

Readability of Arabic vs English Patient Educational Materials

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Statement of the Problem/Background:

More than 8% of the U.S. population has Limited English proficiency (LEP). While Spanish is the most common language in the U.S. for LEP patients, over 350 languages are in use. Providing patient educational materials (PEM) for LEP patients is an important part of care; however, to create usable PEM, translation needs to attend to an array of phenomena including cultural norms and readability. We examined the patient education topics presented in English and Arabic. This issue is particularly relevant in Arabic, as there is no standardized set of Arabic medical terms.

Research Question/Hypothesis

We hypothesized that English PEM would have better readability than the Arabic versions of the same documents.

Research Design/Methods Used in the Investigation

We collected all PEM from the MEDLINE PLUS portal that were available in both English and Arabic. We calculated readability for the English version with Flesch-Kincaid and for the Arabic version with OSMAN, a new publicly available tool for the automated measurement of readability in Arabic. An automated approach to manage formatting requirements through Javascript was used. The means of the two groups were compared with the Student's T-test. The Flesch-Kincaid and OSMAN tools calculate readability based on the number of syllables per word and the number of words per sentence. In addition, we compared the meaning of the Arabic and English medical terms.

Results/Summary of the Investigation

There were 209 English topics in MEDLINE PLUS that had been translated into Arabic. The mean grade level for Arabic and English documents were 6.1 and 7.1, respectively ($P < 0.01$). For 66 (31.6%), the readability of English was higher than Arabic by two grade levels. In contrast, in 6 (3.8%) PEM articles, the readability for Arabic was higher than English by two grade levels. In many instances, the Arabic medical terms are unclear, do not match the English term well, and are more obscure than transliterating the commonly used English medical term.

Interpretation/Conclusion of the Investigation

The OSMAN tool can identify Arabic documents that are hard to read; however, a low score on OSMAN does not ensure that the patient education materials will be easy to understand. Overall, that Arabic PEMS available on the MEDLINE PLUS portal have a better readability score than those in English. However, such an approach does not account for the fact that arcane terminology will be hard for people to understand.

Figure 1:

