

Theoretical Approach to Adherence to Safety Behaviours During COVID-19 Pandemic

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ABSTRACT

Adherence to safety behaviours during the COVID-19 pandemic has become substantial in mitigating the viral spread. However, recently several countries entering into the deadly COVID-19 waves pointed out the issue of non-adherence to recommended COVID-19 guidelines and demand addressing the process of adherence from a different perspective. Approaching the pandemic only from an illness perspective and focusing mainly on symptom reduction is making the process of adherence even more challenging as a result of which COVID-19 cases are spiking daily and increasing the mortality rate globally. Therefore, this paper aims to address adherence behaviour during the Covid crisis, from the perspective of an individual's perception of self, infection and treatment plan, which may provide a theoretical explanation for the process of adherence, using the Common-Sense Model of Self-Regulation (CSM). This health model highlights the constructs such as prototypes and representations, specific for self, illness and its treatment, in generating an action plan which may be continued or discontinued depending upon its efficacy and thereby explains the reason for varied responses of people towards the pandemic. CSM can be used to explain the prominence of concrete behavioural guidelines (action plan) during an infectious outbreak, the significance of providing concrete illness and treatment representation of the infection, the role of appraisal of treatment efficacy in long-term adherence and the essentiality of interventions focusing on self-prototypes. Therefore, understanding adherence during COVID-19 from all these aspects and appropriately adopting a holistic approach integrating the teamwork of medical practitioners, government policymakers, psychologists, social workers and other related experts may prove to be vital in improving adherence behaviour during this pandemic.

Keywords: COVID-19, adherence, common-sense model of self-regulation, pandemic

Initiating and maintaining health behaviour have always been a challenge when it comes to managing diseases. It becomes even more complicated if the condition persists for a long duration with no specific treatment protocol, and precisely this is what is happening in the present scenario of the COVID-19 pandemic. Experts and scientists from different fields are incessantly trying to fix COVID-19 infection using all their expertise but still are unable to manage the infection and slow down its spread. In contrast, misinformation, fear, anxiety,

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chronic illnesses, economic crisis and uncertainty related to a pandemic is worsening the spread with a spike in the fatality rate.

Amid all these qualms, another challenge is that there is no proven drug or vaccine available, although by February 2021 at least seven different vaccines have been officially launched in various countries (World Health Organization, n.d.). But the extent to which these vaccines can protect against infection and transmission is still uncertain (WHO, n.d.). Thus, following the WHO provided COVID-19 guidelines for the public such as physical distancing (at least 1 meter), wearing a mask, keeping rooms well ventilated, avoiding crowds, cleaning hands, and coughing into a bent elbow or tissue has become inevitable in the present scenario (WHO, n.d.). Therefore, adherence to such preventive behaviours is of great significance in controlling the viral spread. However, while adhering to these behaviours individuals are encountering various difficulties physically, psychologically and socially such as quarantine, isolation, travel restrictions etc. owing to which many are unable to follow the guidelines strictly.

There could be several reasons for such non-adherence, mainly because the infection is novel, and there is a lack of clarity regarding typical symptoms. Similarly, experience with the infection varied from person to person, for instance, many had symptoms that ranged from mild to severe, even leading to death, while many of them were asymptomatic with no particular health issues. All these uncertainties related to the virus, its mode of infection, treatment and control are influencing individual's perceptual representation of the illness and treatment which is essential for adherence to health behaviour as explicated by the Common-Sense Model of Self-Regulation (CSM) (Leventhal et al., 1980, 1998, 2016).

This model evolved during a study conducted on community response to the 1957 Asian influenza flu in the United States (Rosenstock et al., 1960). Further, Leventhal (1970) identified a fundamental component of the model, namely, the action plan. Finally, the role of experience, perception and detailed plans for health-relevant action emerged, which set the stage for the Self-Regulation Model, an earlier version of CSM. The focus of the Self-Regulation model is the illness representation which means an individual's common-sense definition of health threats (Leventhal et al., 1980). A more refined version of this model known as the Perceptual-Cognitive Model of Self-Regulation underscored the role of emotion, social and cultural context on representations and action plans (Leventhal et al., 1998). Recently Leventhal et al. (2016) propounded that CSM explains the perceptual, behavioural, and cognitive processes involved in the creation of individual's representations of the somatic and functional properties of the self, the properties of illnesses and the treatment required to manage illnesses, including the formation of action plans for carrying out the treatment. These recent developments of CSM have contributed to understanding how people manage illnesses in daily life, signifying its relevance even in the current pandemic situation.

This paper is an attempt to draw the attention of experts to understand the process of adherence and non-adherence to essential behaviours through the health model, namely the Common-Sense Model of Self-Regulation, in the context of the COVID-19 outbreak, especially when it is long-lasting, and there is no prescribed remedy available. This comprehension will be particularly beneficial in preparing individuals at a personal, community, national and global level to face and survive through the disastrous effects of the COVID-19 pandemic, mainly when certain human behaviours are the only known ways to reduce the spread of the infection and save the vulnerable population for whom this infection could pose a life-threat and also

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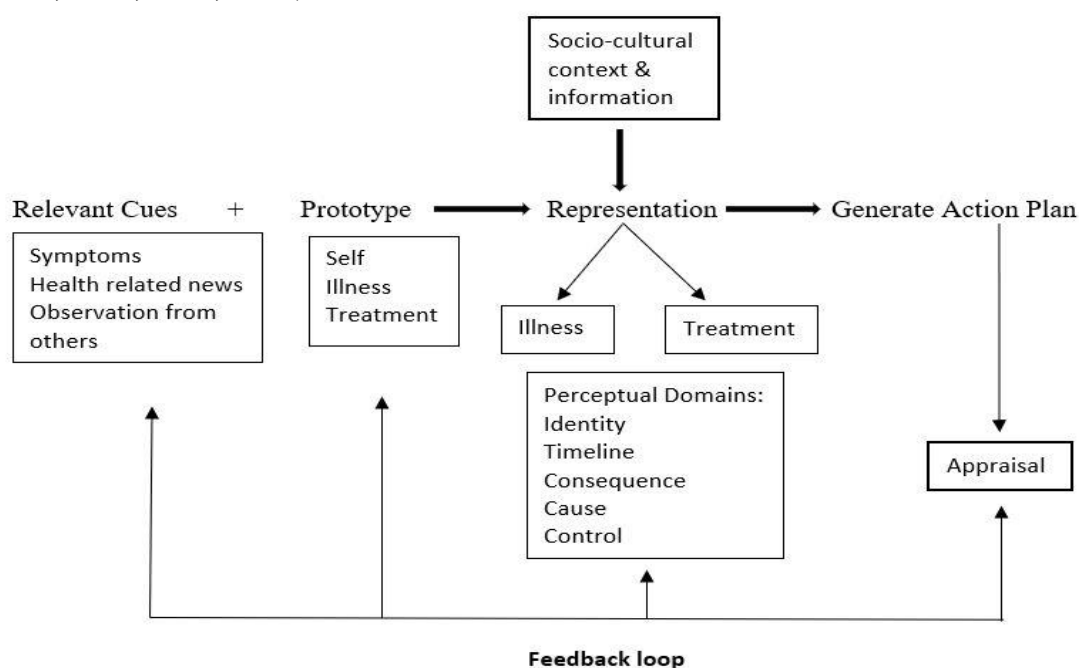
currently several countries are entering into deadly COVID-19 wave further increasing the mortality rate globally (Bagchi, 2021).

Conceptual Framework of the Common-Sense Model of Self-Regulation (CSM)

According to the model, relevant cues such as symptoms, health-related news, and functional changes, along with the prototypes involving self, illness, and treatment, forms the basis for perceptual representation of both illness and treatment. This representation further decides the severity of illness and leads to goal formulation based on the concrete recommendations available either through experts, family, or peers and thereby forming an action plan. However, it does not end here because a feedback loop continually evaluates the effectiveness of the action plan, which becomes essential in maintaining or discontinuing a behaviour for controlling the illness.

The CSM comprises five important perceptual domains of representations (illness and treatment): identity, timeline, consequences, cause, and control. These attributes explain how an individual attempts to identify, prevent, cure or control illness and thereby set the stage for actions and determine the priorities and requirements for evaluating outcomes (Leventhal et al., 1998). Therefore, perceptual representations are organized at multiple levels and evolve over time, and primarily come from the prototypes of self, illness, and treatment or action. A prototype of the self involves biological structure and personal experiences, along with emotional responses. Similarly, specific illness, treatment, and action plans prototype include depositories of personal experience with that particular illness, observation of illnesses, management by others, media-based messages, and expert opinions (Leventhal et al., 2016). Along with these prototypes, cultural and social contexts also influence the process of representation, making CSM a complex, dynamic, and interactive system describing responses to the management of health threats.

Figure 1 A framework of the Common-Sense Model of Self-Regulation (CSM) (Leventhal et al., 1980, 1998, 2016)



Note: This model shows that the content of a representation is shaped based on relevant cues, prototype and socio-cultural context and information, which in turn generate an action plan.

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A periodic appraisal based on the feedback loop decides the continuation or discontinuation of this action plan.

Adherence to Health Behaviour during COVID-19

The encounter of human society with a devastating pandemic occurred a century ago during the 1918 Spanish flu, which took at least 50 million lives worldwide. During this pandemic, one-third of the world's population became infected with the virus signifying the vicious propagation potential of viruses (Centers for Disease Control and Prevention, 2020). However, not much research, particularly on behavioural aspects, could be initiated during this period due to the lack of well-developed scientific and clinical areas of expertise. The recent outbreaks of Zika, MERS, SARS, Ebola, and Nipah virus have attracted global attention. However, still, the behavioural component has been looked into very minimally. Despite the introduction of many Social Cognitive health models, Biomedical models are usually implemented more frequently, which primarily focus on symptom reduction and saving lives rather than addressing adherence to suggested protocols, which is critical for illness management. In the context of COVID-19 spread, more challenging is the maintenance of personal protective behaviours such as physical distancing, wearing a mask, washing hands, avoiding the 3Cs: spaces that are closed, crowded or involve close contact, cleaning and disinfecting surfaces frequently which are regularly touched, knowing the full range of symptoms of COVID-19, staying home and self-isolating even if one has minor symptoms such as cough, headache, mild fever, keeping up to date on the latest information from trusted sources, such as WHO or other national health authorities (WHO, n.d.). According to experts, non-adherence to such behaviours along with highly contagious Coronavirus mutant variants could pose an enormous threat to the entire human species prolonging the pandemic indefinitely, which is evident with a devastating second wave in India (Pandey & Nazmi, 2021).

Therefore, understanding the process of adherence has become crucial in the present outbreak, revealing the essentiality of a broader perspective rather than hugely relying only on a medical perspective, which alone is not sufficient to address the factors related to adherence behaviour. One such important perspective is provided by Health Psychology and its Health Models that aims to explain psychological, social, and environmental factors that determine behaviour in a specific context which may, in the present situation, play a vital role in managing human behaviour for reducing the transmission of the SARS-CoV-2 virus. Common-Sense Model of Self-Regulation (CSM) is one among the notable health models that clearly explains how health threats are perceived and highlight the significance of detailed action plans in compliance with the treatment protocol as well as the appraisal of treatment efficacy (Leventhal, 1970; Philips et al., 2012; Omer et al., 2013) which ultimately helps in long-term adherence to health behaviour. CSM differs from other health models by highlighting the importance of treatment efficacy and its continuous appraisal that plays a crucial role in sustaining healthful behaviour for a long period and thereby explaining the process of adherence.

The dynamic nature of the CSM clearly explains the shift from adherence to non-adherence with the help of a feedback loop evaluating the efficacy of action plans based on the prototypes and representations formed along with the social information and cultural context in which the illness occurs. Prototypes of self, illness and treatment activate the perceptual domains wherein timeline, consequences, cause and control of illness plays a significant role once the illness and its characteristics are identified. If any of the perceptual domains formed seems to be illogical or unworkable, the entire representation formed will undergo drastic changes

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influencing the behaviour adopted by an individual or a group till then. This pandemic made the representation process more complicated with the reporting of asymptomatic carriers and encouraging a large number of people to unfollow government guidelines as they did not see any health threat related to the infection and so did not develop an action plan to manage it, which led to a dangerous spread of the virus globally and is still continuing.

Similarly, with the progress of the pandemic as well as the lack of concrete treatment plan, each individual developed their personal and psychological experiences (uncertainty, loneliness, anxiety, fear and stress) with the outbreak either by having the infection themselves or seeing their family and friends being infected or following quarantine and isolation norms provided by their country and depending on this, each constructed their common-sense model of the infection. This essentially explains why some groups of individuals are too aware of the pandemic and strictly adhering to recommended behaviours, while few others no longer notice the pandemic and living their everyday life.

Another highlight of CSM relevant to this pandemic is that health behaviour largely depends on the credibility of the treatment protocol, and thus concrete guidelines which do not contradict other previous recommendations are essential in initiating and maintaining a coping procedure. For instance, at the beginning of the outbreak, several confusions arose related to the WHO guideline on mask use, first making it mandatory only for those who are sick, those who are caring for the sick, and frontline healthcare workers (Linda, 2020) and later changed its guidelines saying that protective masks could be a barrier for potentially infectious droplets and must be compulsory in public places (Scroll.in, 2020). Such altering recommendations are perceived as ineffective by the general population, leading to non-adherence to even mandatory behaviours.

A systematic guideline that is universally applicable to all, whether a person is symptomatic, asymptomatic or non-infected, must be provided to become part of the everyday routine in the long term. Constantly changing protocols and directions are causing severe damage to adherence; hence recommendations need to be provided with adequate scientific explanations as well as keeping a check on misinformation. Accurate information provided on a timely basis about asymptomatic carriers, reinfection chances, lifestyle changes needed after infection and other physical ailments induced by Covid-19 may result in better adherence to health conduct.

Therefore, CSM provides a robust theoretical framework for explaining adherence to COVID-19 appropriate behaviours. According to CSM, a concrete illness and treatment representation along with a specific action plan is vital for the transition between initiating a health behaviour and sustaining behavioural change (Rothman, 2000; Philips et al., 2013). Similarly, studies have also shown that interventions clarifying self-prototypes in clinical settings have resulted in the effective management of the disease (Spruill et al., 2007; Howell et al., 2012) which provides evidence that the CSM model could help experts in employing the perceptual aspects for better adherence to preventive behaviours during the pandemic in controlling the viral spread.

However, theoretical and practical studies based on CSM suggest that consistent management of illness is the result of planning and adopting strategies for organizing behaviour into a habit, in the form of a daily routine (Bolman et al., 2011; Philips et al., 2013; Brooks et al., 2015; Tanenbaum et al., 2015). More specifically, Philips et al. (2013) showed that unintentional adherence was predicted by habit strength, whereas a patient's belief about treatment efficacy

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along with experiential feedback predicted intentional non-adherence, clearly explaining the most probable reason for non-adherence in the present scenario of the outbreak. But a meta-analytic study conducted by Brandes and Mullan (2013) suggested that CSM may not be the appropriate model to use in the predictive studies of adherence. Therefore, different dimensions of CSM have to be studied in detail to understand its relation with adherence and its appropriate application for improved adherence.

A Common-Sense Approach to understand adherence during COVID-19 spread

The most crucial need of this moment is adherence to COVID-19 protocols; even though it cannot end the pandemic, but is inevitable to reduce the spread of viruses. Though statistical data on the fatality rate of COVID-19 is very low compared to other viral infections (Elflein, 2020), each life matters, so it is obligatory to contain the spread. Efficient methods must be developed based on a sound theoretical basis for increasing public awareness and their vital role in reducing viral spread. One such theoretical explanation for the issue of non-adherence is explained by CSM, which provides a foundation for implementing and sustaining a treatment plan.

People in most countries had little to no history with such contagious diseases at the beginning of the pandemic, except in those countries where such viral infections occurred in the form of epidemics, so according to CSM, prototypes of illness and treatment were developed based on the relevant cues such as infected country's management practices, media-based information and expert advice rather than personal experiences. Resulting in the complacency of a vast population to government directives despite the uncertainty regarding the action plan, and most of them remained at home, anticipating the lockdown and travel restrictions to curb the infection rate. However, as time passed on and due to humanitarian concerns, governments were forced to bring back their citizens stuck in other countries and also prolonging lockdown was not feasible as it had severe economic and social repercussions at an individual as well as the global level and this led to a spike in cases.

All these abstract strategies adopted by ruling bodies which later seemed to be ineffective and inconsistent for many, eventually lead to a large proportion of the population forming self-prototype based on their physical conditions such as immunity, co-morbid conditions, age, risk of exposure, and other social situations, resulting in varied illness and treatment representations which ultimately reflected in their behaviours. For instance, many young people were not ready to adhere to COVID-19 protocols claiming that they have strong immunity and, even if they get infected, may not have severe health complications. Therefore, people in highly infected countries started protesting and adopting unhealthy behaviours which even more increased the spread (Philipose, 2020).

Many people across the globe are unknowingly going back to their usual ways of living and thereby hastening the spread. The new normal behaviours to be adopted during this pandemic has become intolerable for them, and the self-prototype concept of CSM may explain the reason behind this intolerance. The self-prototype comprises a person's biological framework and prior experiences. Here, individuals are using their pre-pandemic prototype, that is, the normative self, to create the standards for themselves during the pandemic, and in this process, they cannot embrace the new normal, which is causing extreme mental distress during the pandemic and affecting their personal and social life.

Therefore, interventions clarifying the expectations about themselves during the pandemic may help alleviate anxiety and accept the new standard ways of living, leading to better control

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of the infection. Understanding how the infection is perceived and interpreted determines the strategies followed and the behaviours retained based on its efficacy. This whole process is intertwined and eventually complex resulting in infection management. Hence CSM may provide a better explanation for the process of adherence by identifying specific problems of individuals both at a perceptual and representational level and thereby helping policymakers, health care professionals and governmental and health organizations to adopt appropriate strategies to curb the pandemic. But despite its present relevance, CSM, still, has limitations mainly because of the novelty of the infection and lack of knowledge regarding the outcomes of the action plans being implemented to mitigate the spread. Hence a teamwork approach collaborating medical practitioners, government policymakers, psychologists, social workers and other related experts along with their respective expertise and knowledge is inevitable in containing the spread and ending the pandemic rather than only focusing on the treatment aspect of the infection undermining the behavioural components involved in the management of the infection.

CONCLUSION

The behavioural measures needed to address the threat of the COVID-19 pandemic appears to be easy but adhering to them is a challenge in itself, particularly considering this planet's substantial human population. Therefore, the highest priority must be given to developing strategies based on a robust theoretical background that effectively addresses behavioural, cognitive, emotional, social and cultural factors. These factors are decisive in predicting long term adherence to health behaviour. While COVID-19 is an acute infection, it has features of a chronic model, particularly when it is asymptomatic but at the same time infectious. Hence empirical studies using the CSM framework may provide new possibilities for improving adherence to COVID-19 safety behaviours associated with this outbreak.

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Conflict of Interest

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