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Abstract

Medicine is a field in which people, regardless of their religious or cultural background, interact with and participate in. To that end, limited work has been done to assess the intersection of an individual’s religious and/or cultural dietary restrictions and the use of animal derived medical products and devices. Our proposed research project aims to bridge the gap in our current knowledge in order to assist medical professionals in providing the most appropriate care possible with regards to religious and cultural preferences of their patients. The survey is being distributed via the Mechanical Turks (MTURK) service and through social media. Once data collection is complete, mixed method analyses will be performed to assess how aware participants are of the use of animal derived products in medicines and surgical devices and whether their religious and cultural restrictions would influence their willingness to utilize those animal derived medications or surgical devices.

Introduction

As osteopathic medical students, we embrace that humans are a single unit comprised of body, mind, and spirit and that rational treatment is based upon an understanding of the basic principles of body unity (AOA, 2023). More than 5% of citizens in the United States identify with six major religious teachings and/or cultural dietary restrictions (e.g., veganism) that might impact acceptability of animal-derived medicines and surgical supplies (Enoch et al., 2005; Pew, 2023; Vanderlee et al., 2022). In order to approach patients holistically and with cultural humility, we must avoid making assumptions about their beliefs. Instead, we must understand that cultural humility is a continuous and plastic process that requires open communication combined with continuous self-evaluation for assumptions and bias (Miller, 2009; Sprik & Gentile, 2020). A recent systematic review of the literature found only 8 studies published in English that sought opinions about the acceptability of animal-derived medications or surgical supplies from patients or religious leaders (Babos et al., 2021). Of these eight studies, only one study sought information from US patients themselves, involving only 100 patients and 106 physicians from a single Veteran’s Administration Center in Nebraska (Sattar et al., 2004).

Methods

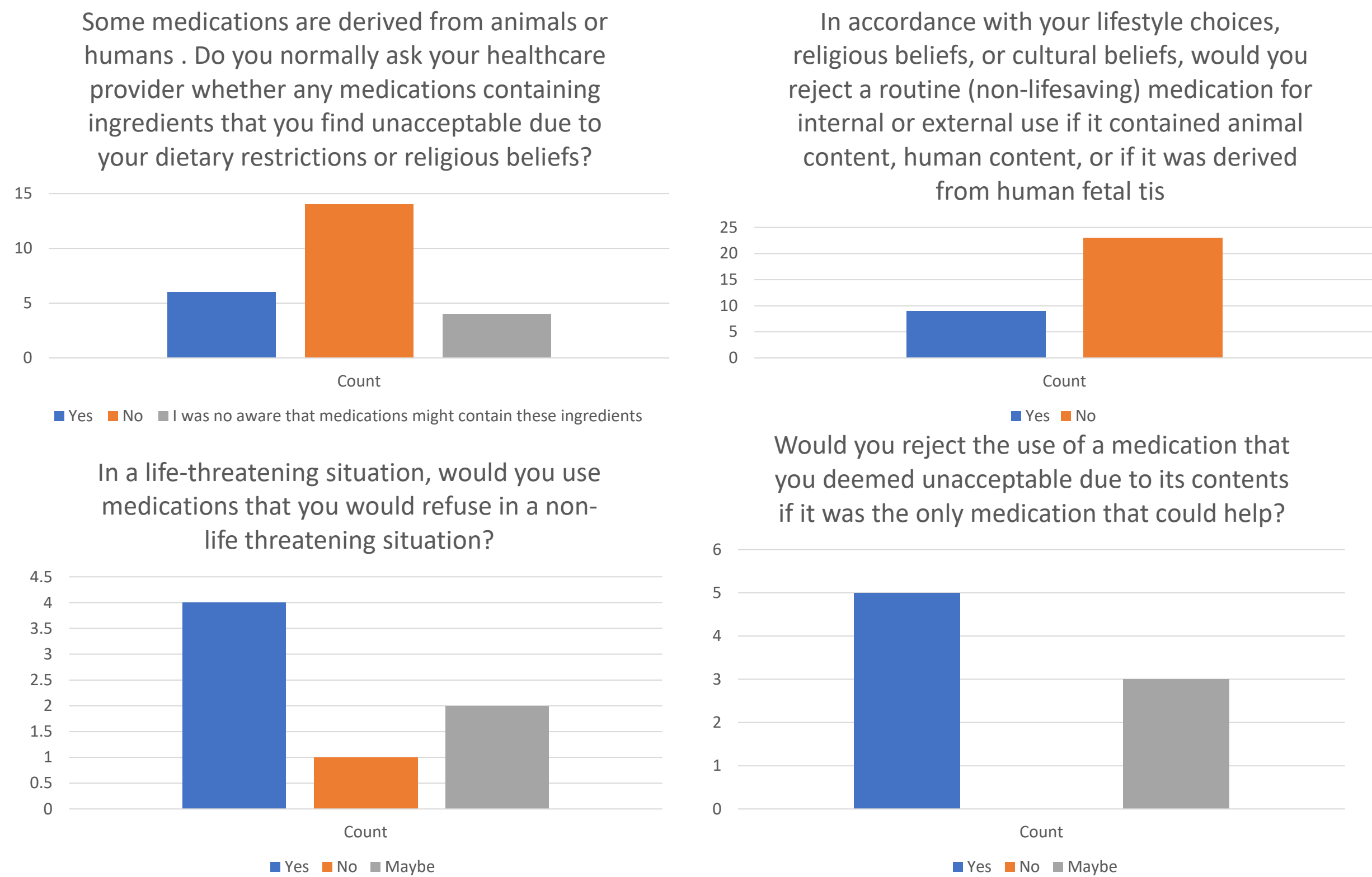
A survey instrument was developed, evaluated for face validity, and approved by Lincoln Memorial University Institutional Review Board. A sample size of 500 participants (250 patients and 250 providers) was derived by estimating that 5% of the US population adheres to beliefs that might impact acceptability of medications and that approximately 70 - 85% of those with such beliefs would prefer animal-free medications based upon (Sattar et al., 2004; Vissamsetti et al., 2012); at least 246 subjects in each arm would be needed to capture the appropriate portion of the population with 95% confidence.

Methods cont.

In order to recruit a sufficient number of subjects, we seek funding to use Mechanical Turks (MTURK). Current literature suggests that MTURK workers spend approximately 10 - 11 seconds per question on surveys and that offering slightly higher wages increases both completion rates and time spent on each question, likely increasing the veracity of the results (Brawley & Pury, 2016; Cloud Research, 2023). Participants will answer between 3 and 30 questions, with health care providers answering the larger amount; the \$2.00 paid to each participant will translate to approximately \$21/hr for the worker. In addition, preliminary data for now has been gathered from social media sharing sites, along with paid respondents.

Results

Below is a table of preliminary survey results that have been collected. 33 people have been surveyed as of 4/4/23. Of the 33, 18 were from social media and 15 were from MTURKs website. Of the 18 from social media, 8 were healthcare providers. Of the 15 from MTURKs, 4 were stated to be healthcare providers



Discussion

Hypotheses: The survey instrument is designed to test the following null hypotheses through X2 analyses at significance level 0.05 for those reporting that religion is moderately to very important (VR) compared to those reporting slightly or not at all important (NR) such that VR = NR for each condition:

- Ho_{1a and 1b}: Strength of religious belief does not influence choice of routine medicines or surgical supplies.
- Ho_{2a&2b}: Strength of religious belief does not influence unacceptability of life-saving medications or surgical supplies.
- Ho_{3a 3b 3c}: Products that participants object to for transplantation do not relate to the strength of their religious belief.

4. Ho_{4a 4b 4c}: Strength of religious belief does not influence willingness to pay more, accept if a product was the only choice, accept if it meant longer treatment; those answering “maybe” to this question will be categorized as “yes” for statistical analysis.

5. Ho_{5a 5b 5c}: The strength of provider religious belief does not influence their belief in the importance of honoring patient preference, with moderately to extremely categorized as “important” and slightly to not at all categorized as unimportant.

6. Ho_{6a -6h}: Acceptability of products for conditions tested in hypotheses 1a – 4c does not differ between health care providers (HCP) and lay people.

7. Ho_{7a}: The expectation or desire for discussion of medication/surgical supply sources does not differ between HCP and lay people.

Limitations: The survey population is intentionally limited to participants from the United States. As such, it may not fully account for cultural or religious differences as they are practiced in other areas of the world. Another limitation is that the study relies on self-reporting religious and cultural beliefs, and their impact on the survey responder’s willingness to engage with animal derived medications; however, the survey does not measure the degree of religiousness and thus cannot account for differences that may arise from varying degrees of belief within a faith itself.

Future Studies: This survey could expand to include a larger sample size from outside of just the United States in order to better assess how different regions and cultural norms influence participants’ beliefs as they pertain to animal derived medications. Another future direction of study could focus on understanding ways in which health care providers could better prepare themselves to have discussions regarding culture and religion. Using paid respondents may also add extra motivation and survey information.

References

American Osteopathic Association. (2023). Explore the philosophy behind the practice of osteopathic medicine. <https://osteopathic.org/about/leadership/aca-governance-documents/tenets-of-osteopathic-medicine>

Babos, M. B., Perry, J. D., Reed, S. A., Bugariu, S., Hill-Norby, S., Allen, M. J., ... & Wethington, K. K. (2021). Animal-derived medications: cultural considerations and available alternatives. *Journal of Osteopathic Medicine*, 121(4), 361-370.

Brawley, A. M., & Pury, C. L. (2016). Work experiences on MTurk: Job satisfaction, turnover, and information sharing. *Computers in Human Behavior*, 54, 531-546.

Cloud Research. (2023) <https://www.cloudresearch.com/resources/blog/a-simple-formula-for-predicting-the-time-to-complete-a-study-on-mechanical-turk/>. (accessed 1/5/23).

Enoch, S, Shaaban, H, Dunn, KW. (2005). Informed consent should be obtained from patients to use products (skin substitutes) and dressings containing biological material. *J Med Ethics*. 31, 2–6. <https://doi.org/10.1136/jme.2003.005272>.

Miller, S. (2009). Cultural humility is the first step to becoming global care providers. *J Obstet Gynecol Neonatal Nurs*.38, 92–3. <https://doi.org/10.1111/j.1552-6909.2008.00311.x>.

Pew Research Center. (2023). Religious Landscape Study. <https://www.pewresearch.org/religion/religious-landscape-study/>. (accessed January 5, 2023).

Sattar, SP, Ahmed, MS, Madison, J, Olsen, DR, Bhatia, SC, Ellahi, S, et al.. (2004). Patient and physician attitudes to using medications with religiously forbidden ingredients. *Ann Pharmacother*. 38, 1830–5. <https://doi.org/10.1345/aph.1E001>.

Sprik, P, Gentile, D. (2020). Cultural humility: a way to reduce LGBTQ health disparities at the end of life. *Am J Hosp Palliat Care*. 37, 404–8. <https://doi.org/10.1177/1049909119880548>.

Vanderlee, L., Gómez-Donoso, C., Acton, R. B., Goodman, S., Kirkpatrick, S. I., Penney, T., ... & Hammond, D. (2022). Meat-reduced dietary practices and efforts in five countries: analysis of cross-sectional surveys in 2018 and 2019. *The Journal of Nutrition*.

Vissamsetti, B., Payne, M., & Payne, S. (2012). Inadvertent prescription of gelatin-containing oral medication: its acceptability to patients. *Postgraduate medical journal*, 88(1043), 499-502.

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