

HIPAA Compliant Moral Distress App
Management's Impact on Healthcare Providers' Psychological Health

A Thesis Prospectus
In STS 4500
Presented to
The Faculty of the
School of Engineering and Applied Science
University of Virginia
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Biomedical Engineering

By
Keegan Pezzella

November 1, 2021

Technical Team Members:
Taylor Brooks, George Miroulis, Keegan Pezzella



On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

ADVISORS

Adarsh Ramakrishnan, Department of Engineering and Society

Dr. Beth Epstein, School of Nursing

Introduction

Psychological stress is a broad topic not limited to any one field or discipline. Being such a complex topic, a specific subtype, moral distress, will be focused on for much of the paper. Moral distress is most often described by the definition created by Andrew Jameton in his book, *Nursing Practice: the Ethical Issues*, where he defines it as when a nurse “knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action”. This definition came out in 1984, so the study of moral distress is a relatively new phenomenon compared to other mental health topics (Jameton, 1984). It is typically thought of in regards to nurses, but is felt by all healthcare professionals from EMTs to doctors. It is important to note that the occurrence of morally distressing incidents has been shown to be rare, but the intensity of the incident is high and has a lasting effect. This lasting effect is termed moral residue (Oh & Gastmans, 2015). The accumulation or residue of moral distress leads to several symptoms including anger, doubt, frustration, powerlessness, burnout, and attrition (Henrich et al., 2017). The most significant for the hospital is burnout. Burnout is defined as “...a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion, increased mental distance from one’s job, or feelings of negativism or cynicism related to one’s job, and reduced professional efficacy.” (*Burn-out an “Occupational Phenomenon,”* n.d.) The typical end result of burnout is quitting which has led to a national understaffing problem. The remaining nurses must handle increased patient numbers with less help which leads to increased stress and further problems (Silverman et al., 2021).

In order to address this problem, the team will develop a HIPAA compliant app in order to aid in the analysis and treatment of moral distress in nurses. The thesis will analyze how the management of healthcare systems impacts the psychological health and function of providers.

Technical Topic

As previously mentioned, moral distress research is a relatively new field, so the tools necessary to measure it in real time are lacking. Currently, a major strategy at many hospitals is an in-person consulting service. A specific example of this is located in the UVA University Hospital. It was established in 2020 and seeks to address moral distress in both the patient and the institution. Nurses and other providers are able to reach out and schedule a consultation (“Moral Distress Consultation Collaborative,” n.d.). However, this service lacks flexibility to accommodate healthcare professionals’ often fluctuating schedules. Also, very real fears of being targeted for speaking out due to the lack of anonymity further constrict the usage of this system. The consultants cannot disclose the identities of the providers coming to them, but this typically does not stop coworkers or bosses from discovering the provider met with a consultant. There is also the psychological aspect where having to reveal their identity can cause the reporting provider to either not come forward or alter their story. Anonymity has been conclusively shown to increase honest reporting of mental health, making its inclusion a necessity for mental health evaluations (Warner et al., 2011). A decade ago, there were very few analytical methods to analyze moral distress. To remedy this, studies have been conducted to improve the collection of data. A prime example of this was the development of the moral distress thermometer. This is a 0-10 system with verbal descriptions for ranges of values. It was designed to be a ranking system due to the success of this type of scale in measuring other subjective values like pain or distress due to cancer (Wocial & Weaver, 2013). There are, however, limitations in the current scope of

use. The moral distress thermometer was a web-based application that was only used for a short period of time to collect data for the experiment carried out for the paper. No wide-scale application of this tool has been used for moral distress analysis, limiting the potential benefits.

In order to solve these problems, an app for smartphones will be developed by the researchers. It will have HIPAA-compliant encryption for the possible inclusion of patient data in moral distress reports, and it will use the moral distress thermometer developed by Dr. Wocial, who will be working with the team. The thermometer will still be from 0-10 (0 being none and 10 being extreme) and will have a list of possible causes for perceived moral distress that the reporter can select. The app will allow quick reporting of moral distress incidents at any time. All reports will be anonymous to keep the identity of the reporter safe from retaliation from coworkers or management. The data collected will be analyzed and aggregated in order for managers to be able to make institutional decisions that affect the correct units in the correct manner. It will also provide resources to the reporter. These resources include methods to reduce the stress and other symptoms of moral distress, information on how to contact the moral distress consultation service, and other ways the reporter can make sure their complaints are heard. These will all be optional, so the reporter is not forced to give up their anonymity. The app will provide an intuitive and quick pathway for those suffering from moral distress to make sure their problems are heard and find ways to decrease the symptoms of moral distress. These features will provide anonymity and flexibility to reporting which will allow nurses to more comfortably report when distressing incidents occur. The data, while being kept anonymous, will be seen by management, so institutional changes can be made. With a more reliable way to measure moral distress, these changes should more accurately lead to less burnout and higher staff retention. Since being short-staffed is also a cause of moral distress, a positive feedback loop is likely

which will lead to even greater staff retention. The scope will be initially quite small. The original sample size will be approximately ten nurses in a single unit. This is quite limited, but the limitations introduced by such a small scope will be rectified by future iterations if the small scale test run is successful.

STS Topic

Healthcare professionals' main goal is patient care, and this is no simple task. It is not only complicated by the unique situation of each patient but also the mental health of the providers and the rules and restrictions put in place by those in charge of the hospital. In order to analyze this problem from the proper viewpoint, the interplay between four main groups will be analyzed: psychological factors of providers, government and legal obligations, managerial rules and constraints, and finally, the effects of the pandemic on the system. As previously mentioned, moral distress leads to anger, frustration, guilt, doubt, and eventually burnout which all negatively impact the patient's care through their effects on the provider's abilities and perceptions.

The psychological variable is deeply connected to the workplace situation in the hospital. Despite the thesis' focus being on management strategies, it is important to remember that there are a myriad of factors in the workplace that can affect moral distress. Not only do internal hospital factors like management tactics affect providers, the providers' mental health directly affects the hospital as well. Negative emotions and burnout lead to hostility in the workplace and low staff retention. In other words, there is now a short-staffed unit with a hostile work environment. A positive feedback cycle has been created due to staffing issues being a major cause of moral distress. This leads to a growing problem where the more distress people experience leads to more people quitting which leads to more distress felt by those still working

and so on. In order to deal with this, most hospitals have built-in tools to help deal with moral distress. UVA has the Moral Distress Consultation Collaborative for example. However, the possible actions a hospital can take are constrained by several factors including their own board of directors and the desires of donors. There are also external factors like lawsuits and government regulations that can increase the difficulty of implementing major reforms. On top of all of these factors, a new one has been introduced that has nearly toppled the delicate balancing act, COVID-19. New rules, new regulations, and new risks have radically altered how providers do their jobs and how rapidly moral distress can develop (Silverman et al., 2021).

In order to improve the psychological health and function of providers, these factors must be addressed. What has previously worked for reducing moral distress in hospitals should be studied and altered to fulfill the new needs of providers working during the pandemic. This will be accompanied by an analysis of what hospitals have already done to combat rising moral distress and how effective these measures have been. The current situation for most hospitals is critical understaffing and high moral distress which leads directly to impairment of patient care and must be resolved. It is also important to quantify how much the situation has changed between now and before the pandemic. This will be determined by studying how a specific hospital has changed with the onset of the pandemic. Certain variables like staff retention, patient load, and moral distress resources will create a much needed visual of how the situation for providers has changed. The goal will be an analysis of the UVA hospital, but if information is limited, another hospital will be analyzed instead.

Research Question and Methods

The question being asked is “how healthcare system management affects the mental health and functioning of providers.” The question is focusing on moral distress and related

problems. The focus of research will be on three subquestions. First, how was moral distress dealt with in a pre-COVID hospital setting? Second, what are the effects on the hospital of not treating moral distress? Third, what changes have hospitals made in response to COVID and have they worked? In order to answer these questions, research on pre-COVID hospital strategies and current hospital strategies must be done. Ideally, the same hospitals would be used for the comparison, but this data is scarce. Therefore, the researcher will seek to find research articles on similar hospitals published before and during the pandemic to address the first and third subquestions. Similarly for the second subquestion, the brunt of work will be a literature review in order to identify the long term effects of moral distress on hospitals. This will be going beyond burnout and the psychological symptoms faced by providers that have been well documented and will be looking at effectiveness of patient care, staffing, and staff morale (Henrich et al., 2017). Most data analyzed will be qualitative, so interpretation of the data will be focused on trends seen in multiple situations.

Conclusion

In order to accomplish the technical objective, an app will be created to measure the moral distress in a nursing unit by receiving self-inputted moral distress scores from the nurses. It must be HIPAA-compliant and deliver anonymous and usable data to those in managerial positions. This will fill a hole in moral distress research and awareness by giving researchers and nurses a viable tool to measure and remedy moral distress. In terms of the thesis, it will be a success when it adequately addresses the most promising methods of correcting moral distress through managerial changes and highlighting the dangers of ignoring the mental health of providers.

References

- 10 Best Practices for Addressing Ethical Issues and Moral Distress*. (n.d.). Retrieved October 14, 2021, from <https://www.amnhealthcare.com/amn-insights/news/10-best-practices-addressing-ethical-issues-moral-distress/>
- Allen, R., Judkins-Cohn, T., deVelasco, R., Forges, E., Lee, R., Clark, L., & Procnier, M. (2013). Moral Distress Among Healthcare Professionals at a Health System. *JONA's Healthcare Law, Ethics and Regulation*, 15(3), 111–118. <https://doi.org/10.1097/NHL.0b013e3182a1bf33>
- Beumer, C. M. (2008). Innovative Solutions: The Effect of a Workshop on Reducing the Experience of Moral Distress in an Intensive Care Unit Setting. *Dimensions of Critical Care Nursing*, 27(6), 263–267. <https://doi.org/10.1097/01.DCC.0000338871.77658.03>
- Burn-out an “occupational phenomenon”*: *International Classification of Diseases*. (n.d.). Retrieved October 13, 2021, from <https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases>
- Davis, M., & Batcheller, J. (2020). Managing Moral Distress in the Workplace: *Nurse Leader*, 18(6), 604–608. <https://doi.org/10.1016/j.mnl.2020.06.007>
- Epstein, E. G., & Delgado, S. (2010). Understanding and addressing moral distress. *The Online Journal of Issues in Nursing*, 15. <https://doi.org/10.3912/OJIN.Vol15No03Man01>
- Fourie, C. (2017). Who Is Experiencing What Kind of Moral Distress? Distinctions for Moving from a Narrow to a Broad Definition of Moral Distress. *AMA Journal of Ethics*, 19(6), 578–584. <https://doi.org/10.1001/journalofethics.2017.19.6.nlit1-1706>
- Fumis, R. R. L., Junqueira Amarante, G. A., de Fátima Nascimento, A., & Vieira Junior, J. M. (2017). Moral distress and its contribution to the development of burnout syndrome among critical care providers. *Annals of Intensive Care*, 7, 71.

<https://doi.org/10.1186/s13613-017-0293-2>

Gutierrez, K. M. (2005). Critical Care Nurses' Perceptions of and Responses to Moral Distress. *Dimensions of Critical Care Nursing*, 24(5), 229–241.

Hamric, A. B. (2012). Empirical Research on Moral Distress: Issues, Challenges, and Opportunities. *HEC Forum*, 24(1), 39–49. <https://doi.org/10.1007/s10730-012-9177-x>

Henrich, N. J., Dodek, P. M., Gladstone, E., Alden, L., Keenan, S. P., Reynolds, S., & Rodney, P. (2017). Consequences of Moral Distress in the Intensive Care Unit: A Qualitative Study. *American Journal of Critical Care*, 26(4), e48–e57. <https://doi.org/10.4037/ajcc2017786>

Jameton, A. (1984). *Nursing practice: The ethical issues*.

Moral Distress Consultation Collaborative. (n.d.). *Center for Health Humanities & Ethics*.

Retrieved October 13, 2021, from

<https://med.virginia.edu/biomedical-ethics/moral-distress-consultation-collaborative/>

Oh, Y., & Gastmans, C. (2015). Moral distress experienced by nurses: A quantitative literature review. *Nursing Ethics*, 22(1), 15–31. <https://doi.org/10.1177/0969733013502803>

Ramos, F. R., Barth, P. O., Schneider, A. M. M., & Cabral, A. S. (2016). *EFFECTS OF MORAL DISTRESS ON NURSES: INTEGRATIVE LITERATURE REVIEW*. 13.

Rathert, C., May, D. R., & Chung, H. S. (2016). Nurse moral distress: A survey identifying predictors and potential interventions. *International Journal of Nursing Studies*, 53, 39–49. <https://doi.org/10.1016/j.ijnurstu.2015.10.007>

Silverman, H. J., Kheirbek, R. E., Moscou-Jackson, G., & Day, J. (2021). Moral distress in nurses caring for patients with Covid-19. *Nursing Ethics*, 09697330211003217. <https://doi.org/10.1177/09697330211003217>

Sirois, F. M., & Owens, J. (2021). Factors Associated With Psychological Distress in Health-Care Workers During an Infectious Disease Outbreak: A Rapid Systematic Review of the Evidence. *Frontiers in Psychiatry*, 11, 589545. <https://doi.org/10.3389/fpsy.2020.589545>

- Torabi, M., Borhani, F., Abbaszadeh, A., & Atashzadeh-Shoorideh, F. (2018). Experiences of pre-hospital emergency medical personnel in ethical decision-making: A qualitative study. *BMC Medical Ethics*, *19*, 95. <https://doi.org/10.1186/s12910-018-0334-x>
- Viele, C. M. (n.d.). *MORAL DISTRESS IN EMERGENCY MEDICAL SERVICES*. 38.
- Warner, C. H., Appenzeller, G. N., Grieger, T., Belenkiy, S., Breitbach, J., Parker, J., Warner, C. M., & Hoge, C. (2011). Importance of Anonymity to Encourage Honest Reporting in Mental Health Screening After Combat Deployment. *Archives of General Psychiatry*, *68*(10), 1065–1071. <https://doi.org/10.1001/archgenpsychiatry.2011.112>
- Wocial, L. D., & Weaver, M. T. (2013). Development and psychometric testing of a new tool for detecting moral distress: The Moral Distress Thermometer. *Journal of Advanced Nursing*, *69*(1), 167–174. <https://doi.org/10.1111/j.1365-2648.2012.06036.x>