Motivations for the Practice of Self-Care Measures Applicable to Mitigate COVID-19 Pandemic

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ABSTRACT

Objective: To identify relevant factors influencing the practice of self-care measures for prevention of the ongoing COVID-19 preventions based on prior evidence-based experiences.

Method: We conducted a literature review of empirical studies conducted between the years 2000 and 2020 focusing on self-care measures in a pandemic situation.

Result: Of the 250 studies identified, 19 studies met inclusion criteria. Sixty-three percent of the eligible studies reported handwashing, 21% reported social distancing, facemask wearing, 11% reported social avoidance and information-seeking behaviour. The identified factors motivating these practices include risk perception, health education and social trust.

Conclusion: We found that public health agencies commonly recommend self-care measures during pandemics. The adherence to them depends on individuals' perception of risk, knowledge about the situation, trust in the government agencies providing the recommendations and empathy that can motivate adherence.

Practice Implication: The public, researchers, and policymakers could learn from the past and present situation to understand what measures are proven relevant and what factors could motivate adherence. More emphasis could be placed on the role of individuals in health promotion and disease prevention as they have been proven to be helpful.

Keywords: Adherence motivations, COVID-19, pandemic, personal care, risk perception, self-care, social trust.

I. INTRODUCTION

The concept of Self-care is vital to human health and wellness. Lipson and Steiger defined Self-care as "activities performed by individuals or communities to achieve, maintain, or promote maximum health." [1]. The concept of self-care is situation and culture-specific. It involves acting and making choices based on knowledge, skills, values, motivation, and confidence [2]. Essentially, it focuses on a continuous care spectrum ranging from complete independence in managing one's health to complete reliance on healthcare providers [3].

In the mid-20th century, the paradigm of individuals taking responsibility for their health became prominent as people paid more attention to chronic medical conditions [3]. During this time, there was a shift in the perception of healthcare providers' role in caring for patients' diseases to support and empower patients as they take important responsibility for their health [4], [5]. The public health perspective of self-care involves interventions that provide a safe environment and access to services that protect individuals and groups (e.g., immunization, family planning, and control infectious disease outbreak) [2]. The focus of public agencies is to allocate resources, provide access to care and regulate factors that may influence individual and community health. This perspective must have motivated all the roles played by the international, national and provincial public health agencies to address the COVID-19 pandemic. The 72nd situation report published by the World Health Organization (WHO) on April 1st, 2020, addressed public
health and social measures for the COVID-19 pandemic [6].

WHO identified actions applicable to individuals, institutions, communities, local, national and international bodies to slow or stop the spread of COVID-19. These measures include detecting and isolating cases, contact tracing and quarantine, social and physical distancing measures, including mass gatherings, international travel measures, and vaccines and treatments. The measures centred on the application of self-care to pandemic prevention. Essentially, pandemic prevention self-care measures include maintaining physical distance between people (of at least one meter), reducing contact with contaminated surfaces, and encouraging virtual social connection within families and communities in conjunction with individual protective measures against COVID-19 such as frequent hand washing and cough etiquette [6].

However, there are divergent perceptions about these pandemic prevention measures [7]. Some studies show positive attitudes towards the self-care measures, while others reveal the negative attitudes of the respondents towards the measures [6]-[9]. While there is continuous advocacy for vaccination among the unvaccinated population, it is pertinent to identify factors that could motivate adherence to all pandemic preventive measures. Since COVID-19 is not the first pandemic, a lesson from what helped in the past and what is helping currently could inform the public and all public health stakeholders on motivations for adherence to self-care measures relevant to mitigate COVID-19.

Therefore, this review article aims to identify relevant factors influencing the practice of self-care measures for prevention of the ongoing COVID-19 pandemic based on prior evidence-based experiences.

II. METHODS

We conducted a literature review of self-care in the pandemic, focusing on all pandemic situations from 2000 to 2020. We searched electronic databases of publications, including PubMed, Medline, and Google scholar. We used Boolean logic to combine mesh terms and text words. Truncation of terms was used to increase the inclusiveness of all terms in the text word category. A librarian from the corresponding author's institution assisted in reviewing the search terms. The search strategy was combined as follows:


Studies were eligible for inclusion if written in the English language, published between January 2000 and June 2020, and addressed self-care measures during a pandemic. We excluded all non-empirical studies, including literature reviews, simulation, and modelling research. We conducted the study search between May and June 2020.

A detailed search was done to look for questions and components related to self-care in the articles' methods, results, and conclusion section. Based on these results, a database was designed for all the mentioned publications to list which self-care components were addressed. In addition, we identified the study author(s), country, and publication year. We also noted information about sample size and the type of study design (e.g., Survey, descriptive qualitative study).

III. RESULTS

As shown in Fig. 1, the literature search flow chart generated 250 studies from PubMed and Google Scholar. Title and abstract review were rapidly done to remove duplicate (50) and irrelevant studies (4450). For example, opinions, critiques, editorial, reviews, modelling and simulation studies were excluded. Finally, out of the 500 studies screened, 50 were considered for full test review, and only 19 studies met the inclusion criteria.

The descriptive components are shown in Table I. The reviewed studies were from North America, Australia, Europe, and Asia. Most of them (95%) were cross-sectional surveys. The sample size ranged from 31 to 146,728. The largest-sized study was a Spanish survey, while the smallest study was a descriptive qualitative study from the United Kingdom. The pandemic situations identified were avian flu, swine flu and COVID-19 SARS. All the studies identified self-care measures in pandemic situations, and such measures are further summarized in themes in the discussion session.

Twelve studies (63%) out of the nineteen eligible studies described hand hygiene as a self-care practice. Four studies (21%) identified social distancing, self-isolation, and wearing facemasks as self-care practices. Two studies (11%) reported social avoidance (avoidance of physical contacts, transportation channels and hospital visits) and information-seeking behaviour (physician visits) as the applicable self-care practices during pandemic situations. (Fig. 2).

![Fig.1. PRISMA flow diagram for the literature review.](image-url)
<table>
<thead>
<tr>
<th>Items</th>
<th>Source</th>
<th>Region</th>
<th>Study Design</th>
<th>Data Collection Period</th>
<th>Sample Size</th>
<th>Pandemic Situation</th>
<th>Identified Self-Care Measures</th>
<th>Factors Promoting Self-Care Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>[21]</td>
<td>Multinational (5 European and 3 Asian regions)</td>
<td>Survey</td>
<td>Sept to Nov 2005</td>
<td>3436</td>
<td>SARS and Influenza</td>
<td>Avoidance of public transport and staying indoor</td>
<td>Risk perception</td>
</tr>
<tr>
<td>2</td>
<td>[17]</td>
<td>Australia</td>
<td>Survey</td>
<td>Winter 2006 to 2007</td>
<td>286</td>
<td>Influenza</td>
<td>Face mask</td>
<td>Risk perception</td>
</tr>
<tr>
<td>3</td>
<td>[8]</td>
<td>UK</td>
<td>Qualitative Study</td>
<td>May to July 2008</td>
<td>31</td>
<td>H1N1</td>
<td>Handwashing and social distancing</td>
<td>Adequate education about control measures</td>
</tr>
<tr>
<td>5</td>
<td>[10]</td>
<td>Australia</td>
<td>Survey</td>
<td>June to Sept 2009</td>
<td>2882</td>
<td>H1N1</td>
<td>Hand washing, facemask</td>
<td>Risk perception (Anxiety about the pandemic) Trust informal information sources (government, media)</td>
</tr>
<tr>
<td>6</td>
<td>[31]</td>
<td>Hong Kong</td>
<td>Survey</td>
<td>Jun-09</td>
<td>1001</td>
<td>H1N1</td>
<td>Self-care behaviour (personal hygiene)</td>
<td>Risk perception</td>
</tr>
<tr>
<td>8</td>
<td>[22]</td>
<td>Malaysia</td>
<td>Survey</td>
<td>April to November 2009</td>
<td>1050</td>
<td>H1N1</td>
<td>Hygienic measures and vaccine</td>
<td>Risk perception</td>
</tr>
<tr>
<td>10</td>
<td>[12]</td>
<td>Italy</td>
<td>Survey</td>
<td>Jun-09 to April 2010</td>
<td>13010</td>
<td>H1N1</td>
<td>Information seeking behaviour</td>
<td>Risk Perception and Social trust</td>
</tr>
<tr>
<td>13</td>
<td>[33]</td>
<td>Hong Kong</td>
<td>Survey</td>
<td>March 2008, August, and November 2009</td>
<td>507, 508 and 1006 respondents</td>
<td>Influenza</td>
<td>Handwashing, cough etiquette</td>
<td>Risk perception</td>
</tr>
<tr>
<td>14</td>
<td>[14]</td>
<td>China</td>
<td>3-stage-Survey</td>
<td>June 2008 and November 2009</td>
<td>300, 359 and 305</td>
<td>COVID-19</td>
<td>Handwashing and Use of Gloves, following govt directives Physical distancing and wearing a face mask</td>
<td>Awareness of self-care measures and positive attitude</td>
</tr>
<tr>
<td>15</td>
<td>[15]</td>
<td>India</td>
<td>Survey</td>
<td>Mar 2020</td>
<td>662</td>
<td>COVID-19</td>
<td></td>
<td>Empathy towards those most vulnerable</td>
</tr>
<tr>
<td>16</td>
<td>[32]</td>
<td>USA, UK, Germany</td>
<td>Survey</td>
<td>Mar 2020</td>
<td>300, 359, 305</td>
<td>COVID-19</td>
<td></td>
<td>Empathy towards those most vulnerable</td>
</tr>
<tr>
<td>18</td>
<td>[20]</td>
<td>Hong Kong</td>
<td>Survey</td>
<td>March to April 2020</td>
<td>765</td>
<td>COVID-19</td>
<td></td>
<td>Risk perception</td>
</tr>
<tr>
<td>19</td>
<td>[23]</td>
<td>Pakistan</td>
<td>Survey</td>
<td>March 2020</td>
<td>400</td>
<td>COVID-19</td>
<td></td>
<td>Risk perception</td>
</tr>
</tbody>
</table>
Another behavioural measure is the use of Facemask. Facemask is commonly recommended in pandemic outbreaks of viral infections that are airborne [17]. The reviewed studies established a high tendency to reduce viral transmission using a face mask but reported low adherence among households [9], [17]. For example, in a prospective, cluster-randomized trial of mask use in 290 households, conducted during the two winter seasons of 2006 and 2007 in Sydney, [17] reported that adherence to mask significantly reduced the risk for influenza-like illnesses but only a few subjects frequently use the mask. Reference [10] in a survey of almost 3000 subjects, noted that the perception of susceptibility to the pandemic. Flu motivated the purchase of Facemask and other hygienic products among 21% of the respondents, while the majority were unprepared. While there are diverse opinions about the efficacy of face masks in preventing clinical infection, a higher perception of risk has been reported to increase mask-wearing adherence [17].

A more recently advocated self-care behaviour in public places during the current COVID-19 outbreak is social distancing. According to the Centers for Disease Control and Prevention (CDC), social distancing, also known as physical distance, implies keeping a safe space of up to 6 feet (about 2-arms' length) from other people not in the same household [18]. While [19] in a large Spanish online survey, shows participants' interest in more social distancing measures, [20] reported lower compliance with public social distancing than personal and household hygiene practices. Another similar measure to social distancing is social avoidance. Avoidance of public transport and staying indoor were earlier described as precautionary behaviour in response to pandemic influenza's perceived threat [21]. Reference [22] in a cross-sectional survey of over 1000 adults, reported a higher social avoidance and staying indoors among them due to the fear of contracting influenza flu. Social avoidance measures used during the pandemic outbreak include self-isolation, avoidance of contact with infected people, and hospital visits [19], [23].

Moreover, the pandemic situation increases the information-seeking behaviour of individuals. People seek information about infectious diseases, preventive measures, and the trend of the pandemic outbreak. A common source of information includes the internet and conventional media sources such as television, radio, and newspapers. In 2010, [24] in a study of 13,000 German residents, described a higher information-seeking behaviour during the H1N1 pandemic. The study noted the frequent use of conventional media sources such as radio, television, and newspapers more than the internet. However, there was a significant increase in an internet search for coronavirus information shortly after declaring a pandemic situation in 2020 [25].

Furthermore, self-care in the pandemic situation is associated with seeking medical help. Physician consultation and medical help from pharmacists and other healthcare professionals are common practices described in the literature [13], [23]. Although with the increasing social restrictions, access to the healthcare provider for non-emergent conditions had reduced, individuals still engage in other measures such as telephone consultations and telemedicine to reach out to their providers [26]-[28].
The reviewed literature also provided insight into some of the factors that may contribute to the practice of the highlighted self-care measures. These include:

1. Risk Perception: Studies have established a significant association between risk perception and self-care measures during pandemic situations [9]-[11], [13], [17], [20]-[22], [33]. Studies of risk perception examined how people feel about their risk of infection during a pandemic situation. A multi-centred population-based survey of over three thousand people showed that the motivation for precautionary behaviour is risk perception in a hypothetical pandemic situation [21]. Risk perception is associated with fears and anxiety about the pandemic situation [22]. Perception of susceptibility to infectious disease has been shown to inform an individual's decision regarding preventative behaviour [19], [29]. For example, adherence to a face mask and social distancing were higher among those who perceived the risk of susceptibility to influenza in Australia [17]. Similarly, hand hygiene, self-isolation, social avoidance and acceptance of vaccines are higher among people with a higher perception of risk of infection [10], [13], [30].

2. Health Education: Adequate education about control measures during a pandemic situation results in precautionary behaviour such as hand hygiene, personal protection, and exposure avoidance [8]. Health education increases knowledge and awareness about pandemic situations and preventive self-care measures [15]. Improving personal knowledge about the pandemic situation and awareness of precautionary measures was instrumental to individual behavioural modification.

3. Social Trust: During pandemic outbreaks, government agencies at local and international levels provide health education and information to guide them through precautionary measures. This information is conveyed through mass media and the internet. Trust in the source of this information has been shown to enhance self-care measures [30], [31]. Reference [30] reported a positive association between acceptance of vaccines and the public trust in the government and public health agencies. The study respondents were eager to receive information about the influenza pandemic from government agencies, health care providers and the media. People accepted public health recommendations such as handwashing, face mask, social distancing, self-isolation, and personal hygienic practices because they trusted in the system [13], [30].

4. Empathy: Pfattheiche described empathy and emotion-driven concern for the people affected by the pandemic situation as the motivation for adhering to public recommendation aside from the trust in the system [32]. Empathy for those affected is a factor that can motivate people to adhere to public health recommendations to not contribute to the spread of the infection. With empathy, people adhere to prevent another victim of the infection. It is noteworthy that inducing empathy for the vulnerable population motivates others to adhere.

V. LIMITATIONS

We have just conducted a rapid literature review of self-care measures in a pandemic situation. Although our review meets the requirement for a rapid literature review, it is not without some limitations. First, we conducted the study when there is limited literature on the ongoing pandemic situation. Hence, most of the included studies were done during previous pandemics. This occurrence resulted in a limited number of included studies in our review. Also, there is a possibility of publication bias because our review was not a systematic review. Therefore, we could not completely rule out this bias. However, our study appears to be the first to review the self-care measures in a pandemic situation. Thus, a systematic review and meta-analysis on this topic may increase needed evidence among health educators.

VI. CONCLUSIONS

Self-care in pandemic situations describes essential individual coping mechanisms in such a tough time from a global perspective. While there are variations in individual coping mechanisms during such situations, we conducted a review that shows us what measures are commonly employed. We also established the role of risk perception, health education that addresses knowledge translation and awareness, social trust in promoting precautionary measures during pandemic situations and empathy in motivating adherence.

VII. THE IMPLICATION OF THE RESEARCH

Our research addresses an essential aspect of personal care and patient education. Self-care awareness is essential during a pandemic outbreak to help people cope with the fear and anxiety related to the pandemic situation. Our findings would help individuals seeking evidence-based information about what they can do during the pandemic situation. Within the last 20 years, the literature review shows that the current pandemic public health measures were built on what helped in the past. Individuals with limited knowledge of what worked in the past would benefit from our findings to improve their trust in the ongoing public health measures.

Our findings will also help health educators to assess evidence supporting public health measures they may recommend at the individual and community levels and the tools to get this done. This evidence would further promote substantial knowledge of self-care measures that can work in a pandemic situation.

Finally, our study may generate more interest in systematic review and meta-analysis on self-care measures and coping strategies in pandemic situations. Researchers can build on our work to synthesize more literature and conduct a meta-analysis of studies addressing self-care in a pandemic situation.
AUTHORS’ CONTRIBUTIONS

This review research was conceptualized by the first and corresponding author (OSA). OSA author conducted the literature search and wrote the initial draft. Other authors reviewed the initial draft and contributed to modifying the draft until the final manuscripts get ready. BYA also provided structural input into tables and figure formatting. All authors agreed to contribute financially to the article processing cost upon acceptance of the manuscript.

CONFLICT OF INTEREST

Authors declare that they do not have any conflict of interest.

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