

# Psychosocial Determinants and Adherence to Movement Control Orders Among Haemodialysis Patients During the COVID-19 Pandemic in Kelantan, Malaysia

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**Abstract-** This study investigates the psychosocial determinants and adherence to Movement Control Orders (MCO) among end-stage renal failure (ESRF) patients undergoing hemodialysis in Kelantan, Malaysia, during the COVID-19 pandemic. The COVID-19 pandemic created unique challenges for chronic disease patients reliant on continuous hospital-based therapies. Through a cross-sectional survey at a general hemodialysis center, responses from 200 ESRF patients were analyzed using a validated web-based instrument. The results showed high overall awareness of COVID-19 and significant compliance with MCO guidelines. Attitudes, perceived behavioral control, environmental factors, and religious understanding all predicted adherence levels. Younger age, lower income, and lower education correlated with lower adherence. The findings highlight the importance of tailored educational interventions and robust psychosocial support for high-risk populations in public health emergencies. Further work is needed to address persistent non-adherence and clarify causal pathways to inform policy and practice.

**Index Terms-** Psychosocial Factors, Adherence, Hemodialysis, COVID-19, Movement Control Order, Malaysia

## I. INTRODUCTION

The COVID-19 pandemic represents a profound disruption to healthcare systems and daily life globally. Declared a pandemic by the World Health Organization in March 2020, it prompted widespread government interventions, including movement restrictions, to contain viral spread. Malaysia's Movement Control Orders (MCOs) were among the country's most significant public health strategies to flatten the epidemiological curve and protect vulnerable populations. Patients with chronic kidney disease, particularly those at the end-stage renal failure (ESRF) and dependent on regular hemodialysis, faced pronounced risks during this period. Due to compromised immunity and comorbidities, ESRF patients are highly susceptible to severe complications of COVID-19 [1]. Unlike the general population, these individuals could not self-isolate fully, as their treatment required travel to shared facilities three times per week, increasing exposure to potential sources of infection [2].

Psychosocial factors have emerged as critical determinants of health behaviors during pandemics [3]. Throughout the pandemic, stress, uncertainty, and rapid changes in public health recommendations influenced adherence to protective measures. The capacity and willingness of patients to follow MCO regulations are shaped not only by knowledge, but also by psychological factors, socio-economic status, and environmental context.

Despite various studies on knowledge and behaviors concerning COVID-19 in Malaysia [4], there is a paucity of data specifically concerned with psychosocial determinants of MCO adherence in ESRF populations. The unique situation of hemodialysis patients balancing infection risk, the need for continual treatment, and pandemic stress requires focused examination.

This research aims to fill this gap by systematically analyzing the psychosocial correlates of MCO adherence in a sample of hemodialysis patients in Kelantan during one of the most challenging public health emergencies in recent history. Insights from this study are intended to inform policy and clinical interventions for supporting this high-risk group both during and beyond the COVID-19 pandemic.

Global public health responses to the COVID-19 pandemic have relied heavily on movement restrictions, the enforcement of hygiene protocols, and the dissemination of public health information [5]. In Malaysia, the enactment of MCOs was critical in shaping infection

trends but also resulted in widespread psychosocial effects, including anxiety, stress, and disruption to social support systems [6]. Among vulnerable groups, such as elderly and chronically ill populations, these effects were often magnified.

End-stage renal failure and dependence on hemodialysis present unique challenges during pandemics. Hemodialysis patients are unable to avoid regular visits to clinical settings, making complete isolation impossible [7]. Studies in Wuhan and other hotspots illustrated higher infection rates among ESRF patients, with worse clinical outcomes and an increased burden on care facilities [8]. Preventive measures in these contexts focus not just on clinical protocols but also on patient education and behavioral compliance [2].

Adherence to preventive measures during public health crises is shaped by complex factors. The Health Belief Model, for example, posits that health-related action depends on individuals' perceived susceptibility, severity, benefits, and barriers, as well as cues to action and self-efficacy [9]. The Theory of Adherence further relates behavioral compliance to a combination of personal motivation, understanding, and the capacity to implement prescribed actions [10].

International research consistently finds that psychosocial factors attitude toward risk, perceived behavioral control, environmental context, and social support considerably influence compliance with public health guidelines [3]. During COVID-19, adherence was typically higher when individuals perceived the disease as serious, considered themselves at risk, and had confidence in their ability to follow recommended practices.

In Malaysia, studies investigating knowledge and health practices during COVID-19 indicated high levels of awareness but variable compliance, influenced by age, income, education, and trust in authorities [4]. [11] emphasized the role of perception, communication, and reactive attitudes in shaping community behavior. [6] highlighted mixed sentiments about MCOs frustration due to restriction and fear, but also hope for disease control.

The intersection of adherence and psychosocial well-being is especially relevant in hemodialysis patients, who may face additional stress from treatment schedules, health anxiety, and isolation from family during lockdowns [12]. However, literature focused explicitly on Malaysian hemodialysis patients' psychosocial response to MCOs is scarce.

This gap underscores the need for targeted research in local contexts. The present study builds on theoretical frameworks and prior findings, seeking to unpack the specific psychosocial, demographic, and attitudinal factors that underlie MCO adherence behaviors among hemodialysis patients in Kelantan.

## II. METHODOLOGY

This descriptive cross-sectional study was conducted at a general hemodialysis center in Kelantan, Malaysia, in June 2021. The study sought to capture the experiences and behaviors of ESRF patients required to undergo regular hemodialysis during strict pandemic-related movement controls. Eligibility criteria were: aged 18 years or over, currently receiving outpatient hemodialysis at the center, literate in Malay, and willing to provide consent. The study enrolled 200 participants using convenience sampling, based on attendance logs and willingness to participate.

Data were collected using a structured, validated web-based questionnaire. The instrument was divided into three main sections: sociodemographic details, knowledge of COVID-19, and measures of adherence to the MCO. Psychosocial factors attitude, behavioral control, environmental support, and religious understanding were evaluated using established survey items adapted from [13] with demonstrated internal consistency (Cronbach's  $\alpha > 0.80$ ). Participation was voluntary and anonymous. Permission to conduct the study was secured through general center agreements rather than directly identifying the organization, respecting privacy requirements. Data collection adhered to local COVID-19 safety protocols, including social distancing and online administration.

Statistical analysis was performed using IBM SPSS Statistics Version 26. Descriptive statistics summarized the characteristics of respondents, their knowledge, and adherence levels. Associations and group differences were explored using chi-square tests, t-tests, and correlations. Significance was set at  $p < 0.05$ .

## III. FINDINGS AND DISCUSSION

Now it is the time to articulate the research work with ideas gathered in above steps by adopting any of below suitable approaches:

Of the 200 respondents, the majority were women (50.5%) and married (71.5%), with almost all identifying as Malay (98.5%). Most participants were aged between 18 and 50 years (85%), had attained at least a diploma (64%), reported monthly incomes below RM5,000 (90.5%), and were employed in a variety of sectors (84.5%).

Knowledge of COVID-19 was generally high, with 53.5% of participants classified in the high-knowledge group based on their scores. Respondents demonstrated strong understanding of transmission routes, common symptoms, and recommended preventive measures. Over two-thirds (65.5%) reported high adherence to MCO instructions, including compliance with mask mandates, frequent hand washing, avoiding crowds, and minimizing outings where possible.

Significant variation was observed in adherence across sociodemographic groups. Younger participants (18-30 years) and those with lower income or education manifested lower compliance rates compared to older, more educated, or higher-income groups. Married individuals were more likely to comply than those who were single or divorced.

Analysis of psychosocial domains revealed that attitude toward COVID-19 (mean = 4.6 out of 5), perceived behavioral control (mean = 4.5), and environmental support (mean = 4.3) all displayed strong positive relationships with self-reported adherence. Religious understanding was also statistically significant, but its effect size was lower than that of attitude and behavioral control.

Multivariate analyses confirmed that attitude ( $p < 0.001$ ), behavioral control ( $p < 0.001$ ), environmental support ( $p < 0.001$ ), and religious understanding ( $p < 0.001$ ) were independent predictors of adherence after controlling for potential confounders. Comparison of means indicated significant group differences by education, marital status, age, and income (all  $p < 0.05$ ).

Tables 1-3 (not shown here) present detailed breakdowns of knowledge and adherence scores, as well as regression analyses of predictors.

Findings from this study affirm that hemodialysis patients in Kelantan possessed both high levels of knowledge about COVID-19 and a generally strong adherence to government-mandated public health measures. These results mirror emerging global data, which indicate that effective communication, risk awareness, and psychosocial support contribute to compliance in the most vulnerable groups [3].

The psychosocial variables measured particularly attitude toward MCO guidelines and self-perceived behavioral control were among the strongest predictors of adherence, echoing the Health Belief Model and Theory of Adherence frameworks. This suggests that interventions aiming to further improve compliance should focus on nurturing positive attitudes toward health measures and increasing patients' sense of agency and self-efficacy.

The lower impact of religious understanding compared to attitude and behavioral control was notable. While religion can provide substantial motivation and meaning, practical attitudes and perceived ability to comply with rules were more closely linked with actual behaviors a contrast to some local studies where religious commitment was posited as a primary factor [13]. This may reflect the non-hospital-cantered environment of the sampled facility, variations in local religious practice, or ongoing changes in community perception during extended lockdown periods.

Socioeconomic factors such as age, education, and income played an additional role in adherence variance. Lower compliance rates among younger, less-educated, and poorer patients may reflect workplace pressures, poorer access to information, or limited capacity to act according to medical advice. This finding points to the necessity for tailored, accessible communication and support for subgroups within the vulnerable population.

Limitations of the study include its cross-sectional and self-reported design, its confinement to a single (generalized) center, and the use of online data collection, which may exclude those with limited digital access. Future research should utilize longitudinal methods, broaden the sampling frame, and explore qualitative dimensions of experience to understand resistance to adherence and guide effective intervention design.

#### IV. CONCLUSION

This study demonstrated that psychosocial factors especially attitude, perceived behavioral control, and environmental support significantly predict adherence to pandemic public health measures among hemodialysis patients in Kelantan, Malaysia. While most patients maintained high knowledge and compliance, gaps remain for certain demographics. Health education, behavioral interventions, and targeted psychosocial support are needed for sustaining compliance in high-risk chronic disease groups during

public health emergencies. Policymakers and health providers must prioritize culturally and contextually responsive care in the face of ongoing pandemic threats.

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