

Using the printed medium to disseminate information about psychiatric disorders

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Abstract

Objective: *The printed medium is a popular method to disseminate health information to the South African public. Reader-focused research indicates, however, that most printed health messages do not transfer information successfully to target audiences. As the first phase of an ongoing investigation into the provision of information to schizophrenia patients and their caregivers in South Africa, the aim of this study is to provide a checklist, to apply it for the evaluation of printed brochures about schizophrenia, and to make recommendations for best practices when using the printed medium for the dissemination of information about schizophrenia in South Africa.* **Method:** *A text-focused evaluation method is applied, using the adapted version of the suitability assessment of material (SAM-test) to evaluate the effectiveness of brochures disseminating information about schizophrenia. A Fry readability test and a Cloze test for comprehension were also used to verify the results of the checklist.* **Results:** *The findings indicate to which degree brochures about schizophrenia do not conform to general accepted criteria for effective printed health messages. The readability level of the brochures indicated a target audience of at least university graduates which makes them unsuitable as information material for the general South African public.* **Conclusion:** *Providing that producers of printed health messages adhere to readily available guidelines, including consultation with the target audience and a sensitivity for South Africa's diverse social reality, the printed medium can be applied successfully and cost effectively in the South African context.*

Key words: *health information, information material, communication/dissemination of health information, text-focused research, usability testing, message design, printed medium, mental health, schizophrenia*

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"For any kind of communication to be successful, it has to be understood" (Ulijn & Strother)

Francis Bacon's famous quote, "knowledge is power" is often used in discourses about the role of information to empower communities and individuals. This is also true about the communication of health information including information about mental disorders. Being informed about a disorder empowers the patient, as well as family members and caregivers to cope with the disorder and the stigma attached to it.¹

But information disseminated by means of mass produced messages does not necessarily lead to knowledge and empowerment. "True knowledge is more than information. It includes the meaning or interpretation of the information".² Information must first be interpreted by the receiver who only then can internalise it as knowledge. Knowledge, the prerequisite for empowerment, grows from the meaning people make of

the information communicated to them. Patients and the people around them must first understand the information communicated to them, before they can be empowered by it.

Using the printed medium nearly exclusively for the dissemination of information to the South Africa public is firmly entrenched in the communication practices of most government departments and other institutions and associations in South Africa. In providing information about schizophrenia to patients and caregivers printed brochures are also prominently used.

The emphasis on a mass media approach such as printed brochures to communicate information to the culturally diverse South African public is a questionable practice. The few studies about reader-focused research in South Africa agree on the ineffectiveness of this communication approach.^{3,4} Printed texts nevertheless have a place in the communication of information. Print messages require relatively simple and cheap methodology to produce; they are handy reference sources, easily stored and allow for great accuracy of content and precision of expression.^{4,5,6}

The current paper reports on the first phase of an ongoing investigation into the provision of information to schizophrenia patients and their caregivers in South Africa.

The aim was to propose a checklist and then evaluate available printed brochures about schizophrenia. It was hoped that

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the findings would lead to meaningful recommendations for best practices when using the printed medium for the dissemination of information about schizophrenia in South Africa, without eroding the already scarce resources of mental health associations.

Method

The research instrument, a checklist based on reader-focused research in South Africa and a comprehensive literature review was compiled. The checklist was used to evaluate nine brochures produced by the South African Federation for Mental Health (SAFMH), the Schizophrenia Foundation of South Africa (SFSa) and the Psychiatric Community Services (PCS). The findings were analysed after which the Fry test and the Cloze test were applied to validate findings. Finally the conclusions lead to recommendations for best practices.

The research instrument

Schrivver and De Jong & Schellens place the evaluation of printed texts on a continuum of text-focused, expert-focused and reader-focused tests.^{7,8} Text-focused methods, on the left hand of the continuum, are those tests in which a person (or computer) assesses "text quality by applying principles or guidelines that have been developed from ideas and sometimes from research.⁷ Expert judgement refers to evaluations by individuals who possess "high knowledge about the text, its audience or writing itself", while reader-focused methods, on the right hand side of the continuum, are "procedures which rely on feedback from the intended audience".⁷

The checklist used in the current study, is a text-focused approach and can be defined as a "list of text features according to which a text is evaluated".⁸ By focusing on a selection of text features, a proper revision procedure is ensured. Many types of checklists are possible. During the compilation of a checklist the completeness of the checklist should be counterbalanced by its manageability. The validity of checklists can be compromised by different interpretations of the questions about certain text features, as well as the relevant suitability of text features in a specific text. The validity improves, however, if the reviewer is relatively near to the target audience.⁸ It is generally assumed that the application of a checklist will in most, or in all cases, lead to an improvement of the text.⁸

Schrivver observed that checklists are usually not based on data from readers or users and that they often codify an organization's misunderstanding of the audience.⁷ In the current study it was counteracted by the fact that this checklist is based on reader-focused text research in South Africa in which the comprehensibility of printed health messages amongst South Africans was tested. Carstens and Snyman proposed a matrix for the evaluation of health messages fashioned on the SAM test of Doak et al.^{4,9} In this paper their matrix is extended by adding to it the findings of more recent reader-focused studies as well as information obtained from a comprehensive literature review of the characteristics of effective printed information material.

Composition of the checklist

The checklist is divided into three sections in which issues pertaining to content, readability and appearance are considered to determine effectiveness.

Content

To determine whether suitable content has been selected, thematic simplicity, brevity and accuracy, as well as the organization of the content are measured by the checklist.

- Thematic simplicity means that clear objectives should be set in terms of what the target audience should know or be able to do after having read the brochure. These objectives should preferably be based on a preceding information needs analysis and should be precise and detailed.¹⁰ It is therefore better to limit each brochure to one theme and to sacrifice detail for a more superficial overview of the subject.¹¹ Brochures should be brief and highly consolidated information packages, unambiguous, and not technical. Excess information might inhibit complete reading or overwhelm the reader.⁶
- Inaccuracies can be eliminated by carefully checking and validating facts through peer consultation and review.⁵

Content has to be organized in such a way that it is convenient, interesting and motivating. This requires a logical arrangement.⁶

- According to the natural geometry of reading, information presented at the beginning of the document attracts more attention than information presented in the middle and especially near the end. Bembridge recommends that the most important facts should be mentioned first and in another form at the end of a document, so that it is the first and last thing to be read.¹²
- Content should be chunked or broken up in "digestible paragraphs", limited to a single message.¹¹ Information can for instance be structured by recommended actions or divided into main and/or sub themes and emphasized by advance organizers (headers). These help readers to locate desired information easily.¹³
- Tools to increase reinforcement and/or retention of the message are repetition, revision and summary of information and can be used to draw attention to main points and enhance comprehension.^{6,14,9} The title is the first point of summary and must indicate the general purpose of the text precisely and concisely.¹²
- Information about the author/organization and contact details at the end will aid credibility and provide the reader with an opportunity for feedback and/or questions.^{9,11}

Readability

Readability is mainly concerned with the degree to which the reader can share meaning with the writer.¹⁵ A writer with a clear concept of the audience can produce more readable texts because he/she is aware of the lexical, textual and background knowledge in the reader's mind. Readability asks for an interaction between writer, reader and text.¹⁶

- There is consensus amongst researchers that producers of information material almost always overestimate the ability of the audience to read and understand printed messages.^{6,17,15,16,19} Specialists in health communication in South Africa advise that the readability level should ideally be lowered to the fourth grade.⁴
- Readability is influenced by the way in which different linguistic components of language are organized.¹⁶ These include lexical, syntactical and textual elements. Syntactic rewriting contributes less to an increase in readability than

lexical and textual revisions.¹⁶ Lexis or word choice has a major impact on readability. Words should be chosen to suit the background of the particular audience. Technical words are often not easily understood by readers and should be limited and explained. Longer words should be replaced by shorter, more common words except where the longer word is familiar to the audience. Short sentences do not necessarily increase readability. A mix of short and longer sentences is preferable.¹⁶ Questions can be used to test reader's understanding.¹⁸

- Textual coherence refers both to themal coherence - the integration of ideas within and between sentences - and global coherence - the integration of high-level ideas across the whole text.^{16,18} Sentences should contain only one idea and should follow logically one after the other while the text should form a logical whole focusing on a single theme or topic.
- Readability is closely linked to the audience. What one audience easily understands will not necessarily suit another audience. The following issues with regard to the audience's role in creating readable texts are key factors to be considered:-
- Was any research done to obtain a clear concept of the audience?
- Does the text build on the audience's knowledge about the topic?
- Is it written in the native language of the audience?
- Will the text motivate the audience to read it?
- Did the audience evaluate the text? (Was it pretested?)
- Was the text revised after the first draft?

Appearance

The attractive appearance of a brochure as well as its legibility encourage reading and contribute to making the text meaningful for the reader. The layout is defined as "the arrangement of the elements of the material on the page".²⁰ Layout should be used to capture the reader's attention and create an attractive document signalling quality and importance.

- The cover should make the purpose of the document clear and create a favourable first impression.⁶ Graphic and visuals are often used to attract attention.
- Colour can be used to enhance attractiveness and draw the readers' attention. Two aspects of colour should be considered: the colour of the paper and the colour of the printed text. The colour of the paper should be muted rather than bright and preferably matt to reduce glare. A good contrast between the colour of the paper and the colour of the print is necessary for legibility.
- Paper of sufficient density should be used to render print invisible from one side of the paper to the other.^{6,11}
- Typography contributes largely to the attractive appearance of printed texts:-
 - White space, defined as "a space of two or more lines between blocks of text" is used as a tool for separating text, graphics and pictures.^{21,9} The effective use of white space allows headers to emerge from the text and facilitates reading.
 - The length of lines should be between 50 and 70 characters but can vary to meet the needs of specific audiences.^{6,9}

- Text should only be left and not fully justified because the variation in space between the words may restrict legibility.^{6,9}
- With regard to typeface, the following issues should be considered:
 - There is no clarity whether serif or sans serif fonts are best to use. This is not as important as other features of the typeface. It is better to use distinct fonts than light spindly fonts or italics as they do not provide enough contrast between typeface and background.
 - Not more than two fonts types should be used in a text.¹¹ It may distract the reader.
 - Using capital letters to emphasize text inhibits the reader from easily recognizing words.^{6,20}
 - A font size of 12 is recommended for most readers, but can be reduced or increased based on the needs of the audience.^{21,13} A high percentage of low literate readers might necessitate an increase in the size of the font.²² In targeting the South African public a font size 13 is the smallest size that can be considered.
- Identifiers refer to signals other than words that help cognition by drawing the attention of the reader to key elements of the content.⁶ Identifiers can include underlining, bold, different colours for different levels of headings, boxes, encircling and cues such as bullets or arrows. The consistent use of identifiers in the text can serve as "a mnemonic to aid the reader's recall of information through associations".⁶
- Visuals refer to pictures, photos, graphs diagrams etc. in the text. These are commonly included in information material and are considered to be especially important for audiences with a low literacy component who might struggle to understand the text without explanatory pictures.¹⁷ It is suggested that that pictures must be kept as simple as possible but that excessive deletion of detail will also reduce comprehension.²³ Big clear realistic drawing and photographs are preferred.^{5,22} For maximum comprehension, pictorial symbols must be as realistic as possible. Pictures will convey information best if the context and detail of the pictures portrays the world of the target audience.

The testing procedure

The text features mentioned above were evaluated on a scale of three:

- 1 indicating "yes" for effective practice
- 2 indicating "not always" or "not sure"
- 3 indicating "no" for ineffective practice

Nine brochures on schizophrenia were collected. They were "Schizophrenia: Bewildered, Confused & different"; "Schizophrenia: The facts"; "Schizophrenia: The role of community support systems"; "Schizophrenia: How the family can cope"; "Schizophrenia: The role of medication"; and "Schizophrenia: Family interaction, helping the individual", produced by SAFMH; "Facts about Schizophrenia" and "Warning signs of relapse", produced by SFSA and "Schizophrenia", produced by Psychiatric Community Services.

A copy of the checklist used to test these nine brochures is provided in Table I.

Table 1 Checklist for the evaluation of printed brochures.				
Text feature to be considered	Score			Comments
	1	2	3	
1 CONTENT				
1.1 Selection of content				
<i>Thematic simplicity</i>				
Is the text limited to only one theme?				
Is it clear what the reader should be able to do after having read the text?				
<i>Brevity</i>				
Does the reader need every fact or statement to take the desired action?				
<i>Accuracy</i>				
Is the information based on up-to-date and credible research?				
Is the author or the sources credible?				
1.2 Organisation of content				
<i>Natural geometry of reading</i>				
Is the most important information placed at the beginning of the text?				
Is the most important information repeated at the end?				
<i>Chunking</i>				
Is the information chunked?				
Are the chunked pieces easily digestible?				
<i>Tools for reinforcement</i>				
Does the title indicate the general purpose of the text?				
Is important information repeated/ summarised?				
Are there headers to facilitate reading?				
Are contact details provided?				
SCORE				
2 READABILITY				
2.1 Level of the text's readability				
Will a person with the reading proficiency of a grade 4 child understand the message?				
2.2 Linguistic components				
<i>Lexis (word choice)</i>				
Does the vocabulary suit the audience's background and knowledge?				
Are there no difficult/ technical words?				
Are technical words explained?				
<i>Syntax</i>				
Is there a mix of short and long sentences?				
Are there questions to encourage active reading?				
<i>Text (coherence of)</i>				
Is there coherence of ideas within sentences?				
Is there coherence of ideas between sentences?				
Is there coherence of the theme across the text?				
2.3 The audience				
Was any research done to obtain a clear concept of the audience?				
Does the text build on the audience's knowledge about the topic?				
Is it written in the native language of the audience?				
Will this text motivate the audience to read it?				
Was the text evaluated by the audience? (pretested?)				
Was the text revised after the first draft?				
SCORE				
3 APPEARANCE				
3.1 Cover				
Does the cover make the purpose of the text clear?				
Are visuals used to attract the attention of the reader?				
3.2 Colour and paper				
Is the colour of the paper muted?				
Was matt (non-gloss) paper used?				
Is there a good contrast between the colour of the paper and the colour of the printed text?				
Is the paper dense enough to prevent transparency?				
3.3 Typography				
Is there enough white space to facilitate reading?				
Is related text placed relatively close together?				
Are the lines no longer than 50-70 characters?				
Is the text only left justified?				
Is the typeface suitable?				
Are no more than two fonts used?				
Are capital letters only used for capitalization?				
Is the font size no more than 12 points?				
Are there identifiers such as underlining, boxes, encircling, bold, etc?				
Are there cues such as bullets or arrows?				
3.4 Visuals				
Are the pictures simple but with enough detail?				
Are the photographs clear?				
Are pictures drawn in a realistic style?				
Do pictures portray the life world of the target audience?				
SCORE				
TOTAL				

An external reviewer evaluated the nine brochures by applying the proposed checklist. In cases where the reviewer did not have the required information or in the case of questions that could only be answered by the producers, the "2" option was used.

The "yes's" (1's) and "no's" (3's) were added up and presented as percentages. The "two's" (2's) were ignored.

Table 2: Consolidation of results						
Texts	Producer	Score	Content	Readability	Appearance	
Total items to be evaluated (b)			13	16	20	48
Schizophrenia: Bewildered, Confused & different	SAFMH	Yes	4	2	1	7
		NA/S	1	4	5	10
		No	8	9	4	23
Schizophrenia: The facts	SAFMH	Yes	7	1	11	19
		N/A	1	8	5	14
		No	5	6	4	15
Schizophrenia: The role of Community support systems	SAFMH	Yes	4	1	10	15
		N/A	0	5	3	8
		No	9	9	7	25
Schizophrenia: How the family can Cope	SAFMH	Yes	8	1	11	20
		N/A	3	9	3	15
		No	2	4	6	12
Schizophrenia: The role of Medication	SAFMH	Yes	4	2	13	19
		N/A	1	6	4	11
		No	8	7	3	18
Schizophrenia: Family interaction, helping the individual	SAFMH	Yes	2	2	5	9
		N/A	1	4	5	10
		No	10	9	10	29
Facts about Schizophrenia	SFSA	Yes	4	1	8	13
		N/A	1	5	9	15
		No	9	4	7	21
Warning signs of relapse	SFSA	Yes	6	2	5	13
		N/A	0	6	9	15
		No	11	6	3	20
Schizophrenia	PCS	Yes	4	1	8	13
		N/A	1	6	8	15
		No	7	6	7	20
Total items evaluated as yes (d)		Yes	43	11	88	
Total items evaluated as n/a (e)		N/A	11	53	41	
Total items evaluates as no (f)		No	63	71	51	
Total items evaluated as yes expressed as percentage*		Yes	36,7%	8,1%	48,8%	
Total items evaluated as n/a expressed as percentage*		N/A	53,85%	52,59%	29,33%	
Total items evaluated as no expressed as percentage*		No	9,40%	39,3%	22,8%	

*The procedure to obtain the percentages was as follows:
 $a \times b = c$ where (a) refers to the 9 nine brochures
 $d = c \times 100$
 $e = c \times 100$
 $f = c \times 100$

Results

A consolidation of the results as measured by the checklist is presented in Table II below.

None of the brochures tested, met the criteria for effective printed health messages. On an average, 36% of the questions pertaining to the content of the brochures and 48% of the questions referring to the appearance of the brochures, elicited a yes. Although this is much lower than needed to ensure effective communication of information, a mere 8,6% of the questions that tested readability managed to elicit a yes. This indicates a serious cause for concern.

Discussion

Content

With regard to the selection of content in the brochures, the main deficiency is that too much information is provided and

that the brochures try to address too many themes in one text. This also affects the organisation of the content in the brochures. Because the objectives of the brochures are not clearly defined, it is impossible to organise the content according to levels of importance.

Appearance

The appearance of the brochures is relatively acceptable. Changes based on the guidelines provided in the discussion above could improve the appearance of the brochures considerably. One important shortcoming identified, is that the visuals are often not sensitive to the context of all the members of the target audience. This can be attributed to the lack of interaction between producers and target audience.

Readability

The high level of reading skill (high readability level) required to understand the brochures is the major impediment to effective communication. Because of the extremely high readability level measured by the checklist, additional mechanisms were applied to verify the findings of the checklist.

One other way to test the readability of a text is to use a readability formula. Readability formulas vary from simple hand-indices like the SMOG grading test and the Fry test to modern Word processor packages. They give quantitative ratings and mainly encourage writers to use simple sentences and vocabulary. Their effectiveness is often questioned, mainly because they might give "a false sense of (the) validity".^{6,24} "Human judgement and common sense, are valued higher by researchers".^{6,15,24} Readability tests can nevertheless provide an indication of the level of reading proficiency needed to read a text.

A Fry test was applied to the brochure, "The role of community support systems", which obtained a readability score of 1/15 (Yes) and 9/15 (No) in the checklist. The high readability level as measured by the checklist was confirmed by the Fry readability test. The Fry test measured a readability level of 17+.⁹ That means that this brochure requires a reading skill of post-graduate level or beyond.

To confirm the findings of the Fry test a Cloze test used for testing comprehension also based on the brochure, "The role of community support systems" were given to five respondents who were all – in line with the findings of the Fry test – university graduates and postgraduates in other fields than medicine. None of them could score more than 65%. 60% is the lowest score to ensure readability for a specific target audience.⁹ When taking into account that only 2 million South Africans are tertiary qualified and only 5 million have matriculated, at most 5 % of the population would be able to make sense of the brochure.²⁹

The high readability level measured here is probably caused by the producers' lack of knowledge about the target audience, little or no interaction with the majority of the readers and little sensitivity for the diverse character of the audience.

This inference is supported by the fact that only five of the nine brochures have been translated in one of the official languages other than English. The other four are only available in English. The fact that only 49% of the South African public understand English sufficiently were produced confirmed the unsuitability of the brochures to communicate information about Schizophrenia to South Africans.³⁰

In summary these results indicate that the brochures cannot effectively communicate information to the general South African public. They are primarily suited to a mainly English speaking, middle aged, upper class and tertiary educated audience. This finding concurs with research abroad USA and possibly reflects the profile of the people who produced the brochures.²¹

Conclusion

Ideally a checklist should be used as a first stage or a supplementary measure of reader focused evaluation.^{7,8} It can never replace reader-focused research. This checklist is therefore just a departure point that necessitates further research.

This study indicates, once again, that scientists should not regard the repackaging of information as a simple and menial task. Producing ineffective print material wastes money and time. Perspicuous print materials require large measures of hard work and discernment.⁶

The ineffectiveness of these printed brochures are indicative of the dominant practices in health communication in South Africa where producers do not show sensitivity for the diverse character of the South African social reality. It again emphasises that to communicate health information effectively to a diverse audience such as the South Africa public, audience segmentation is an imperative. Audience segmentation refers to the process of "dividing up the audience on the basis of similarity ... crucial to achieving an identity of meaning between communicator and receiver...".¹⁰

The decisive influence of culture and background in the multi-cultural world we live in, was expounded by Niels Bohr after receiving the Nobel Prize for his elucidation of the atomic structure. This led Opler to argue that background and cultural differences are extremely important in dealing with mentally ill patients and caregivers.²⁶ Indeed, all the factors that contribute to the diagnosis and treatment of mental disorders, including communication, must be understood to be influenced by the diverse cultures present in our society.^{27,28} This view is borne out by the findings of Motlana et al.²⁵

If, for some or other reason, audience segmentation is not possible, the effectiveness of printed health information about schizophrenia and health related topics could be greatly improved if producers:

- adhere to readily available guidelines for printed health messages,
- consult with a variety of members of the target audience before deciding on content and design, albeit on a limited scale,
- create information material in as many of the South African languages as possible.

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