INSTRUMENT AND TRANSLATION ERRORS THAT CAN BE CAUSED BY USE OF UPGRADED INDIAN FONTS

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ABSTRACT

Aims

Developing Clinical Outcome Assessments (COA's) in Indian languages is often fraught with difficult font issues. The upgrading from Windows XP operating system to Windows 7 has brought about a number of improvements and upgrades in many of these Indian fonts. These font upgrades have also brought to light other issues that could affect the display of characters and document layout of existing linguistically validated instruments that were developed using fonts from Windows XP. This study aims to highlight the types of issues faced when a font is upgraded to a newer version.

Methods

The Short Form 36 version 2 (SF-36v2) was used in this study. A total of 4 languages and 4 Indian fonts with varying characteristics and properties were assessed using visual before-and-after comparisons made by experienced language consultants. All differences found between the old and upgraded font versions were documented. The font changes for each language were identified and then sorted into categories for: word conjugation, font rendering and visual display (such as character size, character thickness and word spacing).

Results

Results showed that 1 out of 4 languages tested had word conjugation corrected; 2 out of 4 languages had font rendering corrected. All 4 languages had changes in visual display that required manual adjustments before the document could be appropriately presented.

Conclusion

In order to maintain the appropriate readability and comprehension of their instruments, developers of quality of life and clinical outcome instruments need to employ quality assurance checks when their measures use the upgraded Indian fonts in order to ensure that Indian characters and words are properly formed and that the visual display is appropriately presented.

OBJECTIVES

Developing Clinical Outcome Assessments (COA's) in Indian languages is often fraught with difficult font issues. The upgrading from Windows XP operating system to Windows 7 has brought about a number of improvements and upgrades in many of these Indian fonts. These font upgrades have also brought to light other issues that could affect the display of characters and document layout of existing linguistically validated instruments that were developed using fonts from Windows XP. This study aims to highlight the types of issues faced when a font is upgraded to a newer version.

METHODS

The Short Form 36 version 2 (SF-36v2) questionnaire was used as the example in this study. A total of 4 languages and 4 Indian fonts with varying characteristics and properties were assessed using visual before-and-after comparisons of the same questionnaire by experienced language consultants. The languages selected for this study are Bengali, Kannada, Malayalam and Tamil and their corresponding fonts are Vrinda, Tunga, Kartika and Latha.

Each selected language of the SF-36v2 was sent to the corresponding translation consultant for proof-reading and identification of differences. The consultant was given two PDF versions of the same document. One PDF file was created using Office Word 2003 software on a computer running on Windows XP Operating System and the accompanying font version that came pre-installed. Another PDF file was created using Office Word 2010 software on a computer running on Windows 7 Operating System and the accompanying font version that came pre-installed.

For example, the Tamil language consultant was given two PDF files that were created using Latha Font Version 1.21 and Latha Font Version 5.9 respectively.

The consultant then printed out a hardcopy and marked any difference found onto the hardcopy. These differences were then extracted as a screenshot and categorized. Table 1 are some examples of the differences found and how they were documented:

Table 1: An example of the documentation of differences found

Bengali Version (using Vrinda Font v1.03)	Bengali Version (using Vrinda Font v5.09)	Characteristics / Properties*
নিম্নলিখিত প্রশ্নগুলি আপনি সাধারণ একটি দিনে যে কাজকর্মগুলি	নিম্নলিখিত·প্রশ্নগুলি·আপনি·সাধারণ·একটি·দিনে·যে·কাজকর্মগুলি·করে·থাকতে·পারেন·সেই·সম্পর্কিত।¶	**In-country comments:** There have been lot of improvisation in Vrinda v5.9 and the revised one is rendering correctly. **Category:** Font Rendering **Characteristics:** (Individual character improved).
চমৎকার	চমত্কার	**In-country comments:** This issue is specific to some keyboard layout, and requires manual adjustment. **Category:** Font Rendering **Characteristics:** (Individual character changed).

**Some of the Characteristics / Properties found: Characters joined, Font change, Individual character change, missing character, overall character increased, thinner bold characters, overall word spacing changed.*

Table 2: Breakdown of differences by category

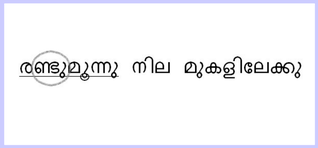
Category	Characteristics / Properties	Kartika Font Differences (Malayalam Language)	Vrinda Font Differences (Bengali Language)	Latha Font Differences (Tamil Language)	Tunga Font Differences (Kannada Language)
Word Conjugation	Characters Joined	Yes	No	No	No
Font Rendering	Font Character Improved	Yes	Yes	No	No
Font Rendering	Individual Character Changed	Yes	Yes	Yes	No
Visual Display	Character Thickness Changed	Yes	No	Yes	Yes
Visual Display	Overall Character Size / Width Increased	Yes	Yes	No	No
Visual Display	Overall Word Spacing Changed	Yes	Yes	No	No

RESULTS

We found that 1 out of the 4 languages evaluated required word conjugation corrections as a result of the switch to a newer version of the same font. An example of this is shown in Figure 1.

Figure 1: Word Conjugation improved on newer version of Kartika Font used for the Malayalam Language.

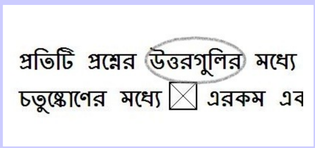
Kartika Font (Windows XP OS)



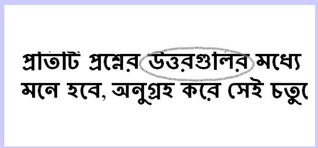
Kartika Font (Windows 7 OS)

Two out of 4 languages had font rendering corrected. The Bengali and Malayalam languages had font rendering corrected as shown in Figures 2 & 3.

Figure 2: Font Rendering improved on newer version of Vrinda Font used for the Bengali Language.

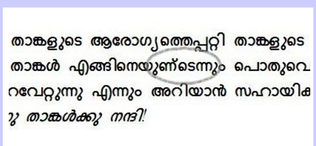


Vrinda Font (Windows XP OS)

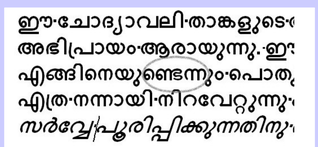


Vrinda Font (Windows 7 OS)

Figure 3: Font Rendering improved on newer version of Kartika Font used for the Malayalam Language.



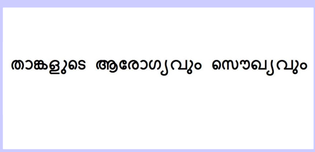
Kartika Font (Windows XP OS)



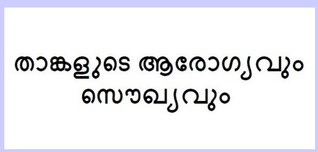
Kartika Font (Windows 7 OS)

All 4 languages had changes in visual display that required manual adjustments before the document could be appropriately presented as shown in Figures 4-7.

Figure 4: Visual Display (overall character size increased) on newer version of Kartika Font used for the Malayalam Language.

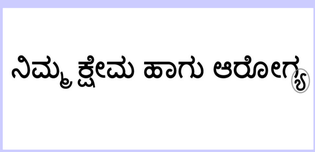


Kartika Font (Windows XP OS)

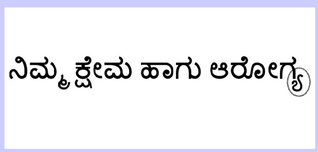


Kartika Font (Windows 7 OS)

Figure 5: Visual Display (thinner bold characters) on newer version of Tunga Font used for the Kannada Language.

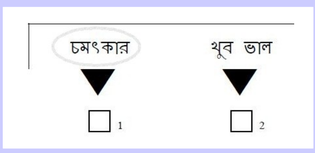


Tunga Font (Windows XP OS)

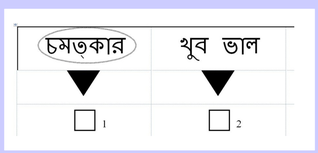


Tunga Font (Windows 7 OS)

Figure 6: Visual Display (character changed) on newer version of Vrinda Font used for the Bengali Language.

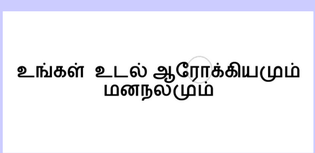


Vrinda Font (Windows XP OS)

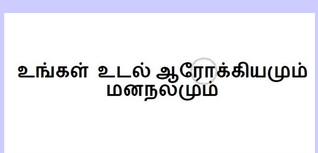


Vrinda Font (Windows 7 OS)

Figure 7: Visual Display (overall character width increased) on newer version of Latha Font used for the Tamil Language.



Latha Font (Windows XP OS)



Latha Font (Windows 7 OS)

CONCLUSION

In order to maintain the appropriate readability and comprehension of their instruments, developers of quality of life and clinical outcome instruments need to employ quality assurance checks when their measures use the upgraded Indian fonts in order to ensure that Indian characters and words are properly formed and that the visual display is appropriately presented.