

COVID-19 AND EATING DISORDERS

The Covid-19 pandemic declared by the World Health Organization (WHO) on March 11, 2020 has changed the living conditions of the world's population; with more than 15 million infections and over 600,000 deaths, the outbreak of the novel Coronavirus has forced several countries to resort to a temporary lockdown to stop its spread. Physical distancing, compulsory use of masks, long queuing at supermarkets, and the forced isolation at home resulted in a general increase in stress, anxiety and fear related to the possibility of being infected and die from Covid-19 (Wang et al., 2020).

While the state of emergency and uncertainty associated with Covid-19 has led to an increase in anxious and depressive symptoms in the majority of the population, this has had even more severe consequences on individuals with a pre-existing mental disorder (Chaturvedi, 2020). In particular, eating disorders are among the diseases most influenced by the lockdown state.

Individuals affected by these disorders engage in eating and weight control behaviours that are harmful to physical health and psychosocial functioning (APA, 2013). In addition, people with an eating disorder have a tendency to base their value almost exclusively on their weight and body image (ibidem, 2013).

Among the main diagnostic categories of eating disorders reported in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; APA, 2013) are:

- Anorexia Nervosa (AN), characterised by such a restriction in the daily calorie intake as to cause a significant weight loss (body mass index below 17 kg/m in mild cases up to severe cases in which the body mass index is below 15 kg/m).
- Bulimia Nervosa (BN) and Binge Eating Disorder (BED), characterised, on the other hand, by eating continuously. The person eats large amounts of food in a short period of time (from 1-3 episodes per week to more than 14 in severe cases) and, in the case of BN, such binge eating is followed by elimination behaviours (e.g. use of laxatives, self-induced vomiting and so on), which do not occur in BED. Therefore, if people suffering from bulimia oscillate between normal weight and being slightly overweight, those with binge eating disorder may be overweight and, in some cases, obese, although this disease is to be considered distinct from obesity (Zaccagnino, 2017).

Eating disorders are also constantly on the rise: a systematic review of literature conducted in 2019 showed an increase in prevalence from 3.5% in the period between 2000 and 2006, to 7.8%, in the period between 2013 and 2018 (Galmiche et al., 2019), with a mortality rate of around 5% (Fichter and Quadflieg, 2016). In addition, according to the Italian Society for the Study of Eating Behaviour Disorders (SISDCA), in Italy alone, these disorders affect 8,500 people every year, and they may be increasing due to the Covid-19 pandemic and the related risk factors. During the first weeks of

lockdown, as a matter of fact, the number of people who experienced the so-called "food-insecurity", i.e. a form of insecurity with respect to the possibility of buying enough food for oneself and the family, quadrupled (Loopstra, 2020). This fear could have been triggered by the long queues in front of supermarkets, as well as the lack of availability of some types of food and empty shelves; therefore, families started to stock up on highly nutritious and long-term food, as confirmed by the research conducted by Coldiretti (Organisation of Agricultural Entrepreneurs at national and European level). Specifically, the survey showed that Italians, in the lockdown period, purchased significantly more flour and semolina (+ 150%), sweets (+13%), pasta and gnocchi (+ 7%), ready-made pasta meals (+24%) and pizza doughs (+38%).

For a person with an eating disorder, however, this situation may have constituted a risk factor for maintaining and worsening the symptoms: the fact of having large quantities of food available at home, mostly high in calories, may have facilitated the occurrence of binge eating or, on the contrary, even more restrictive eating behaviours aimed at weight control (Brooks et al. 2020). For individuals with bulimia or binge eating disorder, for example, being forced to stay at home throughout the day, for weeks, with packed food supplies, may have increased the tendency to eat large amounts of food; as a side effect, given the difficulties in shopping due to the declared state of emergency, such dysfunctional behaviour may have increased intra-family conflict and the resulting state of emotional activation in the individuals involved (Touyz, Lacey & Hay, 2020).

As anticipated, as a result of the containment measures adopted by governments, the majority of the population started to spend their days at home, with a significant increase in free time. This has led to spending more time on social networks and being constantly exposed to emotionally activating contents and images related to the spread of the virus and its mortality rate (Koeze and Popper, 2020). This phenomenon, combined with the state of emergency, may have caused an increase in anxiety and concern linked not only to the virus outbreak, but also to the feeling of uncertainty and loss of control related to the situation, which are sensitive issues for individuals affected by an eating disorder (Brown et al., 2017). Specifically, people affected by such disorders report a reduced tolerance towards uncertainty and, in this perspective, dysfunctional eating habits may have been functional to the temporary reduction of the feeling of anxiety and stress generated by the emergency situation (ibidem, 2017).

Moreover, during the state of emergency, the population was educated about self-monitoring their body and state of health in order to promptly recognise the symptoms related to Covid-19 (e.g. fever, shortness of breath and cough); however, this may have increased interoceptive sensitivity and the so-called "anxiety sensitivity", i.e. sensitivity to anxiety-related symptoms, which are interpreted as dangerous for physical, psychological or social health (Silverman et al. 2003). Both of these sensitivities seem to play a key role in increasing the perceived level of anxiety and the resulting dysfunctional eating behaviours (Smits et al., 2019).

In accordance with the above are the results of the pilot study on 32 patients with an eating disorder conducted by the University Hospital of Bellvitge during the first two weeks of lockdown (Fernandez-Aranda et al., 2020). The subjects were administered daily telephone surveys on their psychophysical state, which revealed a growing concern over uncertainty regarding the future, fear of infection and loss of employment.

In addition, 56.2% of patients reported an increase in anxiety symptoms due to which, in some cases, they carried out dysfunctional eating behaviours, such as grazing and emotional eating (eating to calm their anxiety).

Another significant figure, which the authors recorded, was an increase in food-related issues in 38% of cases.

In addition to the consequences already reported, prolonged exposure to the media may have been an additional risk factor for individuals with eating disorders due to the messages conveyed about the risk of gaining weight and therefore the promotion of diets and exercise (Cooper et al., 2020). As a matter of fact, the correlation between the exposure to images of lean and athletic bodies proposed by the media and the negative view of one's own body with the consequent implementation of harmful eating behaviours is well known (Sabik, Falat & Magagnos, 2020; Slater, Cole & Fardouly, 2019). It is clear, therefore, the relevance that these messages linked to weight and healthy eating may have had in a critical period like the one just experienced, especially for those suffering from an eating disorder (Cooper et al, 2020).

Moreover, the inability to engage in physical activity out of one's own home increased the fear of gaining weight. In this regard, the positive effects of mild sport activity on physical and mental health (USDHHS, 2008) are well known; therefore, the closure of sport centres and the limitations imposed on exercising outdoors may have contributed to increased concerns about weight and, more generally, the feeling of stress. This seems to be especially true for people who use sport in their daily life as a form of emotional regulation of the negative emotions experienced (Dalle Grave, Calugi & Marchesini, 2008) Furthermore, these aspects take on even greater importance when considered in the light of the isolation imposed by the lockdown and the consequent decrease in social support. The latter is, as a matter of fact, considered a protective factor for all psychopathologies, including eating disorders (Linville et al., 2012), and helps to reduce the sense of loneliness that, vice versa, seems to play an important role in the onset and maintenance of psychological disorders (Holt-Lunstad et al., 2015). Moreover, isolation is considered a secondary effect of the onset of an eating disorder and, combined with other factors, seems to play a key role in the chronicisation of the disorder (Balbo, 2015).

In light of the above, it is clear that, during the containment measures, there have been a number of factors – including increasing food-insecurity, body image and weight concerns, limitations on exercise and isolation – which may have had a negative impact especially on individuals with eating disorders or with a vulnerability to it. This is supported by a study conducted in the UK on 153 individuals with an eating disorder, in remission or cured. These individuals were asked to complete an anonymous online questionnaire about the social impact of lockdown, technology usage or changes to physical activity rates (Branley-Bell & Talbot, 2020). The results showed that 86.7% of participants reported an increase in symptoms of eating disorders, 86.4% revealed intense feelings of social isolation due to the pandemic and 81.4% reported spending much more time online, which in 55% of cases influenced the worsening of the symptoms of eating disorders.

Furthermore, the research reported that 36.5% of the participants increased their physical activity, 65.9% said they spent more time ruminating on their weight, exercise and meals and, finally, 66.7% reported having a different relationship with food as a result of the pandemic.

In light of this evidence, it can be said that the consequences of the pandemic, analysed so far, may have exacerbated an existing eating disorder or the risk of developing one.

However, it is necessary to consider further, more general aspects related to the spread of Covid-19 that may have contributed to exacerbate the above picture.

These include the exposure to stressful life events related to one's own health, family members' health, and to general living conditions; as a matter of fact, many people have witnessed relatives

and/or friends fall ill or, in some cases, die, without having the possibility of being there with them, except through telephone calls. In addition, several families began to have financial worries due to the halved salaries, the possibility of losing their jobs, the management of children and the adaptation to a new everyday life.

In this regard, several studies have shown that being exposed to stressful life events can predict the onset of an eating disorder, as well as affect the maintenance and possible relapse of the eating disorder (Degortes et al., 2014; Grilo et al., 2012; Pike et al., 2006). In line with what has been stated, the most at risk could be the health care staff, forced in some cases to live away from their families, subjected to stressful work shifts and exposed to daily scenes of suffering and death.

Besides health care workers, individuals with Covid-19 are also at risk, especially those who needed hospitalisation and intensive care; as a matter of fact, in combination with experiencing the disease, they may be victims of stigma and ostracism from people around them (Cooper, 2020). In line with what has been stated, a study on hospitalised individuals with SARS, conducted by Mihashi and co-workers, found an increase in dysfunctional eating behaviours following the recovery, among others (Mihashi et al., 2009).

In addition to what has been reported so far, the spread of Covid-19 and all that has resulted has caused an alarming rise in cases of domestic violence and child abuse (Galea, Merchant & Lurie, 2020), factors that seem to increase the risk of onset and maintenance of an eating disorder, as well as post-traumatic stress disorder (Hazzard et al., 2019; Trottier & MacDonald, 2017). Several studies have shown that being abused during childhood (physical, sexual or psychological abuse) or seeing repeated episodes of parental conflict (Bi et al., 2018) increase the risk of developing an eating disorder in adolescence (Hazzard et al., 2019). Furthermore, 78% of patients with an eating disorder report at least one episode of physical, emotional or sexual abuse, parental neglect, bullying and/or death of one of the attachment figures in their life history (Tasca, 2019).

In addition to having had difficult childhood experiences, individuals with an eating disorder, both men and women, report high rates of intimate partner violence and domestic violence (Bundock et al., 2013), which have been on the rise during the Covid-19 pandemic.

In the light of the picture outlined so far, it is clear that all these factors may have contributed to the onset of dysfunctional eating behaviours and to the worsening of already existing symptoms, partly due also to patients' limited access to treatment caused by the redistribution of health care staff. As far as hospitalised patients are concerned, there has been a reduction in daily visits by specialists (e.g. psychiatrist, nutritionist, nurses, etc.) and hours dedicated to psychological support, as well as the suspension of all therapies and supervisions related to meals, conducted in groups (Davis et al., 2020). In addition to this, during the pandemic, only one visitor was allowed to see these patients, and only after undergoing temperature screening every day, together with a check for flu symptoms and possible contacts with people affected by Covid-19 (ibidem, 2020).

On the other hand, it is clinical practice, especially in cases where symptoms are severe, that non-hospitalised patients with eating disorders are constantly monitored to verify their state of health (Anderson et al., 2017). However, due to the allocation of health resources to the Covid-19 emergency and the limited access to hospital facilities to reduce the risk of infection, these health checks have been cancelled and postponed in about 50% of cases (Davis et al., 2020). Therefore, this may have had a negative impact especially on those who had just started therapy at the beginning of the lockdown, taking these limitations and physical distancing as reasons to avoid treatment centres and thus maintaining the symptoms.

On the basis of the above, during Covid-19 outbreak, psychologists and psychotherapists took action to ensure support to patients and their families through calls and/or video calls, using web-based platforms (Cooper et al., 2020). Previous studies have shown that, for eating disorders and other psychopathologies, treatment provided remotely has an efficacy comparable to that provided in presence, especially in cases of cognitive-behavioural therapy, family therapy and parental support (de Zwaan et al., 2017; Zerwas et al., 2017).

Moreover, in light of the effectiveness on individuals suffering from anorexia nervosa, bulimia and binge eating (Kenny, Carter, & Safer, 2019; Lock et al., 2017), some clinicians have taught their patients self-help interventions, to independently manage the critical moments that could arise during lockdown. These include psychoeducation, problem-solving, self-monitoring with respect to one's thoughts and emotions and the technique of urge surfing, based on the non-judgmental observation of a certain activating stimulus for the person until the progressive decrease of its intensity (Cooper et al., 2020).

Moreover, the therapist's use of e-mail and messaging may have been helpful in ensuring a connection with the patient and support in light of the imposed social isolation. These tools, if used correctly and combined with therapy, can help the patient to self-monitor and self-regulate, increasing communication between therapist and patient and encouraging the latter to express emotionally charged content (Taylor, in press).

Now, entering into the merits of the therapies conducted online with good results during the pandemic period, there is, among others, EMDR (Eye Movement Desensitisation and Reprocessing) therapy. This methodology uses bilateral stimulation to help the patient reprocess traumatic memories and has proved to be effective even when delivered through technological supports (Spence et al., 2013), demonstrating to be promising for the treatment of eating disorders (Balbo, Zaccagnino, Cussino & Civilotti, 2017). Several studies have shown, as a matter of fact, that the therapy conducted with EMDR leads to a significant improvement in symptoms related to these disorders (Halvgaard, 2015; Zaccagnino et al., 2017; Smajić & de la Fosse, 2019) and has positive effects on the perception of body image and self-esteem (Dziegielewski & Wolfe, 2000), both in the short and long term (Bloomgarden & Calogero, 2008).

Furthermore, by identifying the memories perceived by the individual as disturbing and allowing a more adaptive processing of difficult experiences, this methodology takes on even greater significance in light of the pandemic and its consequences; as already mentioned, the spread of Covid-19 has potentially exposed individuals to stressful and, in the most serious cases, even traumatic life events that may have exacerbated an already existing symptomatology or have constituted a risk factor for the onset of the same.

In such cases, by using EMDR, it has been possible for clinicians to help patients to access those painful memories and progressively integrate negative emotions, feelings and beliefs linked to them, until their complete reprocessing.

However, the therapist's task is to investigate not only those experiences that create discomfort in the present, but also to help the patient to access early traumatic memories that contributed to the onset of the current disorder and dysfunctional strategies of self-regulation and management of stressful situations (Zaccagnino, 2017).

As previously mentioned, the role of unfavourable childhood experiences (e.g. maltreatment and abuse) and relational traumas, related to attachment dynamics, are recognised as risk factors for the development of eating disorders as highlighted by DSM-5 (APA, 2013; Felitti & Anda, 2010; Murphy

et al., 2013; Münch, Hunger & Schweitzer, 2016; Tasca, 2019). It is well known the protective role that parental responsiveness and availability to the child's needs have for the development of the ability to recognise and regulate emotions, but also for the formation of adequate self-other models (Bowlby, 1973). In this perspective, having had childhood experiences of neglect and physical or emotional unavailability by one's caregiver and/or having experienced episodes of abuse may have facilitated the development of alternative and poorly functioning strategies in order to adapt to one's life context (Groh et al., 2017; Clear, Gardner, Webb, and Zimmer-Gembeck, 2019). In line with this, the development of dysfunctional eating behaviours can be considered an attempt to manage overwhelming emotions and memories, linked to such traumatic experiences (Racine & Wildes, 2014).

Therefore, it is clear the importance of identifying and subsequently reprocessing such early traumas, in order to progressively become able to separate present from past, narrating a coherent autobiography and thus increasing awareness of its current functioning (Zaccagnino, 2017).

In order to achieve this goal, the psychoeducation phase is important, in which the clinician increases the patient's awareness of the dynamics of functioning that characterise him/her and leads him/her towards the exploration and implementation of new and more appropriate coping strategies in the management of disturbing events. In this sense, psychoeducation is a fundamental moment to understand the meaning of symptomatology within the trajectory of traumatic life events also inherent to the history of attachment (ibidem, 2017).

Moreover, this phase can be useful both to teach the patient more functional strategies, in order to manage independently the critical moments that may have arisen during the pandemic (as mentioned above), and to strengthen the therapeutic alliance between clinician and patient. Cornerstone of all psychotherapeutic approaches, the therapeutic alliance allows the patient to feel welcomed in a non-judgmental context and to freely express what creates discomfort.

The creation, therefore, of a space in which it is possible to relate with the therapist in a climate of alliance and trust may have been even more important in the light of the social isolation imposed by the lockdown, to express, among others, concerns about uncertainty and fear of contagion, which arose because of Covid-19 infection.

In addition, one stage of EMDR therapy that may have taken on even greater importance at such a critical time is the installation of resources. The goal of this phase is to help the patient identify his or her qualities and, within his or her life history, also the moments or actions in which he or she felt good, full of life and/or was successful.

This type of work allows the individuals to strengthen their sense of self-efficacy and safety, as well as develop a greater motivation to treatment: these factors are considered as protection to face and manage emergency situation – such as the one caused by the spread of Covid-19 – in a functional way.

References

- American Psychiatric Association. (2014). *DSM-5 Manuale diagnostico e statistico dei disturbi mentali*. Milano: Raffaello Cortina Editore.
- Anderson, L. K., Reilly, E. E., Berner, L., Wierenga, C. E., Jones, M. D., Brown, T. A., Kaye, W. H., & Cusack, A. (2017). Treating eating disorders at higher levels of care: Overview and challenges. *Current Psychiatry Reports*, 19(48).
- Balbo, M. (2015). *EMDR e disturbi dell'alimentazione: tra passato, presente e futuro*. Giunti.
- Balbo, M., Zaccagnino, M., Cussino, M., & Civiiotti, C. (2017). Eye Movement Desensitization and Reprocessing (EMDR) and eating disorders: A systematic review. *Clinical Neuropsychiatry: Journal of Treatment Evaluation*.
- Bloomgarden, A., & Calogero, R. M. (2008). A randomized experimental test of the efficacy of EMDR treatment on negative body image in eating disorder inpatients. *Eating disorders*, 16(5), 418-427.
- Bowlby J. (1973): *Attaccamento e perdita, vol. 2: La separazione dalla madre*. Boringhieri, Torino, 1975.
- Branley-Bell, D., & Talbot, C. V. (2020). Exploring the impact of the COVID-19 pandemic and UK lockdown on individuals with experience of eating disorders.
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*.
- Brown, M., Robinson, L., Campione, G. C., Wuensch, K., Hildebrandt, T., & Micali, N. (2017). Intolerance of Uncertainty in Eating Disorders: A Systematic Review and Meta-Analysis. *European Eating Disorders Review*, 25, 329-343.
- Bundock, L., Howard, L. M., Trevillion, K., Malcom, E., Feder, G., & Oram, S. (2013). Prevalence and risk of experiences of intimate partner violence among people with eating disorders: A systematic review. *Journal of Psychiatric Research*, 47(9), 1134-1142.
- Chaturvedi, S. K. (2020). Covid-19, Coronavirus and Mental Health Rehabilitation at Times of Crisis. *Journal of Psychosocial Rehabilitation and Mental Health*, 1-2.

- Clear, S. J., Gardner, A. A., Webb, H. J., & Zimmer-Gembeck, M. J. (2019). Common and distinct correlates of depression, anxiety, and aggression: Attachment and emotion regulation of sadness and anger. *Journal of Adult Development*, 1-11.
- Cooper, M., Reilly, E. E., Siegel, J. A., Coniglio, K., Sadeh-Sharvit, S., Pisetsky, E., & Anderson, L. (2020). Eating disorders during the COVID-19 pandemic: An overview of risks and recommendations for treatment and early intervention.
- Dalle Grave, R., Calugi, S., & Marchesini, G. (2008). Compulsive exercise to control shape or weight in eating disorders: Prevalence, associated features, and treatment outcome. *Comprehensive Psychiatry*, 49(4), 346-352.
- Davis, C., Chong, N. K., Oh, J. Y., Baeg, A., Rajasegaran, K., & Chew, C. S. E. (2020). Caring for children and adolescents with eating disorders in the current COVID-19 pandemic: A Singapore perspective. *Journal of Adolescent Health*.
- De Zwaan, M., Herpertz, S., Zipfel, S., Svaldi, J., Friederich, H., Schmidt, F., Mayr, A., Lam, T., Schade-Brittinger, C., & Hilbert, A. (2017). Effect of internet-based guided self-help vs individual face-to-face treatment on full or subsyndromal binge eating disorder in overweight or obese patients: The INTERBED Randomized Clinical Trial. *JAMA Psychiatry*, 74, 987–995.
- Degortes, D., Santonastaso, P., Zanetti, T., Tenconi, E., Veronese, A., & Favaro, A. (2014). Stressful life events and binge eating disorder. *European Eating Disorders Review*, 22(5).
- Dziegielewska, S. F., & Wolfe, P. (2000). Eye movement desensitization and reprocessing (EMDR) as a time-limited treatment intervention for body image disturbance and self-esteem: A single subject case study design. *Journal of psychotherapy in independent practice*, 1(3), 1-16.
- Felitti, V. J., & Anda, R. F. (2010). The relationship of adverse childhood experiences to adult medical disease, psychiatric disorders, and sexual behavior: Implications for healthcare. The impact of early life trauma on health and disease: The hidden epidemic, 77-87.
- Fernandez-Aranda, F., Casas, M., Claes, L., Bryan, D. C., Favaro, A., Granero, R., ... & Menchón, J. M. (2020). COVID-19 and implications for eating disorders. *European eating disorders review: the journal of the Eating Disorders Association*, 28(3), 239.
- Fichter, M. M., & Quadflieg, N. (2016). Mortality in eating disorders-results of a large prospective clinical longitudinal study. *International Journal of Eating Disorders*, 49(4), 391-401.
- Galea, S., Merchant, R. M., & Lurie, N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*. Published online April 10, 2020.

Galmiche, M., Déchelotte, P., Lambert, G., & Tavolacci, M. P. (2019). Prevalence of eating disorders over the 2000–2018 period: a systematic literature review. *The American journal of clinical nutrition*, 109(5), 1402-1413.

Grilo, C. M., Pagano, M. E., Stout, R. L., Markowitz, J. C., Ansell, E. B., Pinto, A., Zinarini, M. C., Yen, S., & Skodol, A. E. (2012). Stressful life events predict eating disorder relapse following remission: Six-year prospective outcomes. *International Journal of Eating Disorders*, 45(2), 185-192.

Groh, A. M., Fearon, R. P., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Roisman, G. I. (2017). Attachment in the early life course: Meta-analytic evidence for its role in socioemotional development. *Child Development Perspectives*, 11(1), 70-76.

Hazzard, V. M., Bauer, K. W., Mukherjee, B., Miller, A. L., & Sonnevile, K. R. (2019). Associations between childhood maltreatment latent classes and eating disorder symptoms in a nationally representative sample of young adults in the United States. *Child Abuse & Neglect*, 98.

Halvgaard, K. (2015). Single case study: does EMDR psychotherapy work on emotional eating?. *Journal of EMDR Practice and Research*, 9(4), 188-197.

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, 10(2), 227-237.

Italian Ministry of Health official website, www.salute.gov.it

Kenny, T. E., Carter, J. C., & Safer, D. L. (2019). Dialectical behavior therapy guided self-help for binge eating disorder. *Eating Disorders: Journal of Treatment and Prevention*.

Koeze, E., & Popper, N. (2020, April 7). The virus changed the way we internet. <https://www.nytimes.com/interactive/2020/04/07/technology/coronavirus-internetuse.html>

Linville, D., Brown, T., Sturm, K., & McDougal, T. (2012). Eating disorders and social support: Perspectives of recovered individuals. *Eating Disorders*, 20(3), 216-231.

Lock, J. D., Darcy, A. M., Fitzpatrick, K. K., Vierhile, M., & Sadeh-Sharvit, S. (2017). Parental guided self-help family based treatment for adolescents with with anorexia nervosa: A feasibility study. *International Journal of Eating Disorders*, 50(9), 1104-1108.

Loopstra, R. (2020). Vulnerability to food insecurity since the COVID-19 lockdown. https://foodfoundation.org.uk/wp-content/uploads/2020/04/Report_COVID19FoodInsecurity-final.pdf

- Mihashi, M., Otsubo, Y., Yinjuan, X., Nagatomi, K., Hoshiko, M., & Tatsuya, I. (2009). Predictive factors of psychological disorder develop during recovery following SARS outbreak. *Health Psychology, 28*(1), 91-100.
- Münch, A.L., Hunger, C., Schweitzer, J. (2016) An investigation of the mediating role of personality and family functioning in the association between attachment styles and eating disorder status. *BMC Psychology, 4*:36.
- Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., Steele, H. (2013). Adverse Childhood Experiences (ACEs) Questionnaire and Adult Attachment Interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect, 38*(2), 224–233.
- Pike, K. M., Wifley, D., Hilbert, A., Fairburn, C. G., Dohm, F. A., & Striegel-Moore, R. H. (2006). Antecedent life events of binge-eating disorder. *Psychiatry Research, 142*(1), 19- 29.
- Racine, S. E., & Wildes, J. E. (2015). Emotion dysregulation and anorexia nervosa: an exploration of the role of childhood abuse. *International Journal of Eating Disorders, 48*(1), 55-58.
- Reger, M. A., Stanley, I. H., & Joiner, T. E. (2020). Suicide mortality and coronavirus disease 2019—a perfect storm?. *JAMA psychiatry.*
- Sabik, N. J., Falat, J., & Magagnos, J. (2020). When self-worth depends on social media feedback: Associations with psychological well-being. *Sex Roles, 82*(7-8), 411-421.
- Silverman W.K., Goedhart A.W., Barrett P., Turner C. (2003). The facets of anxiety sensitivity represented in the Childhood Anxiety Sensitivity Index: Confirmatory analyses of factor models from past studies. *Journal of Abnormal Psychology 112, 3, 364-374.*
- Slater, A., Cole, N., & Fardouly, J. (2019). The effect of exposure to parodies of thin-ideal images on young women’s body image and mood. *Body Image, 29, 82-89.*
- Smajić, V. A., & de la Fosse, C. (2019). EMDR treatment for anorexia nervosa triggered by early traumatic experiences. *Psychotherapy in Achieving Health and Well-being for Children and Young People, 2*(2), 65-76.
- Smits, J. A., Otto, M. W., Powers, M. B., & Baird, S. O. (2019). Anxiety sensitivity as a transdiagnostic treatment target. In *The Clinician's Guide to Anxiety Sensitivity Treatment and Assessment* (pp. 1-8). Academic Press.
- Spence, J., Titov, N., Johnston, L., Dear, B. F., Wootton, B., Terides, M., & Zou, J. (2013). Internet-delivered eye movement desensitization and reprocessing (iEMDR): an open trial. *F1000Research, 2.*

- Taylor, C. B., Sadeh-Sharvit, S., Fitzsimmons-Craft, E. E., Topooco, N., Rojas-Ashe, E., & Wilfley, D. E. (in press). Utilization of Technologies to Support Patients with Eating Disorders. In G. M. Reger (ed.) *Technology and Mental Health: A Clinician's Guide to Improving Outcomes*. Routledge Press.
- Tasca, G. A. (2019). Attachment and eating disorders: a research update. *Current opinion in psychology*, 25, 59-64.
- Touyz, S., Lacey, H., & Hay, P. (2020). Eating disorders in the time of COVID-19. *Journal of Eating Disorders* (2020) 8:19.
- Trottier, K., & MacDonald, D. E. (2017). Update on psychological trauma, other severe adverse experiences and eating disorders: state of the research and future research directions. *Current Psychiatry Reports*, 19, 45.
- U.S. Department of Health and Human Services. (2008). Physical activity guidelines for Americans. President's Council on Physical Fitness & Sports Research Digest, 9(4), 1–8.
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*, 17(5), 1729.
- Zaccagnino, M. (2017). *Nuove prospettive nella cura dei disturbi alimentari: Il ruolo dell'attaccamento nel lavoro clinico con EMDR*. FrancoAngeli.
- Zaccagnino, M., Cussino, M., Callerame, C., Civilotti, C., & Fernandez, I. (2017). Anorexia nervosa and EMDR: A clinical case. *Journal of EMDR Practice and Research*, 11(1), 43-53.
- Zerwas, S. C., Watson, H. J., Hofmeier, S. M., Levine, M. D., Hamer, R. M., Crosby, R. D., Runfola, C. D, ... & Bulik, C. M. (2017). CBT4BN: A randomized controlled trial of online chat and face-to-face group therapy for bulimia nervosa. *Psychotherapy and Psychosomatics*, 86, 47-53.