

Developing an Islamic Research Ethics Framework

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Abstract In surveying the medical literature on Islamic principles of research ethics, it is apparent that attempts to identify ethical principles are replete with issues of standards and gaps in knowledge of the uses of scriptural sources. Despite this, attempts at creating an Islamic ethical framework for research ethics may improve current practices in research in Muslim-majority countries and contribute to the growing canon of secular bioethics. This paper aims to identify principles and considerations within Islam that (1) overlap with current corpora on research ethics, and (2) further informs the current research ethics discourse.

Keywords Islam · Research ethics · Human subjects protections · Religion · Ethical framework

Introduction

The emergence of an Islamic perspective on bioethical issues in the peer-reviewed, indexable medical literature is a relatively recent phenomenon. On the contrary, Islam has had a longstanding tradition of rational engagement with ethics more generally, and bioethical issues more specifically, that dates back to its founding in the seventh century. Between the eighth and sixteenth centuries, Islam as a civilization, experienced significant scientific flourishing; a period that saw many developments from physicians who were also

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avid philosophers—for example: Ibn Sina (Avicenna, d. 1037), Al Razi (Rhazes, d. 925), Ibn Rushd (Averroes, d. 1198), Ibn Isa al-Kahhal (d. 1010), and Ibn al-Nafis (d. 1288). Early Muslims were able to find cures for diseases as evident in the prophetic tradition. For example, Ibn Sina has been credited for his early explorations in scientific experimentation, recorded in his seminal work entitled “Canon of Medicine” (*Al-Qanun fi al-Tibb*) (Nasser et al. 2009), where he also outlined several requirements for research on drugs.

Much of the contemporary human subject protections and ethical responsibilities often rely on the Declaration of Helsinki or the Council for International Organizations of Medical Science (CIOMS) guidelines, placing a responsibility on ethical review boards to evaluate human subjects research. These guidelines also currently inform ethical reviews of research in Muslim-majority countries (Alahmad et al. 2012). While there is a wide range of experiences and practices in clinical research performed within Muslim-majority countries, the normative/theoretical principles derived from Islam that ought to arguably inform ethical research practices by Muslim scientists and others are not clearly enunciated. While the passive adherence to research ethics guidelines may ensure that scientific advances in Muslim-majority countries are being conducted ethically, it is equally important for Muslim researchers to actively contribute and participate in the ongoing conversation that is research ethics.

Similarly, the ways in which Jewish and Christian theology informed modern secular bioethics (Cahill 2010), Muslims need not be viewed as passive participants in research ethics compliance, rather, the Islamic religious corpora should be explored with aims of contributing nuance to the evolving research ethics discourse. The overall goal of this paper is to identify principles and considerations within Islam that overlap with current wisdom on research ethics to further inform and contribute to the research ethics discourse. The specific aims are to (1) review current approaches to normative Islamic principles, (2) reflect on contemporary bioethical principles within the context of the Islamic tradition beyond a heavy reliance on juridical/legal frameworks, and (3) propose candidate Islamic research ethics principles. Despite focusing specifically on the ethical obligations of Muslims involved in research, much of our discussion is designed to be extrapolated more broadly to the use of religious frameworks in expanding the research ethics discourse. Through our inaugural explorations in this topic, we hope to encourage others to explore how Islamic ethical principles can be conceived and extrapolated to evaluate ethical issues in research.

Normative Islamic Principles

The two main primary sources within the Islamic tradition used to inform legal and ethical pronouncements are the scriptural text of the *Qur'an*, as well as the teachings of the Prophet Muhammad organized in the form of chains of transmission known as the *hadith* (Brown 2009). The *Qur'an* is organized into chapters (*surah*) and comprised of verses (*ayah*). The *Qur'an* was revealed chronologically over the course of Muhammad's prophetic life, which spanned roughly 20 years. The *Qur'an* is often read and interpreted in tandem with the *hadith*, and both are used when extrapolating ethical and legal maxims or opinions. However, the *hadith's* authenticity and credibility can vary across different interpretative Muslim communities (Brown 2009), and thus, its use is not as sound as the text of the *Qur'an*. Moreover, while we recognize that secondary sources such as juridical, philosophical, and hermeneutical commentaries can help corroborate principles, given the

scope of this paper, we predominately focused on an exploratory analysis mainly from the *Qur'an* and other sources, such as the *hadith*, only when evidence was sufficient.

The inherent plurality of ethical discourse in Islam is emblematic of the Islamic tradition (Sachedina 2005). This paper is a continuation of that discourse through the exploration and discussion of modern Islamic research ethics. Thus, our defining of normative Islamic principles should not be considered as absolute, but rather as a portion of this plurality/diversity and as an opportunity for further exploration, dialog, and refinement. While we attempt to elucidate normative principles, we will also consider the diversity of religious opinions observed among religious practitioners when appropriate. We define Islamic research ethics here as the ethical principles derived or inspired by the Islamic tradition that aims to inform best practices in scientific research.

In surveying the current literature on modern Islamic research ethics, it is apparent that attempts to identify ethical principles are replete with issues of standards, absence of hermeneutical frameworks, and often gaps in knowledge of the various uses of scriptural sources. Similar issues have been noted, namely “in some cases, ‘Islamic’ is used simply to legitimize the ascription of the contents to Islam with no indication, whatsoever, that normative sources of Islamic ethical reflection provide a variety of opinions and resolutions to each ethical dilemma in biomedicine (Sachedina 2008).”

There are two common patterns when scientists and physicians write about the normative Islamic perspective—a disregard of broader textual context and an appeal to authority. Characteristic of a disregard for textual context is a tendency to identify and interpret *Qur'anic* verses or *hadith* without considering its historical, social, scriptural, or literary context. That is, authors will identify singular verses or *hadith* and interpret them with little analysis to substantiate their thesis. Verses are not considered in the context of the rest of the chapter, nor is consideration given to its literary elements that may lend itself to alternative meanings other than the literalist approach typically used. For example, this is most notably seen in scholarship that attempts to situate the principlist bioethics paradigm (i.e., respect for autonomy, beneficence, non-maleficence, justice) within the Islamic tradition (Aksoy and Elmali 2002; Aksoy and Tenik 2002; Mustafa 2014; Sachedina 2007; Serour 1994; Westra et al. 2009). Aramesh defines the entirety of the *Qur'anic* chapter 4 verse 58 (will be notated as chapter:verse henceforth) as pertaining to the principle of justice (Aramesh 2008). Fadel interprets only the first portion of the same verse as an onus of responsibility of the research team to be qualified and competent in their research pursuits (Fadel 2010). Neither author discusses the verse in context of the chapter, nor do they comment on the framework which aided their interpretation; thus, the broader context of when the verse was revealed is never acknowledged. Furthermore, when the same verse is read in relationship to the preceding and corresponding verses, the verse may not even relate to either author's claims.

The second trend is to rely heavily on *fatwa* or legal pronouncements from an authoritative voice, often through the reification of Islam. The current climate of theological Muslim engagement with the *Qur'an* is predominately legalistic in nature. Even so, these interpretations are not considered through various legal hermeneutical paradigms. Most jurists are not in a position to provide legal opinions on contemporary human subjects research issues from this historical legal canon (Sachedina 2008, 2009a; Padela et al. 2014). Characteristic of this approach is an appeal to a jurist for their opinion on either a case or an international ethical standard; the jurist will provide his opinion, with little or no further engagement taking place. The legal opinion is considered to hold normative value, immune to analysis or further engagement, unless in the company of other jurists from similar schools of law (Sachedina 2008, 2009a). Padela et al. note the important gaps in

Islamic bioethical-legal deliberation vis-à-vis the use of porcine products in vaccines, noting that religious scholars and scientists need to interface with modern science (while remaining true to Islamic moral epistemology) to better direct bioethics conversations on Muslim health matters (Padela et al. 2014).

This appeal to authority removes critical analysis from the engagement of the primary Islamic sources, leaving the discourse on research ethics without consideration or perspective from the myriad of hermeneutical approaches. For example, the review of the CIOMS guidelines conducted by the Islamic Organization for Medical Sciences (IOMS) used terms of “Islamic Law,” “Islamic Legislation,” and “Islamic jurisprudence” without clear definitions (IOMS 2004). However, it is significant to note that the IOMS commentary largely accepts the CIOMS guidelines as being within the accepted norms and ethical principles of Islam, which may help improve and inform current practices in research in Muslim-majority countries.

Islam and the Principlist Paradigm

Much like the IOMS commentary’s embracement of the CIOMS guidelines, the current bioethics literature on the principlist paradigm and Islam has noteworthy contributions despite concerning issues with methodology. The principlist paradigm (alternatively: “the four principles”) of contemporary secular bioethics—respect for autonomy, beneficence, non-maleficence, and justice—has been derived from the Belmont Report and articulated in the ground-breaking work of Beauchamp and Childress (2009). These principles have served as the foundation for many current guidelines on ethical research practice. Some have argued that since these four foundational ethical principles are applicable across cultures and societies, their origins can be found in every tradition—including Islam (Aksoy and Elmali 2002; Aksoy and Tenik 2002). Others have argued that such attempts are problematic without first understanding and articulating the moral epistemology of Islam (Sachedina 2007). While we agree with this latter sentiment as well as concerns of the limitations in applicability of the principlist paradigm in the real world (Westra et al. 2009), the following section is an exercise in the identification of a *prima facie* overlap between the four bioethics principles and the range, both thematically and literarily, of interpretation and analysis of *Qur’anic* verses (Abdel Haleem 2004). While we criticize the approach of reading verses in a vacuum, at times, we employ this approach as a way noting variation in interpretation that is interpreter specific and encouraging readers to think about how other literary factors may influence interpretation. This exercise is to highlight the range of interpretations that are possible through a simple engagement of literary interpretation. Our interpretive approach and review of language, context, and literary elements unique to the *Qur’an* is derived from current scholarship in *Qur’anic* hermeneutics and based on the interpretative range of the *Qur’an* that has previously been demonstrated in Islamic studies (Ernst 2011; Lawrence 2007). Our approach serves to highlight the immense potential religious texts hold in expanding our thinking on ethical principles through further hermeneutical strategies. This exploratory work is aspirational in the scholarship waiting to be rendered through better standards and practices in religious approaches to research ethics issues—a new terrain for contemporary Islamic studies.

Respect for Autonomy

The principle of “respect for persons” is intimately connected to autonomy, the notion that competent adults have the right and freedom to make individual decisions so long as they do not infringe upon the rights of others (Beauchamp and Childress 2009). Despite the ongoing debates within Islamic metaphysics on predestination and free will, there is a strong emphasis in the *Qur’an* on autonomous decision-making as an inherent right of human beings. Various prophets are alluded to as examples when their autonomous decisions either led them to, or away, from righteousness. Adam is seen as voluntarily breaking a divine commandment, while Abraham is applauded for obeying. The reader is constantly reminded that a day of reckoning, Day of Judgment, will befall all of humankind, wherein individuals will be held accountable for their individual actions. Finally, the *Qur’an* is replete with references to there being no compulsion in religion, and adherence to particular norms must be an elected and conscious decision.

However, autonomous decision-making can alternatively be understood in terms of communitarian ethics (or even principled autonomy) (Beauchamp and Childress 2009). Decisions are made with consideration of its effects within a community and individuals are often encouraged to ask and consult with members of their family or religious leaders and take into account communal resources. In this regard, consultation plays an important role in this form of communitarian ethics (Sachedina 2009a). In the context of research, women around childbearing age are oftentimes encouraged to consult with and obtain consent from their spouses and family before participating in research as subjects, given the priority of the familial unit over the individual self (Fadel 2010).

Individuals also have a divine obligation to be informed, that is, research participants must be proactive during the consent process. Muslims are seen to have a responsibility over their intellect and they are accountable for seeking knowledge (Aksoy and Tenik 2002; Mustafa 2014; Serour 1994). Muslims are also encouraged to make decisions that are moral and abide by divine injunctions. Furthermore, the duty to do good would also challenge patients who refuse treatment if that refusal results in further harm or death. While refusal of care is a right conferred by current secular articulations of autonomy, the duty to protect self and avoid harm takes moral precedence for many Muslims. The stipulation to do good and follow divine injunctions over individual autonomy is connected to the allusion of Abraham within the *Qur’an* who was given a choice to abide by a divine command. The exception to the rule is the notion that the forbidden is made permissible out of necessity, assuming it does not lead to further harms (“hardship necessitates relief”) (Aqeel 2007).

Some have argued that the participation of children in research is determined by the onset of spiritual awakening and the attainment of intellectual maturity (Hedayat and Pirzadeh 2001). These ages tend to be arbitrarily defined, but two helpful models include the onset of sexual maturity and the “rule of sevens.” Sexual maturity/puberty for boys and girls occurs at different ages, but for the purposes of religious law, sexual maturity is seen as the moment when spiritual and religious duties become obligations. The rule of sevens by contrast separates children into age ranges with particular attention to their ability to consent (Mobasher et al. 2012). Children below 7 are unable to provide consent and are under the full auspices and protections of their parents. From 7 to 14, children are viewed as having some ability to discern between right and wrong and therefore their decision to not participate is accepted over their parents (parents may object even if children in this age group consent). Privacy and confidentiality expectations must include the family; there

are still many ethical considerations pertaining to this age group in particular (Wendler 2006). Children above 14 are seen as being morally mature enough to make autonomous decisions with full maintenance of their privacy.

Beneficence

The attributes of mercy, compassion, beneficence, goodness, and kindness are encapsulated in the divine titles of *Ar-Rahman*, *Ar-Rahim*, *Al-Latif*, *Al-Barr*; these titles serve as important virtues to be actualized by individuals. Additionally, the divine command to “do good” is mentioned several times in the *Qur’an*. Finally, using the *prima facie* approach, the following verses (Mustafa 2014) are examples of beneficence as analyzed independently of their historical or textual context as means of highlighting the interpretive range:

“God commands justice, doing good, and generosity towards relatives and He forbids what is shameful, blameworthy, and oppressive. He teaches you, so that you may take heed.” (16:90)

“Spend in God’s cause: do not contribute to your destruction with your own hands, but do good, for God loves those who do good.” (2:195)

Beneficence is seen as a virtuous duty performed by the agent; it is also seen as the social character of a community, wherein laws should promote mercy, forgiveness, empathy, and altruism. Maximizing the good of the community is prized over individual gains, i.e., individuals must then work to promote the best interest of others over themselves. And since individuals comprise a community, communities are also responsible for ensuring the promotion of beneficence, a common theme in the *Qur’an* (Denny 2001).

As it relates to research, no experimental endeavor is justifiable unless its benefit to society is significantly greater than its risk. The researcher has a moral duty to do good by the subject, to promote the subject’s best interests, which would entail informing the subject of the nature of the study, their freedom to participate or withdraw at any given time, and the plan of action following potential adverse events. Deception, coercion, and exploitation are moral wrongs that do not promote the welfare of the subject and are antithetical to the command to do good. Furthermore, because beneficence is judged by its contribution to society, the onus of responsibility for ensuring that more good than harm is generated from a particular study is on the researcher as well as the community being engaged.

Non-maleficence

While preventing harm has been argued as being weightier than procuring benefits (Aqeel 2007), beneficence and maleficence share a complex relationship within the *Qur’an*. In the context of the scripture, an individual’s actions are judged both in their current life (in the physical sense) and in a metaphysical afterlife. Actions in this life are evaluated as right and wrong moral exchanges between individuals, with the additional evaluation of these actions in an ultimate divine reckoning or judgment. Current work on this topic has identified a few verses related to the principle of non-maleficence (Aksoy and Tenik 2002). Building from this work, there are three thematic trends in terms of beneficence versus maleficence that may be outlined. We explore these themes with more attention to

contextual features to guide understanding of the inter-textual dynamics that should be considered when identifying and deriving principles.

First, *harm as more serious than benefit*. The evaluation of harm is sometimes given more preference over the assessment of benefits, and the potential for harm is evaluated with more stringency. Harm is seen as a grave moral failing, and harmful actions are supplemented by a reminder of punishment. An example of this includes:

“He does not wrong anyone by as much as the weight of a speck of dust: He doubles any good deed and gives a tremendous reward of His own.” (4:40)

“...help one another to do what is right and good; do not help one another towards sin and hostility. Be mindful of God for His punishment is severe.” (5:2)

Second, *benefits are rewarded more than harm is punished*. The act of doing good is rewarded more heavily, and one’s recompenses for doing harm is equal to its weight. This is noted as follows:

“Whoever has done a good deed will have ten times to his credit, but whoever has done a bad deed will be repaid only with its equivalent—they will not be wronged.” (6:160)

Third, *benefits and harms are independent*. This following verse seems to imply that good works do not surmount wrongdoing, but each moral action is exclusive and weighed as an independent consideration.

“...whoever has done an atom’s-weight of good will see it, but whoever has done an atom’s-weight of evil will see that.” (99:7–99:8)

Moreover, an individual’s participation in promoting beneficence or incurring harm is intimately linked to the evaluation of the individual’s moral character as noted here:

“Whoever does good does it for his own soul and whoever does evil does it against his own soul: your Lord is never unjust to His creatures.” (41:46)

“Whoever speaks for a good cause will share in its benefits and whoever speaks for a bad cause will share in its burden: God controls everything.” (4:85)

While it is evident that more analysis is needed to differentiate the relationship of benefit and harm in the Islamic context, these verses can be used to extrapolate some tentative principles for research ethics. Firstly, risks, as harms, are to be evaluated with careful attention. Though a study may benefit society, one must consider whether or not the risk incurred could be further minimized through alternative designs. Within contemporary research ethics for example, study design and validity is often discussed within the context of randomized control trials, placebo, and equipoise; identifying and justifying the right scientific process with consideration to risk reduction falls within the concept of reducing harm and ensuring integrity, which are notably important Islamic ethical values (Reinhart 2001).

Secondly, because of the intimate spiritual pursuit of promoting good and avoiding harm, researchers have a deep moral obligation to ensure human subjects protections over the potential gains of the study. Any harm incurred by a participant is not justified regardless of benefit if that harm was a product of some moral failing.

Thirdly, human beings share an intimate connection to each other, so much so that the moral worth of one life is equal to that of humanity, as noted in 5:32, "...if anyone kills a person—unless in retribution for murder or spreading corruption in the land—it is as if he kills all mankind, while if any saves a life it is as if he saves the lives of all mankind..." As noted, harm is referenced before beneficence, and in the context of clinical research, this principle places the burden on researchers to set priorities in finding cures for diseases, but this pursuit should not supersede the risk of undue harm on the research subject. Moreover, there are diseases that are either endemic to a particular region or affect a small number of the global population. Therefore, in terms of distributive justice from an Islamic perspective, researchers cannot only search for cures that afflict a high volume of individuals; they must also seek to find cures that affect smaller groups or communities of people (e.g., orphan disease). This perspective promotes equality in research and therefore research investments (see next section).

Finally, some have argued that the obligations of a skilled physician are to protect health, avoid doing harm, and remove harmful things (Aksoy and Elmali 2002). This set of obligations therefore is also applicable to the health researcher. Additionally, the pursuit of knowledge and cultivating expertise are part of one's religious duties, and therefore competence on part of the researcher and the research team is a moral duty (Mustafa 2014). Harms can be perpetuated if any part of the research team is ill-informed or acts negligently. It is important for the researcher to conduct research in topics that they are best suited to address.

Justice

Justice is arguably a foundational ethical principle and within Islam it is often seen as the seminal principle, even greater than autonomy (Aramesh 2008). Within bioethics, justice is often defined as distributive justice or the equitable distribution of benefits (Beauchamp and Childress 2009). While equitable distribution of goods is emphasized in the *Qur'an*, there is an equal emphasis on social justice and human rights. The social justice and human rights discussion in Islam is replete with nuanced and rigorous discourse, extending into conversations on the differences between secular and religious conceptions of social justice and human rights (Sachedina 2009b). In all endeavors, humans are charged with the moral duty to improve social welfare. Assuming that the attributes of God are indicative of important Islamic values, *Al-Hakkam* or "The Judge" is commonplace in the *Qur'an*. The *Qur'an* reminds humans to act equitably and fairly among each other for God will be the ultimate arbitrator. Humans are also responsible for distributing resources equally, with a large responsibility falling on those in power.

In the context of research, the researcher has a moral obligation to ensure the fair selection of subjects and that the burdens of research are fairly distributed. This includes taking into account the social context in which research is being conducted. In the example of high-income countries conducting research in low- and middle-income countries in which they have had a previous history of colonialism, host countries may feel that they are owed more than just access to the benefits of the research upon its conclusion (Pratt and Hyder 2015). Research-capacity strengthening efforts may be a component of restoring global social balance, especially if it aims to contribute to the development and sustainability of host nations. While research-capacity strengthening may be seen as a supererogatory act of justice, introducing larger questions of who is responsible and to

what extent, the *Qur'anic* injunctions to be proactive in justice (e.g., obligations of affluent individuals to the disadvantaged, often articulated as the responsibility of the moral actor to protecting and helping the “orphan” and the “needy,” as noted in 2:83, 2:177, 4:9) views what secular bioethics may consider supererogatory as obligatory duties.

Furthermore, in the Islamic system of fairness, researchers are required to compensate a patient’s family in the case of an adverse event or death (Fadel 2010). In this sense, a researcher may not ask a subject to waive their rights for compensation, nor may a researcher absolve themselves of responsibility in the case of serious adverse events. Furthermore, researchers are also responsible for not intervening during morally dubious or suspect situations; inaction by a member of the research team capable of halting or remedying a situation, which may be morally reprehensible, may make the researcher culpable for this inaction (Aksoy 2010).

Candidate Islamic Bioethical Principles

The search for principles integral to Islam is a process that requires a deeper engagement with the tradition; what does Islam as a tradition and canon of ethical and legal thought emphasize in terms of moral responsibilities of the researcher/research team? Following the above strategy of building upon familiar and established contributions in bioethics, we take the foundational work of Sachedina one step further to frame an Islamic research ethics framework based on (1) public interest/common good (*maslaha*), and (2) no harm, no harassment (Sachedina 2007, 2009a).

Maslaha: Public Interest/Common Good

Maslaha can be understood as the concept that “the rational obligation to weigh and balance an action’s possible benefits against its costs and possible harms is central to social transactions in general and biomedical ethics in particular” (Sachedina 2009a). It is based on the idea that the purpose of Islamic ethics and law requires doing justice and preserving peoples’ best interests (Sachedina 2007). Maslaha can also be understood as a nuanced, active weighing of personal interest against communal benefits. Defining public good may seem an elusive, variable task; however, in the work of theologian-jurist Al-Ghazali (d. 1111), public good is defined as the protection of the ends of revelation, namely religion, life, reason, lineage, and property (Sachedina 2009a).

Furthermore, the promotion of three universal goals is important to promoting and ensuring the public good. A summary of these goals by Sachedina is as follows:

Primary/Essential Needs (al-daruriyat): indispensable things that are promulgated for the good of this and the next world, such as providing health care to the poor and down trodden. Such actions are necessary for maintaining public health and the good of people in this life and for earning a reward in the next. Without them, existence would be chaotic, resulting in the loss of life and property. When one member of society suffers, others must work to relieve the afflicted.

General needs (al-hajiyat): things that enable human beings to improve their lives and to remove those conditions which lead to chaos in one’s familial and societal life in order to achieve high standards of living, though these do not reach the level of essentials. If not obtained, this may lead to hardship and disorder, but not to corruption.

Secondary needs (al-tahsinat): things that are commonly regarded as praiseworthy in society, which also lead to the avoidance of those things that are regarded as blameworthy. Noble virtues, makarim al-akhlaq, improve quality of life, to make these needs easily accessible to an average number of a society, and even to embellish these novel virtues in order to render them more desirable (Sachedina 2009a).

Maslaha is often used to justify research, which aims to promote public health and generate generalizable knowledge to contribute to scientific advancement (Sachedina 2009a). With many Muslim societies governed by communitarian ethics, sacrificing the individual good of the subject through the promotion of the public good is seen as the norm (Sachedina 2009a). Pursuit of knowledge is seen as a collective effort and a collective good; neither the researcher nor the subject is autonomous in a vacuum, both have obligations to each other and to society as a whole. Therefore, the participant also has a moral obligation to stay informed and be proactive in his or her engagement, even though the prevention of harm is given priority and concern must be given to protecting research participants.

No Harm, No Harassment

The principle of no harm, no harassment is seen as the encapsulation of beneficence and non-maleficence and is considered “one of the most fundamental principles for deducing rulings dealing with social ethics (Sachedina 2007).” No harm, no harassment prohibits any legislation, promulgation or execution of law that may lead to individual and societal harm (Sachedina 2007). In the context of research, it is important for the community to be engaged to have a clearer understanding of what may, or may not, constitute harm and how that harm is actualized and assessed.

Jurist Muhammad bin Makki’s (d. 1384) commentary can be used as an important indicator in assessing the role of no harm, no harassment in interpersonal relations. Sachedina highlights his commentary as five major rules, summarized as follows:

1. “Action depends upon intention.”
2. “Hardship necessitates relief,” an inference from guidance in the prophetic tradition: “No harm should be inflicted or reciprocated.”
3. “One needs certainty.” To continue an action requires linking the present situation with the past. This rule is rationally deduced on the basis of a juristic practice that links present doubtful condition to the previously held certain situation to resolve the case.
4. “Harm must be rejected,” deduced on the basis of the need to promote benefit and institute it in order to remove causes of corruption or reduce their impact upon the possibility of having to choose the lesser of the two evils.
5. “Custom determines course of action.” The rule acknowledges the need to take local custom into account when making relevant rulings (Sachedina 2009a).

The probability of harm is generally evaluated through this lens, and medical treatment with dubious efficacy may be deemed unethical (Sachedina 2009a). On the contrary, in cases of incurable disease requiring additional experimentation that further exposes subjects to risk or harms, the subject has full right to reject and avert the harm regardless of social benefits that may be promoted (Sachedina 2009a). This principle may also challenge the function of phase I clinical trials which recruit healthy members of society to test the safety of a drug because the probability of harm may not render the practice ethical by

some Muslims. It is important for the Muslim researcher, like the Muslim physician, to put the well-being of the subject above everything. As Sachedina explains: “The sole responsibility of the physician is to the patient. In no way does he/she represent any one else’s interests, including the interests of future sufferers from the same disease. Accordingly, he/she cannot decide to compromise his/her care for the patient by taking into consideration the long-term benefit such experimentation on his/her patient might confer on others” (Sachedina 2009a).

Other Principles and Considerations

Islamic bioethics is not limited to only these two principles, rather Sachedina’s work sets the standard of engagement and scholarship required to elucidate other relevant principles. However, as he has noted, “the literature in English...suffers from sweeping, immature judgments about Islamic positions” (Sachedina 2008). Contemporary scholarship in the medical literature often falls short of hermeneutical standards and examination of moral epistemology within Islam; there has been a deep reliance on legalisms from the four prominent Sunni schools of jurisprudence, to try and provide answers to contemporary questions. It is important for a scholars and academics to develop better standards for scholarship on Islamic perspectives in the pursuit of identifying ethical principles of research ethics and beyond.

The “virtuous researcher” is a concept that can be derived from the ethical duty to do good and preserve the well-being of individuals and the community; analogous to the virtuous physician (Marcum 2012). Within the Islamic context, researchers are obligated to hold themselves to higher standards (relative to international guidelines) and a researcher’s expertise and study design are not the only elements under scrutiny. The personal and moral character of the researcher, his/her reputation, and the establishment of trust with the study population are all values that Islamic sources arguably promote (Sartell and Padela 2015). Additionally, it is important for researchers to be in communication with their colleagues, institutional review boards and ethics committees, voicing concerns when they encounter elements in their research they find questionable or disconcerting.

Following the principle of “enjoining good and forbidding wrong” (*al-amr bi’l-ma’ruf wa’n-nahy ani l-munkar*), researchers have a further obligation to advocate for better standards of conduct in research and speak out against violations in research. Helping develop infrastructure to report adverse events and offering protections to whistle-blowers could be considered as part of this requirement.

Muslims are also responsible for preserving the well-being of animals, and ensuring that their suffering is limited (Gharebaghi et al. 2007; Mobasher et al. 2008; Naderi et al. 2012). For example, in the context of *halal* (religious permissibility) slaughter of animals for consumption, Muslim-majority countries and various religious councils have gone to great lengths to outline the parameters for the “humane” killing of animals (Nakyinsige et al. 2013). The central principle in many of the injunctions governing humane animal welfare is to minimize animal suffering, mistreat, misuse, or abuse. These principles have also been extrapolated for animals used in laboratory research settings; disproportionately painful or disturbing tests are considered unethical, a concept also shared by many international animal welfare committees (Gharebaghi et al. 2007). Some Muslims have also argued that animals hold their own metaphysical station as living entities and humans may benefit from observing and learning from various creatures (Gharebaghi et al. 2007). Furthermore,

scientists, by taking possession of an animal, have a moral responsibility to treat them humanely (Gharebaghi et al. 2007). Additionally, they are to minimize the amount of animals used or sacrificed in preclinical trials (Gharebaghi et al. 2007). This has obvious implications for preclinical trials involving certain types of animals. Reducing suffering and unnecessary experiments on animals is an important consideration for Muslim researchers.

Conclusion

Currently, Islamic ethical principles as articulated in the medical literature provides a starting discourse and the involvement of academics in Islamic studies has greatly improved our current knowledge on Islamic ethics—providing those in the medical field with critical tools to improve the search for Islamic bioethical principles (Sachedina 2009a). Modern research ethics grew out of a prevailing concern for our treatment of human subjects in research.

As scientific research progresses especially in Muslim-majority countries, a greater responsibility is placed on those societies for abiding by international standards for the responsible conduct of research. There is a great need for scholarship on Islamic research ethics that is not only insightful but also methodologically transparent; both Muslim researchers and research participants are challenged to proactively define Islamic ethical guidelines.

For the Muslim researcher working in secular environments, it is important to foster participation in research ethics discourses. Contentious objections by Muslim researchers to particular types of research/methods should be viewed as fertile ground for nuanced conversations and potential advancements and improvements in the research ethics discourse. Additionally, as scientific advancement continues to surpass the imagination, Muslim scientists should lend their scientific expertise and knowledge to informing religious scholars and academics tasked with extrapolating ethical guidelines for emerging scientific research. There is much to be gained from the bridging of scholarly communities through the cross-pollination of religion and science.

This paper should serve as a call for the thoughtful critique and development of an Islamic ethical framework and hopes that through that work we may also improve or revise our current formulations of secular research ethics.

Compliance with Ethical Standards

Conflict of interest None.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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