OA Ojo
W de Lange

Comprehension of HIV/AIDS messages in Lesotho: a case study of *loveLife* outdoor media campaigns

ABSTRACT

Targeted audiences do not always comprehend HIV/AIDS visual campaigns that are meant to educate and inform, and thus such campaigns do not result in a positive change in behaviour and attitude. This is possibly ascribable to the inappropriate use of graphic imagery and other visual elements in many such campaigns. Even though the cost of the ineffective use of graphic images in information and awareness might be difficult to calculate – especially with regard to health-related problems in which lives are involved, – the effectiveness of any visual health-communication material in terms of meaningful learning, comprehension or retention can nevertheless be determined by means of post-testing.

In this study, the comprehension of the *loveLife* outdoor campaign material was thus post-tested amongst 301 subjects from five high schools in both urban and rural areas. The study set out to determine the subjects' comprehension of both the messages and the graphic imagery and evaluated the material for self-efficacy. The results indicate that suitable graphic imagery fosters message comprehension, that inappropriate imagery inhibits comprehension, and that realistic and appropriate imagery is preferred to abstract and representational imagery. In addition, it was found that familiar images are a vehicle towards improved comprehension of HIV/AIDS messages.

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Olutunmise Adesola Ojo is a lecturer in Graphic Design at the Central University of Technology, Free State. Dr Rudi W. de Lange is currently an associate professor in Visual Communication at the Tshwane University of Technology, Pretoria.

INTRODUCTION AND BACKGROUND

In 2004, the Joint United Nations Programme on HIV/AIDS (UNAIDS) estimated that globally close to 40 million people were living with HIV. Their figure for Southern and Eastern Africa at the time was 17 million (UNAIDS, 2004). Similar figures more recently released by South Africa's Medical Research Council (MRC) estimated that 18 million people in Eastern and Southern Africa were living with HIV, while 5.4 million people in South Africa were infected with the virus and 1.8 million AIDS deaths had occurred in South Africa since the start of the pandemic (MRC, 2006). Whilst UNAIDS figures have risen from the 5.3 million predicted by the end of 2002, to 5.5 million (UNAIDS 2006), the Treatment Action Campaign (TAC) and the Actuarial Society of South Africa (ASSA) reported the same figure and added that 1,500 infections occur and that 900 to 950 people daily died of AIDS-related illnesses in South Africa (ASSA, 2006; MRC, 2006; TAC, 2006). Currently, according to UNAIDS, South Africa has the largest number of people living with HIV in the world – approximately 5.7 million, and HIV prevalence in adults aged between 15 and 49 is 18% (UNAIDS, 2008). In 2007, Statistics South Africa (Stats SA) estimated the life expectancy of South Africans at birth to be approximately 49 years for males and 53 years for females, with HIV prevalence at 11% (Stats SA, 2007).

A number of studies have found that several factors contribute to the spread of this pandemic worldwide, namely ignorance and misinformation (Lew-Ting & Hsu, 2002; Torabi, Crowe, Rhine, Daniel & Jeng, 2000), and also a lack of access to life-saving treatment and the delay in rolling out treatment plans (TAC, 2005). Poor planning by governments (Parker, Dalrymple & Durden, 2000) and poor socio-economic conditions (Kelly, Parker & Gelb, 2002; UNAIDS, 2006) are also cited as factors contributing to the spread of this pandemic.

However, since the first reported case of this disease in 1982 (Rawjee, 2002) the Department of Health of the South African Government, as well as non-governmental organisations (NGOs), such as *loveLife*, the Treatment Action Campaign (TAC) and Soul City, are some of the national organisations that are active in informing and educating people and communicating the necessary information and activities to bridge the knowledge gap. Various types of HIV/AIDS awareness campaigns, such as posters and billboards carrying messages ranging from condom use to partner reduction, have been utilised in the past, but few have emphasised abstinence (Shisana & Simbayi, 2002).

National toll-free AIDS helplines are used by the South African Department of Health and other organisations for counselling purposes (Kelly, Parker & Oyosi, 2001; Rawjee, 2002). Television and radio talk shows are also used to reach vulnerable groups and the general public with regard to precautionary practices (Shisana & Simbayi, 2002). A typical example of such is Khomanani Day, falling on 1 December – international World AIDS Day. This event has been used to reach members of the public and to appeal to them to 'pledge' to take action in the face of HIV and AIDS: to "Care, Talk, Test and Condomise" in order to help themselves, their families and their communities. This is done in partnership with the South African Broadcasting Corporation (SABC) as a mass social mobilisation awareness campaign (Khomanani, 2005).

The general aim of health communication is to inform and educate individuals and to influence their behaviour. Before this can be achieved, the targeted audience must understand and accept the messages and then act as suggested, in order to prevent a particular health risk. These programmes have to some extent been successful in raising the awareness of HIV/AIDS amongst the general public. At the same time, it is almost impossible to separate what each individual programme has achieved. In order to measure the effectiveness of specifically the *loveLife* campaigns, selected *loveLife* outdoor campaign materials were post-tested.

loveLife is an NGO focusing on the development and communication of HIV/AIDS-prevention messages aimed at young people in South Africa. The nature of the *loveLife* messages is informative and educational, with the target group being encouraged to make their own decisions. The organisation operates youth-friendly health services and a hotline that young people can call (Thetha Junction 0800 121 900), and it also distributes a youth magazine known as *loveLife's* UNCUT. Six hundred and fifty thousand of these magazines are distributed monthly. Their informative communication material appears on national television, on the popcorn containers sold at movie theatres and at outdoor display areas, to name but a few (*loveLife*, 2006).

loveLife's multimedia HIV/AIDS-prevention activities in South Africa are ongoing awareness campaigns that commenced in 1999. They combine branding techniques with health-promotion techniques to promote a healthy lifestyle amongst 12 to 17-year-olds in South Africa. *loveLife* also uses multimedia channels to provide the youth with awareness programmes, friendly adolescent reproductive health-education services, and outreach and support programmes (*loveLife*, 2000).

Within five years of its inception, over R780 million was spent on this intervention. The principal funding partners are the South African Government and the J Kaiser Family Foundation. More than half of the funding comes from the J Kaiser Family Foundation and non-profit organisations in the United States of America (Singer, 2005). Additional funding is provided by the Global Fund to Fight AIDS, Tuberculosis and Malaria, the Nelson Mandela Foundation and UNICEF, supported by the Anglo-American Chairman's Fund, Avis, Barloworld, BMW, Clear Channel Independent, Independent Newspapers, Mondi, the National Lottery, Novell SA, Pick n Pay, Primedia, *Rapport*, SABC and many other South African companies (*loveLife*, 2007). *loveLife* is seen as the most prominent HIV-prevention campaign intervention in South Africa. Its leadership includes a national advisory board of prominent South Africans, chaired by Tokyo Sexwale and including Zulu King Goodwill Zwelithini and the Rt Rev. Njongonkulu Ndugane, the Archbishop of Cape Town, as well as a significant number of young people (*loveLife*, 2007).

loveLife's first phase, launched in 1999, was called 'Foreplay' – a teaser phase to get the discussion going. The second phase (2000) took the form of different segments addressing topics such as 'Talk', 'Scam to talk' and 'Future'. Phase Three (2001) was also segmented into such topics as 'Choices', 'Positive sexuality' and 'Shared responsibility', while Phase Four (2002) consisted of a series of messages such as 'Bomb', 'FFW & REW', 'Followers', 'Hands', 'Heart', 'Funeral', 'Rape', 'Score', 'Sex' and 'Skin'.

Phase Five (2003) promoted the reduction of the number of sexual partners or monogamy, condom-use, and abstinence. The second part of this 2003 phase was 'Pure', 'Respect', 'Dignity in sexuality' and 'Love to be there in 2010'. The sixth phase (2004) related to family and a better life, education, employment and a career. The seventh phase (2005) was the 'Love life and get an attitude' campaign consisting of different scenarios of positive deeds. Phase Eight (2006) was the 'HIV: Face it' campaign, which zeroed in on the pressures on and expectations of relationships, tackling tough issues of faithfulness, protection, communication between parent and child about sex and sexuality, and testing. This phase was divided into eight different parts, including, 'If it's not just me, you're not for me', 'You can't pressure me into sex', 'Prove your love, protect me', 'No till we know' and 'If you aren't talking to your child about sex, who is?' (*loveLife*, 2006).

loveLife campaigns have sometimes been criticised in the media for failing to address certain issues regarding HIV/AIDS awareness and for being confusing (Coulson, 2002; Halperin & Williams, 2001). Thomas (2004) criticised the campaigns for neglecting important social factors that promote the spread of HIV – such as sexual brutality, transactional sex, gender inequality and other social factors that shape gender identities. Delate (2001) stated that limited understanding of the brand and also contradictory and inharmonious imagery served to diminish the understanding of the message conveyed by the "His & Hers" billboards. Other studies highlighted the *loveLife* campaign's weakness in terms of being incomprehensible (Jordaan, 2006), its failure to address issues of susceptibility and coercion of young women (Thomas, 2004), and also its use of inaccurate, deceptive statistics that rendered other interventions impotent (Parker, 2006). Jordaan (2006) found the concept of the 2004 "Love to be there" outdoor campaign inappropriate in that it failed to address South African language and cultural differences. Coulson (2002), Jordaan (2006) and Parker (2006) claimed that *loveLife's* evaluation methods were problematic and inadequate. They perceived the intervention as lacking independent evaluation, thus leading *loveLife* to conclude that their approaches were indeed effective.

loveLife's approaches may not have been accepted by all and might have been plagued by several barriers and limitations. Nevertheless, their ideas have provided at least current and future researchers, designers, policymakers and other parallel interventions with some reflection and inspiration for further exploration and discussion. These campaigns have been both a source of information dissemination and a potential solution provider to the youth of South Africa concerning HIV/AIDS awareness, other sexually transmitted infections and unwanted pregnancies. Also, *loveLife* has touched a large proportion of the South African youth populace through various multimedia campaigns (Zisser & Francis, 2006).

Health communication is about the use of different methods to enlighten and persuade individuals and encourage the public to improve their health (Freimuth, Cole & Kirby, 2001). Health-communication ideas oriented towards promotion and education are regarded as imperative in the prevention and reduction of the spread of the disease (Pauwels, 2005). It is important to understand and apply such health-promotion messages in a positive way that averts the risk. Therefore, it is possible to determine the effectiveness of any visual health-communication material in terms of meaningful learning, comprehension or retention by means of post-testing.

The evaluation of both current and past HIV/AIDS messages, as well as other health-related promotional campaign messages is therefore essential (Niba, 2004; Yarber, 1995) and constitutes an important factor in determining the success or failure of any campaign (Lagarde, 2003).

According to Yarber (1995) and Niba (2004), the evaluation of newly created HIV/AIDS sexuality messages is important in determining their suitability. Pilot testing of material can identify strengths and weaknesses so that refinements can be made. Two methods of assessment can be adopted to ensure the effectiveness of the campaign: the first is process evaluation, which is conducted during the development of the material (pre-testing), and the second is outcome evaluation (post-testing) to determine whether the objectives have been met.

This study evaluated the comprehensibility of selected *loveLife* outdoor campaign messages, and identified those messages and images that are easily comprehended and those that caused some miscomprehension. It also evaluated the campaign material for self-efficacy and identified participants' imagery-method preferences. Subjects' comments and responses were used to determine the comprehensibility of the messages and their imagery components and also the efficacy of and preference for these campaign messages.

Comprehension – the ability of a receiver to create meaning that is the same as that intended by the sender (McQuail & Windahl, 1993) and which is constructed through interactions between text and reader (Durkin, 1993) – applies equally to visually based messages. A number of factors – for example the content, the mode of presentation and the receiver – affect this communication process. McQuail and Windahl (1993) propose that it is imperative for public messages in any visual communication material to be clear, simple, attractive and appealing to several senses in order to be well understood by an average targeted audience.

Several studies have indicated that the use of appropriate language, good-quality imagery without too much detail, and a good layout with the appropriate typeface and size to maximise legibility and readability are factors that contribute to the clarity of visual material. Receivers' level of education and some social factors, such as, inter alia urbanisation and exposure to television, can also play a part in the comprehension of messages (Carstens, 2004; Gaede, 1999; McQuail & Windahl, 1993).

McGuire's communication-persuasion matrix model (McGuire, 1999) proposes information processing to be a series of hierarchical steps that include attention, comprehension and acceptance. Attention depends on exposure and awareness, while comprehension precedes acceptance of any message. Therefore, the first step in evaluating the effectiveness of any health-communication initiative is to measure the proximal outcomes of attention and comprehension. Research has shown that *loveLife* campaigns have attracted and continue to attract the attention of the South African youth (*loveLife*, 2004; Zisser & Francis, 2006). One important factor underpinning the positive impact expected of these campaigns, after exposure and attention, is comprehension of those messages. Exposure alone does not guarantee comprehension, and without understanding there can be no positive change in behaviour. This indicates that comprehension of health

messages is a critical stage in the hierarchy of steps leading to behaviour change. In the present study, this evaluation was based on open-ended questions about the learners' comprehension of the messages and of the imagery used in each poster.

1. METHOD

1.1 Questionnaire and the pilot tests

A pilot test was conducted to test the questions and the planned procedures. Six Sesotho-speaking students from a tertiary institution volunteered to complete thirty-seven questions about eleven selected individual *loveLife* campaign items. The subjects were encouraged to comment on the comprehensibility of the questions, and changes were made to the procedures and questions after receiving their feedback.

A second pilot test was conducted at a high school in Lesotho. This school differed from the five schools used in the final experiments. Sixty subjects participated in this pilot test. The questions were given in English and also translated into Sesotho. The subjects were encouraged to respond in either English or Sesotho. The time spent on the questionnaire was found to be too long. The subjects' answers and comments were then used to fine-tune the final questionnaire for the evaluation of the outdoor posters.

1.2 The experiment

1.2.1 Campaign materials

For this evaluation, eleven different *loveLife* outdoor campaign materials were selected from amongst the outdoor posters used between 1999 and early 2005. These outdoor posters were representative of the previous approaches of *loveLife* outdoor campaigns and were selected based on the following criteria:

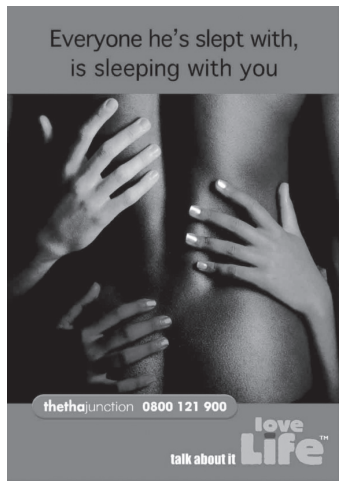
- Full-colour realistic photographs
- Hand-illustrated images
- Typographically based messages
- Graphic symbolism

The posters represented a selection of realistic and abstract images, photographs, hand-drawn images and a combination of type, photographs and hand-drawn images.

For the purposes of this study, the posters were reduced proportionally to conform to their original design – either 42 x 60 centimetres (portrait) or 60 x 42 centimetres (landscape) – depending on the original format. These posters are reproduced on the next two pages.

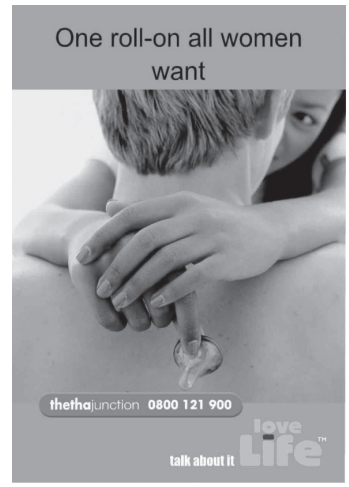
Poster 1

Poster 2



Poster 3

Poster 4



Poster 5

Poster 6

Poster 7

Poster 8

Poster 9

Poster 10

Poster 11

Figure 4: The eleven *loveLife* outdoor posters used in the study

1.2.2 Subjects

Three hundred and one subjects participated in post-testing the eleven outdoor HIV/AIDS posters. These subjects were all schoolchildren from one or two classes of their respective high schools in Lesotho. Of the 301 respondents, 299 spoke the same home language (Sesotho), the remaining two were non-nationals of Lesotho. The sample comprised 158 males and 143 females. Their ages ranged between 15 and 25 years, with the average age being 17 years. The subjects were all in their tenth year of schooling. All participants participated voluntarily and the researcher made it clear to them that they were not being forced to do so.

1.2.3 Site selection and characteristics

The five high schools selected were situated in urban and in rural areas of Lesotho. The schools were systematically selected from a list of schools provided by the Lesotho Ministry of Education so as to include urban, peri-urban, rural and deep-rural schools. One urban school was located in the capital city and another was located within 12 kilometres of the capital city. The peri-urban school was located 12 kilometres outside the capital city, while the rural school was located 50 kilometres from the city and the deep-rural school 120 kilometres. The reason for selecting schools in Lesotho was that the *loveLife* campaigns are not targeted at young people in Lesotho, thus minimising prior knowledge (Williams & Dwyer, 2004) and exposure to these outdoor campaign materials and the campaign.

The Ministry of Education in Lesotho granted permission for the research to be conducted. The author also made prior visits to the schools to submit a letter of introduction to the principals requesting permission and informing them about the nature of the research. A convenient time was arranged so that the evaluation could take place without disruption

to their programmes. The times approved by the respective principals varied, with some sessions falling before the lunch break and others falling just after the lunch break.

1.2.4 Procedure

The outdoor poster materials were displayed on the walls of the respective classrooms and then evaluated by the subjects. The subjects in each school were asked to respond to a series of questions about their comprehension of the imagery (graphics) and to describe what they understood by the intended message in each of the outdoor posters. A second series of questions tested the self-efficacy of the posters.

2. RESULTS

Tables 1 and 2 present the results in respect of the graphic imagery and message comprehension of the subjects according to the individual schools and the subjects as a whole. The results of the subjects' responses are shown in both numbers and percentages. The correct and incorrect interpretation of the graphic imagery and its influence on the message comprehension of each poster is also reflected in the tables. Pearson's Chi-square two-tailed test analysis and Wilk's likelihood-ratio test were used in this study to analyse the data. A significance level of 0.05 was used.

The results are discussed after the tables.

Table 1: Message comprehension in all the schools

MESSAGE COMPREHENSION												
	School 1 (Deep-rural) **(n=79)**		School 2 (Urban) **(n=40)**		School 3 (Rural) **(n=71)**		School 4 (Urban) **(n=50)**		School 5 (Peri-urban) **(n=61)**		**Totals (n=301)**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Poster 1	7	+8.9	33	*82.5	15	21.1	30	60	39	63.9	124	41.2
Poster 2	3	3.8	4	10	6	8.5	14	28	14	23.0	41	13.6
Poster 3	37	46.8	38	*95	26	36.6	31	62	36	59.0	168	58.8
Poster 4	63	79.1	39	*97.5	59	83.1	45	90	50	82.0	256	85.3
Poster 5	38	48.1	28	*70	30	42.3	23	46	38	62.3	157	52.2
Poster 6	54	«68.4	33	*82.5	55	«77.5	20	+40	39	63.9	201	66.8
Poster 7	40	50.6	36	*90	38	53.5	39	78	50	82.0	203	67.4
Poster 8	26	32.9	22	55	25	35.2	35	70	48	*78.7	156	51.8
Poster 9	16	+20.3	30	*75	28	+39.4	28	56	43	*70.5	145	48.2
Poster 10	30	38	23	57.5	25	35.2	35	*70	33	54.1	146	48.5
Poster 11	38	48.1	33	*82.5	33	46.5	25	50	43	70.5	172	57.1
Total & Mean %	**352**	**40.5**	**319**	**72.5**	**340**	**43.5**	**325**	**59.0**	**433**	**64.5**		

*p<0.05; +p<0.05

* Indicates a significantly higher comprehension when comparing all the schools.
\+ Indicates a significantly lower comprehension when comparing urban with rural schools.
« Indicates a significantly higher comprehension when comparing rural with urban schools, that is, schools 1 (deep-rural) and 3 (rural) with schools 4(urban) and 5 (peri-urban).

Table 2: Graphic image comprehension in all the schools

IMAGE COMPREHENSION												
	School 1 (Deep-rural) **(n=79)**		School 2 (Urban) **(n=40)**		School 3 (Rural) **(n=71)**		School 4 (Urban) **(n=50)**		School 5 (Peri-urban) **(n=61)**		**Totals (n=301)**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Poster 1	7	+8.9	32	*80	14	19.7	22	44	27	44.3	102	33.9
Poster 2	5	+6.3	18	45	20	28.2	19	38	18	29.5	80	26.6
Poster 3	72	«91.1	38	*95	60	84.5	42	84	55	90.2	264	88.7
Poster 4	61	77.2	40	*100	66	93	46	92	59	96.7	272	90.4
Poster 5	66	83.5	38	*95	62	87.3	48	*96	58	*95.1	272	90.4
Poster 6	37	46.8	30	*75	38	53.5	13	+26	34	55.7	152	50.5
Poster 7	57	72.2	35	87.5	48	67.6	43	86	56	*91.8	239	79.4
Poster 8	44	55.7	28	*70	45	63.4	28	56	41	67.2	186	61.8
Poster 9	9	+11.4	20	50	20	+28.2	24	48	30	49.2	103	34.2
Poster 10	23	29.1	28	*70.	27	38	34	68	30	49.2	142	47.2
Poster 11	21	26.6	35	*87.5	37	52.1	23	46	45	73.8	161	53.5
Total & Mean %	**402**	**46.3**	**342**	**77.7**	**437**	**55.9**	**342**	**59.8**	**453**	**67.5**		

*p<0.05; +p<0.05

* Indicates a significantly higher comprehension when comparing rural with urban schools.
\+ Indicates a significantly lower comprehension when comparing rural with urban schools.
« Indicates a significantly higher comprehension when comparing school 1, a deep-rural school with school 4, a peri-urban school.

2.1 Subjects' interpretation of the graphic imagery and messages

Poster 1 (Love to be there):
Employment and a career: A young woman pilot depicts achievement against significant odds, including gender stereotyping. The intended message is for young people to be alive in 2010 to enjoy the World Cup and secure their future prospects by modifying their sexual behaviour to avoid the high risk of HIV infection (*loveLife*, 2004). This poster is about a child's long-term dream and the fact that a little girl saw herself becoming a pilot and respected her body and saved herself until she grew up to become a pilot in real life. The poster is designed in two halves: The first half is hand-drawn in a manner resembling a simple, childlike drawing. The other half is a picture of a young career woman dressed in a pilot's uniform against a dark background to show contrast. This method enhances readability of both the picture and the text, which is written against a black background. This approach conforms to the suggestions of Gaede (1999) regarding how images and illustrations should be used in order to overcome barriers to recognition in visual communication. Moreover, the message *"Love to be there"* is clear, simple and brief, as suggested by FHI/AIDSCAP (2003) and STD Communication (2004).

Results obtained in respect of Poster 1 (Love to be there):
When this poster was tested for message and image comprehension amongst the learners, their responses were low, as shown in Table 1 and Table 2. If we consider all the schools together, there was a significantly higher level of message comprehension (41.2%) than graphic image comprehension (33.9%). However, if we consider the schools individually, there was a significantly higher level of image comprehension in urban schools than in rural schools. The imbalance in the levels of image and message comprehension with regard to this poster affected the subjects' comprehension of Poster 1's overall message.

However, when further questions were asked to measure the extent of the subjects' comprehension of the message, they responded as follows (in their own words): "*Someone wants to see a good future"; "When you're a child, you have many dreams or aims in life. It shows that if you live a protected life you can live to the day your dream is fulfilled"; "We should live up to the dreams we had since we were little kids and make sure we fulfil them"; "The lady in the diagram used to draw aeroplanes when she was a kid because she dreams of flying one. She has grown up to become a pilot*".

Some responses of those who misunderstood the message were: "*Those teenagers who love themselves should not walk at night*"; "*Love should be given to all living things. God had given us love before*"; "*Even if we travel I should love those people I meet*"; "*We should be happy like the sky*".

Poster 2 (Foreplay):
This poster consists of photomontages of young celebrities with the same imagery watermarked in the background and the word 'Foreplay' written in reverse-out lettering. *loveLife* (2002) described this poster as being part of a teaser campaign designed to evoke further discussion.

Results obtained in respect of Poster 2 (Foreplay):
This poster had significantly lower message comprehension (13.6%) than image comprehension (26.6%) in all schools (*p*-values approximating 0). Although some of the subjects were able to identify some of the celebrities on the poster, this did not influence their message comprehension (see Table 1 and Table 2). It appears as if here there was little association between the image comprehension and message comprehension. The reason could be that the message 'Foreplay' was not simple enough to allow the subjects to process the whole message correctly. The word 'foreplay' could also have been new to the learners in the rural schools or too ambiguous. From their responses, it seems as if to them the poster depicted a music concert rather than an HIV message.

When further questions were asked to justify the subjects' comprehension of this particular message, their responses were as follows (in their own words): "Y*outh must have a time to enjoy themselves*"; "*Boys and girls should be together*"; "*It shows people have talents and they are using it accordingly*"; "*Some sort of polygamy i.e. two men with five women*"; "*Guys*

and girls should be together"; "*A person can get intimate with more than one person*"; *"It shows that we all must have relationship[s*]"; "*It does not explain enough about what's on the poster or the message because some of us don't know the meaning of the word foreplay*"; "*People should caress, kiss and touch all over but should not have sex*"; "*Love should be considered as play*"; "*Be ready both to make sex*"; "*There are more women than men, these women are trying to attract these men in order to sleep with them so they're competing*"; "*This poster is like a music poster*"; "*It means that nowadays life is fair to everybody because whites and blacks looks the same to each other[s] to proof [sic] that life is about happiness*"; "*To have one another without discrimination*".

Poster 3 (Everyone he's slept with, is sleeping with you):
This poster consists of a photograph of a naked man with the hands of people of different skin colours on his back. It depicts a man with more than one sexual partner and who is thus prone to contracting and transmitting sexually transmitted diseases. The aim of this poster is to encourage people to reduce their number of sex partners and to discourage people from having sexual intercourse without taking protective measures (*loveLife*, 2002). The use of a photorealistic picture in this poster is in line with the previous finding that photorealism promotes potential understanding and accurate interpretation of such messages (De Lange, 1999; Gaede, 1999; Mayer, 1993; Mayer & Moreno, 2002; Waddill & McDaniel, 1992).

Results obtained in respect of Poster 3 (Everyone he's slept with, is sleeping with you):
The level of comprehension of the message (58.8%) and of the graphic imagery (88.7%) used in this poster was significantly high in all schools (*p*-values approximating 0). The results for this poster seem to agree with the suggestion made by Mayer (1993) and Mayer and Moreno (2002) that realistic pictures can improve comprehension. The poster also emphasises a self-efficacy response to the perceived threat of HIV/AIDS (Witte, Cameron, Lapinski & Nzyuko, 1998). This poster depicts the threat of HIV/AIDS in the hope that it will result in self-protective measures or positive behaviour by either keeping to one sexual partner or using condoms because of the perceived threat (Murray-Johnson, Witte, Boulay, Figueroa, Storey & Tweedie, 2001; Witte et al., 1998).

The subjects' responses were as follows (in their own words): "*The message makes us to know that HIV/AIDS is a serious problem*"; "*It means that the prominent man in the picture is promiscuous*"; "*Means prostitution*"; "*Sleeping with different partners promotes the spread of STDs and HIV/AIDS*". When further questions were asked in order to substantiate their responses by differentiating between the hands, they responded with statements like: "*White man's hand, Mosotho and Zulu*"; "*No nail-painted, red nail-painted and silver nail-painted*". This demonstrates that the imagery was well understood by the subjects in terms of the hands belonging to people of different skin colour, gender and age. Yet, though some had difficulty comprehending the imagery, responding as follows with regard to the hands: "*Looks old, tired and healthy*", "*Mosotho hand, Zulu hand and England hand*", "*Right hand, right hand and left hand*", they nevertheless understood the message.

Poster 4 (His & Hers):
This poster was designed to create awareness about teenage pregnancy and the fact that every incident of unprotected sex between men and women can result in unwanted pregnancy (*loveLife*, 2002). It shows the biological symbols of a male and female gamete in action during sexual intercourse. The puzzle concept used in this poster also symbolises both genders as 'his and hers', i.e. the two people in a relationship. This message suggests neither a threat nor an efficacy component, which Witte et al. (1998) consider to be necessary for effective health communication. The message advocates a delay in sexual debut or self-restraint from teenage sex.

Results obtained in respect of Poster 4 (His & Hers):
If we consider all the schools together, we find that this poster had a significantly high response rate with regard to both image comprehension (90.4%) and message comprehension (85%). However, if we compare the urban and rural schools, we find that the levels of image comprehension and of message comprehension were higher in urban schools than were those in rural schools (p-values<0.1). It was also found that the respondents knew what was being depicted in the illustration and that this aided their message comprehension. In respect of this poster, the level of articulation in the rural schools was lower than in the urban schools.

When further questions were asked to measure the extent of the subjects' comprehension of the message and imagery, their responses were as follows (in their own words): "*I have to either abstain or have safe sex to avoid pregnancy*"; "*Unprotected sex leads to unplanned pregnancy*"; "*It means some one is getting into trouble and is going to regret it*"; "*Show how baby are made*"; "*Sexual intercourse is the responsibility of both male and female*".

Poster 5 (One roll-on all women want):
This poster depicts a man and a woman in a relationship negotiating protected sex. The woman is holding a condom as an inevitable commodity on such an occasion. Although this poster neither mentions nor reflects the severity of HIV/AIDS or the associated risk, it does however carry a positive message. This poster promotes the perception of self-efficacy, as described by Witte et al. (1998). It also promotes negotiation and condom use, as well as consensual sex. It is persuasive in nature and depicts sexually active youths as being in control of their sexual behaviour.

Results obtained in respect of of Poster 5 (One roll-on all women want):
This poster elicited a significantly higher level of image comprehension (90%) than of message comprehension (52.5%) in all the schools in both the rural and the urban areas (p-values approximating 0). It was also found that the imagery contributed to the subjects' comprehension of this particular poster.

When further questions were asked in order to corroborate the extent of the subjects' comprehension of the messages and the imagery, they responded as follows (in their own words): "*She (the lady) is telling him (the man) about the importance of a condom*"; "*Put it on – no condom, no sex*".

Poster 6 (His & Hers):
This poster highlights the shared sexual responsibility associated with unprotected sex, namely a baby. It shows the symbolic representation of a baby's face as a product of both a man and a woman. This approach is based on the research finding that 71% of young South Africans indulge in unprotected sex (*loveLife*, 2002). This message again does not suggest the severity of HIV/AIDS nor is there an efficacy response component, as suggested by Witte *et al*. (1998). However, it does draw attention to the duties and realities awaiting any teenager who indulges in unprotected sex – i.e. the responsibility of childcare and development.

Results in respect of Poster 6 (His & Hers):
This poster had a lower level of image comprehension (50.5%) than message comprehension (66.8%) in all schools (see Table 1 and Table 2). However, if the schools are considered individually, we find that the two rural schools had significantly higher levels of message comprehension (68.4% and 77.5% respectively) than the one urban school and the peri-urban schools (40% and 63.9% respectively). The reasons for this could be that the respondents in the urban and peri-urban schools who had difficulty comprehending this poster partially recognised the imagery and made an effort to decode its abstract nature. Thus, by actively decoding and interpreting the mood, age and gender of the baby's image, their attention was diverted away from the message. A respondent with partial comprehension was unable to understand that the message related to a baby as a product of unprotected sex and thus constituting a shared responsibility. This shows that abstract images can cause misunderstanding and a loss of information. This is corroborated by the findings of Gaede (1999) and Delate (2001) regarding denotative and connotative levels of meaning, which describe the meaning that did not tally with the intended meaning as with inconsistent decoding in the studies of semiotics (the study of signs). This is an active process of how meaning occurs when communicating through visuals.

Judging by the following comments, the symbolic representation led many respondents to misunderstand the baby's face: "*A sad woman*"; "*A sleeping toy*"; "*It is like the baby is being raped*"; "*The baby's sad face*"; "*Pink or red means pain and blue or purple means happiness*"; "*They will be crying after they are infected by AIDS*". However, the respondents who were able to articulate the message knew that the message was about a shared responsibility awaiting the boy and the girl. They understood the message as follows: "*An unplanned child does not only belong to a girl but it's also a boy's responsibility*"; "*What belongs to him belongs to her too*"; "*It belongs to both of them*".

Poster 7 (Which way are you headed?):
This poster depicts a positive message using the graphic symbols for 'fast forward' (FFW) and 'rewind' (REW) to illustrate the message. The icons or buttons enhance the comprehension of this message. Although the poster suggests neither the severity of HIV/AIDS nor any self-efficacy, it both encourages the youth to examine where they stand in any sexual relationship and points to their next course of action.

Results in respect of Poster 7 (Which way are you headed?):
The results show that this poster had a significantly high level of message comprehension (67.4%) in all schools. This may be ascribed to the simplicity of the message coupled with the appropriate graphic imagery of the 'fast forward' and 'rewind' buttons. This imagery complements the message and AIDS comprehension. The level of image comprehension was significantly higher (79.4%) in all schools (*p*-values approximating 0). The comprehension of imagery contributed to the subjects' comprehension of this particular message.

The following were the responses given by subjects to justify their comprehension (in their own words): "*Shows whether a person is going forward in life or backward*"; "*Which path am I taking in life*"; "*I am to choose a way for myself and be wise in my decision*"; "*I should eschew what is not good for me*".

Poster 8 ("I had sex. Will I die?"):
This poster carries words supposedly uttered by a 14-year-old girl. It shows that the person in question is confused and lacks not only sufficient knowledge about HIV/AIDS, but also sex education. The depiction of the name and age of the 'speaker', and the use of inverted commas around the statements, serve to create the impression that the words are actually being spoken by a certain individual. This is a simple message, but can only be understood by a literate person, because it has no pictures or any visual imagery that could aid its comprehension.

Results in respect of Poster 8 ("I had sex. Will I die?"):
There was a significantly higher level of message comprehension among subjects from the urban school than among those from the rural school. The deep-rural school reflected 32.9% message comprehension, while the rural school reflected 35.2% message comprehension. The urban schools reflected 55% and 70% message comprehension respectively, and the peri-urban school 78% message comprehension (see Table 1 and Table 2). Although no illustrations or graphic imagery was provided that could aid the respondents' comprehension of this particular poster, the respondents from the urban schools were nonetheless able to understand the message. The subjects were also asked to provide reasons for the inverted commas used in this particular message so as to compensate for the imagery questions asked about the other posters. A significantly higher response rate was recorded in all schools (see Table 1 and Table 2). This shows that many subjects from all the schools could recognise that the message used quoted speech.

When further questions were asked to corroborate the degree of comprehension, some of the responses given were as follows: "*It means that child had sex at young age and after that he/she is afraid of dieing [sic] of HIV/AIDS*"; "*When I want to make sex, I should have knowledge first*"; "*Unprotected sex is not save [sic]*"; "*A teenager had unprotected sex and he/she is worried*"; "*A confused teenager without any knowledge*"; "*This person is ignorant*". In other words, the responses pointed to the fact that having unprotected sex could be risky and deadly. Some of the respondents from rural schools made the following comments: "*Is it the end of life when one is no longer a virgin?*"; "*I feel pain when I have sex. Am I sick*?"

Poster 9 (Dignity):
This poster depicts self-pride or respect. The graphic material here is in the form of a photograph showing the hand of a woman holding a bottle of perfume. The words 'Dignity – wear with pride' form the only message apart from the *loveLife* logo and the *Thetha Junction* telephone numbers. This poster is used to promote one of the values behind a long-lasting relationship, namely 'dignity'. It was designed to encourage love for one's body and the resolve to keep one's virginity as part of dignity and pride (*loveLife*, 2002).

Results in respect of Poster 9 (Dignity):
Taking all the schools together, it was found that this poster had a significantly higher level of message comprehension (48%) than of image comprehension (34.2%) (*p*-values approximating 0). Also, when considering the schools individually, it was found that the rural schools had significantly lower levels of both message and image comprehension. This poster was misunderstood by 65% of the subjects from rural schools. Many of the respondents could not relate this message to HIV/AIDS awareness campaigns, as they interpreted the message as being "*Dangerous and hazardous*" or "*Many people are drinking beer*". This became evident when further questions were asked about the contents of the bottle in the poster. This particular message may not be suitable for rural subjects.

The responses of the subjects were that the bottle contained beer, alcohol, drugs, medicine that can abort an unborn child, medicine to protect life, condoms, or hair-washing liquid. The majority of the 35% of subjects who comprehended the message were from urban schools. They gave the following responses: "*Individual pride*"; "*Respect*"; "*A special behaviour or a rank of a particular person*"; "*Virginity preserves it*"; "*It means dress properly*"; "*It means that I must be confident and proud of myself*". From the subjects' responses it would appear that rural and urban factors are contributors to the comprehension of symbolic visual messages.

Poster 10 (Love life, get attitude):
This poster carries a simple message. Graphically, the message is rendered in a style that is different from that of all the other posters used in this study. It is colourful and 'funky' to attract youths' attention. The letter form used to write the words 'love life' and the phrase's rendering appear crafty, funky and conspicuous. It covers almost the entire page and is very noticeable and attractive. While the words 'get attitude' are not as large as are the words 'love life', they are still legible. The advancing background colour complements the imposed lettering colour and makes the poster visible. Although this poster says nothing about the severity of HIV/AIDS, it depicts a positive message that is attractive and simple to understand.

Results in respect of Poster 10 (Love life, get attitude):
The results indicate that this poster enjoyed a significantly higher level of message comprehension (48.5%) than of image comprehension (47.2%) (*p*-values<1%) in all schools. The message was however not understood by subjects from the rural school. The results show that the deep-rural school displayed 38% message comprehension, while the rural school displayed 35.2% message comprehension. The two urban schools achieved 57% and 70% message comprehension respectively, while the peri-urban school obtained 54%

message comprehension. This result concurs with the finding of Zisser and Francis (2006) who, in their survey, found that the underlying message of 'get attitude' as intended by *loveLife* was understood only by youths in urban schools and not by those in rural schools.

The fact that the poster in question was in use at the time of this evaluation, coupled with the influence of other media such as television, radio and print available in urban areas, may have assisted the respondents from the urban schools to understand this poster.

With regard to the meaning of the poster's message, some of the respondents said the following: "*I should be careful in everyday life and abstain to avoid having HIV/AIDS*"; "*Love your life more than everything in this world*"; "*I must love life and to be a good youth with the good qualities so that I can have future*"; "*Know what is good and bad*"; "*Be in control and behave well*"; "*Let your NO be NO*". However, some respondents clearly misunderstood the message: "*Green pasture[s] in Africa in the year 2010*"; "*Broken glasses in the background means – someone's destroyed life or future*". The proportion of miscomprehension was lower in the urban schools than in the rural schools (see Table 1 and Table 2).

Poster 11 (It's not the end of your world):
This poster depicts a graphic illustration of a broken or shattered love symbol. It symbolises the end of a love relationship, with a clearly positive message written to encourage people in a like situation to believe that life goes on. The colours are inviting and striking. The contact details (*Thetha Junction 0800 121 900*) provided on this poster may help people in a similar situation to know where to turn for any further information and help.

Results in respect of Poster 11 (It's not the end of your world):
The poster portrays a positive message and is illustrated with appropriate graphic imagery. This also concurs with the suggestion made by Mayer (1993) that a picture can enhance understanding if it is appropriate and familiar and does not distract the viewer's attention. The imagery used in this message was familiar to the subjects and thus complemented the message. The level of comprehension of both the image (53.5%) and the message (57.2%) was significantly high in all schools (p-values<1%). However, if the schools are considered individually, we see that the level of comprehension was significantly lower in the deep-rural school, where the message elicited 48% comprehension and the imagery 26.6% comprehension. Some respondents commented that the poster did not highlight the severity of the health risk in question, but that the message was a positive one.

3. EVALUATION OF THE CAMPAIGN MATERIALS FOR EFFICACY

The structure of the questions for this part of the evaluation was based on the extended parallel process model (EPPM). The EPPM maintains that a health message must have a threat element and an efficacy element in order to be effective in changing behaviour (Witte et al., 1998). It must also promote persuasive messages that stimulate fear in order to encourage people to adhere to the suggested options (Murray-Johnson et al., 2001). The threat element of the message makes viewers feel prone to the risk, whilst the efficacy element makes viewers feel that they will be protected from danger if they follow the recommended option.

3.1 Questions and results

The efficacy of these posters was tested by evaluating the comprehensibility of the outdoor material in terms of the messages and graphic imagery used in the posters. Pearson's chi-square test and Wilk's likelihood-ratio test were used to determine which of the posters received high response rates and which of them received low response rates in terms of the questions. The level of significance used was 0.01. The results of only posters that received a significantly high response rate and those that received a significantly low response rate are given in Table 3.

Table 3: Results of subjects' (n=301) responses to the efficacy of the posters

(All at *p*-value approximating 0)

Questions	Posters that received a significantly high response rate	Number of subjects and percentage		Posters that received a significantly low response rate	Number of subjects and percentage	
		n	%		*n*	%
Question 1: *Do any of these eleven posters make you feel that if you do take the recommended option you can avoid being infected with HIV/AIDS through casual sexual intercourse?*	Poster 5	130	43	Poster 8	26	8
Question 2: *Do any of these posters make you feel that you should have a positive dream and work towards making that dream come true by abstaining from teenage sex?*	Poster 1 Poster 7 Poster 10	131 62 61	43 20.6 20.3	Poster 3 Poster 5 Poster 6 Poster 8	20 27 21 28	6.6 9.0 7.0 9.3
Question 3: *Which of these posters make you feel you can stop yourself from being infected with HIV/AIDS or other sexually transmitted diseases (STDs)?*	Poster 5	168	55.8	Poster 6 Poster 7 Poster 8	15 17 20	5.0 5.6 6.6
Question 4: *Which of these posters make you feel that HIV/AIDS and STDs are serious problems?*	Poster 3 Poster 8 Poster 11	84 80 63	27.9 26.6 20.9	Poster 1 Poster 2 Poster 7 Poster 9 Poster 10	7 20 12 19 15	2.3 6.6 4.5 6.3 5.0
Question 5: *Which of these messages do you understand best?*	Poster 1 Poster 11	95 82	31.6 27.2	Poster 2 Poster 6	20 21	6.6 7.0
Question 6: *Which of these illustrations/pictures do you like most?*	Poster 1 Poster 10	92 65	30.6 21.6	Poster 4 Poster 6 Poster 8	15 9 11	5.0 3.0 3.7

Poster 1 (Love to be there); Poster 2 (Foreplay); Poster 3 (Everyone he's slept with, is sleeping with you); Poster 4 (His & Hers); Poster 5 (One roll-on all women want); Poster 6 (His & Hers); Poster 7 (Which way are you headed?); Poster 8 ("I had sex. Will I die?"); Poster 9 (Dignity); Poster 10 (Love life, get attitude); Poster 11 (It's not the end of your world).

The first question asked the subjects to state which of the eleven posters made them feel that they could avoid being infected with HIV/AIDS if they were to take the recommended course of action. Poster 5 (*One roll-on all women want*) received a significantly high response rate [*n*=130 (43%)], whilst Poster 8 ("*I had sex. Will I die?*") received a significantly low response rate [*n*=26 (8%)]. Both *p*-values were smaller than 0.01 and approximated 0. Poster 5 was highly preferred among the respondents for its self-efficacy (see Table 3). This message made the respondents feel vulnerable and provided a way out.

The second question related to the response efficacy of the posters in terms of whether any of the posters made the respondents feel ambitious and willing to forsake an early sex debut. Poster 1 (*Love to be there*) [*n*=131 (43.5%)], Poster 7 (*Which way are you headed?*) [*n*= 62 (20.6%)] and Poster 10 (*Love life, get attitude*) [*n*=61 (20.3%)] received significantly high response rates. All *p*-values were smaller than 0.01 and approximated 0. The respondents believed that this positive message encouraged them to dream about a better future and to try to actualise their dream by delaying their sex debut and living a positive lifestyle. Some stated that this poster did not address the severity of HIV/AIDS in any shocking of fearful manner, but rather tried to persuade them to be responsible and look to the future by remaining standing, whatever the odds and by aspiring to become a better person. The respondents believed that these messages were positive and served to give them hope (see Table 3).

Question Three asked whether any of the posters made the respondents feel that they could protect themselves from being infected with HIV/AIDS or another STD. This question also tested for the perceived response efficacy of the posters. Poster 5 (*One roll-on all women want*) received a significantly high response rate of *n*=168 (55.8%). This poster stood out in terms of preference with regard to response efficacy among all the eleven posters used in this study. The respondents stated that they would be able to follow the advice of using a condom and negotiating with their partner during sex in order to remain uninfected. Poster 6 (*His & Hers*) received a significantly low response rate of *n*=15 (5%), because the message did not reflect the risk of contracting HIV/AIDS, suggest any threat of the disease, or offer a response suggestion. It only reminded respondents of the responsibility awaiting both males and females who indulge in unprotected sexual behaviour. Both Poster 7 (*Which way are you headed?*) [*n*=17 (5.6%)] and Poster 8 (*"I had sex. Will I die?"*) [*n*=20 (6.6%)] received significantly low response rates in terms of response efficacy. The respondents argued that these messages offered no way forward. Respondents also commented that the message in Poster 8 came from a confused teenager and that, apart from a telephone line, no positive response was depicted in the poster.

Question Four related to the perceived severity and self-efficacy of the posters and asked the subjects to decide which of the posters made them aware of the fact that HIV/AIDS is a serious problem. Poster 3 (*Everyone he's slept with, is sleeping with you*) received a significantly high response rate [*n*=84 (27.9%)]. Poster 8 and Poster 11 also received significantly high response rates of *n*=80 (26.6%) and *n*= 63 (20.9%) respectively (*p*-value approximating 0). Poster 3 arouses fear by telling viewers how easily one can be infected through unprotected sex. Although this poster does not suggest condom usage, it does indirectly emphasise the self-efficacy response

and the perceived severity of HIV/AIDS. This poster depicts the severity of HIV/AIDS in the hope that this will result in self-protective measures or a positive lifestyle by either keeping to one sexual partner or using condoms in response to the perceived threat.

Question Five asked the subjects to identify which message they understood best. Poster 1 (*Love to be there*) [*n*=95 (31.6%)] and Poster 11 (*It's not the end of your world*) [*n*=82 (27.2%)] had a significantly high response rate. The respondents believed that these messages were positive messages that provided hope and encouraged a positive lifestyle. The images are thus relevant and appropriate to the messages and serve to enhance comprehension (*p*-value approximating 0). Poster 2 (*Foreplay*) received a significantly low response rate [*n*= 20 (6.6%)].

The respondents did not perceive any part of the material in Poster 2 (*Foreplay*) to be a reminder of the threat and severity of HIV/AIDS or of the self-efficacy or response efficacy needed in order to overcome HIV/AIDS. The respondents associated this material with a music concert rather than with HIV/AIDS prevention. The subjects also mentioned that they were not influenced to take any action against HIV/AIDS, as this was not mentioned anywhere in the poster. Poster 6 (*His & Hers*) also received a significantly low response rate of *n*=21 (7%).

The subjects were also asked which of the illustrations or pictures they preferred most. The respondents' preference for the illustration method in relaying messages was significantly high. Poster 1 (*Love to be there*) [*n*=92 (30.6%)] and Poster 10 (*Love life, get attitude*) [*n*=65 (21.6%)] *each* received a significantly high preference rating, while Poster 4 and Poster 6 each received a significantly low preference rating. Poster 8 is simply a plain text message without any imagery.

4. DISCUSSION OF RESULTS

The subjects from both the rural and urban schools understood Posters 3, 4, 5 and 7. These results are in line with the suggestion of Coulson, Goldstein and Ntuli (1998), Gaede (1999), FHI/AIDSCAP (2003) and STD Communication (2004) that health messages must be 'simple' and 'clear'. The images in Poster 3 and Poster 5 employ photorealism and appear to be appropriate to the messages, in that they aid comprehension. Poster 4 and Poster 7 utilise iconic signs that illustrate the real object suggested by the text and thus create actual meaning, as described by Delate (2001). This is consistent with the finding of Pauwels (2000) and the design guidelines suggested by STD Communication (2004), namely that familiar images aid comprehension. STD Communication (2004) suggests the use of visuals that help convey messages rather than 'decorate' the poster, as this serves to distract users. The use of visuals that are culturally relevant and images that are familiar to the audience is encouraged.

The results of the imagery comprehension of Poster 6 (*His & Hers*) concur with Delate's finding (2001) that the meanings associated with this imagery were not correctly understood. Although the message appeared simple, the subjects in that study were unable to link the image to the message.

In the present study, the learners in both the rural and urban schools generally understood posters 8, 10 and 11. The degree of the understanding was not the same as for posters 3, 4, 5 and 7. Poster 1 recorded a low message comprehension because of poor image comprehension in rural schools. The rural subjects found the imagery method in this poster confusing. The respondents were unable to link the two illustration methods (photorealism and child's drawing) and assign an accurate meaning to the message. As a result, the perceived message of this poster differed from the intended meaning of 'love to be there'. This result obtained in respect of Poster 1 is similar to what Jordaan (2006) found, namely that subjects, because of the exclusive use of English in the poster campaigns, were unable to provide an accurate interpretation of the concept. However, this poster was well comprehended in urban schools and also had a high preference when tested for preferred illustration method. This could be because of unintended embedded humour (Jordaan, 2006) and the incidental exposure of the subjects from urban schools to a wider range of visual material.

Poster 9 (*Dignity*) had significantly low image and message comprehension in all the schools. This could be because of the absence of pictures to buttress the text. Poster 9 was misunderstood as a result of the unfamiliar imagery used in the message, especially amongst the respondents from the rural schools. The fragrance or perfume image used to illustrate the poster appeared to be a foreign concept to the respondents. Such children might never have seen, touched or used perfume before, which means that they would not have been able to recognise the image. The respondents from rural schools were unable to associate this image with warnings about HIV/AIDS. Prior exposure of the subjects to any visual item used in visual communication material can either hamper or assist their comprehension of messages. A lack of decoding skills can make it difficult for rural subjects to comprehend messages as intended (Carstens, 2004; FHI/AIDSCAP, 2003; STD Communication, 2004). Carstens (2004) explains that a low-literate viewer relies on the situation and the accompanying pictures to assume or guess the meaning of the message. Pictures that do not have any cohesion with the message may result in poor comprehension.

It was also found that the subjects preferred realistic, appropriate imagery, such as photorealism, rather than abstract imagery in these types of health messages. This was evident from the significantly high response rate with regard to the recognition of the images used in Poster 3 (89%) and Poster 5 (90.4%). Poster 2 and Poster 9 also employ photorealistic images, yet the messages were misunderstood. It can be inferred that the pictures in Poster 2 and Poster 9 were seen as being inappropriate to the message and were moreover unfamiliar to the rural subjects. This may have led to the message being misunderstood. Inappropriate use of imagery has previously been found to be a vehicle leading to miscomprehension of messages (Pauwels, 2000).

The urban schools' significantly high preference rating of Poster 1 and Poster 10, which employ the preferred illustration method, can be deduced as having been influenced by subjects' prior exposure to illustrations, cartoons and comics on television and in books. This may have influenced the urban respondents' preference for and comprehension of the graphic imagery components used in Poster 1 and Poster 10. This is consistent with a previous finding by McQuail and Windahl (1993) and by Gaede (1999) that level of education and some social factors can play a part in the comprehension of messages.

Several posters created a sense of self-efficacy among the subjects. These posters gave a practical answer to real-life situations. The subjects regarded the message in Poster 5 (*One roll-on all women want*) to be positive and felt that the imagery depicted an efficacy component. The use of detailed imagery showing condom negotiation in the poster could be another factor that contributed to its effectiveness. Some subjects claimed that the message could make them change their behaviour. A positive message was reinforced in Poster 10 (*Love life, get attitude*), while Poster 1 (*Love to be there*) depicted hope and Poster 7 challenged the subjects by asking which way they were headed. These types of messages concur with the findings of FHI/PATH (2002), which suggest that positive messages are effective.

Poster 8 carried a threatening message (*"I had sex. Will I die?"*), depicting the risk and severity of HIV/AIDS. The low score recorded by this poster shows that it lacks response and self-efficacy. The respondents' comments concurred with the findings of Witte *et al*. (1998) who suggested that campaign materials depicting both a threat and a means of overcoming that threat might be effective. In this case, the message depicts a threat without suggesting any means of dealing with it.

Poster 1 (*Love to be there*) was found to have high response efficacy. The respondents felt that this poster made them look towards the future in a positive way rather than considering the severity of HIV and the other consequences associated with teenage sex. It is apparent from this study that detailed imagery, positive messages and an approach of fear that nevertheless provides solutions seem to be preferred in campaign material amongst the target group.

These results would seem to support the findings of Yarber (1995) and Lagarde (2003) who suggest that the evaluation of HIV/AIDS and sexuality messages is important in order to ascertain their impact and determine areas where the programme can be improved. Moreover, proving the effectiveness of such messages is considered to be the main aim of assessment with a view to improving the quality of such messages.

5. CONCLUSION

This study evaluated the comprehensibility of *loveLife's* outdoor messages, specifically the comprehension of graphic imagery, self-efficacy and the imagery preferences for the eleven posters. Messages and the imagery components in the posters were generally better comprehended in urban schools than in rural schools. Representational and abstract imagery might not be suitable for health communication messages. Poster 6 (*His & Hers*) made use of such imagery and obtained low image and message comprehension scores. However, unexpectedly, rural subjects comprehended the abstract imagery in Poster 6 (*His & Hers*) better than did the subjects in the urban school. The reasons could be that the learners had previously been exposed to the imagery in question in one of their class subjects.

Though Poster 4 (*His & Hers*) has an abstract and a representational illustration method, it nonetheless obtained high image and message comprehension scores in both the rural and

the urban areas. The reason could be that the subjects were familiar with the imagery used in this poster. Familiar imagery might help target audiences to comprehend a message better, and suitable graphic imagery fosters message comprehension because it is like adding idioms to grammar (Bonnici, 1999). Unfamiliar images and ambiguous language in Poster 9 (*Dignity*) and Poster 2 (*Foreplay*) caused the messages to be misunderstood.

This study also found that:

- Comprehension of graphic imagery influences the comprehensibility of visual-based messages.
- Poor interaction between the imagery and the accompanying message could contribute to poor comprehension of the messages.
- Realistic and appropriate imagery is preferable to abstract and representational imagery – hence familiar and message-relevant imagery can improve the comprehension of HIV/AIDS messages.
- Pre-testing of each component of the HIV/AIDS messages amongst the right target samples is highly recommended, because it would facilitate the detection of flaws at the planning stage. Appropriate remedies for the issues raised by the target samples during the pre-testing stage can effectively eliminate the identified flaws.
- Post-testing can evaluate the efficacy of the visual material, thus identifying the strengths and weaknesses of such communication materials. Subsequent communication materials can be constructed on the basis of the success and strength of previous materials. Avoidance of past mistakes will provide experience and support the prevailing ideas, which will thus be better comprehended and hopefully promote a positive, healthy lifestyle.
- The use of simple language or words that can be understandable to low-literate people is also suggested. Poster 9 is a case in point in that many respondents were unable to attach any meaning to the word ‘dignity’.
- Positive messages and imagery encouraging the youth to live a healthy lifestyle could win them over and influence them positively.

Further research into the development of appropriate imagery for HIV-prevention campaigns is recommended, also in order to identify the various social influences that prevent the youth from being positively influenced by the simple and clear concepts that are recommended in such campaigns.

REFERENCES

ASSA (Actuarial Society of South Africa). (2006). *Biennial report on the state of the South African HIV/AIDS pandemic*. Retrieved November 29, 2006, from www.assa.org.za/AIDS.

Bonnici, P. (1999). *Visual language: the hidden medium of communication*. Crans-Près-Céligny: RotoVision.

Carstens, A. (2004). Tailoring print materials to match literacy levels: a challenge for document designers and practitioners in adult literacy. *Language Matters*, 35, (2), 459-484.

Coulson, N. (2002). *Developments in the use of the mass media at the national level for HIV/AIDS prevention in South Africa*. Retrieved November 11, 2006, from http://www.comminit.com/strategicthinking/stcoulson/sld-1541.html.

Coulson, N., Goldstein, S. & Ntuli, A. (1998). *Promoting health in South Africa: an action manual*. Cape Town: Heinemann.

De Lange, R.W. (1999). *Culturally modified pictures in printed media as an adjuvant to education in developing countries*. Unpublished doctoral thesis, University of Stellenbosch, South Africa.

Delate, R. (2001). *The struggle for meaning: a semiotic analysis of interpretations of the* loveLife *"His & Hers" billboard campaign*. Retrieved November 11, 2006, from http://www.comminit.com/strategicthinking/stloveLife/sld-2210.html.

Durkin, D. (1993). *Teaching them to read*. (6th ed.). Needham, MA: Allyn & Bacon.

Family Health International/AIDS Control and Prevention Project (FHI/AIDSCAP). (2003). *How to create an effective communication project*. Arlington, VA: FHI/AIDSCAP.

Family Health International/Program for Appropriate Technology in Health (FHI/PATH). (2002). *Developing materials on HIV/AIDS/STIs for low-literate audiences*. Washington DC: FHI.

Freimuth, V., Cole, G. & Kirby, S. (2001). Issues in evaluating mass-mediated health communication campaigns. In I. Rootman, M. Goodstadt, B. Hyndman, D.V. McQueen, L. Potvin, J. Springett & E. Ziglio (Eds). *Evaluation in health promotion: principles and perspectives (WHO Regional Publications, European Series No. 92)*. Geneva: WHO.

Gaede, R.J. (1999). *The semantic and pragmatic comprehension of visual rhetorical codes by literate and illiterate adults in a development communication setting*. Unpublished doctoral thesis, Technikon Free State, Bloemfontein.

Halperin, D. & Williams, B. (2001, 26 August). This is no way to fight AIDS in Africa. *Washington Post*, p. B1.

Jordaan, J. (2006). A critical perspective on the reception of three *loveLife* billboards in rural Transkei. *Communitas, 11*, 107-124.

Kelly, K., Parker, W. & Gelb, S. (2002). *HIV/AIDS, economics and governance in South Africa: key issues in understanding response*. Retrieved February 15, 2006, from http://www.cadre.org.za.

Kelly, K., Parker, W. & Oyosi, S. (2001). *Pathways to action: HIV/AIDS prevention, children and young people in South Africa – a literature review*. Pretoria: Save the Children, South Africa.

Khomanani. (2005). *Khomanani Day*. Retrieved March 22, 2006, from http://www.info.gov.za/events/2005/khomanani.htm.

Lagarde, F. (2003). *Review of Canadian HIV/AIDS campaigns carried out between 2000 and 2002*. Ottawa: Health Canada.

Lew-Ting, C.Y. & Hsu, M.L. (2002). Pattern of responses to the HIV transmission question: rethinking HIV knowledge and its relevance to AIDS prejudice. *AIDS Care, 14*, (4), 549-557.

loveLife. (2000). *loveLife Brochure*. Johannesburg: *loveLife*.

—. (2002). *Annual report*. Retrieved March 24, 2005, from http://www.loveLife.org.za/.

—. (2004). *Annual report*. Retrieved March 24, 2005, from http://www.loveLife.org.za/.

—. (2006). *Love them enough to talk about sex: good parent-child communication vital to combating HIV infection in SA*. Retrieved December 01, 2006, from http://www.loveLife.org.za/.

Mayer, R.E. (1993). Illustrations that instruct. *Advances in Instructional Psychology, 4*, 253-384.

Mayer, R.E. & Moreno, R. (2002). Aids to computer-based multimedia learning. *Learning and Instruction, 12*, 107-119.

McGuire, W.J. (1999). *Construction social psychology: creative and critical processes*. Cambridge: Cambridge University Press.

McQuail, D. & Windahl, S. (1993). *Communication models for the study of mass communication*. New York: Longman Publishing.

Medical Research Council (MRC). (2006). *Release of biennial report on the state of the South African HIV/AIDS epidemic*. Retrieved November 29, 2006, from http://www.mrc.ac.za/.

Murray-Johnson, L., Witte, K., Boulay, M., Figueroa, M.E., Storey, D. & Tweedie, I. (2001). Using health education theories to explain behaviour change: a cross-country analysis. *International Quarterly of Community Health Education*, 20, (4), 323-345.

Niba, M.B. (2004). *HIV/AIDS communication-based interventions in Southern Africa: the value of implementation and evaluation methodologies of projects*. Unpublished doctoral thesis, University of KwaZulu-Natal, Pietermaritzburg.

Parker, W. (2003, August). *Re-appraising youth prevention in South Africa: the case of* loveLife. Paper presented at the South African AIDS Conference, Durban. Retrieved May 30, 2007, from http://www.cadre.org.za/files/reappraising_youth.pdf.

—. (2006). *Claims and realities in programme evaluation: reflections on* loveLife*, South Africa*. Retrieved May 30, 2007, from http://www.cadre.org.za/present.htm/.

Parker, W., Dalrymple, L. & Durden, E. (2000). *Communicating beyond AIDS awareness: a manual for South Africa*. Auckland Park: Beyond Awareness Consortium.

Pauwels, L. (2000). Taking the visual turn in research and scholarly communication: key issues in developing a more visually literate (social) science. *Visual Sociology, 15*, 7-14.

—. (2005). Posters, billboards and grassroots media relating to TB and AIDS in the Free State and Lesotho. *Acta Academica Supplementum, 1*, 337-353.

Program for Appropriate Technology in Health (PATH) and Save the Children. (2003). *A guide to developing materials on HIV/AIDS and STIs*. Seattle, WA: PATH and Save the Children.

Rawjee, V.P. (2002). *Effective HIV/AIDS communication campaigns: a case study of an HIV/AIDS awareness campaign targeted at young adults at a tertiary institution*. Unpublished Master's dissertation, University of KwaZulu-Natal, Pietermaritzburg.

Shisana, O. & Simbayi, L. (2002). *Nelson Mandela/HSRC study of HIV/AIDS: South African national HIV prevalence, behavioural risks and mass media household survey*. Pretoria: HSRC.

Singer, R. (2005, 19 August). Is *loveLife* making them love life? *Mail & Guardian*, p. 25.

Statistics South Africa (Stats SA). (2007). *Mid-year population estimates, South Africa 2006*. Retrieved January 11, 2007, from http://www.statssa.gov.za/publications/P0302/P03022006.pdf.

STD Communication. (2004). *Design principles for communicating about sexually transmitted diseases*. Retrieved November 9, 2006, from http://stdsearch.shs.net/Principles/PrimerBrochure2.aspx.

Treatment Action Campaign (TAC). (2005). *TAC evaluation, April 2005*. Retrieved September 10, 2006, from http://www.tac.org.za.

Treatment Action Campaign (TAC). (2006). *Equal Treatment, 20*, 1-40. Retrieved September 10, 2006, from http://www.tac.org.za.

Thomas, K. (2004). A better life for some: the *loveLife* campaign and HIV/AIDS in South Africa. *Agenda, 62*, 29-35.

Torabi, M.R., Crowe, J.W., Rhine, S., Daniel, D.E. & Jeng, I. (2000). Evaluation of HIV/AIDS education in Russia using a video approach. *Journal of School Health, 70*, (6), 229-234.

UNAIDS. (2004). *UNAIDS at country level: progress report*. Geneva: UNAIDS.

—. (2006). *UNAIDS report on the global AIDS epidemic*. Geneva: UNAIDS.

—. (2008). South Africa- Country Situation. Retrieved June 30, 2006, from http://data.unaids.org/pub/FactSheet/2008/sa08_soa_en.pdf.

Waddill, P.J. & McDaniel, M.A. (1992). Pictorial enhancement of text memory: limitations imposed by picture type and comprehension skill. *Memory and Cognition, 20*, (5), 472-482.

Williams, J. & Dwyer, F. (2004). The relative effectiveness of varied testing formats in retrieving information related to different educational objectives. *International Journal of Instructional Media, 31*, (3), 257-266.

Witte, K., Cameron, K.A., Lapinski, M.K. & Nzyuko, S. (1998). A theoretically based evaluation of HIV/AIDS prevention campaigns along the trans-African highway in Kenya. *Journal of Health Communication, 3*, 345-363.

Yarber, W.L. (1995). Presidential address: principles for creating AIDS/sexuality education messages for youth. *Journal of Sex Research, 32*, (4), 1-11.

Zisser, A. & Francis, D. (2006). Youth have a new attitude on AIDS, but are they talking about it? *African Journal of AIDS Research, 5*, (2) 189-196.