An assessment on the risk of burnout among Medical Technologists at a public tertiary hospital in Bulacan amidst COVID-19

Gabrielle Alexandra L. Aguilar, Sunny Boy M. Balinas Jr., Kenneth Carl V. Bautista, Marc Louie B. Belgira, Isabel Maria F. Garcia, Jocelle Hui Xing T. Khoo, Maria Mikaela B. Ordonia, Maria Luisa R. Olano, PhD
1Department of Medical Technology, Faculty of Pharmacy, University of Santo Tomas, Manila, Philippines

Background Information

The consistent rise of COVID-19 cases in the Philippines meant that more patients needed care and treatment which resulted in many overworked and fatigued healthcare workers (HCWs) (Sasangohar et. al, 2020), including medical technologists. This situation could lead to burnout among HCWs which is the result of a multitude of chronic stressors found in the workplace and is usually demonstrated through exhaustion and inefficacy of employees (Montero-Marin & Garcia-Campayo, 2010). Medical technologists working in hospitals which cater to COVID-19 testing are at an increased risk or state of burnout due to increased workload (Shjoa et al. 2020).

Job satisfaction is another contributing factor for burnout considering HCWs are forced to overwork and are unable to take enough days off from work (Biana & Joaquin, 2020). Work environment as a result of discrimination, harassment, exposure to carriers of the virus in addition to physically demanding workload can cause burnout among HCWs (Tan et al, 2020). As a result, medical technologists experiencing burnout syndrome are more likely to have detrimental effects on the entire organization such as producing low-standard work and creating differences between co-workers. (Dobson, Szeto & Knaak, 2019).

This study is directed to Medical Technologists and Chief Medical Technologists who are the pillars of healthcare and are susceptible to burnout to be provided better care for them to be able to perform accurately and efficiently in a workplace that is physically and mentally conducive and to create interventions or programs to address and lessen the risk of burnout among medical technologists.

Through a quantitative, non-experimental correlational study, the factors which have shown a link to an increase in the risk of burnout; including workload, job satisfaction, and work environment, were explored to determine the correlation between these factors and burnout.

Materials and Methods

The study utilized a quantitative, non-experimental correlational design wherein standardized questionnaire surveys, with likert scales were used as a mode for obtaining data from respondents. Inclusion criteria for the subjects were as follows:

- Participant should be a licensed medical technologist
- Currently working and have experience working at a COVID testing center of the hospital at the time of data gathering
- Should willingly partake in the research
- If any of these three criteria were not satisfied, then they are excluded from partaking in the study

4 standardized questionnaires were provided, with permission from creators of surveys, to fulfill the research objective

- Maslach Burnout Inventory by Maslach (22- item survey to assess experience of burnout)
- Job Satisfaction survey by Spector (36- item survey to measure attitude towards job and its aspects)
- NASA Task Load Index by Hart (Index used to assess workload through five 7-point scales)
- Work Environment survey by Havaei (23- item survey to assess respondent’s work environment conditions)

Ethical considerations

Study was given approval by the University of Santo Tomas’ Faculty of Pharmacy Ethics Review Committee to conduct the research. Participation was voluntary through providing informed consent prior to the collection of data and withdrawal was allowed if a participant wished to do so.

Data Analysis

Study uses Spearman’s and Pearson’s correlation coefficient to identify the strength of a relationship between a factor and burnout. Analysis of the individual surveys were also done according to the specified instruction of creators.

Figure 1. Conceptual Framework

Proper Objectives

This study was conceptualized to explain the involvement of the contributing factors mentioned to the risk of developing burnout. Specifically, the objectives of the study were to:

- To determine the relationship between workload and the risk of developing burnout among medical technologists working at a public tertiary hospital in Bulacan.
- To determine the relationship between the work environment and the risk of developing burnout among medical technologists working at a public tertiary hospital in Bulacan; and
- To determine the relationship between job satisfaction and the risk of developing burnout among medical technologists working at a public tertiary hospital in Bulacan.
This result does not coincide with most studies that suggest that decrease in job satisfaction can lead to burnout. According to the study Roslan et al. (2021), the increase in effort or workload will lower the satisfaction, which will lead to medical technologists feeling vulnerable and at risk of burnout. Also, with the study conducted by Alrawasdeh et al. (2021), it was found that because of the changes brought about by the pandemic, more frontline physicians were experiencing burnout and lower satisfaction levels. Yates (2019) also states that physicians are more at risk of developing burnout because of low job satisfaction, mainly because of a great number of work hours.

There is no significant relationship between resources and supplies and risk of developing burnout. However, it is evident that there is a very weak negative correlation between risk of burnout and adequacy of training.

Thus, implying that the more training the employees receive, there is less likelihood to develop burnout.

Organizational preparedness is not associated with the risk of developing burnout in medical technologists.

In a study conducted by Sadiq & Tyler (2016), employees' perception on the organization's preparedness amidst a crisis varies

Members of the workforce depend on the administrators, supervisors, and the like, to decide what is beneficial for the organization.

Medical technologists are less likely to experience burnout in terms of developing risk-reducing measures for the whole organization.

There is a weak negative correlation hence, an inverse relationship between the respondents' concerns about contracting COVID-19 from their workplace and bringing COVID-19 home to those they live with and family friends.

- This does not coincide with any literature on this topic (Coughlan et al., 2020) and (Portoghese et al., 2014).
- This is possible due to the small sample size of the study.

Concern about contracting COVID-19 from their workplace which can be in conjunction with their concern about transmitting COVID-19 into their home to their family members and friends.

- Familial transmission is greater than transmission from other contacts wherein 75-80% of COVID-19 infections were sourced from intra-familial transmission of the virus in China (Lei et al. 2020).

There is a weak positive correlation with the respondent's confidence in their ability to assess their PPE requirements and personal risk.

- Constant use of PPE increases mental pressure of HCWs as there is a need for greater effort in maintaining and ensuring proper PPE is worn
Table 1. Spearman Rank Correlation: Significant Relationship Between Work Environment in Terms of Organizational Support and the Risk of Developing Burnout Among Medical Technologists

<table>
<thead>
<tr>
<th>Organizational Support</th>
<th>Burnout</th>
<th>Pearson Correlation</th>
<th>Interpretations</th>
<th>p-value</th>
<th>Decision</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>How you have your professional COVID experience?—Told to work despite possible or confirmed exposure to COVID-19</td>
<td></td>
<td>Very Weak Positive Correlation</td>
<td>0.116</td>
<td>0.371</td>
<td>Failed to Reject Ho</td>
<td>Not Significant</td>
</tr>
<tr>
<td>How you have experienced any of the following personal COVID experience?—Told to work despite COVID-19 symptoms</td>
<td></td>
<td>Very Weak Positive Correlation</td>
<td>0.351</td>
<td>0.039</td>
<td>Failed to Reject Ho</td>
<td>Not Significant</td>
</tr>
<tr>
<td>To what extent have you been supported by your organization during the COVID-19 pandemic?</td>
<td></td>
<td>Very Weak Positive Correlation</td>
<td>0.397</td>
<td>0.086</td>
<td>Failed to Reject Ho</td>
<td>Not Significant</td>
</tr>
</tbody>
</table>

Table 2. Pearson r Correlation: Significant Relationship Between Workload and the Risk of Developing Burnout Among Medical Technologists

<table>
<thead>
<tr>
<th>Workload</th>
<th>Pearson Correlation</th>
<th>Interpretations</th>
<th>p-value</th>
<th>Decision</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Weak Positive Correlation</td>
<td>0.192</td>
<td>0.269</td>
<td>Failed to Reject Ho</td>
<td>Not Significant</td>
<td></td>
</tr>
</tbody>
</table>

Note: “p-value is less than or equal to 0.05 level of significance, reject ho, otherwise, failed to reject ho”.

Table 3. Pearson r Correlation: Significant Relationship Between Workload and the Risk of Developing Burnout Among Medical Technologists

<table>
<thead>
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</tbody>
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Note: “p-value is less than or equal to 0.05 level of significance, reject ho, otherwise, failed to reject ho”.

There is a weak positive correlation in individuals who are told to do work despite COVID-19 symptoms.

- Can be attributed to negative consequences such as a decreased productivity, loss of quality of work, lack of confidence, etc. (Mekonnen, Tefera, & Melsew, 2018) which are some possible evidence of burnout. (Maslch, 1998) (Anjum, et al., 2018) (Mekonnen, Tefera, & Measleaw, 2018)

Conclusion

Based on results shown, only a minority of the respondents (31.7%) showed presence of burnout, which may explain how all factors (Job satisfaction, Work environment, and Workload) held no significance despite having either positive or negative correlation with risk of developing burnout. However, respondents were particularly concerned about some aspects of work environment such as bringing COVID-19 to their family and friends, their ability to assess PPE requirements and their personal risk, as well as working while showing symptoms of COVID-19 disease which negatively contribute to mental demands among HCWs and have shown significant relationship to risk of developing burnout. This showed that despite some workers not showing the presence of burnout, the majority of the respondents still held their reservations stipulating that these concerns may cause burnout. In order to mitigate the symptoms, proper organizational management may be implemented in order to reduce the likelihood of developing burnout.

References