Assessing Life Balance During the Early Phase of COVID-19 Physical Isolation in Iranian Society

Sepideh Nazi1, PhD; Somaye Kavousipor2*, PhD; Saeedeh Pourahmad3, PhD; Farzaneh Yazdani4, PhD; Mehdi Rezaee5, PhD; Sahar Ghanbari2, PhD

1Department of Occupational Therapy, Iran University of Medical Sciences, Ali Asghar Hospital, Tehran, Iran
2Department of Occupational Therapy, School of Rehabilitation Sciences, Rehabilitation Sciences Research Center, Shiraz University of Medical Sciences, Shiraz, Iran
3Department of Biostatistics, Bioinformatics and Computational Biology Research Center, Colorectal Research Center, Shiraz University of Medical Sciences, Shiraz, Iran
4Department of Occupational Therapy, Senior Lecturer in Occupational Therapy, Faculty of Health and Life Sciences, Oxford Brookes University, Oxford, England
5Department of Occupational Therapy, School of Rehabilitation, Shahid Beheshti Medical Science University, Tehran, Iran

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Abstract

Background: This study explored the concept of 'life balance' during physical isolation due to COVID-19 in Iran in 2020.

Methods: In a cross-sectional design, 403 participants completed the internet-based "Life Balance Inventory (LBI)", which includes five subscales: health, relationship, identity, challenging/interesting activity, and daily activities. The data were analyzed using SPSS 21, and a significant level of less than 0.05 was considered. Descriptive statistics, t-tests, and one-way ANOVA were utilized in the analysis.

Results: The total mean score of LBI was 1.51±0.38 (unbalanced). The scores were distributed among the participants as follows: 52.6% of participants scored between 0.6 and 1.5 (very unbalanced); 37.7% of participants scored between 1 and 1.5 (unbalanced); 8% of participants scored between 2 and 2.5 (moderately balanced); and finally, 1.7% of participants scored between 2.5 and 3 (very balanced). Significant relationships were found between LBI and gender (P=0.001), chronic comorbidity (P=0.029), and Job (P=0.044). The health subscale showed no statistical difference according to the demographic factors. Males demonstrated more life balance in their daily activities, including driving and social transportation (P=0.001). Married participants and those older than 40 exhibited more balance in the relationship subscale (P=0.001). Teachers and faculty members showed more balance in identity (P=0.014) and relationship (P=0.001). Higher-income participants revealed more life balance in the challenge/interesting subscale (P=0.033).

Conclusion: The results suggested that participants experienced an unbalanced lifestyle during the early phase of COVID-19 isolation.

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Introduction

COVID-19, a novel coronavirus first reported in Wuhan, China, in late 2019, has rapidly spread across the globe, becoming a pandemic. Physical isolation helps prevent the spread of infection [1]. Studies on public mental health conditions have shown an increase in anxiety, depression, substance use, loneliness, and sleep disruption during the COVID-19 pandemic [2, 3]. Prolonged home restriction during a disease outbreak may affect people’s physical...
and mental health [4, 5]. Evidence indicates changes in people’s daily lives when social distancing measures are enforced [6]. Changes in sleeping time, leisure time, participation in social roles, and social communication can occur. Therefore, alterations in life patterns may harm the mental health status, sense of well-being, and quality of life [7].

Life balance is an individualized, multifactorial, and complex health-related concept [8], described by Matuska and Christiansen as the main concept of the Life Balance Model (LBM). This model emphasizes five basic dimensions: health, relationships, challenges, identity, and efficient time use. Understanding and satisfying these five basic needs and balancing life activities can reduce stress and increase life meaning and well-being [9].

Participation in various occupations and activities, such as engaging with others, sleeping, resting, self-awareness activities, and self-care is necessary to cover these basic needs. These meaningful and satisfying activities help people identify their strengths and improve their self-identity, values, and purpose [10].

Various life conditions, such as pandemic situations and physical isolation, may affect an individual’s occupations, roles, and needs and influence their life satisfaction and well-being. For example, occupational therapists’ work has changed to a tele rehabilitation model [11, 12]. Some chronic conditions, such as multiple sclerosis [13], can impact life satisfaction and balance, as can conditions associated with aging [14].

Existing literature on mental health during the COVID-19 isolation period describes conditions such as depression, stress, and anxiety. In this paper, we aim to report on life balance during COVID-19. The Life Balance Inventory (LBI) is an instrument used to measure life balance. It is based on the theoretical foundation of the Life Balance Model, which Matuska designed [15].

Methods

Given the isolation conditions, we conducted a web-based cross-sectional study of three parts: the Life Balance Inventory, demographic questions, and an open question to gather qualitative data [16-18]. This paper reports the results of the quantitative data. The authors adapted the guidelines suggested by Artino and colleagues for developing and reporting survey-based research [19].

A sample of 403 participants was recruited using convenience and snowball sampling techniques, yielding a response rate of 28.79%. Approximately 1.5% of participants reported a presumed or diagnosed case of COVID-19 within their household. The anonymous self-report questionnaire was designed online using Porsline software (https://porsline.ir/). Online data gathering that is relatively low-cost and practical for a large sample [20] can increase the representativeness of the sample size and prevent duplication of cases [21]. However, relying solely on internet-based data collection increases the risk of coverage bias [22]. A telephone-based data collection method could have also been used to collect data. This method, however, was not considered due to certain cultural considerations.

The first step involved identifying occupational therapy students in Iran’s southern, eastern, western, northern, and central regions. These students were the stakeholders in circulating the online survey on social networks (WhatsApp, Telegram, LinkedIn, and Facebook). Given the time-sensitivity of physical isolation, convenient and snowball sampling methods were deemed appropriate. Researchers aimed to reduce the coverage and sampling error through this systematic approach to data gathering within the identified population [23]. The average time taken to complete the questionnaire was 15 minutes. Responses completed in less than 10 minutes were excluded from the analysis. Although we had 1400 visitors from March 18 to April 30, 2020, only the 403 participants who completed the questionnaires were included in the final analysis.

LBI measures a participant’s satisfaction with the time spent on their daily activities. It comprises 53 questions and five subscales: health, relationship, identity, challenging/interesting activity, and daily activities. The total average score of the questionnaire and all subscales are used for statistical analysis. Participants complete the questionnaire based on the time they allocate to each activity. There are five levels of responses: always less than I want (1), sometimes less than I want (2), about right for me (3), sometimes more than I want (4), always more than I want (5). The scoring criteria for the LBI are defined as follows: 1.0-1.5—very unbalanced, 1.5-2.0—unbalanced, 2.0-2.5—moderately balanced, 2.5-3.0—very balanced. The LBI was translated into Persian by Nazi (Persian-LBI). It has demonstrated good internal consistency with Cronbach’s alpha values of 0.89 and 0.97, respectively. The face validity of the Persian LBI (P_LBI) is satisfactory. Both the Content Validity Index (CVI) and Content Validity Ratio (CVR) are 1, indicating good content validity [24].

The research project received initial approval from the Rehabilitation Ethics Committee, with the ethics code IR.SUMS.REHAB.REC.1399.020. Participants were informed that their contributions would be used anonymously for the study. They were also allowed to receive the research results by providing a contact number.

Results

In this study, there were 403 participants, of which 277 (69.2%) were females and 123 (30.8%) were males. A third of the participants were 30 to 40 years old (36.4%). The majority had a high level of education (80.3%), were employed (62.6%), and earned a medium monthly salary (52.9%). Most participants had no chronic comorbidities (88.8%) and reported a negative personal or family history of COVID-19 (98.5%).

Although the primary location of the study was in Shiraz, the center of Fars province in southern Iran, about half of the participants resided in Fars province (48.6%). Participants also hailed from Tehran, the capital of Iran (14.2%), and from the southern (10%), eastern (2%), western (5.5%), northern (6.2%), and central (13.5%)
regions of Iran.

In this part of the report, to provide a comprehensive perspective on the time spent by all participants, we consolidated the five categories of LBI responses into three categories. We then performed some descriptive statistics, including the percentage of participants spending time “less than I want,” “right for me,” and “more than I want.” Participants could choose the answer “I don’t do this activity”.

For all six questions of the health subscale, 3.4% chose “I don’t do this activity “, 43.4% chose “about right for me”, 16.9% chose “more than I want” and 32.3% chose “less than I want”. For all ten questions of the relationship subscale, 20% claimed “I don’t do this activity “, 43.4% claimed “about right for me”, 18% claimed “more than I want”, and 32.3% claimed “less than I want”.

For all 15 questions of the identity subscale, 27.3% considered “I don’t do this activity”, 23.8% considered “about right for me”, 11.3% considered “more than I want”, and 37.6% considered “less than I want”. For all 20 questions of the challenging/interesting activity subscale, 29.5% represented “I don’t do this activity”, 20% represented “about right for me”, 16.9% chose “more than I want” and 32.3% chose “less than I want”. For two questions of the daily activity subscale, 45.4% claimed “I don’t do this activity”, 8.5% claimed “about right for me”, 2.7% claimed “more than I want”, and 43.4% claimed “less than I want”. The total mean scores for the Identity and Challenge/Interest subscale items were 1.51 (0.38) (unbalanced). The score of 52.6% (Standard Deviation: SD) of LBI in all 403 participants was 0.6-1.5 (very unbalanced), it was 1-1.5 (unbalanced) for 37.7% of participants, for 8% of participants it was 2-2.5 (moderately balanced), and finally for 1.7% of participants it was 2.5-3 (very balanced).

The results showed that some activities of LBS needed to be more applicable, suitable, or appropriate for our participants. More than 50% of participants chose the “I don’t do this activity” for “taking care of pets”, “going to plays, movies, sporting events”, “journaling”, “storytelling” and “sewing/needle works”. About 40% percent of participants did similarly for “doing outdoor activities”, “participation in organized sports”, “writing, composing music and poem”, and “participation in formal religious activity”.

In the data analysis, a significant association was found between certain demographic characteristics- namely gender, chronic comorbidity, Job, and the total mean scores of LBI. Table 1 compares these results using two statistical tests: One-way ANOVA and the Independent two-sample T-test. Additionally, Figure 1 presents the total mean scores of LBI and five activity subscales.

The results indicate significantly higher total mean scores for the Identity and Challenge/Interest subscale items than the Health and Relationship subscale items (One-way ANOVA followed by Tukey HSD test; P value<0.05). The Health mean score did not show any significant association with demographic characteristics, although chronic comorbidity was on the borderline.

Significant associations were found for the Relationship mean score with marital status, age, job, and chronic comorbidity. The Identity mean score showed a significant association with the job and chronic comorbidity although the job was on the borderline.

Table 1: Demographic characteristics of participants and their relations with Total Mean Score of life balance inventory (LBI)

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. (%)</th>
<th>Mean (SD)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>123 (30.8)</td>
<td>1.60 (0.36)</td>
<td>0.001*</td>
</tr>
<tr>
<td>Female</td>
<td>277 (69.2)</td>
<td>1.46 (0.39)</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>164 (41.6)</td>
<td>1.50 (0.39)</td>
<td>0.904</td>
</tr>
<tr>
<td>Married</td>
<td>230 (58.4)</td>
<td>1.50 (0.38)</td>
<td></td>
</tr>
<tr>
<td>Age (year)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>125 (31.2)</td>
<td>1.51 (0.38)</td>
<td>0.188</td>
</tr>
<tr>
<td>30-40</td>
<td>146 (36.4)</td>
<td>1.46 (0.37)</td>
<td></td>
</tr>
<tr>
<td>&gt;40</td>
<td>130 (32.4)</td>
<td>1.55 (0.39)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>79 (19.7)</td>
<td>1.47 (0.36)</td>
<td>0.205</td>
</tr>
<tr>
<td>Bachelor</td>
<td>165 (41.1)</td>
<td>1.49 (0.33)</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>101 (25.2)</td>
<td>1.50 (0.43)</td>
<td></td>
</tr>
<tr>
<td>PhD</td>
<td>56 (14)</td>
<td>1.60 (0.44)</td>
<td></td>
</tr>
<tr>
<td>Job</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>80 (20.0)</td>
<td>1.43 (0.38)</td>
<td>0.044*</td>
</tr>
<tr>
<td>Teacher</td>
<td>65 (16.2)</td>
<td>1.56 (0.37)</td>
<td></td>
</tr>
<tr>
<td>Non Hospital Employee</td>
<td>85 (21.2)</td>
<td>1.54 (0.44)</td>
<td></td>
</tr>
<tr>
<td>Hospital Employee</td>
<td>18 (4.5)</td>
<td>1.47 (0.41)</td>
<td></td>
</tr>
<tr>
<td>Housewife or Retired</td>
<td>70 (17.4)</td>
<td>1.42 (0.31)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>83 (20.7)</td>
<td>1.58 (0.36)</td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>24 (6)</td>
<td>1.34 (0.32)</td>
<td>0.084</td>
</tr>
<tr>
<td>Medium</td>
<td>212 (41)</td>
<td>1.52 (0.38)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>164 (41)</td>
<td>1.51 (0.39)</td>
<td></td>
</tr>
<tr>
<td>Area of Residency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>……...</td>
<td>195 (48.6)</td>
<td>1.53 (0.39)</td>
<td>0.456</td>
</tr>
<tr>
<td>The South</td>
<td>40 (10.0)</td>
<td>1.54 (0.38)</td>
<td></td>
</tr>
<tr>
<td>The East</td>
<td>8 (2.0)</td>
<td>1.38 (0.43)</td>
<td></td>
</tr>
<tr>
<td>The West</td>
<td>22 (5.5)</td>
<td>1.48 (0.37)</td>
<td></td>
</tr>
<tr>
<td>The North</td>
<td>25 (6.2)</td>
<td>1.41 (0.28)</td>
<td></td>
</tr>
<tr>
<td>The Center</td>
<td>54 (13.5)</td>
<td>1.54 (0.41)</td>
<td></td>
</tr>
<tr>
<td>Chronic comorbidity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>45 (11.2)</td>
<td>1.39 (0.35)</td>
<td>0.029*</td>
</tr>
<tr>
<td>No</td>
<td>355 (88.8)</td>
<td>1.52 (0.38)</td>
<td></td>
</tr>
<tr>
<td>Family history of Covid-19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>6 (1.5)</td>
<td>1.54 (0.37)</td>
<td>0.832</td>
</tr>
<tr>
<td>Negative</td>
<td>394 (98.5)</td>
<td>1.50 (0.38)</td>
<td></td>
</tr>
</tbody>
</table>

*Independent two-sample T-test or One-way ANOVA ; **Standard Deviation Significant at 0.05 level; ***Significant at 0.01 level
The Challenge/Interest mean score significantly associated with income and chronic comorbidity, and the Daily activity mean score showed a significant association with gender (P<0.05). These associations are detailed in Table 2.

**Discussion**

This study aimed to examine the state of life balance during the early phase of physical isolation. The results revealed that participants led an unbalanced lifestyle. The scores indicated a moderately balanced status in the health subscale, an unbalanced status in the relationship subscale, and a very unbalanced status in the identity, challenging/interesting activity, and daily activity subscales. Most participants reported spending “less than I want” time on activities across all five LBI subscales. **Health subscale:** The health subscale scores were...
moderately balanced and were not influenced by demographic conditions. Participants could take care of their health because they spent more time at home due to increased social distance. However, many participants expressed a desire to spend more time on health-related activities, which could indicate a potential obsession with their health [25]. People living with Multiple Sclerosis reported similar results in another study, indicating that their health aspect of life is not balanced [13].

**Relationship:** Demographic variables influenced this dimension of life more than health-related activities. Married individuals had more opportunities to be at home and with their families during this period [26]. Conversely, single individuals, who usually had contacts outside the home and with friends, had fewer opportunities during this period and struggled to meet this need. The absence of people with chronic conditions in the family implied no worries and stresses in this area, allowing individuals to pay more attention to other needs, including relationships, and to better fulfill individual and family roles. Due to the closure of schools and universities, teachers and university staff have spent more time at home and with their families, suggesting that the relational aspect of individuals in these professions has been better addressed.

Individuals under 40, who have more social roles outside the home, such as work and study, were less able to handle relationship needs due to the social distancing measures imposed by the COVID-19 pandemic. However, individuals over 40 were better able to meet their relationship needs [27]. They had previously spent more time at home, and some may be retired or housekeepers. Due to social distancing measures and the closure of schools and workplaces, their spouses and children have been more at home, resulting in increased intimacy and emotional contact with their family members.

**Identity:** Hospital staff, teachers, and university staff were more balanced in the identity dimension. The profession is the primary demographic characteristic influencing differences and positive perceptions in identity-related activities. The better satisfaction of the identity dimension among hospital staff could be attributed to the fact that these individuals continued to work during social distancing, unlike other professions. By assisting other people and patients during this period, they may have perceived a heightened sense of usefulness and identity and, therefore, experienced greater satisfaction than other professions [28]. In contrast to the present study, Nurse Faculty report heavy workloads, role demands, and a lack of self-care, leading to moderate life balance and burnout [29]. Nickell reported some negative experiences in the mental health of hospital staff, including 29% of hospital staff and 45% of nurses experiencing emotional distress during the pandemic period [30]. The primary difference was the timing of the research.

**Interest/challenges:** High-income participants were more balanced in challenge activity than low- and medium-income participants. Individuals with chronic comorbidity had less balanced experiences in challenging activities than those without chronic conditions. People with higher incomes, less impacted by economic issues, had more opportunities and, thus, a better chance to pursue their interests during social distancing. Individuals who were ill or had to care for others with co-morbid or chronic conditions experienced more stress due to disease-related issues and caring responsibilities. These individuals needed to pay more attention to their health needs or the person they cared for, leaving them with less time to address their interests [24]. Additionally, Charmaz suggested that adults with chronic illness lose their identities as a result of increasingly restricted lives, social isolation, being discredited, and feeling like a burden to others or being unable to engage in favorite activities [31]. Nazi et al reported that women who cared for children with disabilities at home experienced a greater sense of imbalance, which was directly related to an increase in the disability of their children [24].

**Daily activity:** Results indicated that male participants’ daily activities, including driving and social transportation, were more balanced. This could be attributed to men having more social roles than women, making them more susceptible to these effects [32].

**The Total score:** Differences in the total score of LBI are influenced by certain demographic characteristics such as gender, occupation, and the presence of chronic health conditions within the family. Males demonstrated a more balanced life than females. Among occupations, teachers and university staff experienced a more balanced life than individuals in other professions. Families with chronic health-related conditions were more unbalanced than those without. Overall, this imbalance tends to reduce time spent on activities. During the isolation period of COVID-19, Participants devoted more time to health-related and challenging/interesting activities. This suggests that the isolation period was essential for health care and provided a valuable opportunity to engage in interesting activities that had previously been neglected due to lack of time.

A previous study indicated that women rated their life events as more negative and less controllable than men. It was suggested that women experience more stress than men, and their coping style is more emotion-focused [33]. Analysis during the early months of the pandemic revealed that women’s burdens were escalating [34, 35]. Our results highlighted gender differences in the total score of life balance and daily activity subscales.

Matuska et al demonstrated that race, age, education level, income, occupation, and other socioeconomic factors contribute to life balance [36]. Our results indicated that occupation plays a significant role in determining life balance status. Choices and lifestyles can influence experiences or situations, such as social isolation during the pandemic, which may positively and negatively impact health and well-being [37, 38]. People’s occupational choices may be limited or altered due to resource changes or environmental demands. Personal capacities and /or limitations, challenges of managing multiple roles, time pressures related to modern life, and other personal or environmental factors could influence life balance during this period. Completing the questionnaire, which contained numerous
extensive questions, was time-consuming. This might decrease the number of participants who complete the questionnaire. Furthermore, it precludes using other related questionnaires, such as those measuring stress and depression, for more in-depth details. The LBI revealed the balance or imbalance of life dimensions, but it did not provide more details about the pattern of time consumption. Consequently, the researchers decided to employ some descriptive statistics, which may extend the length of our results.

The use of media and internet-based sampling was a significant limitation. It appears to restrict the demographic characteristics of the participants, particularly in terms of education level and employment status.

It is suggested that a shorter version of the LBI needs to be developed. Assessing the balance during the later stages of COVID-19 could help study the long-term effects of the pandemic and compare how people adapt during the early and late phases of isolation.

We have some recommendations for the authors of Persian version of the LBI. Certain activities require more consideration, and it seems they are culturally related. For instance, pet care should be taken into account.

Conclusion

Our study was conducted during the peak of the initial phase of the COVID-19 outbreak in Iran. We concluded that the isolation period due to COVID-19 could negatively impact people’s life balance. If this isolation persists, it may lead to physical and mental health consequences. The scores of LBI indicated that participants could not manage their time and meet their needs across all aspects and dimensions of life. At times, the demands of life circumstances during social isolation exceed people’s ability to cope, resulting in an imbalance in meeting needs. This can lead to increased perceived stress and dissatisfaction.

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Conflict of Interest: None declared.

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