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## Increasing Incidence Within PubMed of the Use of the Misspelling "Pruritis" (Sic) Instead of "Pruritus" for Itch

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## SHORT COMMUNICATION

## Increasing Incidence within PubMed of the Use of the Misspelling “Pruritis” (sic) Instead of “Pruritus” for Itch

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Writers generally benefit from word processing technology, and the use of other forms of formal writing such as typewriters is archaic. The first stand-alone spell checker programs originated in the early 1980s, and by 1995 they were embedded within word processing programs such as Word 95 (1). With the ubiquity of such software, spelling errors in the medical literature should be extinct. Yet, as a reader of the medical literature with an interest in itch, this author is impressed with the numbers of misspellings of the word «pruritus.» The word pruritus is derived from the Latin *pruritus*, past participle of *prurire* “to itch” (2) To assess the frequency and characteristics of the misspellings of this word, a PubMed search was undertaken.

## METHODS

On December 2, 2015, a PubMed search using “pruritis not pruritus” was undertaken to find the occurrences of this misspelling. Additional searches were performed on other variations of spelling including “priritis,» «priritus,» «prurutus,» and «prurutis.» Of the total of 152 misspelling occurrences, one could not be verified in the text, and two were books rather than Journal articles. Subsequent searches were performed in similar fashion as outlined below.

## RESULTS

Since 1916, 149 occurrences of the spelling «pruritis» were identified within medical journals, whereas there were no occurrences for another alternative spelling. By contrast, for the correct spelling of pruritus, there were 17,377 citations. The numbers of misspelled citations appear to be increasing. Although the first PubMed citation found dates from 1916, (3) a large increase begins in 2010 (Fig. 1). The countries of origin of the manuscripts are depicted in Fig. 2. Native English-speaking countries of Australia, India, Ireland, the United Kingdom, and the United States are responsible for 60% of the misspelled citations. Not a single occurrence of misspelling was identified from Germany, Spain or Brazil, whose authors contributed 5%, 2%, and 1%, respectively, of all «pruritus» publications. By contrast, 6% of publications from both the United States and United Kingdom contained this misspelling.

A more careful review of the citations with misspellings reveals that 4 were Cochrane reviews, which require extensive scholarship to produce. Although 9 of the publications were in non-English languages including Chinese, French, Japanese, Russian, and Turkish, 94% were published in the English literature. Ten (7%) of the identified publications were in dermatology-specific publications, including the *Annales de Dermatologie et de Vénérologie*, *European Journal of Dermatology*, *Journal of Drugs in Dermatology*, *American Journal of Dermatopathology*, and others. A careful review of the institutions that produced these articles includes Harvard, Johns Hopkins, Kyushu University, Mayo Clinic, University College London, Vardhaman Mahavir Medical College, and others.

## DISCUSSION

Spell checkers and modern technology should theoretically remove the risk of spelling errors. Further, following submission by the authors, the peer-reviewed literature requires reviewers to read and comment upon the submission, and the editorial staff of the Journal to oversee other aspects of publication. Yet, the problem of the word «pruritis» appearing in the world literature appears to be increasing. Pruritis (sic) does not represent inflammation of the «prur,» or any other organ. There are in excess of 1,000 words ending with the suffix «-itis.» (4) By contrast, there are only about 20 words with the suffix «-itus,» including such examples as *detritus*, *emeritus*, *fremitus*, *habitus*, *introitus*, *situs*, *tinnitus*, *vomitus*, and the word of this paper, *pruritus*

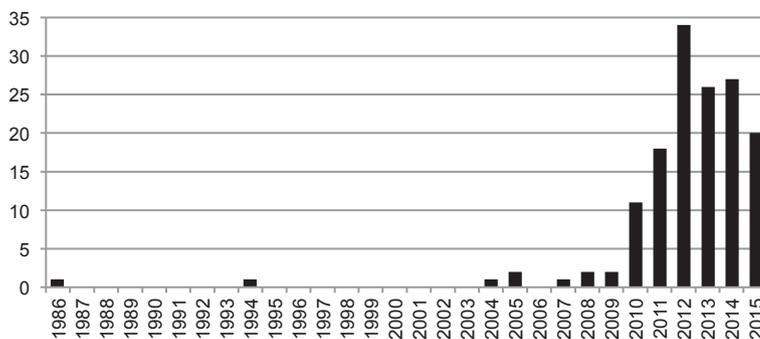


Fig. 1. Incidence of occurrence of the search term “pruritis” in Journals appearing since 1986. A singular reference from 1916 was excluded.

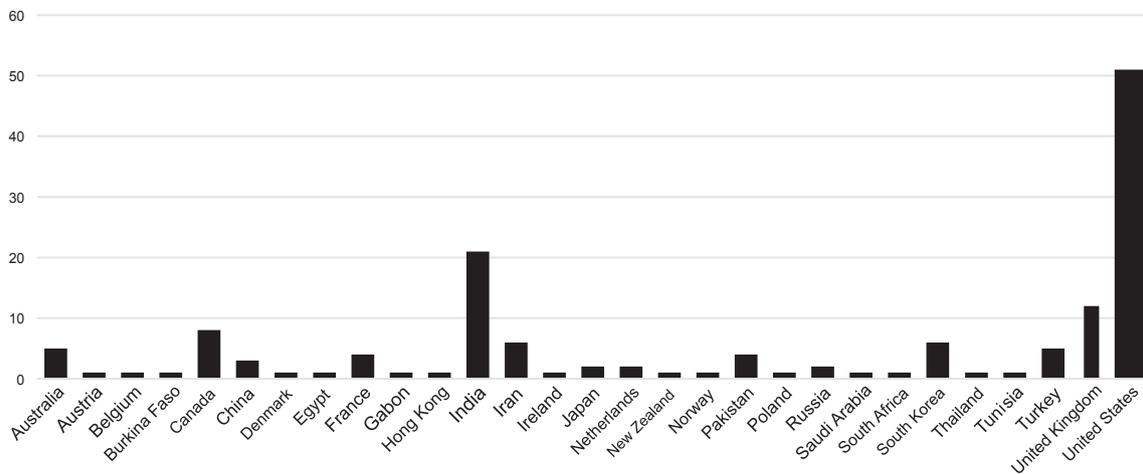


Fig. 2. Histogram of the frequency of "pruritis" PubMed journal citations by country for all years available.

(5). Simply on the basis of likelihood, ending a word with «-itis» is much more likely to be correct than ending with «-itus.» Taking this process one step further, there are the following numbers of PubMed references for nonexistent words such as «decubitis»- 17, «vomitis»- 3, «tinnitis»- 8, «cubitis»- 2, «habitis»- 1, and «crepitis»- 1.

Spell checker programs have notable failings, brought most vividly to light by Eckman and Zar with a poem containing 123 misused words of the poem's 225 total words (6). Supposedly, in the 1990s these mistakes were all missed by the program. Since then, there has been considerable improvement in software. Writers, especially native English-speaking writers, may assume that they do not need to learn to correctly spell.

Papers published in non-English languages may not be more likely to have pruritus spelled incorrectly. Indeed, since the majority of misspellings originated from Countries in which English is the primary or a primary language, non-familiarity with the English language does not seemingly represent a justification for misspelling.

Having interacted with many learners including medical students, residents in training, and attending physicians, misspelling beyond the medical literature is a common occurrence. A former resident physician with whom I had the pleasure to work labeled me as a member of the "spelling police." When physicians at all levels write patient-related notes, spelling mistakes are quite common (7, 8).

There may be systematic biases found within the PubMed algorithms that may "hide" older occurrences of the word "pruritis," but nevertheless we do not see extinction of this misspelling. Some of the current leading dermatologists in the world and some of the world's leading medical institutions have authored these publications. Thus, writers for the medical literature should consider substituting the easier to spell word "itch" for pruritus. The noun itch derives from the Old English word *gicce*, from the verb *giccan* "to itch." (9). A cursory PubMed search found no misspellings of the word itch.

Spell checkers are helpful, but the complexity of the medical nomenclature ensures that at least some words are misspelled. This author writes not to cajole, scorn nor ridicule, but rather to encourage higher quality in scholarship. More written knowledge is available to us than at any time in the past, so we are entrusted to writing it correctly.

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