Research Article

A VBA Macro Application to Check Blank Pages for Pharmaceutical Tables and Listings in Clinical Research

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ABSTRACT

As a statistical programmer, I have encountered many blank pages in tables and listings for clinical trials. Due to the spacing issue with SAS and flaws in coding, the long clinical table and listing report needs a blank page check application with VBA in Word. Therefore, I programmed a VBA application to solve this problem.

Key words: VBA, Blank Page Check, Clinical Report
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INTRODUCTION

In a pharmaceutical company or a contract research organization, statistical programmer needs to generate a clinical report of tables and listings regulated by the Statistical Analysis Plan.

Due to the Statistical Analysis System (SAS) is the FDA approved software to conduct clinical research. But the spacing and page break algorithm is not up to date. SAS generates the clinical research tables and listings in rtf files, which are requested by most clients. Every time when we submit tables and listings, we need to check for the blank pages manually. The quality control process of the clinical report is very rigorous, as stated in the journal article written by Sullivan [1].

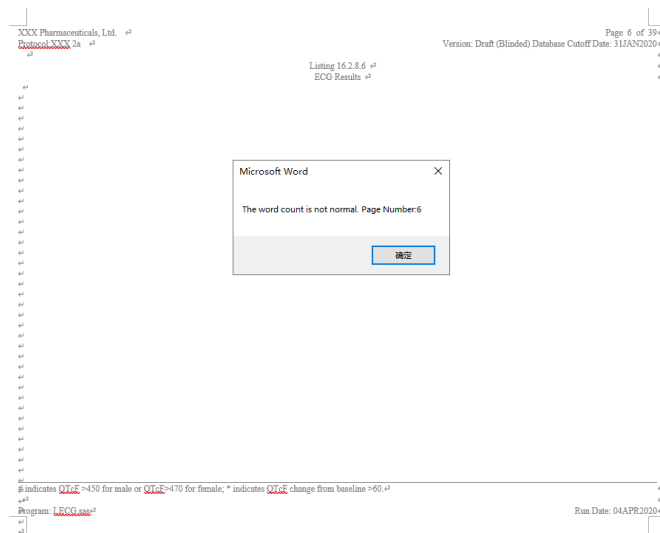Therefore, a VBA macro is necessary to be used in the quality control of the clinical reports.

METHODS

VBA Code:

```
Sub findemptypage()
Dim totalpage1 As Integer
Dim pagenum1 As Integer

totalpage1 = ActiveDocument.Range.Information(wdNumberOfPagesInDocument) 'find the total page number

Selection.GoTo What:=wdGoToPage, Which:=wdGoToAbsolute, Count:=1  'go to the first page

For i = 1 To totalpage1
ActiveDocument.Bookmarks("\page").Select   'select everything on the current page

If Selection.Words.Count< 50 Then
MsgBox "The word count is not normal. Page Number:" &i
End If

Selection.GoTo What:=wdGoToPage, Which:=wdGoToAbsolute, Count:=i + 1
Next i
End Sub
```

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Thecode is provided above. I firstly need to find the total page number and then go to the first page. Then my algorithm selects everything on the first page. A word count is performed on the first page to check if the words are less than the 50 threshold, which can be adjusted yourself. If yes, then a message box will show "The word count is not normal. Page Number:x". If no, then nothing happens and it moves on.

After the word count, the program goes to the next page to repeat the process until the last page of the report.

RESULTS AND DISCUSSION

Fig. 1 Result of Blank Page

In Figure 1, the VBA program successfully captured the blank page of the clinical table or listing report. By adjusting the threshold of words in the methods section, we can account for the words that are left on the blank page for formatting. If we set this threshold too high, then we may get a false positive result for blank page. If we set it too low, then we might miss the actual blank page.

If the document is more than 1000 pages, then a manual check would probably take a very long time. This is a useful program for the fellow statistical programmers in clinical research. It can also apply to other documents for blank page checking.

This program can only process one file at a time. A more powerful batch run program for multiple files will be produced in the future.

REFERENCES

[1].   E.M. Sullivan, M.A. Gorko and R.C. Stellon et al. A Statistically-Based Process for Auditing Clinical Data Listings. TherInnovRegul Sci 31, 647–653 (1997).