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**American Muslim Health Disparities: The State of the Medline Literature**

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**ABSTRACT**

Background: While religious beliefs and values influence health behaviors, conventional health disparities research rarely examines health outcomes by religious affiliation particularly within multi-ethnic minority communities.

Methods: Using a systematic strategy we searched the Medline literature to identify empiric studies that report on health disparities between American Muslims and non-Muslim groups residing in America. In addition to use religious affiliation descriptors for Muslim groups we utilized geographic and ethnicity terms such as “South Asian” or “Pakistani” as proxy terms to help uncover studies of American Muslims.

Results: 171 empirical studies were captured. South Asians and Arabs were the most commonly studied groups, and mental health was the most common studied health condition. The overwhelming majority of studies did not assess connections between the Islamic faith and health outcomes.

Conclusion: Healthcare disparities among American Muslims remain under-investigated. The few empirical studies of American Muslim groups, or of ethnic groups with large numbers of Muslims, rarely examine relationships between Islam-related factors and health outcomes and thereby miss an opportunity to understand the relationships between religion and health disparities.

**Keywords:** Health inequities, Immigrant Health, Islam, Minority Health, Religion,

**INTRODUCTION**

Studying and intervening upon disparities in health outcomes is integral to bringing about equitable and quality healthcare to all. Despite overall improvements in American population health metrics, minority racial and ethnic groups continue to experience healthcare inequities across a range of diseases and health outcomes. Accordingly the elimination of healthcare disparities, and thereby promoting social justice, remains an important goal of the American healthcare system and healthcare policy leaders ("Healthy People 2010: Understanding and Improving Health," 2000).

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In addition to determining health differences by socioeconomic status, healthcare disparity research typically assesses healthcare differences by racial and ethnic affiliation. Consequently much of the current health intervention work focuses on improving outcomes among racial and ethnic minority groups and on reducing socioeconomic barriers to health. Indeed by definition healthcare disparities research predominately involves measuring differences across markers of race and ethnicity (Kelley et al., 2005). The decision to classify, and to report, healthcare disparities by race and ethnicity is based on the assumption that, in general, social experiences and cultural values that impact health are shared by people of the same racial and ethnic affiliation. While this assumption may not be fully true it has proven useful in targeting health interventions for disadvantaged minorities.

However conventional healthcare disparity studies may miss potentially important population groups that are not confined within singular racial and ethnic categories, and may also miss the influence of shared values that impact groups across race and ethnicity (Gee et al., 2009; Gomez et al., 2007; Lee & Vang, 2010). One such influence is that of religion. Certainly people of the same religious affiliation can share in social experiences and ascribe to the same values, and these experiences and values may impact health behaviors and healthcare decisions. Accordingly religious groups may experience differences in health outcomes that are not visible in current healthcare disparity work that is predominately confined by racial and ethnic categories (Padela & Curlin, 2012). Consequently research on health disparities among multi-racial and multi-ethnic religious communities is scant and unsystematic.

American Muslims represent an ideal population for assessing how religion may impact health across racial and ethnic lines. Muslims in the US and Canada number between 5-8 million and comprise of multiple racial and ethnic groups, the most prominent of which are Arab Americans and South Asians. American Muslims are also mix of native-born and immigrant populations, with nearly two-thirds of the population being comprised of 1<sup>st</sup> and 2<sup>nd</sup> generation immigrants from Muslim-majority nations (Lauderdale, 2006; "Muslim American Demographic Facts," 2000; "Muslim Americans: Middle Class and Mostly Mainstream," 2007; Obama, 2009; Shah et al., 2008; Smith, 2002). Within this diverse group, research suggests that Islamic beliefs about illness, values such as modesty concerns, and ethico-legal guidelines related to therapeutics, influence health and healthcare-seeking behaviors across the community (Padela & Curlin, 2012) and discrimination directed at a religious identity impacts the health of American Muslims of every ethnic and racial group (Abu-Ras & Abu-Bader, 2009; Inhorn & Serour, 2011; Lauderdale, 2006; Padela & Heisler, 2010; Shah et al., 2008).

While it may be reasonable to hypothesize that religion-related factors may contribute to healthcare disparities between Muslim and non-Muslim groups within the US and Canada, as of yet there has been no way to assess such differences in a systematic manner; national health surveys do not adequately capture religious affiliation and naming algorithms used to mine national datasets for Muslim affiliation have poor sensitivity (Curlin et al., 2009; Curlin et al., 2010; Curlin et al., 2001).

Given that Islam and Muslims are generally under-represented in the MEDLINE literature (Poza & Fins, 2005), we utilized a systematic literature review search strategy that augmented search strings using markers of religious affiliation to identify studies of American Muslim with race and ethnic descriptors to uncover additional studies. Our goal was to describe the state of the American Muslim healthcare disparities research as documented within the MEDLINE literature.

## METHODS

We conducted a Medline search using PubMed and Ovid to identify manuscripts published between 1980 and May 2009 that pertained to American Muslim healthcare disparities. Our earliest inclusion date was 1980 because there were no studies of American Muslims reported in the Medline literature prior to this date. We focused on MEDLINE literature because it is the largest bibliographic database of life sciences, containing about 18 million records from approximately 5,000 selected publications from 1950 to 2009, is globally accessible to both clinicians and researchers, and because it is the main venue of publication for researchers interested in community health studies from the US (Falagas et al., 2008; Pozo & Fins, 2005).

Our initial search string consisted of variations of the terms “American”; “Muslim”; “Islam”; “Health Disparity”; “Healthcare Disparities”; “Disparity” in both databases. These initial search strings yielded less than 10 manuscripts total. For example the search “American” AND “Muslim” AND “healthcare disparities” yielded one manuscript in Pubmed. Recognizing that most healthcare disparity research focuses on racial and ethnic groups we further deployed a search strategy that used three sets of terms covering geographic origin (GO), location (LO), and healthcare disparities (HD) (Table 1). The GO domain attempted to capture ethnic groups that may include large numbers of Muslims. Thus we included terms for (i) national identities from countries listed as having greater than 50% Muslim populations by the CIA World Factbook profiles, e.g. Indonesian and Pakistani, and ethnic identities that may be predominantly Muslim in the US, specifically Arab or South Asian. The LO term used was “AND America” so as to restrict our search to studies that study American communities. This term was employed as it captured the greatest number of total articles compared to the terms such as “North America” or “United States.” The PubMed search strategy used “Epidemiology OR Neoplasms OR Cardiovascular System OR Prevalence” for the HD domain. These terms were not “explodable” terms in Ovid. All searches were limited to English language publications.

After completing the database searches, four researchers reviewed the manuscript titles and abstracts to eliminate studies that were not empirical studies, did not take place in North America, or involved a racial, ethnic, or geographic origin group that did not contain Muslims. After deleting references that were duplicated by the PubMed and Ovid searches, the resulting references underwent full-text review. We further completed a hand search of titles and abstracts within the *Journal of Immigrant and Minority Health*, and the journal *Ethnicity and Disease* from 2001 to 2009 as these two journals contained the most number of citations in our search and these journals only began to have relevant citations beginning in 2001.

Three investigators independently reviewed all remaining manuscripts using a data abstraction form that recorded the following nine manuscript characteristics: 1) whether the manuscript was a full study or a brief report, 2) the study type (a primary quantitative survey, a prevalence study using national datasets, health intervention study, other), 3) the disease states studied (mental health, cardiovascular, cancer, other), 4) the population or ethnic group studied, 5) the location of the data collection (city/ metro area, region, state, national), 6) whether the study directly compared health metric between study groups, 7) the number of research subjects, 8) whether the population studied was predominately a refugee population, and 9) whether the study incorporated measures of Islamic religiosity or identified Islam-related factors as contributing to health differences between the population studied and the general US or Canadian population. Data abstraction discrepancies were resolved by team consensus. A final database of pertinent manuscripts and abstraction sheets was generated and accuracy verified by the independent data entry of two team members.

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A health disparity, by definition, is the result of comparing the health status of two groups. To be as broad as possible we included studies that measured health differences between any known Muslim group, or a group with Muslim members (i.e. Arab), and the general population. Further, studies that reported on health metrics within a Muslim group, e.g. prevalence studies, and then compared them to other groups in the discussion were also retained.

Table 1 Literature Review Search Strategy

<p><u>Healthcare Disparity Terms</u> Ovid: Exploded terms- “Health Status Disparities OR Healthcare disparities OR Minority Health OR Delivery of Healthcare OR Health Services Accessibility OR Morbidity OR Incidence”</p> <p>PubMed: Ovid search terms, and additional MESH terms “Epidemiology OR Neoplasms OR Cardiovascular System OR Prevalence”</p> <p><u>Geographic Origin (Ethnicity or Nationality) Terms</u> National identities associated with Muslim majority nations, or ethnic identities comprising of significant numbers of Muslims. Examples “AND Arab” or “AND Indonesia”</p> <p><u>Location Term</u> “AND America”</p>
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#### RESULTS

The PubMed and Ovid searches generated 2666 and 3310 manuscripts respectively. Our hand search of the two aforementioned journals identified an additional 34 manuscripts. After removing duplicates, and discarding papers that were not empirical studies of Muslim populations in North America, 171 manuscripts were retained for data abstraction. These 171 manuscripts represented a diverse set of nationalities and ethnic groups that contain Muslim members. Most studies were conducted among ethnic groups, rather than immigrant populations of specific nationalities. Thus Muslims were studied as part of groups such as South Asians (n=42) or Arabs (n=41). Immigrants from Somalia, Bosnia, and Afghanistan were the most common nationalities studied. Three manuscripts studied “Muslims” without further specification by ethnicity or national origin. No empirical studies were found that reported on the health of a group of native-born African American Muslims. The most commonly studied disease states involved mental health conditions (n=29) and cancer (n=22). Fifty eight studies collected data within a state (i.e. Nebraska), or a large poorly-defined region (i.e. Southern California), while metro Detroit, known to have a large Arab Muslim community, accounted for 28 studies. 26 studies involving Canada-based Muslim groups were found. No manuscripts reported on Muslims in Mexico.

Importantly, most studies did not study Islam-related factors, such as religiosity, and their impact upon health outcomes; only a minority considered Islamic beliefs, values or practice to effect health differences between Muslim and non-Muslim groups. Indeed of the 171 manuscripts, only 29 specifically mentioned Islam within the text, and only 19 suggested that Islam may contribute to differential health outcomes between Muslim and non-Muslim groups.

Table 2 Breadth of Studies (Total n=171)

Reported Geographic Origin of Study Participants	
Ethnic Groups	
South Asian	42
Arab	41
Single Nationalities	
Somali	13
Bosnian	11
Afghani	9
Health Condition Studied	
Mental Health	29
Cancer	22
Cardiovascular Disease	16
Reproductive Health	13

## DISCUSSION

Healthcare disparities are most commonly researched, and reported, along socioeconomic, ethnic and racial lines. Minority religious communities, however, may share health behaviors and healthcare experiences that arise from a common set of religious beliefs, values and experiences. In turn these shared health behaviors may lead to specific differences in health outcomes when compared to other group. In this study we sought to describe the state of American Muslim health disparity research through a systematic literature review employing a novel literature search strategy that, in addition to using religious affiliation terms, i.e. “Muslim”, utilized racial and ethnic group affiliation search terms to uncover studies of Muslim populations in North America.

American Muslims are racially and ethnically diverse and health behaviors across this group are strongly influenced by religious beliefs and values (Beine et al., 1995; Carroll et al., 2007; Davidson et al., 2008; Ghaemi-Ahmadi, 1992; Laird et al., 2007; Matin & LeBaron, 2004; Padela et al., 2012; Reitmanova & Gustafson, 2008). Further, and particularly in the aftermath of 9/11, having a Muslim identity exposes individuals to discrimination that also impacts health behaviors and outcomes (Abu-Ras & Abu-Bader, 2009; Padela & Heisler, 2010). Hence, the study of American Muslim health is particularly useful for researchers look to tease out the influence of religion upon health outcomes across racial and ethnic lines. Furthermore, the importance of looking at the patterning of health disparities by religious affiliation is evidenced by research that suggests that British Muslims experience health disadvantages across multiple disease states (Karlsen & Nazroo, 2010). Studying American Muslim health disparities may provide insight into how religious affiliation, values, practices and identity impact health.

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While our strategy of using ethnic or national identities as a proxy for religious affiliation did allow us to capture many more studies that would have the term “Muslim,” we found few studies that reported on the relationships between religion and health. As most studies sampled populations according to ethnic affiliation, e.g. Arab or South Asian, the study groups included both Muslims and non-Muslims, and because religious affiliation was not captured reporting Muslim health metrics was not possible nor was comparing Muslim members of an ethnicity to non-Muslim members of the same ethnic group. Accordingly researchers appear to have been more focused on the relationships between culture, immigrant status, and health than on religion and health. By not assessing religious affiliation and by not incorporating measures of religiosity in their studies, researchers missed the opportunity to study the relationship between Islam and health, and overlooked a key factor impacting health behavior- religion.

Decades of research has shown that religious affiliation, religiosity, and religious identity impact health. For example, a salutary relationship between religious participation and health status with reductions in morbidity, as well as in overall and cause-specific mortality, is found among individuals who adhere to religions with strict behavioral demands. In addition, active religious participation has been associated with less illness and with better health (Levin et al., 2005). On the other hand studies outside of the US report that self-identification as part of a religious minority may contribute to health disparities (Karlsen & Nazroo, 2010). Based on the scant literature we found much more specific attention is needed to study the patterning of health outcomes and healthcare disparities based on religion in the US and Canada, and specifically among Muslim groups.

Our study has several important limitations. First, we restricted our search to MEDLINE as this database is the largest, and most widely used, resource for clinicians and health services researchers in the US. However other databases such as PsychInfo may index studies not found in Medline and that document American Muslim healthcare disparities in a more complete way and we suggest similar systematic review approaches be conducted with these databases. Second, we used a geographic origin term (incorporating ethnicity or nationality) within our search strategy to capture manuscripts that studied American Muslim populations. This novel strategy is an inherently a limited surrogate for religious affiliation. There are American immigrants from Muslim-majority countries who are not Muslim, and immigrants from countries that are not-Muslim majority nations such as India and Lebanon, that are Muslim. Furthermore, a significant number of American Muslims are indigenous African Americans and our augmented search strings using ethnic group or nationality as proxies for religion excludes research on the health of native-born African American Muslims. Consequently, while our novel search strategy did uncover a greater number of manuscripts that reported on American Muslim groups than we would have by limiting the search string to “Muslims”, it still only offers partial window into research among potentially Muslim groups residing in America.

Religion is related to ethnicity and geographic origin in complex ways, and culture, language, perceived discrimination, and other aspects of ethnicity and nationality may all have unique influences upon health outcomes. Indeed, among minority groups, while “there are often clear areas of overlap between aspects of religion and aspects of ethnicity in both the self-understanding of people and their experience of unfair treatment, disadvantage, and discrimination,” “the dimension of “religion” should not be completely collapsed into that of “ethnicity” nor vice versa. Rather, their complex relationship needs to be borne in mind and teased out in each specific context that is under consideration” (Beckford, 2006). Our findings

suggest the need for such detailed research so that the independent influences of religion, race, ethnicity and other factors upon health disparities can be elucidated.

Our search strategy explored health disparity research conducted among a group of co-religionists, American Muslims, by using the more traditional markers of ethnicity and nationality to uncover empirical studies indexed by MEDLINE. Our findings suggest that our search strategy met with limited success, at least partially on account of the fact the American Muslim health in general, is under-researched. Nonetheless the limited research suggests that religious beliefs, values and identity impact the health of American Muslims in significant ways, and that the relationships between religion and health as it relates to American Muslim health outcomes warrants focused attention (Padela & Curlin, 2012).

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