

**THE RELATIONSHIP BETWEEN PERSONALITY
TRAITS, COPING STYLES AND PSYCHOLOGICAL
DISTRESS AMONG HEALTH CARE WORKERS
INVOLVED IN THE TREATMENT AND CARE OF
COVID-19 PATIENTS IN KELANTAN MALAYSIA**

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LIST OF SYMBOLS, ABBREVIATIONS OR NOMENCLATURES

WHO	World Health Organization
HCW	Health Care Worker
PPE	Personal Protective Equipment
PUI	Person Under Investigation

ABSTRAK

Pengenalan: Petugas kesihatan menghadapi risiko untuk mengalami tekanan psikologi semasa pandemik Covid-19. Justeru itu, kajian kami bertujuan menerokai ciri-ciri sosio-demografik, tret personaliti neurotik, kaedah-kaedah menangani tekanan, dan hubung kait ciri-ciri tersebut dengan tekanan psikologi dalam kalangan petugas kesihatan di negeri Kelantan yang menghadapi pandemik Covid-19.

Kaedah: Satu kajian keratan rentas secara atas talian telah dijalankan antara 1 Julai 2020 sehingga 28 Februari 2021 semasa pandemik Covid-19 dalam kalangan petugas kesihatan di tiga hospital di negeri Kelantan yang ditetapkan sebagai hospital COVID iaitu Hospital Raja Perempuan Zainab II, Kota Bharu, Hospital Sultan Ismail Petra, Kuala Krai dan Hospital Tumpat. Peserta kajian dikehendaki menjawab soalan-soalan data sosiodemografi, Big Five Inventory (N) untuk menilai tret personaliti neurotik, skala COPE Ringkas yang menilai kaedah-kaedah menangani tekanan, dan juga General Health Questionnaire (GHQ-12) yang menilai tahap tekanan psikologi.

Keputusan: Seramai 336 petugas kesihatan terlibat dalam kajian ini. 22.9% daripada peserta kajian didapati mengalami tekanan psikologi. Dalam analisa 'multiple logistic regression', hanya tret personaliti neurotik masih menyumbang secara signifikan kepada tekanan psikologi (Adjusted OR = 1.348, 95% CI = 1.243-1.461), manakala penggunaan kaedah keagamaan sahaja masih menyumbang secara signifikan sebagai faktor pelindung daripada tekanan psikologi (Adjusted OR = 0.581, 95% CI = 0.386-0.876).

Kesimpulan: Petugas kesihatan menghadapi risiko mengalami tekanan psikologi semasa wabak Covid-19. Tret personaliti neurotik merupakan faktor penting yang menyumbang kepada tekanan psikologi manakala penggunaan kaedah keagamaan untuk menangani tekanan merupakan faktor pelindung yang penting dalam kalangan petugas kesihatan semasa menghadapi wabak Covid-19.

Kata Kunci: COVID-19; petugas kesihatan; tekanan psikologi, tret personaliti neurotik, kaedah menangani tekanan.

ABSTRACT

Introduction: Health care workers (HCWs) face a risk of developing psychological distress during the COVID-19 pandemic. Our study examined socio-demographic characteristics, trait neuroticism, and coping styles and their association with psychological distress among HCWs in Kelantan facing the pandemic.

Methodology: We conducted an online cross-sectional survey between 1st July 2020 till 28 February 2021 among HCWs in three designated COVID hospitals in Kelantan, Malaysia, namely Hospital Raja Perempuan Zainab II, Kota Bharu, Hospital Sultan Ismail Petra, Kuala Krai, and Hospital Tumpat. A non-probabilistic purposive sampling method was used. Online questionnaires consisting of sociodemographic data, Big Five Inventory (N) to assess trait neuroticism, Brief COPE scale to assess coping styles and General Health Questionnaire (GHQ-12) to assess psychological distress were distributed to all HCWs.

Results: A total of 336 HCWs were included in the analysis. 22.9% HCWs experienced psychological distress. In multiple logistic regression analysis, only higher trait neuroticism remained significantly positively associated with psychological distress (Adjusted OR = 1.348, 95% CI = 1.243-1.461), while use of religious coping remained significantly negatively associated with psychological distress (Adjusted OR = 0.581, 95% CI = 0.386-0.876).

Conclusion: In conclusion, trait neuroticism and use of religious coping are important predictors of psychological distress among HCWs facing the COVID-19 pandemic.

Keywords: COVID-19; health care workers; psychological distress, neuroticism, personality, coping

CHAPTER 1: INTRODUCTION

1.1. Background of the Study

Coronavirus disease (COVID-19) was first reported in Wuhan, China, in late December 2019 and subsequently spread worldwide. On March 11, 2020, the World Health Organization (WHO) officially declared the COVID-19 as a pandemic (World Health Organization, 2020). As of 30th January 2022, over 370 million confirmed cases and over 5.6 million deaths have been reported globally (World Health Organization, 2022b). With the global coronavirus pandemic entering its third year in 2022, governments worldwide are still struggling with public health countermeasures to cope with increasing cases, surge in hospitalizations and emergence of SARS-CoV-2 variants and subvariants. In Malaysia, the first imported cases were confirmed in 3 Chinese nationals on 25 January 2020. As of 28 May 2022, Malaysia has reported over 4.4 million confirmed COVID-19 cases, and over 35,000 deaths (World Health Organization, 2022a).

A recent systematic review and meta-analysis of 38 studies in 19 countries revealed that about 40% of Health Care Workers (HCWs) experienced anxiety, depression, or distress during the pandemic (Saragih et al., 2021). Other studies have shown that anxiety, depression, stress, sleep problems and somatic symptoms are among the common mental health problems experienced by HCWs during disease outbreaks (Muller et al., 2020; Shaukat et al., 2020). Data reported from some research studies indicate that while HCWs are likely to experience a wide range of stressors, many of them lack appropriate coping strategies (Khalid et al., 2016; Srivastava et al., 2021; Thai et al., 2021). However, there is scarcity of information about the psychological stressors HCWs experience and the coping styles they employ.

Factors within the individual, such as personality traits and coping styles may affect how a person reacts in times of crises, and this may contribute to the development of psychological distress. Psychological distress refers to a state of emotional suffering, resulting from being exposed to a stressful event. Inability to cope effectively with the stressor, results in psychological distress that can manifest as a range of adverse mental health and psychiatric outcomes including depression, anxiety, acute stress, post-traumatic stress, burnout, and psychiatric morbidity (Sirois and Owens, 2021). Under normal circumstances, work-related psychological distress in HCW is associated with several short and long-term adverse outcomes including decreased quality of patient care, irritability with colleagues, cognitive impairments that can negatively impact patient care. In the context of an infectious disease outbreak, such adverse consequences may be amplified (Sirois and Owens, 2021).

Coping is represented as actions and thoughts that individuals use to deal with challenges in their environment (Man et al., 2020). The tendency to demonstrate more positive coping when faced with distress can be considered a feature of resilience, that provides a buffer between occupational stress and psychological well-being. Positive coping includes self-coping styles such as active or passive psychological and life adjustments, taking the initiative to be altruistic, seeking team support, rational cognition through comparisons with other situations, favourable information, and self-encouragement (Sun et al., 2020).

On the other hand, studies have shown that personality traits such as neuroticism, intolerance of uncertainty, and negative autofocus were associated to worse levels of psychological adjustment (Árbol et al., 2021; Kang et al., 2020; Osimo et al., 2021).

These individual differences might be taken into consideration when designing prevention programs aiming to dampen the psychological impact of HCWs during disease

outbreaks. Therefore, promoting adequate coping behaviour in HCWs during the COVID-19 pandemic must be given priority as a highly resilient workforce is needed to face challenges over the course of this pandemic. Furthermore, no countries are alike with respect to cultural influences, resources, and response, each has its unique impact on the healthcare staff facing that disease (Khalid et al., 2016).

COVID-19 with its emerging variants and sub variants remains a threat to the global health in an unprecedented manner. As the health system continues to deal with the COVID-19 pandemic, it is important to safeguard the welfare of health care workers in our Ministry of Health, Malaysia. Many efforts have been employed at the national level to provide psychological support to those affected by the outbreak. However, evidence-based assessments and interventions targeting HCWs are relatively limited. Therefore, studies that address psychological support needs and interventions for HCWs are necessary both in the emerging period of the pandemic and in the post-pandemic period. These issues are the intended focus of the study. This study aims to examine how individual factors of personality traits and coping styles may contribute to the development of psychological distress among health care workers, as this may assist in targeting the delivery of psychological interventions.

1.2 Rationale and Significance of the Study

The Covid 19 pandemic, being unexpected and associated with unpredictable events, highly contagious and with limited available medical interventions is a significant source of stress. Frontline HCWs who are directly engaged in the diagnosis, treatment, and care for patients with COVID-19, are most vulnerable to adverse psychological outcomes, i.e., of developing more severe mental symptoms, including stress, anxiety, depression, distress, insomnia, emotional exhaustion, burnout, as well as posttraumatic stress disorder (Sirois and Owens, 2021).

Some personality traits and coping styles could be potential risk factors in stressful situations. Studies have shown that adaptive personality traits, such as extraversion are positively associated with active coping styles, such as problem-focused or emotion-focused coping styles, while maladaptive personality traits such as neuroticism are associated with avoidant and dysfunctional coping (Afshar et al., 2015; Pilch et al., 2021). Several recent studies on COVID-19 have also identified similar links between adaptive and maladaptive personality traits and coping responses (Bongelli et al., 2021). Therefore, personality traits such as neuroticism and coping styles can be considered distinct constructs that each affects the behavioural adaptations in response to adverse situations, and both have a relationship with the development of psychiatric morbidity.

As the COVID-19 pandemic is novel and unprecedented, it has aroused considerable uncertainties. Due to its novelty, research on personality traits and coping styles, in the face of this threat is still in its infancy. Many studies have explored the relationships between neuroticism and psychological distress, while other studies have examined coping styles and psychological distress. However, there are relatively limited studies that have examined both constructs simultaneously in the relationship with psychological distress. This study will help give clarity on whether the level of neuroticism traits affects

coping styles employed and the relationship both constructs have with the development of psychological distress.

Protecting health care workers is an important component of public health measures for addressing the COVID-19 pandemic and thus special interventions to promote mental well-being in health care workers exposed to COVID-19 need to be immediately implemented. Understanding the relationship that neurotic personality traits and coping strategies have in the development of psychological distress among health care workers, during this unprecedented global crisis, will aid in making psychological interventions more focussed at the acquiring and utilizing of more adaptive strategies.

1.3 Research Questions

1.3.1 What is the level of neurotic personality traits among health care workers involved in the treatment and care of Patients Under Investigation (PUI) or confirmed cases of COVID-19?

1.3.2 What are the coping styles used among health care workers involved in the treatment and care of Patients Under Investigation (PUI) or confirmed cases of COVID-19?

1.3.3 What are the associated factors of psychological distress among health care workers involved in the treatment and care of Patients Under Investigation (PUI) or confirmed cases of COVID-19?

1.4 Objectives

1.4.1 General Objectives

To study the relationship between neurotic personality traits, coping styles and psychological distress among health care workers involved in the treatment and care of Patients Under Investigation (PUI) or confirmed COVID-19.

1.4.2 Specific objectives

1. To determine the level of neurotic personality traits among health care workers involved in the treatment and care of PUI or confirmed cases of COVID-19.
2. To determine the coping styles among health care workers involved in the treatment and care of PUI or confirmed cases of COVID-19.
3. To determine the association between psychological distress and neurotic personality traits, coping styles, and sociodemographic factors among health care workers involved in the treatment and care of PUI or confirmed cases of COVID-19.

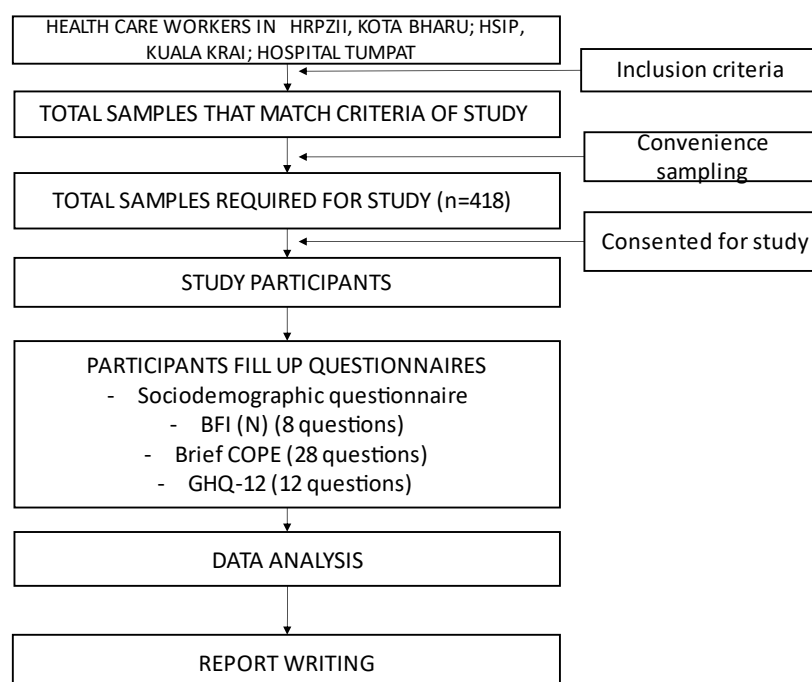
1.5 Methodology

This was a cross-sectional study conducted from 1st July 2020 till 28th February 2021 among healthcare workers of three designated COVID hospitals in Kelantan, Malaysia, namely Hospital Raja Perempuan Zainab II, Hospital Sultan Ismail Petra, Kuala Krai, and Hospital Tumpat. A non-probabilistic purposive sampling method was used. A set of online questionnaires, consisting of sociodemographic data, Big Five Inventory for neurotic personality traits, Brief COPE scale for coping styles and General Health

Questionnaire (GHQ-12) for psychological distress were distributed to the healthcare workers through their heads of department after getting permission from the respective hospital directors. Email and text message were sent with information about the study, an invitation to participate, and a link to the study on Google Form. Due to the sampling method, a complete list of all potential participants could not be obtained. A total of 337 participants completed the questionnaire. Among those, 336 participants provided digital informed consent and were included in the study. The remaining 1 participant was excluded in view of no consent. Data entry and analysis was done using The Statistical Package for Social Study (SPSS) Version 26. Descriptive statistics were used to describe the socio-demographic attributes of the participants, level of neurotic personality traits, coping styles and psychological distress. Multiple logistic regression analysis was carried out to determine the significant factors associated with psychological distress.

1.6 Flow Chart Methodology

Figure 1. Study Flow Chart



1.7 Dissertation Organisation

This dissertation is formatted in accordance with the Postgraduate Office, School of Medical Sciences' guidelines for Format B Manuscript Ready (2016). The second chapter is the study protocol, which was submitted for ethical approval. The third chapter is a manuscript that has been prepared for submission to the MDPI Healthcare journal.

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CHAPTER 2: STUDY PROTOCOL

2.1 INTRODUCTION AND STUDY BACKGROUND

The world is currently facing a coronavirus disease (COVID-19) pandemic. Its early stages began in December 2019, when the WHO China Country Office received news of fourty four cases of pneumonia of unknown aetiology, that were detected in the city of Wuhan, in the Hubei province of China (WHO, 2020). A new type of coronavirus was identified by Chinese authorities, and isolated in laboratory samples on 7th January 2020. In the subsequent months, cases of this new coronavirus disease began being reported in other countries as well. The WHO declared this outbreak as a Public Health Emergency of International Concern on 30th January 2020. This new coronavirus disease was later given the name COVID-19. As of 7th April 2020, 0800 (GMT+8), the WHO reports a total of 1 214 466 confirmed cases around the world, with 67 767 confirmed deaths, and 211 total number of countries, areas or territories with cases reported (WHO, 2020).

In a press statement released by the Director General of Health Malaysia, as of 12.00 p.m 6th April 2020, a total of 3793 confirmed cases of COVID-19 have been reported in Malaysia, with 62 cases resulting in mortality (Ministry of Health Malaysia, 2020). Out of the total confirmed cases, 142 cases were reported from the state of Kelantan. In response to this crisis, the Malaysian authorities have implemented several measures to contain the spread of this disease, including a movement control order (MCO) which began on 18th March 2020- 31st March 2020, and was subsequently extended till 14th April 2020. Select hospitals in each state were designated as screening hospitals or admitting hospitals for patients under investigation (PUI) and confirmed COVID-19 cases. The admitting hospitals were designated according to availability of appropriate and adequate isolation facilities, with a core team of health care workers trained in managing patients with COVID-19. In the state of Kelantan, three hospitals

namely, Hospital Raja Perempuan Zainab II, Kota Bharu, Hospital Sultan Ismail Petra, Kuala Krai, and Hospital Tumpat were designated as admitting hospitals for Patients Under Investigation (PUI) or confirmed cases of COVID-19 (Ministry of Health Malaysia, 2020a). As such, the researcher has opted to conduct the study in these three named hospitals. The health care workers consist of doctors, nurses, medical assistants, attendants, and other allied health personnel such as laboratory staff and pharmacists, in various positions.

As the health system prepares itself to deal with the COVID-19 pandemic, it is important to safeguard the welfare of health care workers in our Ministry of Health, Malaysia. Over the past decade, there has been an increasing awareness of the physical and psychological challenges health care workers face. In these uncertain times it becomes especially important that the mental health of front-line health care workers is a key consideration. Many efforts have been employed both locally and at the national level to provide psychological support to those affected by the outbreak. However, evidence-based assessments and interventions targeting health care workers are relatively limited. These issues are the intended focus of the study.

In this crisis, health care workers, especially those directly involved in the diagnosis, treatment, and care of patients with COVID-19 face the risk of developing various degrees of psychological distress. Many factors could potentially contribute to this mental health burden such as increasing number of patients under investigation (PUI) as well as confirmed cases, increase in workload, declining availability of personal protective equipment, patient mortalities, fears of getting infected themselves, or spreading infection to family members or others, and not forgetting the possible negative impact that may occur as a result of the constant stream of news reports about COVID-19 itself. Factors within the individual, such as personality traits and coping styles may affect how a person reacts in times of crises, and this may contribute to the development of psychological distress. This study aims to examine how

these individual factors of personality traits and coping styles may contribute to the development of psychological distress among health care workers, as this may assist in targeting the delivery of psychological interventions.

2.2 LITERATURE REVIEW

2.2.1 Overview of the role of neurotic personality traits (neuroticism) in mental health.

Personality traits distinguish one individual from another, by its significant effect on how an individual typically responds to the environment (Mischel, 2004). Neurotic personality traits or neuroticism refers to the individual variations in negative emotional responses to threat, frustration, or loss (Costa and McCrae, 1992). While neuroticism originates from Freudian theory, the modern-day psychological concept of neuroticism is usually defined in descriptive psychometric terms. Terms such as irritability, anger, sadness, anxiety, worry, hostility, self-consciousness, vulnerability have all been used in operationally defining neuroticism, and have shown significant correlation with one another in factor analyses (Costa and McCrae, 1992; L. R. Goldberg, 1993). When facing challenges, these ‘negative emotional responses’ are often seen in individuals with high neuroticism and it is often out of proportion to the circumstances (Mc Crae and Costa, 1986). Extensive research is available on the associations between trait neuroticism and its associations with both mental and physical health outcomes. These studies also show that the association with neuroticism is independent of the correlation that sociodemographic factors, such as age, sex, socioeconomic status have on mental and physical health outcomes (Kendler et al., 2004; Neeleman et al., 2001; Stronks et al., 1997). One meta-analysis revealed large magnitudes of association between neuroticism and schizophrenia, mood disorders, anxiety disorders, somatoform disorders, and eating disorders (Malouff et al., 2005). A study on the public health significance of trait neuroticism in Singapore revealed that there is particularly strong predictive validity of neuroticism in predicting future adverse

mental health outcomes, especially when it is considered in the context of negative life events (Lahey, 2009).

2.2.2 Overview of the role of coping styles in mental health

Coping is often defined as efforts to prevent or diminish threat, harm, and loss, or to reduce its associated distress (Carver and Connor-Smith, 2010). While some include responses that are automatic or involuntary (Eisenberg et al., 1997; Skinner and Zimmer-Gembeck, 2007), others limit the concept of coping to voluntary responses (Compas et al., 2001). As coping remains a very broad concept, problems can arise in making distinctions between types of coping. Indeed, a large number of distinctions exist in the attempt to categorize different types of coping (Skinner et al., 2003).

2.2.2(a) Problem versus emotion focused

Problem-focused coping is directed at the stressor itself: taking steps to remove or to evade it, or to diminish its impact if it cannot be evaded. Emotion-focused coping is aimed at minimizing distress triggered by stressors. Because there are many ways to reduce distress, emotion-focused coping includes a wide range of responses, ranging from self-soothing (e.g., relaxation, seeking emotional support), to expression of negative emotion (e.g., yelling, crying), to a focus on negative thoughts (e.g., rumination), to attempts to escape stressful situations (e.g., avoidance, denial, wishful thinking). Problem- and emotion-focused coping can also facilitate one another. Effective problem-focused coping diminishes the threat, but thereby also diminishes the distress generated by that threat. Effective emotion-focused coping diminishes negative distress, making it possible to consider the problem more calmly, perhaps yielding better problem-focused coping. This interrelatedness of problem- and emotion-focused coping

makes it more useful to think of the two as complementary coping functions rather than as two fully distinct and independent coping categories (Lazarus, 2006).

2.2.2(b) Engagement versus disengagement

Engagement coping aims at dealing with the stressor or related emotions, whereas disengagement or avoidance coping aims to escape the threat or its related emotions (Roth and Cohen, 1986; Skinner et al., 2003). Engagement coping includes problem-focused coping and some forms of emotion-focused coping such as emotion regulation, support seeking, acceptance, and cognitive restructuring; whereas disengagement coping includes avoidance, denial and wishful thinking (Carver and Connor-Smith, 2010). Despite the aim of escaping distress, disengagement coping is usually ineffective in reducing distress over longer term, as it does not remove the existence of the threat or its eventual impacts. Additionally, avoidance and denial may result in paradoxical increase in intrusive thoughts about the stressor, and in turn increases negative mood and anxiety (Najmi and Wegner, 2015).

2.2.2(c) Accommodative coping and meaning-focused coping

Accommodative coping refers to adjustments within the self that are made in response to constraints. It applies to responses such as acceptance, cognitive restructuring, scaling back one's goals in the face of significant interference (Brandtstädter and Renner, 1990).

A related concept is meaning-focused coping, in which people draw on their beliefs and values to find, or remind themselves of, benefits in stressful experiences (Park and Folkman, 1997). This type of coping includes reordering one's priorities in life and infusing ordinary events with positive meaning. It also represents an accommodation to the constraints of one's life

situation, and involves reappraisal, most likely when stressful experiences are going badly or not in one's control (Folkman, 2008).

2.2.2(d) Proactive coping

It has been pointed out that some forms of coping occurs proactively, before the occurrences of a stressor, unlike usual discussions of coping which take the view of coping as a response to threat or harm (Aspinwall and Taylor, 1997). This type of coping is almost always problem focused, and involves accumulation of resources that may prove useful before the arrival of a threat, and scanning the experiential horizon for signs of building threats (Carver and Connor-Smith, 2010).

2.2.3 Relationship between personality and coping

Although personality and coping may be related, coping is not simply a direct manifestation of personality under adverse conditions. Evidence including one meta-analysis found the relationship between personality and coping are only modest, coping is less stable than personality, and coping predicts adjustment over and above personality (Connor-Smith and Flachsbart, 2007; Murberg et al., 2002) . Coping styles are only modestly heritable, and the genetic bases for personality and coping do not overlap strongly (Jang et al., 2007).

2.2.4 Overview of mental health burden among health care workers during outbreaks

Many studies have reported significant levels of adverse psychological reactions including psychological distress among health care workers during previous outbreaks (Bai et al., 2004; Chua et al., 2004; Maunder et al., 2003; TAM et al., 2004).