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Covid-19 outbreak: A challenge calling for early intervention on contamination obsessive fears?

Donatella Marazziti[1,2,3], Federico Mucci[4], Armando Piccinni[2,3], Davide Dèttore[5], Andrea Pozza[6]

[1] Dipartimento di Medicina Clinica e Sperimentale, Section of Psychiatry, University of Pisa
[2] Unicamillus University, Rome
[3] Brain Research Foundation, Lucca
[4] Department of Biotechnology, Chemistry and Pharmacy, University of Siena
[5] Department of Health Sciences, University of Florence
[6] Department of Medical Sciences, Surgery and Neurosciences, University of Siena

andrea.pozza@unisi.it

ABSTRACT. L'emergenza COVID-19 è una fase estremamente delicata per i sistemi sanitari pubblici, che ha imposto ai singoli l'adozione di rigide restrizioni sui loro spostamenti e attività, cambiamenti nelle abitudini igieniche e norme di distanziamento sociale, essenziali a limitare o ritardare la progressione del virus. L'intervento precoce sull'insorgere di paure ossessive di contaminazione clinicamente rilevanti, uno dei sintomi più caratteristici del disturbo ossessivo-compulsivo (DOC), in un periodo critico quale quello attuale, è un tema di prioritaria importanza nel dibattito sulle conseguenze psicologiche della pandemia nella popolazione mondiale. La diagnosi e la presa in carico dei pazienti con DOC da parte di specialisti della salute mentale avvengono generalmente con un ritardo di numerosi anni. Una prolungata latenza nel trattamento di questa condizione si associa a sua volta a una peggior prognosi, una maggiore resistenza terapeutica e un quadro clinico più grave, nonché più elevati costi socio-sanitari. La ricerca scientifica sui fattori di vulnerabilità e sui meccanismi protettivi coinvolti nello sviluppo del disturbo è ancora agli albori, l'inizio di un percorso essenziale a implementare strategie di intervento precoce *evidence-based*, soprattutto nell'attuale emergenza COVID-19.

SUMMARY. The present Covid-19 outbreak is an international public health emergency that has imposed to people strict mobility/activity restrictions and changes in the hygiene habits, essential to limit/delay virus diffusion. Early identification of and intervention on contamination obsessive fear, a core symptom of obsessive-compulsive disorder (OCD), are always of paramount importance, and in critical periods, such as the present one, should be imperative. OCD is generally associated with a delay in the correct diagnosis and first professional management of several years after symptom onset. A longer duration of untreated illness is in turn associated with a worst prognosis, higher treatment resistance and other clinical complications, as well as increased societal costs. It seems to be crucial to promote research efforts devoted to the early identification of subgroups at risk of developing clinically relevant contamination symptoms, to understand more deeply the vulnerability and protective mechanisms involved in this pathophysiological process in order to plan evidence-based early intervention strategies.

Keywords: *Covid-19, Pandemic, Obsessive-compulsive disorder, Contamination fear, Obsessive beliefs, Early intervention*

BACKGROUND

The World Health Organization (WHO) on March 11 2020 defined Covid-19 outbreak as a pandemic, a public health emergency of great international concern that all countries should soon strive to contain its rapid progression (WHO, 2020). As a result, several governments introduced a series of countermeasures to limit or at least to slow down the virus spread including more rigorous hygiene habits, more or less severe moving and activities restrictions, and quarantine.

With no doubt, this dramatic social change represented and still represents a highly stressful life event with a negative impact on daily habits and healthy behaviours: therefore, it potentially may favour the onset of symptoms in individuals with a pre-existing vulnerability for psychopathology, or sharpening distress in clinical groups who already suffer from a psychopathological disorder, but even in healthy subjects in peculiar periods of their life. This is particularly relevant for the onset of or exacerbation of clinically meaningful contamination fears and the related impairing safety behaviours (i.e., washing/checking, avoidance, reassurance seeking by doctors/Internet) in individuals with obsessive-compulsive (OC) tendencies, or with a full diagnosis of obsessive-compulsive disorder (OCD). All these negative effects may be also amplified by distorted, ambiguous or simply inaccurate information provided by the media on the risk of contamination (Brooks et al., 2020).

Contamination fear is considered one of the core symptoms of OCD (McKay & Carp, 2017). Its epidemiology is quite heterogeneous across the studies and some evidence, although controversial, would suggest that it represents the most frequent symptom subtype of OCD, affecting around 25-60% of patients (Karadağ, Oguzhanoglu, Özdel, Ateşci & Amuk, 2006; Li, Marques, Hinton, Wang & Xiao, 2009; Mahgoub & Abdel-Hafiez, 1991; Markarian et al., 2010; Ruscio, Stein, Chiu & Kessler, 2010). Such heterogeneity may be attributed to a number of methodological differences in the assessment instruments, samples' recruitment strategies, and cultural contexts (McKay & Carp, 2017). Cultural differences in the epidemiology of contamination fears are not still well-established due to the lack of evidence on non-Western cultures and ethnic minorities (Bloch, Landeros Weisenberger, Rosário, Pittenge & Leckman, 2008), despite the research effort on this topic is increasing during the last years (Williams, Chapman, Simms & Tellawi, 2017). Interestingly, African Americans with OCD have been found to report more contamination symptoms than European Americans with OCD (Williams, Elstein, Buckner, Abelson & Himle, 2012).

The early identification of contamination fears is always of paramount importance, but in critical periods, such as the present one, should be imperative. OCD is generally associated with a delay in the correct diagnosis and first professional management of around 9-10 years after symptom onset (Dell'Osso, Camuri, Benatti, Buoli & Altamura, 2013). A longer duration of untreated illness is in turn associated with a worst prognosis, higher treatment resistance and other clinical complications, as well as increased societal costs (Fineberg et al., 2019).

Recently, an umbrella review on risk and protective factors of OCD led to the conclusion that, despite the quite large amount of data including prospective designs, there is no solid evidence that certain factors can predispose to or protect from the development of OCD (Fullana et al., 2019)

In light of all these considerations, it seems to be crucial to promote research efforts devoted to the early identification of subgroups at risk of developing clinically relevant contamination symptoms, to understand more deeply the vulnerability and protective mechanisms involved in this etiopathogenetic process in order to plan evidence-based early interventions strategies.

SUBGROUPS AT RISK FOR CONTAMINATION OBSESSIVE FEARS AT COVID-19 TIME

Different subgroups may be considered at higher risk for contamination-based OC symptoms during the current Covid-19 emergency and should be carefully monitored on OCD-related outcomes.

The offspring of first-degree relatives with OCD diagnosis and contamination symptoms should be regarded as a vulnerable group due to the potential genetic vulnerability and the possible effects of vicarious exposure to probands' beliefs/behaviours, distress and emotional regulation difficulties (Chacon et al., 2018; Rector, Cassin, Richter & Burroughs, 2009).

During quarantine, a heightened use of social media can also increase the risk to be exposed to biased information about the Covid-19, therefore, to a more frequent trend to use these media to seek compulsively reassurance against fears.

Moreover, those OCD patients who are in remission/recovery after a successful treatment should be periodically monitored with respect to their risk of relapse, as several procedures due to quarantine and strict hygiene measures can increase their risk for relapse. Indeed, some reasoning errors specific to OCD vulnerability may develop during this period, such as the so-called *ex consequentia* reasoning ("I am washing my hands, therefore there must be dirt") (Dèttore & O'Connor, 2013). As previously reported (Tibi et al., 2017), depressive symptoms emerging during the quarantine due to the strong reduction of positive reinforces, can in turn represent vulnerability/maintenance factors or consequences of OC symptoms. The effects of quarantine on the recrudescence of OC symptoms may be also exerted through increased family accommodation, heightened parental control, more intense exposure to relatives' depression/anxiety or marital distress (Berman et al., 2018; Wu et al., 2016).

The exacerbation of OC symptoms in patients with a full OCD diagnosis should be carefully assessed during Covid-19 outbreak with respect to the risk of developing other psychopathological conditions. Indeed, it has been reported that in the long-term, young OCD patients may suffer from psychotic spectrum disorders (Meier et al., 2014).

Elderly people represent another subgroup that should be strictly assessed for late-onset contamination fears (Haines et al., 2020), as epidemiological and clinical data showed that elderly women and those individuals with lower cognitive functioning are at a higher risk for these symptoms (Dell'Osso et al., 2017; Prouvost, Calamari & Woodard, 2016). Even women during all pregnancy phases should be monitored for psychological wellbeing and distress regarding excessive contamination fears during Covid-19 time, since basically they are at greater risk for OCD, as compared with the general female population, with an aggregate risk ratio of 1.79 (Fawcett et al., 2013). Generally, during pregnancy, contamination fears and even intrusive thoughts and images of intentional harm to infants may be frequent (Collardeau et al., 2019; Lawrence, Craske, Kempton, Stewart & Stein, 2017), however they may become excessive, distressing and really "pathological" when elicited by a pandemic.

We consider healthcare professionals another high-risk subgroup for excessive contamination fears, because they are constantly exposed to contamination risk, frequent contacts with infected people, and they have to cope with the traumatic effects of the Covid-19 outbreak (i.e., loss of sick patients and colleagues, working in emergency situation with inappropriate safety equipment). This subgroup may also suffer from a high sense of responsibility regarding contaminating their relatives, a potential risk factor for OCD development.

For all the above-mentioned subgroups, early signs of OC symptoms should be early identified to implement timely and even early intervention strategies. Some authors (Fontenelle & Yücel, 2019) proposed a staging model of OCD where ultra-high risk is based upon sub-threshold symptoms (i.e., a total Yale-Brown Obsessive Compulsive Scale score, Y-BOCS; Goodman et al., 1989), the gold standard scale to assess symptom severity, in the 1-13 range, coupled with the presence of a positive family history of OCD or tics. In any case, a key ingredient to develop early approaches is the knowledge of early predictors of OC symptoms in community people (Brakoulias, Perkes & Tsalamanios, 2017).

According to cognitive models, meta-analytical evidence and prospective studies in adults, children/adolescents and pregnant women, obsessive beliefs including perfectionism/intolerance of uncertainty, inflated sense of responsibility, threat overestimation, importance/control of thoughts may act as specific risk and maintenance factors of OC symptoms (Abramowitz, Khandker, Nelson, Deacon & Rygwall, 2006; Mantz & Abbott, 2017; Pozza & Dèttore, 2014; Salkovskis, 1985). Research on the specificity of such beliefs for contamination symptoms has not produced consistent evidence, yet. It may be hypothesized that some of them, i.e. threat overestimation, intolerance of uncertainty and inflated sense of responsibility for causing/not preventing Covid-19 contagion, might even play a stronger role in the current dramatic emergency.

The assessment of the risk for pathological contamination symptoms should also take into account the distinction between harm avoidance processes and disgust avoidance (Melli, Chiorri, Carraresi, Stopani & Bulli, 2015). Two disgust-related psychological processes, i.e. disgust propensity and disgust sensitivity, have been found to be specific predictors of contamination-based symptom changes and they should be evaluated in early screening programs conducted on community individuals (Olatunji, 2010).

Other cognitive constructs (e.g., anxiety sensitivity, not just-right experience, inferential confusion and propensity to deontological guilt) (Coles & Ravid, 2016; Ottaviani, Collazzoni, D'Olimpio, Moretta & Mancini, 2019; Wheaton, Mahaffey, Timpano, Berman & Abramowitz, 2012), or some

family processes, such as the tendency to rely on proxy to access internal states or expressed emotion (Zhang et al., 2017), already related to increased risk for OCD, should also be considered.

Finally, the potential change in the sleep cycle pattern and the consequent sleep disturbances represent another mechanism that might increase the risk for the emergence or exacerbation of OC symptomatology is. Some studies showed that eveningness and sleep disturbances might mediate and even prospectively predict the worsening of symptoms in patients with OCD independently from the presence or absence of depressive symptoms (Cox, Tuck & Olatunji, 2018; Paterson, Reynolds, Ferguson & Dawson, 2013).

All these vulnerability/maintenance factors involved in the pathway towards the onset of contamination fears should be comprehensively assessed through longitudinal designs in large community samples with the aim of early identifying at-risk subgroups.

BEYOND SYMPTOMS: LOOKING FOR PROTECTIVE FACTORS

While the above-mentioned vulnerability/maintenance factors may be assessed and monitored through screening programs in vulnerable groups, protective factors should also be taken into account. Some factors may be expected to reduce the progression of contamination symptoms, such as a strong awareness of OCD-related vicious cycles and its early warning signs in vulnerable individuals, patients and their relatives.

As shown by some meta-analyses, social support and marital adjustment seem to represent a sort of protective factors against the onset/exacerbation of OC symptoms during quarantine (Palardy, El-Baalbaki, Fredette, Rizkallah & Guay, 2018). Other evidence showed that personality factors including emotional stability, resilience and coping strategies act as protective dimensions, particularly among adolescents (Hjemdal, Vogel, Solem, Hagen & Stiles, 2011; Moritz et al., 2018; Stavropoulos, Moore, Lazaratou, Dikeos & Gomez, 2017). Other individual characteristics may be considered as resources such as mindfulness skills, self-compassion and personal values (e.g., Leeuwerik, Cavanagh & Strauss, 2020). Similarly, other health-related variables may show a positive impact on dysfunctional contamination fears, such as healthy behaviours including daily walking and exercise (although currently limited by several governments), correct eating habits, lack or reduction of cigarette smoking or substance abuse (Abramovitch, Pizzagalli, Geller, Reuman & Wilhelm, 2015). All these healthy habits may produce a beneficial effect also on demoralization or depressive symptoms closely dependent on OC symptoms (Buchholz et al., 2019). For ethnic minorities some social positive factors may be important during this period such as positive ethnic identity and being part of a religious community (Williams & Jahn, 2017).

Finally, for all vulnerable subgroups and patients with OCD, the use of digital technologies and social media should also be considered as a way to maintain or strengthen social networks and the possibility to do one's job by flexible forms of work organization such as smart working, may have beneficial effects on self-esteem and mood.

EARLY INTERVENTION OPTIONS

Some early intervention strategies may be helpful during the Covid-19 outbreak when contacts with clinicians are expected to be less frequent or even impossible. During this time window where mental health services and clinicians are less available, untreated symptoms might get worse. Several well-conducted meta-analyses demonstrated that cognitive behavioural therapy (CBT) delivered through health technologies, i.e. telephone, web-cameras and smartphone apps, may produce great benefits on a variety of OCD-related outcomes including intrusive thoughts, compulsive behaviours, symptom awareness, obsessive beliefs, quality of life and depressive features (Dèttore, Pozza & Andersson, 2015; Wootton, 2016). This modality of delivering CBT is cost-effective and has the advantage of reaching a large number of people; it may be particularly helpful as early intervention strategy for individuals with sub-threshold symptoms and those vulnerable to OCD onset. Health technology-based CBT may promote psychoeducation that can increase the awareness of the individual on the cognitive-behavioural vicious cycles of OCD in order to prevent catastrophic meta-worry capable to worsen symptoms (Besharat, Atari & Mirjalili, 2019).

Internet-based therapies for OCD should include information on how to perform evidence-based exposure and response prevention and cognitive interventions. The importance of exposure and response prevention during the

quarantine may be related also to its antidepressant effects, since it can function as a behavioural activating process (Blakey, Abramowitz, Leonard & Riemann, 2019).

Additional approaches have been proven to be effective and are particularly suitable for e-learning modalities such as mindfulness-based interventions or acceptance and commitment therapies (Jalal et al., 2018; Kulz et al., 2019). Such third-generation approaches might produce positive changes on some mechanisms involved in the maintenance of symptoms in clinical and subclinical groups, such as attentional biases and experiential avoidance (Haberkamp, Schmidt, Hansmeier & Glombiewski, 2019).

Other pure self-help resources including self-help books, Internet websites and other online reading materials may be helpful for some patients or other individuals reporting clinically relevant contamination fears (Pearcy, Anderson, Egan & Rees, 2016). Self-help chats guided by expert patients might be another future direction for therapy, particularly due to the reduction in the economic resources of the patients.

Novel therapeutic scenarios can include a greater involvement of family members in the therapeutic pathway of patients, since the quarantine imposes to people a more frequent and closer contact with their relatives. Therefore, a reflection is necessary on the involvement family members living with the patient in the therapeutic process, for both young and adult patients (Baruah et al., 2018; Belus, Baucom & Abramowitz, 2014; Rosa-Alcázar et al., 2019), as it should be evaluated in individual cases.

However, while all these approaches may have the strength of being a good option for those individuals suffering from social stigma, they can have the disadvantage of selecting the patients since those who have a weaker motivation to change may be reluctant to initiate such programs or may be more likely to drop out (Monaghan et al., 2015).

The ERP is a time-consuming technique demanding a high effort from the patient. Therapeutic alliance and some techniques, such as motivational interview conducted by a therapist, might be key ingredients in the motivational process that precedes engagement in exposure (Simpson & Zuckoff, 2011; Vogel, Hansen, Stiles & Götestam, 2006). Evidence about the role of therapists' variables on dropout risk is, however, inconclusive (Ong, Clyde, Bluett, Levin & Twohig, 2016). In addition, since quarantine does not permit exposure practice outside home, therapists should consider the use of imaginal exposure to a greater extent than before when in-office or real-life exposures were possible (Maloney, Koh, Roberts & Pittenger, 2019). The use of interoceptive exposure might add some therapeutic benefits in terms of helping the patients to manage more effectively arousal-related signs and catastrophic beliefs (Blakey & Abramowitz, 2018).

Early intervention at the coronavirus time should also consider the risk that individuals experience traumatic feelings due to loss of loved ones, hospitalization, Covid-19 symptoms or terrific social media representations of the illness (Depoux et al., 2020). Therefore, trauma-focused interventions including Eyes Movement Desensitization Reprocessing may provide a positive contribution to the management of post-traumatic symptoms (Marsden, Lovell, Blore, Ali & Delgadillo, 2018).

PARADOXICAL EFFECTS OF COVID-19 OUTBREAK ON CONTAMINATION FEARS IN PATIENTS WITH OCD

While Covid-19 outbreak can be expected to represent a triggering factor towards developing OCD in some subgroups, this dramatic emergency could elicit some relatively useful effects amongst other subgroups. It is well established that perceived social stigma, shame and fear of negative evaluation might contribute to worsen OC symptomatology in chronic patients (Durna et al., 2019). Paradoxically, Covid-19 pandemic and the related avoidance and strict hygiene habits might hypothetically normalize the subjective experience of patients with chronic OCD and might be even useful to reduce social stigma among patients with a diagnosis of chronic OCD. This appears to be a quite likely epiphenomenon of the emergency, since almost everybody now adopts frequent and almost ritualistic hand washing, social distancing or other hygiene measures.

It may be expected that the restrictive measures imposed by the pandemic to patients' daily life might shift their attention from rituals to new values, such as awareness of the present moment or the importance of freedom. Several studies suggest that some individuals may experience positive psychological changes following exposure to trauma (Sherr et al., 2011). Therefore, the highly challenging life circumstances produced by Covid-19 outbreak might paradoxically be associated with positive psychological changes, and promote

a kind of post-traumatic growth, including perceptions of personal strength, intimate relationships, appreciation of life, new possibilities, and spirituality (Tedeschi & Calhoun, 2004). In addition, the drastic changes in people's lives might reduce the expectations of family members towards symptom changes in their relatives with OCD, thereby reducing unrelenting standards//excessive criticism which often maintain the disorder in these patients (Kim, Lee & Lee, 2014).

The Covid-19 outbreak should, thus, be regarded as a challenge to understand the onset and the progression of contamination fears. Longitudinal research should ascertain psychological factors potentially involved in the development of such fears in community people without OCD, in those with a latent vulnerability towards its development and in clinical populations.

CONCLUDING REMARKS

Covid-19 outbreak represents a severely stressful life event with a potential impact on people with vulnerability to OCD, in those patients with sub-threshold OC symptoms, or in those who achieved recovery after a successful treatment. Severe mobility and activity restrictions, and changes in the hygiene habits are essential to limit Covid-19 diffusion and delay its progression. However, the occurrence of dysfunctional, clinically relevant contamination fears may be the downside highlighting the importance of a more comprehensive knowledge on the vulnerability pathways towards the onset of pathological contamination fears in order to inform policy making and risk communication on one hand, early identification, intervention and possibly prevention on the other one.

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