Open Peer Commentaries

The Determination of Quality of Life and Medical Futility in Disorders of Consciousness: Reinterpreting the Moral Code of Islam

Mohamed Y. Rady, Mayo Clinic Hospital
Joseph L. Verheijde, Mayo Clinic

The Islamic moral code originates from two primary sources: the Quran and the Sunnah (Rady and Verheijde 2014a). Regardless of time and place, this code provides practical and comprehensive guidance on behavioral aspects in health and illness. In Western principlism-based bioethics, medical futility justifies withholding and withdrawing of life-sustaining treatment (LST) based on a subjective determination of an unacceptable quality of life (QOL). This contrasts with physiologic futility; withholding or withdrawing treatment because of physiologic ineffectiveness.

The determination of treatment futility based on QOL remains medically, ethically, and legally controversial in disorders of consciousness (DOC) (Demertzi et al. 2014; Giacino et al. 2014). DOC includes several neurologic states, such as locked-in syndrome, unresponsive wakefulness syndrome (formerly known as vegetative state), minimally conscious state, brain death, and others. Padela and Mohiuddin (2015) propose a QOL definition of medical futility in DOC. The QOL is assessed with the “theological concept of accountability before God” (*mukallaf*) status: “the cognitive faculty to recognize God and thereby can benefit [a person’s] afterlife by performing religious practices (worship) or other meritorious actions willfully”. They posit that acceptable QOL is “a clinical/physiologic state where one can perform willful actions while being cognizant of their potential after life ramifications”. They argue that brain death physiology has been accepted as the foundational concept of futility. Then they argue that absent consciousness equates to absent QOL in other states of DOC.

In the Islamic moral code, the *mukallaf* status specifically pertains to the accountability for consequences of actions and deeds. When cognitively impaired, the non-*mukallaf* person is temporarily or permanently exempt from this accountability. The non-*mukallaf* status is not intended to judge the worthiness or quality of a human life. However, the authors link the non-*mukallaf* status to theologically unworthy QOL that warrants the denial of medical care based on the futility rationale. From this, they infer that medical treatment is futile in states of DOC. Padela and Mohiuddin translate *higher brain death* criteria into *theological death* in Islamic bioethics. We have outlined elsewhere how contemporary Islamic bioethics seeks closer alignment with Western principlism-based ethical decision making (Rady and Verheijde 2014a). Here, we outline scientific and theological arguments severing the links between non-*mukallaf* status, worthiness of life, and medical futility based on (1) the scientific challenge of brain death concept weakening the foundational definition of futility, (2) the confusion of obligation to provide medical treatment with the responsibility to provide compassionate care and the suggestion that end-of-life care (EOLC) may denote instrumentalizing another person’s life, (3) the authors’ silence about what constitutes medical treatment versus basic humane care, (4) the argument that medical treatment is to restore cognition without defining the minimal threshold in theological worthiness of life, and (5) the role of autonomy when medical treatment is deemed futile.

©Mohamed Y. Rady and Joseph L. Verheijde

This is an Open Access article. Non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly attributed, cited, and is not altered, transformed, or built upon in any way, is permitted. The moral rights of the named author(s) have been asserted.

Address correspondence to Mohamed Y. Rady, Department of Critical Care Medicine, Mayo Clinic Hospital, 5777 East Mayo Boulevard, Phoenix, AZ 85054, USA. E-mail: Rady.mohamed@mayo.edu

SCIENTIFIC OBJECTIONS

Padela and Mohiuddin (2015) view states of DOC as unacceptable QOL since all fulfill non-*mukallaf* status and, therefore, medical treatment is futile. They posit that because brain death is an accepted criterion, its physiology can be used as a basis for equating QOL with futility. However, the concept validity of brain death has been challenged, weakening the authors' assertion that it is a foundational basis for defining futility (Crippen 2014; Peterson et al. 2014; Rady and Verheijde 2013a). Padela and Mohiuddin cite outdated practice guidelines that claim absent awareness and willful acts in a permanent vegetative state (PVS). Contemporary neuroscientific evidence has disproven this premise by demonstrating awareness and willful modulation of brain activity (Di Perri et al. 2014; Gosseries et al. 2014; Guller and Giacino 2014; Monti et al. 2010; Naci et al. 2014). The content of consciousness (awareness of self and environment) cannot be discerned from the level of consciousness (responsiveness) in DOC. Therefore, more than 40% of these patients are incorrectly diagnosed with absent awareness (Cruse et al. 2014; Schnakers et al. 2009). Padela and Mohiuddin circumvent the difficulty of correctly prognosticating in DOC by asserting that "dominant probability (*ghalabat al-zann*) [in contrast to certainty without doubt (*yaqin*)] is acceptable" (9) based on the predominant view of Islamic jurists. Incorrect designation of treatment futility in DOC based on non-*mukallaf* status can deny appropriate treatment to restore *mukallaf* status. The authors' application of "dominant probability" in futility determination and treatment withdrawal illustrates already pervasive "therapeutic nihilism" and self-fulfilling prophecies of poor outcome (Giacino et al. 2014). Therefore, we have cautioned against making irreversible life-ending decisions under these circumstances (Rady and Verheijde 2014a; 2014b).

Padela and Mohiuddin confuse the obligation to provide medical treatment with the responsibility to provide patient care. They state: "[In] PVS (or an analogous clinical condition) the Muslim physician has no Islamic obligation to initiate or continue clinical care" (10). They incorrectly characterize EOLC as synonymous with instrumentalizing another individual's life by focusing on the curative aspect of medical treatment without mentioning its palliative properties. They also do not differentiate between withdrawing and withholding LST. In the context that medicine is ultimately unable to prevent death, no absolute definition of "lifesaving treatment" exists. The Quran describes the inevitability of death. Inevitability is the rationale for withholding cardiopulmonary resuscitation in the imminently dying. It does not justify withholding or withdrawing physiologically effective palliative treatment. Palliative treatment alleviates distress, delivers compassionate care, and upholds human dignity without purposefully shortening life. Padela and Mohiuddin do not address potential hunger and thirst from withholding and withdrawing nutrition and hydration. Also, the distress of acute asphyxia following the withdrawal of mechanical ventilation may not be effectively treated without resorting

to life-shortening interventions (Billings 2012). We think distinguishing between a person at the end of life and an imminently dying person is relevant when withdrawing therapeutically effective treatment that provides palliation (Rady and Verheijde 2013b). The timeline of an end-of-life trajectory can vary due to comorbid conditions and physiological effectiveness of treatment. Withdrawing physiologically effective palliative treatment because of unacceptable QOL shortens the end-of-life trajectory. Padela and Mohiuddin avoid addressing the detrimental consequences on the quality of palliation and the purposeful life-shortening effect of treatment withdrawal.

THEOLOGICAL OBJECTIONS

Padela and Mohiuddin transform the diminished cognitive capacity of non-*mukallaf* status to a theologically unworthy life incapable of worshiping God. The *mukallaf* status is about individual accountability for observance of the moral code, for example, doing what is required and leaving what is forbidden. The exception on accountability granted to non-*mukallaf* persons is God's justice and mercy to mankind. Padela and Mohiuddin reinterpret the lack of accountability in non-*mukallaf* status to mean theological death in DOC. They limit the theological worthiness of a human life to only willful performance of religious rituals and deeds. The confusion arises from equating a diminished cognition in non-*mukallaf* status with incapacity of worshiping God. The Quran states that the *Salat* or prayer (ritualistic practice of physical acts with supplication), as it is a form of remembrance of God, is one example of an act of worship: "Therefore remember Me (by praying, glorifying). I will remember you" (The Quran n.d., 2:151). Awareness and remembrance of God are also acts of worship. Diminished cognitive capacity in a non-*mukallaf* person does not prevent remembrance of God. Non-*mukallaf*, for example, a prepubescent child, can be aware and remember God. A non-*mukallaf* adult can retain awareness and perform this act of worship: "Those who remember Allah [God] (always, and in prayers) standing, sitting, and lying down on their sides" (The Quran n.d., 3:191).

Contemporary neuroscience has confirmed that awareness can be retained in noncommunicative and unresponsive patients (Boly et al. 2013). Additionally, no clinical test exists to conclude lack of awareness. Padela and Mohiuddin do not ascertain that unresponsive or noncommunicating Muslim patients lack capacity for awareness and remembrance of God. The Quran describes that all creations worship God through His glorification and each creation has its own way of worshiping that is beyond mankind's comprehension:

Allah [God], He it is Whom glorify whosoever is in the heavens and the earth, and the birds with wings out-stretched (in their flight)? Of each one He (Allah) knows indeed his *Salat* (prayer) and his glorification, [or everyone knows his *Salat* (prayer) and his glorification], and Allah is All-Aware of what they do. (The Quran n.d. 24:41)

Invoking an arbitrary threshold of cognitive capacity for theological worthiness of life and worshipping God conflicts with the Quran:

The seven heavens and the earth and all that is therein, glorify Him and there is not a thing but glorifies His Praise. But you understand not their glorification. (The Quran n.d. 17:44)

Why link QOL with diminished cognition and theological death in DOC? Padela and Mohiuddin appear to realign the moral code of Islam with Western secular bioethics' definition of unacceptable QOL especially in persons with severe neurologic disabilities. It is unclear whether their perceived theologically unworthy life as an index of QOL is universally applicable in futurity determination. Does it apply to non-Muslim patients treated by Muslim physicians, Muslim patients treated by non-Muslim physicians, or Muslim patients treated by Muslim physicians?

The non-*mukallaf* status as an index of QOL appears more like a theological reformulation of higher brain death and is, thus, prone to similar criticism and wide rejection. A non-*mukallaf* person is declared theologically dead and should no longer be considered a member of society nor receive medical care because of treatment futility. Indeed, enforcement of non-*mukallaf* status can violate individual autonomy and permit nonconsensual termination of a person's life because of her severe neurologic disability (Rady and Verheijde 2014b). Applying this QOL index would also mean that all treatment should be withdrawn from a pregnant brain-dead woman with a viable fetus, since both maternal and fetal lives have non-*mukallaf* status.

CONCLUSIONS

Padela and Mohiuddin proposed a QOL index signifying theological death that warrants withdrawal and withholding of medical treatment in DOC. This index raises serious scientific, theological, and moral questions. It obfuscates a life-ending decision with an end-of-life decision and covertly risks allowing nonconsensual euthanasia. ■

REFERENCES

- Billings, J. A. 2012. Humane terminal extubation reconsidered: The role for preemptive analgesia and sedation. *Critical Care Medicine* 40(2):625–630.
- Boly, M., R. D. Sanders, G. Mashour, and S. Laureys. 2013. Consciousness and responsiveness: lessons from anaesthesia and the vegetative state. *Current Opinion in Anaesthesiology* 26(4): 444–449.
- Crippen, D. 2014. Changing interpretations of death by neurologic criteria: The McMath case. *Journal of Critical Care* 29(5): 870–871.
- Cruse, D., I. Gantner, A. Soddu, and A. M. Owen. 2014. Lies, damned lies and diagnoses: Estimating the clinical utility of assessments of covert awareness in the vegetative state. *Brain Injury* 28(9): 1197–1201.
- Demertzi, A., R. J. Jox, E. Racine, and S. Laureys. 2014. A European survey on attitudes towards pain and end-of-life issues in locked-in syndrome. *Brain Injury* 28(9): 1209–1215.
- Di Perri, C., J. Stender, S. Laureys, and O. Gosseries. 2014. Functional neuroanatomy of disorders of consciousness. *Epilepsy and Behavior* 30: 28–32.
- Giacino, J. T., J. J. Fins, S. Laureys, and N. D. Schiff. 2014. Disorders of consciousness after acquired brain injury: The state of the science. *Nature Reviews in Neurology* 10(2): 99–114.
- Gosseries, O., H. Di, S. Laureys, and M. Boly. 2014. Measuring consciousness in severely damaged brains. *Annual Review of Neuroscience* 37(1): 457–478.
- Guller, Y., and J. Giacino. 2014. Potential applications of concurrent transcranial magnetic stimulation and functional magnetic resonance imaging in acquired brain injury and disorders of consciousness. *Brain Injury* 28(9): 1190–1196.
- Monti, M. M., A. Vanhaudenhuyse, M. R. Coleman, et al. 2010. Willful modulation of brain activity in disorders of consciousness. *New England Journal of Medicine* 362(7): 579–589.
- Naci, L., R. Cusack, M. Anello, and A. M. Owen. 2014. A common neural code for similar conscious experiences in different individuals. *Proceedings of the National Academy of Sciences*, published ahead of print September 15. doi:2010.1073/pnas.1407007111; <http://dx.doi.org/10.1073/pnas.1407007111>
- Padela, A., and A. Mohiuddin. 2015. Ethical obligations and clinical goals in end-of-life care: Deriving a quality-of-life construct based on the Islamic concept of accountability before God (taklif). *American Journal of Bioethics* 15(1): 3–13.
- Peterson, A., L. Norton, L. Naci, A. M. Owen, and C. Weijer. 2014. Toward a science of brain death. *American Journal of Bioethics* 14(8): 29–31.
- Rady, M. Y., and J. L. Verheijde. 2013a. Brain-dead patients are not cadavers: The need to revise the definition of death in Muslim communities. *HEC Forum* 25(1): 25–45.
- Rady, M. Y., and J. L. Verheijde. 2013b. End-of-life care and the withdrawal of cardiorespiratory life support: Are practice recommendations trustworthy? *Critical Care Medicine* 41(12): 2813–2815.
- Rady, M. Y., and J. L. Verheijde. 2014a. The moral code in Islam and organ donation in Western countries: reinterpreting religious scriptures to meet utilitarian medical objectives. *Philosophy, Ethics, and Humanities in Medicine* 9(1): 11.
- Rady, M. Y., and J. L. Verheijde. 2014b. Nonconsensual withdrawal of nutrition and hydration in prolonged disorders of consciousness: Authoritarianism and trustworthiness in medicine. *Philosophy, Ethics, and Humanities in Medicine* 9(1): 16. doi:10.1186/1747-5341-1189-1116.
- Schnakers, C., A. Vanhaudenhuyse, J. Giacino, et al. 2009. Diagnostic accuracy of the vegetative and minimally conscious state: Clinical consensus versus standardized neurobehavioral assessment. *BMC Neurology* 9(1): 35. <http://www.biomedcentral.com/1471-2377/9/35>
- The Quran. n.d. Mohsin Khan–English translation of The Quran. Available at: <http://www.quranexplorer.com/Quran> (accessed September 15, 2014).