebook use maintains eating disorder risk. *International Journal of Eating Disorders, 47*(5), 516-523. DOI: 10.1002/eat.22254.

- Malouff, J. M., Schutte, N. S., & Thorsteinsson, E. B. (2014). Trait emotional intelligence and romantic relationship satisfaction: A meta-analysis. *The American Journal of Family Therapy*, 42(1), 53-66. DOI: 10.1080/01926187.2012.748549
- Marchant, A., Hawton, K., Stewart, A., Montgomery, P., Singaravelu, V., Lloyd, K., Purdy, N., Daine, K., & John, A. (2017). A systematic review of the relationship between internet use, self-harm and suicidal behaviour in young people: The good, the bad and the unknown. *PloS One*, 16(12). DOI: 10.1371/journal.pone.0181722.
- Martínez-Gómez, D., Veses, A. M., Gómez-Martínez, S., Pérez de Heredia, F., Castillo, R., Santaliestra-Pasias, A. M., & Marcos, A. (2015). Television viewing time and risk of eating disorders in Spanish adolescents: AVENA and AFINOS studies. *Pediatrics International*, 57(3), 455-460. DOI:10.1111/ped.12662
- Mikolajczak, M. (2015). Emotional intelligence and health: relationships, pathways and interventions. In Keynote speaker at the Conference on Emotional Intelligence and Well-being. DOI: 10.3389/fpsyg.2015.00160
- Mingoia, J., Hutchinson, A. D., Wilson, C., & Gleaves, D. H. (2017). The Relationship between Social Networking Site Use and the Internalization of a Thin Ideal in Females: A Meta-Analytic Review. *Frontiers in psychology*, 8. DOI:10.3389/fpsyg.2017.01351.
- Morgan, J. F., Reid, F., & Lacey, J. H. (1999). The SCOFF questionnaire: assessment of a new screening tool for eating disorders. *Bmj*, 319(7223), 1467-1468. DOI: <https://DOI.org/10.1136/bmj.319.7223.1467>.

- Morrison, C. M., & Gore, H. (2010). The relationship between excessive Internet use and depression: a questionnaire-based study of 1,319 young people and adults. *Psychopathology*, *43*(2), 121-126. DOI: 10.1159/000277001.
- Musaiger, A., Bader, Z., Al-Roomi, K., & D'Souza, R. (2011). Dietary and lifestyle habits amongst adolescents in Bahrain. *Food & nutrition research*, *55*(1), 7122. DOI: 10.3402/fnr.v55i0.7122.
- Pagani, L. S., Fitzpatrick, C., Barnett, T. A., & Dubow, E. (2010). Prospective associations between early childhood television exposure and academic, psychosocial, and physical well-being by middle childhood. *Archives of pediatrics & adolescent medicine*, *164*(5), 425-431. DOI: 10.1001/archpediatrics.2010.50.
- Petrides, K. V. (2009). *Technical manual for the trait emotional intelligence questionnaires* (TEIQue). London. UK: London Psychometric Laboratory.
- Petrides, K. V. (2010). Trait emotional intelligence theory. *Industrial and Organizational Psychology*, *3*(2), 136-139. DOI: 10.1111/j.1754-9434.2010.01213.x
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British journal of psychology*, *98*(2), 273-289. DOI: 10.1348/000712606x120618
- Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, *29*(3), 1243-1254. DOI: 10.1016/j.chb.2012.11.012

- Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, 29(3), 1243-1254. DOI:10.1016/j.chb.2012.11.012
- Saklofske, D. H., Austin, E. J., Rohr, B. A., & Andrews, J. J. (2007). Personality, emotional intelligence and exercise. *Journal of Health Psychology*, 12(6), 937-948. DOI: 10.1016/j.paid.2010.05.010
- Sanchez-Ruiz, M. J. Abi Habib, R. & Tohme, P. (in progress). Validation of the trait Emotional Intelligence Questionnaire (TEIQue) in Lebanon.
- Schutte, N. S., Malouff, J. M., & Hine, D. W. (2011). The association of ability and trait emotional intelligence with alcohol problems. *Addiction Research & Theory*. DOI:10.3109/16066359.2010.512108
- Selfhout, M. H., Branje, S. J., Delsing, M., ter Bogt, T. F., & Meeus, W. H. (2009). Different types of Internet use, depression, and social anxiety: The role of perceived friendship quality. *Journal of adolescence*, 32(4), 819-833. DOI: 10.1016/j.adolescence.2008.10.011
- Takao, M., Takahashi, S., & Kitamura, M. (2009). Addictive personality and problematic mobile phone use. *CyberPsychology & Behavior*, 12(5), 501-507. DOI:10.1089/cph.2009.0022
- Thomé, S., Härenstam, A., & Hagberg, M. (2011). Mobile phone use and stress, sleep disturbances, and symptoms of depression among young adults-a prospective cohort study. *BMC public health*, 11(1), 66. DOI:10.1186/1471-2468-11-66.
- Tiggemann, M. (2005). Body dissatisfaction and adolescent self-esteem: Prospective findings. *Body Image*, 2(2), 129-35. DOI: 10.1016/j.bodyim.2005.03.006.

- Tiggemann, M., & Pickering, A. S. (1996). Role of television in adolescent women's body dissatisfaction and drive for thinness. *International Journal of Eating Disorders*, 20(2), 199-203. DOI: 10.1002/(SICI)1098-108X(199609)20:2<199::AID-EAT11>3.0.CO;2-Z.
- Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, 46(6), 630-633. DOI:10.1002/eat.22141
- Tsai, C. C., & Lin, S. S. (2001). Analysis of attitudes toward computer networks and Internet addiction of Taiwanese adolescents. *Cyber Psychology & Behavior*, 4(3), 373-376. DOI: 10.1089/109493101300210277
- Turner, P. G., & Lefevre, C. E. (2017). Instagram use is linked to increased symptoms of orthorexia nervosa. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*, 22(2), 277-284. DOI: 10.1007/s40519-017-0364-2.
- Vartanian, L. R., & Dey, S. (2013). Self-concept clarity, thin-ideal internalization, and appearance-related social comparison as predictors of body dissatisfaction. *Body Image*, 10(4), 495-500. DOI: 10.1016/j.bodyim.2013.05.004.