

Celebrity endorsed music videos: innovation to foster youth health promotion

A. J. Macnab^{1,2,*} and R. Mukisa^{1,3}

¹Stellenbosch Institute for Advanced Study (STIAS), Wallenberg Research Centre at Stellenbosch University, Stellenbosch 7600, South Africa, ²Faculty of Medicine, Department of Pediatrics, University of British Columbia, Vancouver, Canada, V6H 3V4 and ³Health and Development Agency (HEAD), Mbarara, Uganda

*Corresponding author. E-mail: ajmacnab@gmail.com

Summary

There are calls for innovation in health promotion and for current issues to be presented in new and exciting ways; in addition to creating engaging messages, novel ways to deliver health messaging are needed, especially where youth are the key target audience. When pupils in WHO Health Promoting Schools were asked what health messages would resonate with them, they also identified celebrities as the ‘messengers’ they would be particularly likely to listen to. Expanding on these discussions, the pupils quoted celebrity-recorded music videos containing health and lifestyle messaging as an example of where they had learned from celebrities. Their ability to sing phrases from the songs and repeat key health messages they contained indicated the videos had commanded attention and provided knowledge and perspectives that had been retained. We located on YouTube the video titles the pupils identified and evaluated the content, messaging and production concepts these celebrity-recorded music videos incorporated. All are good examples of the health promotion genre known as education entertainment, where educational content is intentionally included in professionally produced entertainment media to impart knowledge, create favorable attitudes and impact future behaviors. The importance of this genre is growing in parallel with the burgeoning influence of social media. Music videos resonate with youth, and celebrity recordings combine young people’s love of music with their fascination for the aura of celebrity. Hence, producing videos that combine an effective health message with celebrity endorsement offers potential as an innovative conduit for health promotion messaging among youth.

Key words: celebrity, education entertainment, health promotion, innovation, music videos

INTRODUCTION

Now that links between exposures during key developmental periods in early life and later health and disease are established, the challenge for those promoting health in the context of the developmental origins of health and disease (DOHaD) is how to engage those at risk ([International Society for Developmental Origins of Health and Disease, 2015](#)). It is relatively

straightforward to decide ‘who’ needs to be engaged—youth have to be the key target population, and there is growing recognition that both genders must be engaged ([Pentecost *et al.*, 2017](#)). This is because the ‘window of opportunity’ for intervention in relation to DOHaD requires that behaviors prior to conception are influenced so as to optimize fetal micronutrient provision. And, because infant care and nutrition after birth are

known to be as relevant to future health as patterns of growth throughout pregnancy, engagement must include boys and girls to emphasize that fathers as well as mothers have important roles in the future health of their offspring (Macnab and Mukisa, 2018).

However, youth are not a subset of the population who traditionally prioritize or even seriously consider their future health, nor that of their potential partners, let alone their offspring (Davies *et al.*, 2018). But health quality is heavily influenced by lifestyle habits (Bandura, 2004), and health knowledge and positive behaviors learned during adolescence are important because such behaviors correspond strongly from adolescence to adult life and hence potentially have a sustained influence (Viner *et al.*, 2012). So, it is relevant and an important investment to engage young people in the context of DOHaD because of the real possibility that effective behavioral change will translate in the long term into a reduction in noncommunicable diseases (NCDs); these include type 2 diabetes, obesity, and heart disease (Daar *et al.*, 2007), conditions with burgeoning health impact worldwide (Kickbusch, 2009).

Antonovsky states that the concept of health promotion has given birth to “some bright ideas” (Antonovsky, 1996), but there are calls to create new approaches (Crisp *et al.*, 2000) and to “innovate for health” (de Leeuw, 2011). The Cape Town manifesto specifically directs that DOHaD concepts be presented as a new and exciting way to achieve a healthier life (International Society for Developmental Origins of Health and Disease, 2015). Innovation is necessary to generate health promotion ‘messages’ that have contemporary relevance and which resonate with youth literate with social media. As Batras *et al.* identify, innovative solutions comprise strategies based on influential factors that can be applied to promote change and which account for the uniqueness of social settings (Batras *et al.*, 2016). Hence, we also need to explore how and by whom the messages chosen are shared so that they are clearly heard by young people initially and have potential to create the most long-term impact. For this reason, debate is necessary on who will be the best ‘messengers’ and what modes of delivery will be the most effective. The aim for health promotion about DOHaD is obviously to contribute to informed decision-making and adoption of health behaviors that benefit the progeny of the targeted youth during pregnancy and infancy.

While the health promotion literature contains sound methodology and concepts (Rimer and Glanz, 2005; Bandura, 2006), because youth are our target population, it behoves us to actively engage young people in the process. Their input is central to the generation of

innovative and pertinent messaging and also to identify novel media and the messengers they see as having the greatest potential to attract, engage and motivate young people (WHO Commission on Social Determinants of Health, 2008). This tenet becomes all the more vital recognizing the central place of social media and YouTube in the lives and lifestyles of today’s youth (Brown and Witherspoon, 2002; Chou *et al.*, 2009; Brodersen *et al.*, 2012).

In this context, we conducted a study in Uganda, where we presented the concept of DOHaD to senior pupils in rural primary schools and through discussion groups identified which health issues resonated with them, what health messages would generate interest and which messengers would command most attention. This paper describes one component of the discussions not reported previously (Macnab and Mukisa, 2018). Pupils had told us that they would pay particular attention if celebrities were the messengers used to promote DOHaD-related health messages, but what then became clear was that music videos recorded by local celebrities were popular in the school, and many pupils already identified strongly with several that they saw as promoting health and lifestyle messages. Because many pupils could sing musical phrases or quote familiar content from these videos (both in Luganda and in English), it was apparent that they had retained key health messages from hearing the lyrics and viewing the images. This raised the question, could music videos represent an innovative avenue to educate youth about DOHaD? Hence, this paper presents for debate, evaluation of the music videos endorsing health promotion which the pupils reported were popular in school.

METHODS

The titles of the videos evaluated and pupil comments included come from a formal observational study, where pupils in their final upper primary year in 3 schools in Uganda were introduced to DOHaD concepts and asked in discussion groups to identify what factors would foster DOHaD-related health promotion. The respondents ranged in age from 11 to 13 years; details of the population, methods, process for school engagement, consent and results have been described previously (Macnab and Mukisa, 2018). The discussion groups are a regular activity approved by the schools, where we already have established WHO Health Promoting School (HPS) programs running. These programs are based on the WHO HPS model, and in-class sessions are used to engage pupils in health-related topics, promote discussion and

identify avenues for constructive behavioral change (WHO, 1997; Macnab *et al.*, 2014).

In follow-up discussions, we explored the finding that pupils saw celebrities as effective health promotion messengers. In response, they gave celebrity music videos that contained health or lifestyle messages as an example. These videos were ones that were popular, readily available (YouTube and radio) and spontaneously listened to because they liked the music, but happened to have a health promotion theme. When asked about specific health messaging they were aware of, we were given the titles and an overview of the content of several videos, the names of celebrity performers who they saw as endorsing health, positive behaviors or lifestyle and pupils sang phrases or recited lyrics from the songs and the context and specific scenes used to portraying the health messages.

We subsequently located the videos they cited by title on YouTube and transcribed the words these videos contain to evaluate the extent of the health messaging incorporated into the songs. The principal production elements the videos incorporate were also reviewed; as no formal evaluation tools could be found, this was done based on principles for the design of effective education entertainment (EE) media in the literature (McGuire, 2001; Singhal and Rogers 2002; Piotrow and de Fossard, 2004; Rimer and Glanz, 2005; Porter, 2006; Storey and Sood, 2013). Finally, we have discussed why it is likely the content, construct and production of the videos the pupils remembered seeing contribute to their impact on youth and suggest how similar celebrity videos could be used as effective tools for promotion of DOHaD health messaging.

CELEBRITY MESSAGES IN SONGS

General

When we first asked pupils to tell us about a health message they had learned from a celebrity music video, the song suggested spoke in general terms about knowing that ‘consequences follow from whatever we choose to do.’ This was probably because of the simple way we had introduced the DOHaD concept as a ‘cause and effect’ relationship.

The message about consequences is contained in the music video *Obuvubuka bwo* (Your Youth) recorded by Bobi Wine (<https://www.youtube.com/watch?v=IHc73xKWOHE>, 2013)

Young people

Enjoy your youth and be happy while you are still young

Do everything that you want to do

And follow your heart’s desire.

But remember

For everything that you do

Judgement must come.

Ecclesiastes chapter 11 verse 9

The pupils’ principal reason why Bobi’s message has impact was that he is a big celebrity, and another factor being that his message must be right because he used words from the Bible. Bobi’s video engages its audience because he uses visual cues, locations and an overall style similar to those employed in the production of his other popular videos; he speaks to a broad audience by singing in English and Luganda (pupils in Uganda are taught English and Luganda), and includes the source of the biblical text in the lyrics to emphasize the message. Uganda is a country with a large Christian following, so a biblical quote or song recorded in a Gospel style likely has particular appeal.

Messages on maternal and child health

When we asked whether they knew of a music video where the message related to the maternal and child health concepts we had introduced them to through the DOHaD discussion, the immediate response was a chorus of “No child is born to die, no mother should die giving life,” with the pupils explaining that these are the words of a popular song written and recorded by a group of celebrity musicians in Uganda (<https://www.youtube.com/watch?v=pDS1KsAuTQY>, 2014). Aware of the issue of maternal and infant morbidity and mortality, these celebrities came together to create a powerful message through their music, intended to promote awareness and prompt action to generate change. It was clear speaking with the pupils that this song resonates with youth because of the talent, popularity and stature of the artists involved in Ugandan society, but, the message also has power because of the emotional impact of avoidable maternal and infant death.

The words of the song (Everyone—All stars Uganda) are transcribed in Table 1. They are a model of how to combine elements that make the impact and appeal of a health promotion message as broad as possible for a potential audience. The production of this video also employs the core elements of the EE genre model of health promotion (McGuire, 2001; Singhal and Rogers 2002; Piotrow and de Fossard, 2004; Rimer and Glanz, 2005; Porter, 2006; Storey and Sood, 2013). The group of celebrities has broad appeal, achieves gender equity by including male and female artists and children also contribute as central protagonists. Three languages are included, Luganda, Swahili and English. Each performer

Table 1: English lyrics of 'Everyone'—all stars, Uganda

<i>Introduction</i>	<i>Verse 5</i> (Artist David Lutalo sings in Luganda)
No child is born to die And no mother should die giving life. We need to come together To make a difference Everyone.	<i>Verse 6</i> (Artist Peter Miles returns to 'Rap')
<i>Chorus</i> (Artists Children and celebrities)	It's a bit big tragedy Why we have to sleep and wake up in agony That's why I don't mess with biology Make a discovery Follow me, follow to save the children generally. 20, 50, 60 get to 70 till to the infinity. Cause we have ability. Ability.
No child is born to die Born to die No mother should die giving life We need to come together you and I Everyone, everyone we all today.	<i>Verse 7</i> (Artist Jose Chameleone sings 'Ragga'). His lyrics includes questions and messages in Luganda, English and Swahili)
<i>Verse 1</i> (Artist Bobi Wine sings Ragga in Luganda and English)	<i>Verse 8</i> (Artist Navio sings in 'Hip Hop')
Imagine 282 children to die Why don't we wonder why they have to die Why don't we save them little babies cause everyday 16 mommas dem have to die Inna Uganda we simply cry If we just cry they'll continue to die They'll die and die till we try ooh why.	Back to the business, We need staff and equipment when it comes to health You all know my passion is endless Women walking miles to find a place to child birth. We're all responsible no matter how your mind works Too many kids dying that we have to save Other my change this But first it's me I thought it couldn't get worse but hey, 16 women died giving birth today.
<i>Verse 2</i> (Artist Radio)	<i>Verse 9</i> (Artist Gravity Omutujju sings 'Lugaflow' in Luganda)
Save a child and save a mother Every child deserves a mother A mother loves to see her daughter Find a man and become a mother. Have some sons or maybe some daughters Some could be nurses or some will ah ha Like a sweet lovely something along We can only do it if we want together.	<i>Verse 10</i> (Artist Mike Wine sings in 'Ragga' in Luganda and English) Let's combine the energy we save the future.
<i>Verse 3</i> (Artist Weasel in Rap)	<i>Verse 11</i> (Artist Chagga sings in Luganda)
Everybody stand up, come step alite No baby born to die No mother has to cry Everybody needs a life, We can make a future let me say. Together we can make a difference Put up resistance They need existence Everybody's assistance. Your presence, me want to let you know ooh oh.	<i>Verse 12</i> (Artist Rema Namakura)
<i>Verse 4</i> (Artist Judith Babirye sings in Luganda)	Hey, You and I can change this, together You and I tokoolere wamu Everyone is me Everyone is you Hand in hand in, coz
(continued)	<i>Chorus</i> (Whole ensemble and children)
	No child is born to die Born to die No mother should die giving life We need to come together you and I Everyone, everyone we all today.

brings his or her own unique style and music genre to the messaging (Ballad, Reggae, Rap, Hip Hop and Lugaflo) (Tapper, 1994) so that each individual celebrity can reach out to his or her own fans as well as contributing to the collective impact of the work as a whole. Rap, for example, is considered one of the most controversial of music genres, but research indicates that it can have profound psychological and educational effects on the listener, and it has been utilized effectively with adolescents in fields such as education, risk reduction and counseling psychology (Iwamoto, 2007). In addition, the messaging is not just delivered through words or in song; the music conveys emotion, powerful images are included and text messaging is used like subtitles to deliver specific health messages which include:

- When pregnant visit a health facility as soon as possible.
- Make at least 4 antenatal clinic visits during pregnancy
- Give birth in a health facility under the care of a skilled health care worker
- Seek medical care immediately if mother or newborn is unwell.
- All proceeds go towards the purchase of life-saving equipment for hospitals in Uganda
- Everyone has a role to play in ensuring that maternal, newborn and child health is prioritized, funded and delivered effectively at community and national level
- Together we can end the preventable death of mothers and newborns

Many of these messages were recalled and key elements quoted by pupils in their descriptions of what they had learned from the videos they liked to watch.

The English lyrics of the introduction and chorus of the song are:

No child is born to die
And no mother should die giving life.
We need to come together
To make a difference
Everyone.

The song continues with English lyrics that speak clearly to the issue of mothers dying during childbirth and babies dying in infancy being urgent and a public concern. Numbers are given to quantify the problem, resources needed are listed, the preventable nature of these deaths is emphasized and everyone is called upon to take responsibility and generate change.

The phrases in Luganda and Swahili each reinforce these messages or challenges the listener to be responsible and become involved. In verse 4 Judith sings ‘Everyone

has their own experience of death, and wherever you are my friend you can start to make a difference’; In his verse David asks each of us ‘Who do you think is going to help this young blood if not you?’ and Bobi goes further, with the challenge ‘Whose responsibility is it, yours or mine?’ Jose repeats the theme of collective responsibility: ‘Me and you and everyone are responsible for all the young ones; how can a child be born and quickly die? Saving the children of the future is the responsibility of all of us’. Then Gravity calls: ‘Don’t sleep – wake up. Let us all fight for the young blood and the mothers not to die. Children must not be left alone without mothers.’ Mike asks ‘Mothers die when they are giving birth, but why?’ and brings a new thought: ‘We just say the government should help, but me and you, and you and me, let’s combine our energy now to save the future’. And, finally, Chagga describes the ideal all should strive for; ‘Children’s lives are lovely when they are able to laugh with their mothers, celebrate their birthdays year by year and live in a peaceful country’.

Messaging of importance identified by boys

The boys in the group were asked to suggest a video with a health message that they saw as particularly relevant and important to them. Interestingly, they chose one with messaging about HIV/AIDS; teachers told us later that this had been shown in the previous term as part of the health education curriculum developed collaboratively with parents and pupils when the school was enrolled as one of our WHO Health Promoting Schools. When reviewing this video on YouTube the impression was of a dark story line portraying adult characters, with one exception, the inclusion of a girl of school age. The video is Togwamu Suubi (Don’t lose hope), Keep Uganda alive (<https://www.youtube.com/watch?v=ErLphG0u6cU>, 2013). It is recorded in Luganda and translated; the key messages contained in the song are:

Keep Uganda alive.
We are not running away because you are affected (with HIV)
Do not lose hope
We are here for you

(The AIDS) message should be everywhere including in schools
Educate our youth
Use protection (condoms)
Get tested (for HIV)
Stay faithful, do not cheat (on your partner) and risk the danger (HIV)

Please, all pregnant mothers – get tested
 If your husband has left you – don't fear,
 Take your medicine and care for your children

Those who are affected
 Please do not hide your disease
 You should know there is treatment.
 Always have protection (condoms) available at your house

Do not lose hope
 We as celebrities want to fight this disease, we are there
 for you and are with you.

This video conveys important and direct messages. The words of the song are inclusive and written so that they speak to men and women, adults and youth, those who are HIV positive and negative, women who are pregnant, those who have been left by their partners and youth thinking of starting sex. The celebrities combine a message of hope with the importance of testing and treatment and advice on how to avoid transmission through use of condoms. They call for universal action to fight the disease but also for tolerance toward those who have it.

The specific scenario that includes the young girl is interesting; here, a school-age girl dressed in her uniform is shown entering a room with an older man, all the visual cues are that they are about to engage in sex. However, the girl catches sight of a TV where the celebrities' video is playing, and after seeing their message she decides not to have sex, gets up and leaves. It was this scene that was described by the boys who suggested this video; this suggests that the messaging had an impact when it was shown in the previous term and that the knowledge and intended behavior promoted had been understood and retained by the pupils.

Messaging of importance to girls

When asked for a message that was important to the girls, they first spoke of their interest in certain celebrities explaining that they liked them because of what they sang about. When they described songs recorded by these artists, these seemed to be ballads on the general theme of romance, but three main themes ('hopes' or 'wanted realities') for the messages, predominated:

- Hopes for fidelity, lasting relationships and true love.
- Greater gender equality and opportunity for girls.
- Validation of the roles, actions and lives of women

An example on the first theme is where Khalifa Aganaga sings in Mukyaala Mwami (Wife and husband) (<https://www.youtube.com/watch?v=m7UYaXRysuU>, 2016).

The way that you love...
 Don't feel frightened, don't feel shy...
 You have made me forget other ladies.
Chorus: Wife and husband - that is always good when
 you are loving each other and the relationship is fine.

For the second, Woman (<https://www.youtube.com/watch?v=dpsmX4QzLNC>, 2015) sung in English by Juliana Kanyomozi. The words for Woman are a real celebration of the strengths and virtues of women and so are worth listening to in full. Key verses and the chorus are summarized in Table 2.

And for the third, Superwoman (<https://www.youtube.com/watch?v=5ueRpSLiDdI>, 2017) sung in Luganda and English by Bobi Wine and Nubian Lee, where key messages are the role and impact of mothers; sung in a combination of Luganda and English; the key messages are:

Respect your mama, love your mama.
 I became what I am because of my mother
 She is a superwoman.
 It was because of you,
 Because of all your work
 All the time when I was weak,
 That I am who I am.

Table 2: English lyrics of 'Woman'—Juliana Kanyomozi

<i>Verse 1:</i>
We don't know how she always finds her way. The mystery of a woman. A savior in a time of need The bravery of a woman. In your time of need she does the deed. The magic of a woman
<i>Chorus:</i>
Woman, woman. A warrior is a woman. Woman, woman. A savior is a woman.
<i>Verse 2:</i>
When a man will cry a woman smiles When her spirit's down She has no time to frown. A warrior is a woman.
<i>Chorus:</i>
<i>Verse 3:</i>
Bountiful, wonderful is her frame of mind Beautiful, colorful her style is one of a kind. Her womanhood and her motherhood Are her strength and pride. Her warmth and grace she cannot hide The wonders of a woman
<i>Chorus:</i>
Woman, woman. A warrior is a woman. Woman, woman. A savior is a woman.

Everything can be possible when you have a mother's love.
Superwoman.

CRITERIA FOR EDUCATION ENTERTAINMENT

We found these videos met published criteria for the entertainment education genre of health promotion. This genre is a communication strategy that aims to alleviate a social issue or educate the public through custom-made forms of entertainment, where the production involves the use various types of mass media to communicate messages intended to drive social and behavioral change (McGuire, 2001; Singhal and Rogers 2002; Piotrow and de Fossard, 2004; Rimer and Glanz, 2005; Porter, 2006; Storey and Sood, 2013). Each individual video addressed locally relevant and current educational issues, including avoidable maternal and neonatal death, the contemporary challenge of AIDS and calls for gender equity, celebration of women and the central role of mothers. Also, they all incorporated multiple techniques and approaches used successfully to increase the impact of various forms of entertainment. Hence, we suggest music videos warrant attention as a potential medium for innovative health promotion and lend themselves in particular to engaging youth in developing countries in the context of DOHaD.

DISCUSSION

This paper describes music videos available on social media that were evaluated via YouTube; senior Ugandan primary school children had given them as examples of recordings made by celebrities where clear health promotion messages could be learned from watching the videos or listening to the songs. These videos are ones that pupils listen to spontaneously because they like the music or follow the recording artist but which happen to have celebrity endorsed health promotion content. The content and production of these videos follow established principles employed in the design of EE media. The EE genre, a recognized form of health promotion (Singhal and Rogers, 2002; Piotrow and de Fossard, 2004; Porter, 2006), intentionally incorporates educational content into a variety of entertainment media to increase knowledge about an issue, create favorable attitudes and change behaviors.

Music videos represent one of the most popular EE media formats (Singhal and Rogers, 2002; Storey and Sood, 2013). In their design, the central issue to be framed in the video is chosen first, and then layers of reference values are added to the lyrics that complement

the central message; these layers come from *multiple sources* (e.g. the song writer, lyricist, content experts or members of the intended target audience). Creative elements (images, sound, music, transitions, animations, text and special effects) are then employed and artfully mixed so as to attract, retain and impact, while informing, touching and influencing the viewer. Compelling visual images are central to good video obviously, but it is also relevant that humans process visual information 60 000 times more quickly than narrative fact (Porter, 2006). Good sound is also essential, as this reinforces the message by establishing the tone, mood and emotional context. Watching videos involves verbal and nonverbal thinking and so engages both sides of the brain; the left brain processes dialogue, plot, rhythm and lyrics in parallel with right brain processing the visual images, relationships, sound effects, melodies and harmonic relationships from the video (Schlaug, 1995; Hébert and Peretz, 1997)

Repetition of the health promotion content is an important design element; repeated words, phrases, text and images, including multiple performers and using different languages within the song, multiplies the opportunities for the message to 'connect' with its target audience. Added impact comes with repeated playing; unlike a message that is only heard once, each time a video is viewed or a song heard, the educational message imprints that much more on the memory of the viewer/listener and increases the probability that the message will be retained (Bradac *et al.*, 1989; Singhal and Rogers, 2002). Subsequently, a glimpse of the visual images, hearing a phrase from the song or even seeing the celebrity in another video can then trigger recall of the core message. Although there is no proof as yet that such imprinting will translate into behavioral change, it is an important start that the majority of pupils indicated they were aware of music videos with a health message, and more than half the children indicated that they could sing a phrase or quote a message from a video that they had watched. Such awareness is an achievement in itself in health promotion terms, and we know that where positive behaviors evolve in adolescence, they tend to carry forward into adult life (Viner *et al.*, 2012). Of interest, boys clearly identified with music videos more than girls; if this applies broadly, celebrity music videos offer a rare avenue to preferentially engage boys in DOHaD-related health promotion, where the emphasis to date has predominantly been focused on girls and women, yet both genders clearly need to learn the links between causation of illness and the contribution of diet and lifestyle in early life to the onset of NCDs later (Daar *et al.*, 2007)

Familiarity and interest in music videos among Ugandan youth, and attraction to social media where available, are in keeping with trends reported in high- and middle-income countries (Chou *et al.*, 2009). The use of EE as a communication strategy for health promotion has been advocated as particularly applicable for the developing world (Singhal and Rogers, 2002; Storey and Sood, 2013), and the design principles advocated for effective EE were evident in all the music videos our pupils identified. Pupils in Uganda also have sufficient access to these videos for many to remember key content, and certainly familiarity with the names of the celebrity recording artists is wide spread.

However, in debate on the merits of the celebrity music videos, it must be acknowledged that only a very small proportion follow the principles of EE. Also, that overall, most music videos cannot be considered to have positive social messaging or depict appropriate behaviors and role modeling; many are rightly seen to contain negative messages and portray issues such as gender equity, sexual behavior, alcohol abuse, drug taking and violent behavior in a harmful way (Tapper *et al.*, 1994; Brown and Witherspoon, 2002; Ward *et al.*, 2005). Consequently, it was refreshing to find the strong, positive messaging about women, stable relationships and motherhood in the videos that the female pupils identified.

Research does validate a role for celebrities in health promotion and the potential effectiveness of their endorsement (Erdogan, 1999): ‘Heroes, heroines and role models can motivate children and teenage youth’, and this aspect of social marketing is seen as a way to design better health promotion campaigns and create more effective nutrition education in particular (Kraak and Pelletier, 1998). Celebrities are recognized to be effective in ‘selling’ health promotion messages (Valente and Pumpuang, 2007); many are highly visible and already affect opinion in society, so readily assume the role of champions advocating for change, particularly where they share social and cultural bonds with their audience (Batras *et al.*, 2016). The more their ‘audience’ identifies with their celebrity, the more they associate with the issues and causes advocated, and the greater the likelihood of them adopting the values modeled. In Uganda, few children ever see their celebrities perform in person, but the news, TV, radio and the availability of their music videos on social media make them widely “accessible” and hence influential. A caveat is however necessary; media controversy exists around the ethics of payments required by some celebrities for endorsement and concern of negative impact where high-profile celebrities fall from grace (Chapman and Leask, 2001).

We recognize limitations in what we report. The music videos evaluated were identified during conversations with pupils that followed our formal study of how African youth can be engaged in the context of DOHaD-related health promotion. The inquiry was unstructured, the pupils’ responses spontaneous and the examples of celebrity music videos given may not be as popular or well known in all schools, nor the awareness of the messages evident representative of young people across Uganda. However, YouTube data corroborate the pupils’ view that these videos are widely viewed, although popularity is known to be constrained by geographic locality of interest (Brodersen *et al.*, 2012). The evaluation of the videos was empirical, translations were done by authors fluent in Luganda, English and Swahili, but back-translation for precise meaning was not done; evaluation was also conducted against criteria for the production of EE media advocated in the literature rather than against a validated evaluation tool, as none could be identified. Similarly, our analysis of the song lyrics, incorporated health messages and the importance of celebrity to young people is based on the related literature discussed, as research evaluation of the impact of music videos is lacking. However, we suggest that celebrity endorsed music videos do have potential as an innovative medium to engage youth in the context of health promotion. And that debate and research to this end is warranted, particularly as young people must be the target audience for efforts to address the current challenge of fostering the DOHaD message.

‘We need to innovate for health’ (de Leeuw, 2011), and as de Leeuw has argued, there is great scope for health practice improvement (Batras, 2016), and much wisdom to be learned from advances in the social sciences and alternative disciplines. Arguably advances in education entertainment are no exception, particularly as the landscape for health promotion is changing (Kickbusch, 2009), and there is a recognized need to respond to contemporary health challenges (de Leeuw, 2011). The current epidemic of NCDs, including type 2 diabetes and obesity, is one such challenge, and contemporary recognition of the links between developing NCDs and exposures during key developmental periods in early life requires innovative health promotion to engage and inform young people about the developmental origins of health and disease.

ACKNOWLEDGEMENTS

AJM was a Fellow in residence in 2017 at Stellenbosch Institute for Advanced Study (STIAS) at Stellenbosch University, and is a

member of the 'Health in Transition' long term theme group at STIAS led by Abdallah Daar.

FUNDING

The programs in our Ugandan WHO 'Health Promoting Schools' are funded by the Hillman Medical Education Fund, Canada. Both authors thank STIAS for support that allowed them to work together while this paper was written.

CONFLICT OF INTEREST

None declared.

REFERENCES

- Aganaga, K. (2016) Mukyaala Mwami. (Wife and Husband). <https://www.youtube.com/watch?v=m7UYaXRysuU> (last accessed 25 November 2017).
- All Stars (Bobi, Radio, Weasel, Chameleone, Navio, Miles, Renam Gravity). (2014) Everyone. <https://www.youtube.com/watch?v=pDS1KsAuTQY> (last accessed 25 November 2017).
- All Uganda Stars. (2013) Togwamu Suubi (Don't lose hope). Keep Uganda alive. *New Uganda Music*. <https://www.youtube.com/watch?v=ErLphG0u6cU>
- Antonovsky, A. (1996) The salutogenic model as a theory to guide health promotion. *Health Promotion International*, **11**, 11–18.
- Bandura, A. (2004) Health promotion by social cognitive means. *Health Education & Behavior*, **31**, 143–164.
- Bandura, A. (2006) The primacy of self-regulation in Health Promotion. *Applied Psychology: An International Review*, **54**, 245–254.
- Batras, D., Duff, C. and Smith, B. J. (2016) Organizational change theory: implications for health promotion practice. *Health Promotion International*, **31**, 231–241.
- Bradac, J. J., Hopper, R. and Wiseman, J. M. (1989) Message effects: retrospect and prospect. In Bradac, J. (ed), *Message Effects in Communication Science*. Sage, Newbury Park, CA, pp. 241–317.
- Brodersen, A., Scellato, S. and Wattenhofer, M. (2012) YouTube around the world: geographic popularity of videos. In: *Proceedings of the 21st International Conference on World Wide Web*. ACM, pp. 241–250.
- Brown, J. D. and Witherspoon, E. M. (2002) The mass media and American adolescents' health. *Journal of Adolescent Health*, **31**, 153–170.
- Chapman, S. and Leask, J. A. (2001) Paid celebrity endorsement in health promotion: a case study from Australia. *Health Promotion International*, **16**, 333–338.
- Chou, W. Y., Hunt, Y. M., Beckjord, E. B., Moser, R. P. and Hesse B. W. (2009) Social media use in the United States: implications for health communication. *Journal of Medical Internet Research*, **11**, e48. <http://doi.org/10.2196/jmir.1249>
- Crisp, B. R., Swerissen, H. and Duckett, S. J. (2000) Four approaches to capacity building in health: consequences for measurement and accountability. *Health Promotion International*, **15**, 99–107.
- Daar, A. S., Singer, P. A., Persad, D. L., Pramming, S. K., Matthews, D. R., Beaglehole, R., et al. (2007) Grand challenges in chronic non-communicable diseases. *Nature*, **450**, 494–496.
- Davies, J. I., Macnab, A. J., Byass, P., Norris, S. A., Nyirenda, M., Singhal, A., et al. (2018) Developmental origins of health and disease in Africa - influencing early life. *Lancet Global Health*, **6**, e244–245.
- de Leeuw, E. (2011) Theory and policy innovation for health: where has the creativity and fun gone? *Health Promotion International*, **26**, 1–3.
- Erdogan, B. Z. (1999) Celebrity endorsement: a literature review. *Journal of Marketing Management*, **15**, 291–314.
- Hébert, S. and Peretz, I. (1997) Recognition of music in long-term memory: are melodic and temporal patterns equal partners? *Memory and Cognition*, **25**, 518–533.
- International Society for Developmental Origins of Health and Disease. (2015) *The Cape Town Manifesto*. International Society for Developmental Origins of Health and Disease, Cape Town. <https://dohadsoc.org/wp-content/uploads/2015/11/DOHAD-Society-Manifesto-Nov-17-2015.pdf> (last accessed 10 January 2018)
- Iwamoto, D. K., Creswell, J. and Caldwell, L. (2007) Feeling the beat: the meaning of rap music for ethnically diverse mid-western college students—a phenomenological study. *Adolescence*, **42**, 337.
- Kanyomozi, J. (2015) Woman. *New Ugandan Music Video*. <https://www.youtube.com/watch?v=dpsmX4QzLNc> (last accessed 25 November 2017).
- Kickbusch, I. (2009) Policy innovations for health. In Kickbusch, I (ed) *Policy Innovation for Health*. Springer, New York, NY, pp. 1–21.
- Kraak, V. and Pelletier, D. L. (1998) How marketers reach young consumers: implications for nutrition education and health promotion campaigns. *Family Economics and Nutrition Review*, **11**, 31–41.
- Macnab, A. J., Stewart, D. and Gagnon, F. (2014) Health promoting schools: initiatives in Africa. *Health Education*, **114**, 246–259.
- Macnab, A. J. and Mukisa, R. (2018) Priorities for African youth for engaging in DOHAD. *Journal of Developmental Origins of Health and Disease*, **9**, 15–19.
- McGuire, W. J. (2001) Input and output variables currently promising for constructing persuasive communications. *Public Communication Campaigns*, **3**, 22–48.
- Pentecost, M., Ross, F. C. and Macnab, A. (2017) Beyond the dyad: making intervention DOHAD interventions more inclusive. *Journal of Developmental Origins of Health and Disease*, **9**, 10–14.
- Piotrow, P. T. and de Fossard, E. (2004) Entertainment-education as a public health intervention. In Singhal, A., Cody, M. J., Rogers, E. M. and Sabido, M. (eds), *Entertainment-Education*

- and *Social Change: History, Research, and Practice*. Mahwah, NJ, Lawrence Erlbaum, pp. 39–60.
- Porter, B. (2006) Beyond words: the craftsmanship of digital products. *Learning & Leading with Technology*, **33**, 28–31.
- Rimer, B. K. and Glanz, K. (2005) *Theory at a Glance: A Guide for Health Promotion Practice*, 2nd edition. District of Columbia, WA, US Department of Health and Human Services, National Institutes for Health.
- Schlaug, G., Jäncke, L., Huang, Y., Staiger, J. F. and Steinmetz, H. (1995) Increased corpus callosum size in musicians. *Neuropsychologia*, **33**, 1047–1055.
- Singhal, A. and Rogers, E. M. (2002) A theoretical agenda for Entertainment-Education. *Communication Theory*, **12**, 117–135.
- Storey, D. & Sood, S. (2013) Increasing equity, affirming the power of narrative and expanding dialogue: the evolution of entertainment education over two decades. *Critical Arts*, **27**, 9–35.
- Tapper, J., Thorson, E. and Black, D. (1994) Profile: variations in music videos as a function of their musical genre. *Journal of Broadcasting & Electronic Media*, **38**, 103–113.
- Valente, T. W. and Pumpuang, P. (2007) Identifying opinion leaders to promote behavior change. *Health Education & Behavior*, **34**, 881–896.
- Viner, R. M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., *et al.* (2012) Adolescence and the social determinants of health. *Lancet*, **379**, 1641–1652.
- Ward, L. M., Hansbrough, E. and Walker, E. (2005) Contributions of music video exposure to black adolescents' gender and sexual schemas. *Journal of Adolescent Research*, **20**, 143–166.
- WHO Commission on Social Determinants of Health. (2008) *Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health: Final Report of the Commission on Social Determinants of Health*. Geneva, Switzerland, World Health Organization.
- WHO Expert Committee on Comprehensive School Health Education and Promotion. (1997) Promoting Health Through Schools. WHO Technical Report Series, No. 870. http://apps.who.int/iris/bitstream/10665/41987/1/WHO_TRS_870.pdf. (last accessed 10 January 2018).
- Wine, B: featuring Nubian Li and Henry Tigan. (2013) Obuvubuka bwo (Enjoy your youth). (Swartz) <https://www.youtube.com/watch?v=IHc73xKWOhE> (last accessed 25 November 2017).
- Wine B. and Lee N. (2017) Superwoman. <https://www.youtube.com/watch?v=5ueRpSLiDdI> (last accessed 25 November 2017).