



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



ORIGINAL ARTICLE

# Psychological defence mechanisms during the COVID-19 pandemic: A case series



G. Walker<sup>a,b,\*</sup>, T. McCabe<sup>a,c</sup>

<sup>a</sup> University of Glasgow, Glasgow, United Kingdom

<sup>b</sup> Victorian Institute of Forensic Mental Health, Melbourne, Australia

<sup>c</sup> NHS Greater Glasgow and Clyde, Glasgow, United Kingdom

Received 12 July 2020; accepted 26 October 2020

Available online 7 November 2020

## KEYWORDS

COVID-19;  
Defence mechanisms;  
Psychoanalytic;  
Stress;  
Emotions

## Abstract

**Background and objectives:** COVID-19 has had a negative effect on mental health across the world's population. Healthcare workers in particular have experienced increased levels of psychological distress, depression and anxiety. Any perceived stress to an individual can provoke psychological defence mechanisms. Using psychoanalytic theory, a defence mechanism is described as an unconscious psychological strategy, with or without resulting behaviour, which aims to reduce or eliminate anxiety arising from unacceptable or potentially harmful stimuli. This paper aims to describe a range of psychological defence mechanisms encountered within colleagues in relation to the COVID-19 pandemic.

**Methods:** Using the methodology of a case series, specific defence mechanisms are explored with reference to further literature in the field.

**Results:** The author has encountered varying psychological defence mechanisms, both within himself and in other members of the multidisciplinary team. These have been illustrated in the attached clinical vignettes, relating to the specific psychological coping mechanisms of; denial, hypochondriasis, altruism, sublimation and humour.

**Conclusion:** We encourage acknowledgement of psychological defence mechanisms and their implications on day to day practice. Whilst defence mechanisms can have a number of negative consequences as described in this article, they also have an important role, particularly in the case of mature defence mechanisms, as protective factors against psychological distress and symptom formation. Deeper understanding of the gold-standard hierarchical organisation of defence mechanisms could help increase utilisation of specific therapeutic interventions for enhancing changes from immature to mature defensive responses to stressful experiences as the COVID-19 pandemic progresses.

© 2020 Asociación Universitaria de Zaragoza para el Progreso de la Psiquiatría y la Salud Mental. Published by Elsevier España, S.L.U. All rights reserved.

\* Corresponding author.

E-mail address: [graham.walker@forensicare.vic.gov.au](mailto:graham.walker@forensicare.vic.gov.au) (G. Walker).

## Introduction

On the 11th of March 2020, The World Health Organisation declared that the coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was at a pandemic level across the world. This has been an unusual time, in that most of the world population has been affected by an outbreak of disease simultaneously.

Social distancing has been one of the primary mitigation strategies used across the World to control the spread of COVID-19. Twitter analysis (an American based microblogging and social networking service) has shown that posts related to implementation and negative emotions around social distancing largely dominated their media platform, in combination with topics of social disruption and adaptation.<sup>1</sup> Analysis of Weibo posts (a Chinese based microblogging website) suggested that negative emotions (for example anxiety, depression and indignation) and sensitivity to social risks increased, while the scores of positive emotions (for example Oxford happiness) and life satisfaction decreased. Those affected were concerned more about their health and family, while less about leisure and friends.<sup>2</sup>

More specifically to healthcare workers, a recent observational cross-sectional study was conducted amongst anaesthesiologists and nursing staff at a tertiary academic medical centre in Singapore. Appropriate screening tools identified psychological distress in 37.4% of participants. At least moderate anxiety was identified in 30.7% and depression in 30.0% of study participants. Psychological distress was significantly associated with the presence of multiple co-morbidities in staff, direct involvement in COVID-19 patient care, receiving a quarantine order, and redeployment outside normal professional boundaries. Perceived risks of infection (83.6%) and infecting family members (78.0%) were the top two concerns identified.<sup>3</sup>

Further studies have shown similar negative impacts on the mental health of healthcare workers.<sup>4,5</sup> Both the individual and wider working team, can experience psychological stress and react to that perceived threat in different ways from one another, depending on a variety of factors including psychological reserve and supervision support.

Any perceived stress to an individual can provoke psychological defence mechanisms. Using psychoanalytic theory, a defence mechanism is described as an unconscious psychological strategy, with or without resulting behaviour, which aims to reduce or eliminate anxiety arising from unacceptable or potentially harmful stimuli.<sup>6</sup> In life, these can result in healthy or unhealthy consequences depending on the circumstances and frequency with which the mechanism is used. The construct of defence mechanisms initiated in the psychoanalytic field, but in recent years has been used increasingly in various psychological and psychiatric approaches. They are defined in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, 5th Edition as 'Mechanisms that mediate the individual's reaction to emotional conflict and external stressors'.<sup>7</sup> This would support the argument that defence mechanisms are not only a psychoanalytic concept.

A defence mechanism can become pathological when its persistent use leads to maladaptive behaviour, resulting in

an adverse effect on an individual's social functioning, physical or mental health. Defence mechanisms protect the mind, self and/or ego from perceived negative consequences, and provide protection from a situation with which one cannot currently cope.<sup>6</sup>

Vaillant proposed that response to stress can be viewed from two vantage points – pathological or coping.<sup>6</sup> Pathological responses to stress include impairment of brain function via chemical or structural changes, possibly leading to diagnosable conditions such as post-traumatic stress disorder. Coping responses to stress can be more within control of the experiencing individual, being divided into three broad categories. These are voluntarily eliciting help from appropriate others (e.g. by seeking social support), voluntary strategizing (e.g. by gathering information, anticipating danger, and rehearsing responses to danger) and/or involuntary defences (similar to fever and leucocytosis in physical health) which involve unconscious homeostatic mechanisms that reduce the disorganizing effects of sudden stress.<sup>6</sup>

Vaillant discusses the properties of involuntary defences.<sup>6</sup> They are generally not conscious; with the exception of some mature responses as described below. They reduce distressing effects of both emotional and cognitive dissonance and can be defined discreetly from one another, in four different categories. **Psychotic defences** allow the individual to reconstruct external experiences and eliminate the need to cope with reality. **Immature defences** lessen distress and anxiety produced by a perceived threat or an uncomfortable reality. **Neurotic defences** allow an individual to avoid feelings of guilt and anxiety, particularly in relation to aggressive tendencies and sexual desires. This can facilitate short-term advantages in coping with stress, but longer term implementation can lead to issues within both intimate and more formal relationships. **Mature defences** are more conscious processes which enhance pleasure and feelings of control.<sup>6</sup> These defences are proposed to be dynamic and reversible. They are not necessarily negative to an individual, and can be adaptive or creative, but can also be harmful and pathological. To the unaware individual, defences can be unnoticeable, but to the observer they can appear odd or even irritating.<sup>6</sup>

Following on from Vaillant's seminal findings, Perry developed a 7-level hierarchical organisation of defence mechanisms known as the Defence Mechanisms Rating Scales.<sup>8</sup> This was inspired by Vaillant's work but used empirical validation and benefited from research perspective and consensus for definitions, functions and examples of specific defences and thus is considered the gold standard theory for the assessment of defence mechanisms.<sup>9</sup>

It has been proposed that defence mechanisms associated with the COVID-19 pandemic could be more typically immature, in that anxiety over the viral outbreak can be temporarily alleviated by alteration of painful mental contents and/or radical distortion of external reality.<sup>10</sup> Anxiety can reduce levels of work and functioning, and much of the population have stopped working in their regular jobs, therefore going back to a more immature level of existence. The extent of psychological symptoms presenting in individuals seem to be proportionally related to the extent of employed defence mechanisms.<sup>11</sup> Psychological health is closely related to the ability to appropriately use a variety of defences in challenging contexts, and excessive use of

immature defences is a risk factor for the development of psychopathology.<sup>12,13</sup>

Despite these described negative impacts of defence mechanisms, they have also played an important role as protective factors against psychological distress during the COVID-19 pandemic. Utilisation of defence mechanisms can promote mental resilience. Higher overall defensive functioning was associated with lower levels of depression and post-traumatic stress symptoms in an Italian cohort.<sup>14</sup>

As a psychiatry trainee, I was involved in co-ordinating the 'on-call' rota for a large teaching hospital in Scotland. I worked together with members of staff across the multi-disciplinary team, including senior and junior medical staff, nursing staff, and administration support staff. It has been a challenging time, with staff being redeployed to roles and departments they may not be routinely familiar with. This has included staff being redeployed to roles where they have to deal with acute medical issues, something that a number of staff members may not encounter on a consistent basis for a number of years. Further challenges have presented by way of staff having to change their on call hours at short notice and an anecdotal higher rate of staff sickness and isolation – disrupting regular routines and requiring flexibility. This has caused both concerns for colleague's physical health, and also increased working hours for those having to cover for those colleagues.

## Objectives

Using the methodology of a case series, this paper aims to describe a range of psychological defence mechanisms encountered within colleagues in relation to the COVID-19 pandemic. These defence mechanisms are then explored within the discussion section of the paper.

## Methods

The author has encountered varying psychological defence mechanisms, both within himself and in other members of the multidisciplinary team. These have been illustrated in the attached clinical vignettes, which have been modified slightly to protect anonymity. Case series are uncontrolled study designs which have an increased risk of bias. Despite this, they have an important influence on the medical literature, and can form the foundations for more in depth, focused studies.<sup>15</sup> These clinical vignettes were recalled several weeks after the author had witnessed the events of them. A number of events were not directly witnessed by the author, nor were focused interviews or further qualitative research carried following these encounters. The clinical vignettes are given more to illustrate examples and promote further thinking in the reader of similar encounters they may have within their own practice. It is acknowledged that the description of the cases may be influenced by the authors internal bias and own interpretation of events.

## Results

Clinical vignettes:

- (1) **Denial** – As the frequency of news reports on the virus spreading across the world from Wuhan, China increased, a consultant psychiatrist did not want to accept the reality of this. The reality of the situation was too threatening and anxiety provoking. Therefore it was easier from a cognitive perspective to deny the virus being a real threat. This caused the consultant to speak out to fellow staff about precautions being unnecessary. This caused frustration and upset, amongst other members of the team, who could not understand why their colleagues were not taking this threat as seriously when starting to implement precautionary action.
- (2) **Hypochondriasis** – A psychiatry trainee started to think more and more about the impact of catching 'the virus'. They had a had a diagnosis of asthma and several elderly family members in residential care. They recurrently asked their peers about how to minimise the risk of catching the virus, and checked up on daily guidelines multiple times a day. Despite peers offering advice and support, the psychiatry trainee did not accept this advice. It was perceived by the trainee that their colleagues were not being affected as much by COVID-19 as the trainee themselves, and therefore their advice was deemed not good enough. The trainee did not follow advice given to them by colleagues, despite repeatedly asking for this. Eventually, the stress levels became too high for the trainee to cope and they signed themselves off work with stress.
- (3) **Altruism** – A psychiatry trainee took it on themselves to take on multiple extra shifts to cover for colleagues who were self-isolating. His planned holiday to Europe had been cancelled so he had time to allocate to work and did not over-exert himself. He gained satisfaction knowing that he was able to help out others by working during the outbreak and combatting the virus.
- (4) **Sublimation** – A psychiatry trainee felt irritated at the fact that he had to go into work to do excessive hours whilst his partner has been placed on furlough and was getting paid to sit at home and play computer games. Instead of letting this bring his spirit down however, he volunteered to create the new rota for trainees during COVID-19 to cover for staff shortages. This converted some of his negative energy into more positive thoughts as he felt he was making a difference to others.
- (5) **Humour** – A member of nursing staff donned full personal protective equipment to demonstrate the current guidelines to other members of staff. She had an unusual appearance, and when walking down the corridor did a dancing motion. Whilst the reasons for wearing this equipment were very serious, some laughter enhanced the mood in what could have been otherwise a very sombre occasion.

## Discussion

When the virus was in its initial stages of spreading in Wuhan, China, there was widespread **denial** of the virus being a threat to life in the Western world. Denial can be defined as a refusal to accept external reality because it is too threatening, which can reduce anxiety. Simultaneously, denial can also involve lack of acceptance of internal reality. It felt eas-

ier for some individuals to refuse to accept the virus was a threat, despite objective evidence to the contrary or indeed ignorance.

There has also been evidence of **hypochondriasis**, in which an individual repetitively voices a complaint or series of complaints, apparently to seek help. Despite this, covert feelings of, hostility or resentment towards a potential help provider are expressed simultaneously by the subject's rejection of the suggestions, advice, or other offerings. The complaints may consist of either somatic concerns or life problems. Despite the individual being offered a potential helpful response from those they are seeking it from, they will reject this.<sup>8</sup>

Many health professionals and their family members have become unwell with COVID-19. This has ranged from minor symptoms that can be managed at home in isolation, to more serious and potentially life threatening symptoms that require hospital admission. Some individuals have perceived symptoms consistent with COVID-19 and therefore have had to take time off work to isolate as per government guidelines. Whilst repeatedly seeking reassurance from colleagues regarding physical health and recovery from the resulting illness, some individuals have harboured resentment towards those who have not fallen ill personally, or do not have vulnerable relatives who are more likely to become seriously ill. Therefore, these individuals may reject advice from those they resent on recovering from COVID-19, not follow guidelines with regard to reducing spread of the virus, or behave in a more hostile manner towards an intended helpful responder. Hypochondriasis is positively correlated with development of depression and anxiety symptoms.<sup>16</sup> Development of features of hypochondriasis has specifically predicted COVID-19 pandemic-related psychopathology in adults.<sup>17</sup>

There has also been evidence of defence mechanisms during the COVID-19 pandemic that have provided more benefit to the local service. Staff members have channelled their energy in **altruism** or **sublimation**, where they have focused their energy on getting involved in stretching their skills and physical resources in face of challenge. This has included getting involved in additional services such as personal protective equipment mask fitting, or working extra on call shifts to cover for colleagues who are off sick. **Humour** has also been implemented during working hours to help mentally deal with the very stressful and challenging environment of day to day work. Altruism, sublimation and humour are examples of high adaptive defences. These defences usually maximise gratification and allow more conscious awareness of feelings, ideas, and their consequences. In a population of cancer patients, implementation of these defences correlated positively with physical and emotional functioning and reduced levels of anxiety and depression.<sup>18</sup>

Defence mechanisms can be penetrated in many ways, including by confrontation and highlighting of them. This is particularly true for psychotic, immature and neurotic defences, where the mechanisms are less conscious. This can be a wide variety of psychological therapy methods, including psychodynamic psychotherapy. Recent research has also shown a role for medication in managing defence mechanisms, in combination with psychotherapy.<sup>19</sup>

## Conclusion

We present a partial range of psychological defence mechanisms associated with the recent pandemic. It is likely that readers will be able to think of other defence mechanisms that they have encountered in their own practice, or within teams they have been involved with. The author has aimed to highlight that whilst these defence mechanisms are discussed in many texts as something to be learned for examinations, it is important to acknowledge their existence and consider their implications on day to day practice.

Whilst defence mechanisms can have a number of negative consequences as described in this article, they also have an important role, particularly in the case of mature defence mechanisms, as protective factors against psychological distress and symptom formation. There is a requirement for deeper knowledge of the gold-standard hierarchical organisation of defence mechanisms, which considers all defences in a continuum that goes from immature to mature defensive strategies.<sup>8,14</sup> This could help increase utilisation of specific therapeutic interventions for enhancing changes from immature to mature defensive responses to stressful experiences as the COVID-19 pandemic progresses.

## Ethical considerations

Ethical approval was not required for this research article and any discussion is fully anonymised.

## Funding

There was no funding for this work.

## Conflict of interest

The authors have no conflict of interest to declare.

## References

1. Kwon J, Grady C, Feliciano JT, Fodeh SJ. Defining facets of social distancing during the covid-19 pandemic: Twitter analysis. medRxiv. 2020.
2. Li S, Wang Y, Xue J, Zhao N, Zhu T. The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. *Int J Environ Res Public Health*. 2020;17:2032.
3. Lee MC, Thampi S, Chan HP, Khoo D, Chin BZ, Foo DP, et al. Psychological distress during the COVID-19 pandemic amongst anaesthesiologists and nurses. *Br J Anaesth*. 2020;125:e384–6.
4. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by healthcare workers during covid-19 pandemic. *BMJ*. 2020;368.
5. Kang L, Li Y, Hu S, Chen M, Yang C, Yang BX, et al. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *Lancet Psychiatry*. 2020;7:e14.
6. Vaillant GE. Involuntary coping mechanisms: a psychodynamic perspective. *Dialogues Clin Neurosci*. 2011;13:366.
7. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub; 2013.

8. Perry JC. Defence mechanism rating scale. Cambridge, MA: Harvard School of Medicine; 1990.
9. Di Giuseppe M, Perry JC, Lucchesi M, Michelini M, Vitiello S, Piantanida A, et al. Preliminary reliability and validity of the DMRS-SR-30, a novel self-report measure based on the defence mechanisms rating scales. *Front Psychiatry*. 2020;11:870.
10. Marčinko D, Jakovljević M, Jakšić N, Bjedov S, Mindoljević Drakulić A. The importance of psychodynamic approach during COVID-19 pandemic. *Psychiatria Danubina*. 2020;32:15–21.
11. Santana MRM, Zatti C, Spader ML, Malgarim BG, Salle E, Piltcher R, et al. Acute stress disorder and defence mechanisms: a study of physical trauma patients admitted to an emergency hospital. *Trends Psychiatry Psychother*. 2017;39:247–56.
12. Bond M, Perry JC. Long-term changes in defence styles with psychodynamic psychotherapy for depressive, anxiety, and personality disorders. *Am J Psychiatry*. 2004;161:1665–71.
13. Zanarini MC, Weingeroff JL, Frankenburg FR. Defence mechanisms associated with borderline personality disorder. *J Personal Disord*. 2009;23:113–21.
14. Di Giuseppe M, Zilcha-Mano S, Prout TA, Perry JC, Orrù G, Conversano C. Psychological impact of COVID-19 among Italians during the first week of lockdown. *Front Psychiatry*. 2020;11:1022.
15. Murad MH, Sultan S, Haffar S, Bazerbachi F. Methodological quality and synthesis of case series and case reports. *BMJ Evid-Based Med*. 2018;23:60–3.
16. Wheaton MG, Abramowitz JS, Berman NC, Fabricant LE, Olatunji BO. Psychological predictors of anxiety in response to the H1N1 (swine flu) pandemic. *Cognit Therapy Res*. 2012;36:210–8.
17. Lee SA, Crunk EA. Fear and psychopathology during the COVID-19 crisis: neuroticism, hypochondriasis, reassurance-seeking, and coronaphobia as fear factors. *OMEGA-J Death Dying*. 2020, p.0030222820949350.
18. Di Giuseppe M, Ciacchini R, Micheloni T, Bertolucci I, Marchi L, Conversano C. Defence mechanisms in cancer patients: a systematic review. *J Psychosom Res*. 2018;115:76–86.
19. Perry JC, Banon E, Bond M. Change in defence mechanisms and depression in a pilot study of antidepressive medications plus 20 sessions of psychotherapy for recurrent major depression. *J Nerv Ment Dis*. 2020;208:261–8.