Monitoring and Evaluation Assessment of The Lucky Specials Movie

Final Report

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Discovery Learning Alliance — Education Changes Everything

QUIZSICAL Pictures

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Wellcome

PEPFAR — U.S. President's Emergency Plan for AIDS Relief

USAID — From the American People

msh — Management Sciences for Health

Acknowledgements and Disclaimer

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We greatly acknowledge and thank all participants of this evaluation, who gave of their time and insights during the data collection phase. Our evaluation team consisted of:

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The evaluation team was responsible for the evaluation's administrative and logistical need, the collection of data through conducting a pre and post assessment survey, follow-up telephonic interviews, the review of project-related documents and the synthesis and analysis of the data. We thank our team for their dedicated efforts during this assignment.

The Lucky Specials Movie Partners

The Lucky Specials movie was produced by Discovery Learning Alliance and Quizzical Pictures in association with Tangled Bank Studios with support from Howard Hughes Medical Institute (HHMI), the Wellcome Trust, and USAID and PEPFAR through the Leadership, Management & Governance Project, led by Management Sciences for Health (MSH).

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About the LMG Project

Funded by the US Agency for International Development (USAID), the Leadership, Management, and Governance (LMG) Project (2011–2017) is collaborating with health leaders, managers, and policymakers at all levels to show that investments in leadership, management, and governance lead to stronger health systems and improved health. The LMG Project embraces the principles of country ownership, gender equity, and evidence-driven approaches. Emphasis is also placed on good governance in the health sector—the ultimate commitment to improving service delivery and fostering sustainability through accountability, engagement, transparency, and stewardship. Led by Management Sciences for Health (MSH), the LMG consortium includes Amref Health Africa, International Planned Parenthood Federation (IPPF), Johns Hopkins University Bloomberg School of Public Health (JHSPH), Medic Mobile, and Yale University Global Health Leadership Institute (GHLI).

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List of Abbreviations and Acronyms

AIDS	Acquired Immunodeficiency Syndrome
CC&DW	Creative Consulting & Development Works
HIV	Human Immunodeficiency Virus
IN	Inside Story
LS	*The Lucky Specials*
MDR	Multi Drug Resistant
MSH	Management Sciences for Health
NDOH	National Department of Health
WHO	World Health Organization
XDR	Extensively Drug Resistant

Definition of Key Terms

1. **Attribute independent variable:** An attribute independent variable could be a variable that is a fixed attribute: gender or the country of residence of an individual. These variables cannot be changed or manipulated by the researcher as they are an inherent part of a person or object.
2. **Dependent variable:** Dependent variables are variables affected or determined by independent variables, such as (for the purpose of this study) participants' TB-related knowledge and perceptions.
3. **Edutainment:** Video games, movies, television programs, or other material, intended to be both educational and enjoyable.
4. **Experimental independent variable:** An experimental independent variable refers to variables that are usually under the direct control of the experimenter (and/or evaluator), and can be actively manipulated (for the purpose of this evaluation, for example the movie screened to evaluation participants).
5. **Immediate outcomes:** For the purpose of this report, immediate outcomes refer to the changes in the TB knowledge, perceptions and behavior intention immediately after watching *The Lucky Specials* movie.
6. **Intent/Intention:** Both words are nouns that come from the verb intend, which means to have something in mind as a plan or purpose. In terms of meaning, there is little difference between these two nouns. They both mean a plan or purpose to do something.
7. **Self-report and/or response bias:** These terms refer to a wide range of cognitive biases that influence the responses of participants away from an accurate or truthful response. These biases are most prevalent in the types of studies and research that involves participants self-reporting, such as structured interviews or surveys.
8. **Short-term outcomes:** For the purpose of this report, short-term outcomes refer to

retention and maintenance of the changed TB-related knowledge and behavior intention.

9. **Statistically significant:** The likelihood that a relationship between two or more variables is caused by something other than random chance.

Executive Summary

Management Sciences for Health (MSH), under the USAID-funded Leadership, Management, and Governance Project, commissioned Creative Consulting & Development Works (CC&DW) in November 2016 to conduct a monitoring and evaluation (M&E) assessment of *The Lucky Specials* movie. *The Lucky Specials* movie is intended to be an invaluable tool for reaching people infected and affected by TB and HIV, policymakers, and the public. As such, the goal of the movie is to relay useful information to motivate personal and systemic TB-related behavior change that lowers infection rates and increases access and adherence to treatment. This report subsequently provides the results of that assessment, detailing the immediate and short-term outcomes of the intervention (*The Lucky Specials* movie). The purpose of the evaluation was to identify and document the expected and unexpected outcomes specific to the immediate and short-term perceptions and behavior as a result of the target audience viewing the movie. In addition, the evaluation focused on addressing the below objectives:

- Evaluate the effect of the film on viewers' knowledge (transmission, prevention, and treatment adherence), attitudes (stigma), and behavior intentions (prevention, screening, and treatment adherence);
- Evaluate the effect of the movie on viewers' intended behavior changes (prevention, screening, and treatment adherence);
- Evaluate the effect of the movie on viewers' actual behavior change (prevention, screening, and treatment adherence); and
- Evaluate the effect of the film on audiences from different backgrounds including:
    - Gender
    - Country, and
    - Socio-geographic location (urban, peri-urban and rural).

The evaluation was conducted concurrently in **seven project sites**, namely Krugersdorp, Nigel and Sedibeng in South Africa's Gauteng province, Cape Town in South Africa's Western Cape Province, as well as Maseru, Mazenod and Mokhotlong in Lesotho. These seven sites represented (as far as possible) respectively rural (including rural mining where possible), peri-urban, and urban communities in both South Africa and Lesotho.

The Evaluation Method

CC&DW applied a **mixed-methods approach** to the evaluation. The mixed-methods approach incorporated both qualitative and quantitative data collection and analysis methods that were inclusive and complementary. The mixed-methods approach allowed for data gathering in multiple ways with evaluation participants to elicit a variety of standpoints on the important achievements and recommendations of *The Lucky Specials* movie going forward. CC&DW employed a **quasi-experimental, two-group pre- and post-assessment** design for this evaluation; including a follow-up post-assessment on the intervention group. The evaluation included **comparison and intervention groups** to allow assessment of any bias within the study population related to their current TB knowledge, perceptions and behavior intention. The comparison group viewed the film *Inside Story*[1] during the screening, while the intervention group viewed *The Lucky Specials*. Evaluation

[1] *Inside Story* tells the story of a young soccer player, Kula, who is exposed to HIV, and his subsequent battle with the disease. *Inside Story* transfers HIV knowledge to viewers. Available from: www.insidestorythemovie.org

participants were invited to attend a screening of either *The Lucky Specials* movie or *Inside Story*. On the day of the screening, the evaluation team randomly selected what movie would be screened to the group of voluntary, self-selected participants. The movie selection was done on the flip of a coin. This process was followed until the pre-allocated number of participants for one of the movies was reached, where after the other movie was subsequently screened. Each group received the same pre- and post-assessment. In South Africa, randomly selected members of the intervention group were additionally contacted and telephonically interviewed 30 days after they viewed *The Lucky Specials*, to explore viewers' knowledge retention, as well as some indication of change in behavior intent.

The Evaluation Report

The findings of the evaluation have been structured around the intervention's three key objectives, in order to effectively report on whether these objectives were met or not. *The Lucky Specials*' three key objectives included: 1) Increase and maintain TB-related knowledge of participants; 2) Change TB-related perceptions of participants; and 3) Change and maintain TB-related behavior intentions of participants.

The **first section** of the report provides a brief background and introduction to the evaluation, which is followed by a targeted review of existing literature of TB and health-related behavior change multi media interventions and theories (**section 2**). **Section 3** provides an overview of the evaluation purpose and objective and **section 4** describes the method employed to conduct this evaluation. The evaluation ethics and quality assurance measures are provided in **section 5**, with the evaluation and data limitations imitations stipulated in **section 6**. The main evaluation results and subsequent discussions are provided in **sections 7 and 8**, which is followed by the key evaluation recommendations in **section 9**. In addition, three annexures are attached to this report, including the evaluation participant consent form (**Annexure A**) and the data collection tools used to collect the primary data for this evaluation (**Annexures B, C and D**). **Annexure E** provides a detailed overview of the evaluation limitations with mitigation strategies employed by CC&DW to reduce the effect of such; while the detailed analyzed quantitative data is provided in **Annexure F**.

The Main Evaluation Findings

Based on the evaluation findings, it was concluded that ***The Lucky Specials* movie did transfer TB-related knowledge** to the viewers, who increased their knowledge when compared to a comparison group that did not watch the movie. The differences between the intervention and comparison groups were found to be statistically significant, which can be interpreted as an effect of *The Lucky Specials* movie. Such newly acquired TB-related knowledge also appeared to have been retained by the intervention group, as the majority of viewers could recall such information 30 days after watching the movie. It was found that *The Lucky Specials* movie **did have some immediate effect on viewers' TB-related perceptions**. However, no statistically significant changes were found between the intervention and comparison groups' perceptions on TB myths or TB positive people. This may have been because *The Lucky Specials* movie appeared to have focused more on TB-related information and knowledge, than addressing specific TB-related perceptions and stereotypes. Lastly, it was found that *The Lucky Specials* **achieved its immediate and short-term outcomes to change viewers' TB-related behavior intention**.

The Main Evaluation Recommendations

Key recommendations for *The Lucky Specials* movie going forward, as well as similar future health-related edutainment movies included:

- Distribution across as many TV channels as possible (community TV networks, taxi TV, online TV stations and popular websites that host films and allow free streaming of content);
- Distribution across relevant learning networks (not only on television, but relevant non-governmental organizations, schools, tertiary institutions);
- Include relevant stakeholders in the future screenings of *The Lucky Specials* movie (and similar future films), such as Departments of Basic and Higher Education, as well as Department of Health, to provide TB-related support (both educational and bio-medical) in schools, tertiary institutions and hospitals/clinics;
- Repackage *The Lucky Specials* movie content into shorter versions (90 minutes and perhaps 3 episodes) and communications products, such as online short video clips, information posters and flyers. This will allow the film to be utilized in more diverse ways;
- Screen *The Lucky Specials* movie (and similar future films) in relevant public spaces (such as prisons, banks, clinics, hospitals or any space with a television and a long waiting time);
- Consider the length of an edutainment movie (one of the main critiques of *The Lucky Specials* movie was its length) and be cautious that such movies are not too long; and
- Identify and include policy-making specific information in edutainment movies.
- Supplementing the screening of the film with TV and/or radio talk shows or community screenings followed by group discussions to increase interactivity with the material. Community screenings and discussions will be especially important in high risk areas, and TV and/or radio talk shows or community screenings followed by group discussions could be added to increase interactivity;
- Including a short focus group facilitation guide with the movie, that focuses specifically on TB-related stigma and behavior intentions;
- Co-ordinate TV screenings with multi-pronged TB campaigns run by government or NGOs to maximize the impact of both and to align with increased screening at clinics; and
- Include an 'after care' manual and facilitated peer discussion groups for a period after screening the movie, to encourage discussion and reinforcement of behavior/perceptions change.
- Recognizing that behavior change is best achieved through multimedia campaigns that are also aligned with coordinated health service provision (such as planning for an increase in TB screening); and
- Partnering with relevant organizations or governmental departments that can run a sustained multimedia campaign that also links to the service provision that will need to match any increased demand in services.

The Lucky Specials movie was released by the South African Broadcasting Corporation to the public on World TB Day, 24 March 2017 [Note from DLA: Incorrect airing date. SABC license set to begin Sept. 2017]. In addition to being screened on television, the movie formed part of the 2017 San Francisco Black Film Festival. It appears at the time of the evaluation, that the movie would be screened on an ongoing basis and on a variety of platforms across southern Africa. As such, the evaluation recommendations specifically focused on strengthening the intervention in the immediate future, as well as strengthening similar interventions in the longer-term future.

1. Background and Introduction

Tuberculosis (TB) is a disease affecting millions of people worldwide. According to the World Health Organization's (WHO) global TB report[2], it was estimated in 2015 that 1.4 million people who were Human Immunodeficiency Virus (HIV) negative died of TB. In addition, there were 0.4 million TB-related deaths among people living with HIV. As a result, there were a total of 1.8 million TB-related deaths reported in 2015 (WHO, 2016). However, TB is a treatable and curable disease, through amongst other ways, sufficient, accessible information and education. It is against this backdrop that Management Sciences for Health (MSH) and Discovery Learning Alliance (DLA) develop and implement health education interventions, where health information is produced in accessible formats. The production of *The Lucky Specials* movie is an example of one such initiative. Through the USAID-funded Leadership, Management, and Governance Project, MSH commissioned Creative Consulting & Development Works (CC&DW) in November 2016 to conduct a monitoring and evaluation (M&E) assessment of *The Lucky Specials* movie. This report subsequently provides the results of that assessment, detailing the immediate and short-term outcomes of the intervention (*The Lucky Specials* movie). *The Lucky Specials* movie is intended to be an invaluable tool for reaching people infected and affected by TB and HIV, policymakers, and the public. As such, the goal of the movie is to relay useful information to motivate personal and systemic behavior change that lowers infection rates and increases access and adherence to treatment. The purpose of the evaluation was to identify and document the expected and unexpected outcomes specific to the immediate and short-term perceptions and behavior as a result of the target audience viewing the movie. In addition, the evaluation focused on addressing the below objectives:

- Evaluate the effect of the film on viewers' knowledge (transmission, prevention, and treatment adherence), attitudes (stigma), and behavior intentions (prevention, screening, and treatment adherence);
- Evaluate the effect of the movie on viewers' intended behavior changes (prevention, screening, and treatment adherence);
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- Evaluate the effect of the film on audiences from different backgrounds including:
    - Gender
    - Country, and
    - Socio-geographic location (urban, peri-urban and rural).

Before the evaluation was done, CC&DW conducted a targeted literature review with specific focus on the TB phenomenon in Africa, as well as theoretical approaches to changing health-related behavior. Conducting a targeted literature review was critical as it described how the evaluation is related to prior research, as well as justified the evaluation method.

[2] World Health Organization. (2016). *Global Tuberculosis Control 2016,* Geneva. Available at: www.who.int/tb/publications/global_report/en/

2. Targeted Literature Review

The study evaluated the immediate and short-term effect of *The Lucky Specials* movie on changing young people's knowledge, behavior and perceptions towards TB and people affected with TB. Based on the content of the film, the film can be regarded as a mass media narrative intervention that aims to:

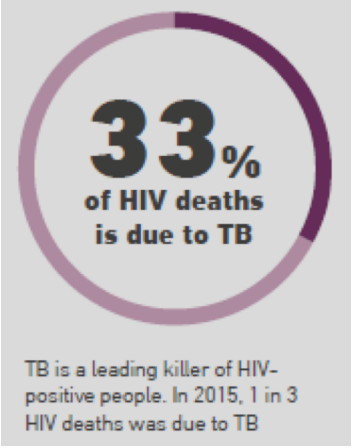
- Increase knowledge of risk factors for TB (smoking, alcohol use, HIV, exposure to mine dust, exposure to TB-infected people, and poor ventilation);
- Increase population behaviors that enhance early diagnosis and treatment (through increasing knowledge of TB symptoms, promoting TB screening in symptomatic individuals and encouraging those tested to return to the clinic for both diagnosis and treatment); and
- Promote adherence to treatment regimens (thereby reducing the spread of TB to others as well as reducing the likelihood of developing drug-resistant TB).

In line with the study purpose and objectives of the intervention (*The Lucky Specials* Movie), the literature review presents evidence on the critical behavioral issues affecting TB control in Africa as a whole, and South Africa and Lesotho specifically; relevant models of behavior change and evaluations of their effectiveness; the effectiveness of mass media campaigns in changing health behavior; approaches to selecting the ideal communication medium; and TB-related mass media interventions that have been conducted in South Africa.

2.1 Introduction

The African region continues to bear a significant proportion of the global burden of tuberculosis. Out of an estimated 9.6 million tuberculosis patients globally, almost 2.7 million of them live in the region. People who are infected with HIV are 20 to 30 times more likely to develop active TB. More than 880 000 HIV-infected TB patients, or 3 out of 4 people infected with TB and HIV, live in Africa (WHO, 2015).

In 2014, the WHO estimated that between 32 000 to 49 000 multidrug-resistant tuberculosis (MDR-TB) patients lived in the region. A total of 26 531 (83%) of estimated MDR-TB patients were notified in 2014. 68% of diagnosed cases have been enrolled in a treatment program, but with a treatment success rate of only 55% in 2012. MDR-TB remains a public health crisis due to gaps in access to diagnosis and treatment (WHO, 2015).

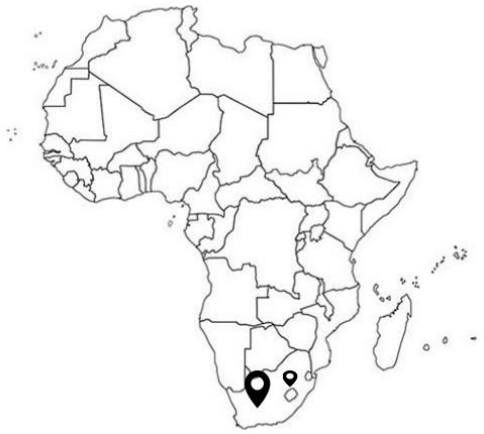


Source: WHO, 2015.

Of all the countries that reported their TB statistics to the WHO in 2015, there were 22 countries that were referred to as TB "high burden" countries[3]. As estimated in 2014, TB "high burden" countries account for 83% of all estimated TB incident cases worldwide (WHO, 2016). Both South Africa and Lesotho (locations of which shown in Figure 1) have been listed as "high burden" countries.

[3] These countries have been prioritized at a global level since 2000.

Figure 1: Geographic positioning of South Africa and Lesotho on the African continent



TB mortality and incidence rates in South Africa and Lesotho explain the high burden caused by TB in these countries. Table 1 below provides an overview of TB mortality and incidence[4] rates in Africa, South Africa and Lesotho respectively (WHO, 2016).

Table 1: 2015 TB mortality and incidence rates in Africa, South Africa and Lesotho

Region/Country	HIV negative TB Mortality	HIV positive Mortality	Total TB Incidence	HIV positive TB Incidence	Population
Africa	450,000	300,000	2,720,000	834,000	989,000,000
South Africa	25,000	73,000	454,000	258,000	55,910,000
Lesotho	1,200	4,800	17,000	12,000	2,140,000

In 2015, Africa had an excess of 2 million new TB cases and 750,000 TB mortalities.

2.1.1 Tuberculosis in South Africa

Situated at the southernmost end of the African continent, South Africa measures 1.2 million square kilometers. Bordered by Namibia, Botswana, and Zimbabwe to the north and Mozambique to the northeast, South Africa's southern half is surrounded by water: the Indian Ocean to the southeast and the Atlantic Ocean to the southwest. In its own northeastern region, South Africa almost entirely encircles Swaziland; in its central eastern region South Africa territorially surrounds Lesotho. Poised in a geographically strategic location, for centuries South Africa was the object of battles fought between European invaders and the indigenous Africans. South Africa today is a rich kaleidoscope of people, languages, and cultures (StateUniversity.com; 2017).

South Africa's Demographics:

In mid-2016, South Africa had a population of 55.91 million; of which 51% (28,53 million) were female. In addition, life expectancy at birth was estimated at 59,7 years for males and 65,1 years for females. More than a third (36%) of the population were youth aged 15 to 34.

Tuberculosis was found to be the leading cause of death from 2013 to 2015, accounting for at least 7% of all deaths each year (8,8% in 2013; 8,3% in 2014; and 7,2% in 2015). This indicates that the proportion of deaths due to tuberculosis has been consistently decreasing over the years (Statistics South Africa [Stats SA], 2015).

[4] Where 'incidence' refers to the number of (new) individuals who develop a specific disease or experience a specific health-related event during a particular period.

South Africa has the third highest burden of TB in the world, with an estimated 450,000 new cases each year. Notably, approximately 60-73% of these cases are HIV positive. South Africa is also one of the leading countries in global MDR-TB, with a growing incidence of both MDR and extensively drug-resistant (XDR) TB in the last decade (National Department of Health [NDOH], 2014; HST, 2014).

Several predisposing factors increase the risk of developing TB, including: HIV, diabetes, active or passive smoking, high alcohol consumption (>40g per day) and exposure to silica dust. Certain groups of people are also at higher risk such as miners and mining communities, health care workers, prisoners, migrants and people living or working in poorly ventilated spaces (Soul City Research Unit, 2015). These individuals often have a high exposure to silica dust, and the poor ventilation increases their likelihood and frequency of exposure to TB.

A major problem identified by Churchyard et al (2014) is the loss of the chance to follow up nearly 25% of cases that test positive for TB, because patients do not return to the clinic for either diagnosis or treatment. Combined with poor adherence, this can have adverse effects on the TB cure rate — defined as the percentage of smear positive cases that become smear negative after treatment. In 2012, the TB cure rate ranged from 65,8 - 83% across the different provinces of South Africa, with a national average of 75,8%. While these cure rates are a significant improvement from what they were a decade ago, they fall short of the 80% target set by the NDOH (HST, 2014a). Suboptimal cure rates inevitably lead to increases in the incidence of MDR and XDR TB.

Individuals at risk, TB patients, and healthcare workers perceive stigma as having a significant impact on willingness to seek and complete treatment. Stigma is defined as a process whereby certain characteristics (such as having TB) are viewed as undesirable. Studies have identified several explanations for why TB is stigmatized, with the perceived contagiousness of TB being the most common cited factor. TB can also be stigmatized due to its association with other disvalued characteristics such as HIV, malnutrition, and poverty. TB-infected individuals report being concerned that TB stigma will lead to social isolation, rejection by romantic partners and/or economic losses such as job loss or reduced income. While stigma is commonly cited as a cause of delayed diagnosis and poor adherence, studies that have attempted to quantify this effect, or test interventions in this regard, are scarce and have produced mixed results, with the evidence remaining inconclusive (Courtwright & Turner, 2010).

Two of the central factors in achieving TB control are early diagnosis and initiation of treatment, and successful completion of treatment (correct treatment regimen taken for the correct time). The presence of these factors results in both improved health outcomes for the infected individual as well as reduced transmission of the disease to others (Churchyard et al, 2014; Nglazi et al, 2014). TB services in South Africa are relatively accessible at local Primary Health Care (PHC) clinics with provision of free consultations, diagnostic tests and treatment. However, long travelling distances to clinics in remote areas and long waiting times in PHC clinics have been identified as key impediments to accessing services.

Given the high co-infection rates with HIV, integration of TB and HIV services has been a major priority for the health department, who report that these services have been successfully scaled and implemented (Soul City Research Unit, 2015).

2.1.2 Tuberculosis in Lesotho

The rate of HIV infection among adults in Lesotho is one of the highest in the world at 23%. As HIV has taken its toll, the country has also suffered rising rates of maternal mortality, poor child health, and TB. TB is a major public health problem in Lesotho. With an estimated prevalence of 696/100,000 the country has the third highest per capita burden in the world. Statistics indicate that about 64% of TB cases are also co-infected with HIV. In Lesotho, TB is associated with HIV and AIDS co-infection, social problems, difficulties in patient adherence and the threat of resistance against anti-tuberculosis drugs (Lesotho Ministry of Health, n.d.).

Lesotho Demographics:

The Kingdom of Lesotho is a landlocked country, surrounded by South Africa. The country has an estimated population of 2.1 million people, of whom 39% are aged 0-14 years (male 433,229; female 427,926), 56.3% are aged 15-64 years (male 600,476; female 642,538), and 4.7% are aged 65 years and over (male 43,691; female 60,094). Life expectancy at birth in 2017 was 29 years, primarily because of the HIV/AIDS epidemic (Lesotho Ministry of Health, n.d.).

To reach health services, people struggle through harsh weather and mountainous terrain, walking an average of four hours to reach clinics. Without enough staff and resources, doctors struggle to cope. Life expectancy reflects these problems, peaking at only 49 years (Partners In Health [PIH], 2017). PIH (2017) completed construction of the country's first public TB reference laboratory in 2012. Herein, cases of XDR TB, an even more severe form of the disease, can be identified without sending samples outside of the country. It's one of only two such state-of-the-art testing facilities in southern Africa (PIH, 2017).

The magnitude of the TB in South Africa and Lesotho is evident in the above discussion. This may raise the question 'Who is doing something about it in the African region?' (WHO, 2016). International organizations, such as the World Health Organization, support and implement programs targeting the knowledge, attitudes, behavior and practices of individuals at risk, to bring about health-related behavior change. Such programs include formal training, advocacy, communication and awareness, health literacy, social mobilization and multi-media (WHO, 2016). The following section subsequently reviews media-based approaches to TB prevention in Southern Africa.

2.2 Media-based Approaches to TB Prevention in Southern Africa

CC&DW first conducted an online review to identify current mass media focusing on TB in Southern Africa (as depicted in Table 2). Eight instances were found, of which only one is still screening. Many of the media sourced were documentaries, and not particularly focused on TB education. Furthermore, only the Soul City and Siyayinqoba TV series included entertainment value, but these largely focus on HIV/AIDS prevention, care and support topics, with some episodes factoring in topics on TB. Films like *The Lucky Specials*, would potentially add value to these current series with its specific focus on TB, as well as draw more interest in taking action based on its use of the narrative form over an informational approach.

The previous DAL and Quizzical Pictures movie titled *Inside Story* is included in the below review. Even though *Inside Story* does not focus on TB, it is an example of using mass media in health behavior and learning. *Inside Story* focuses on HIV/AIDS through edutainment and fiction. *Inside Story* was used in the evaluation of *The Lucky Specials* movie (please see further information in Section 3, the evaluation

method section); as such, it was important to included it in the review of literature.

Table 2: Summary of relevant TB media in South Africa

Title	Media type	Content focus				Communication type		Free access	Source
		TB context	TB Prevention	TB Treatment	HIV	Educational	Entertainment		
The Lucky Specials	Film	X	X	X	X	X	X	X	Discovery (2016)
Inside Story	Film	-	-	-	X	X	X	X	Discovery (2012)
Soul City multimedia	TV series (Soul City and Soul Buddies), radio, print material; social media	-	X	X	X	X	X	X	Soul City (2001-2015); Scheepers (2004)
They go to die	Documentary	X	X	X	-	X	-	-	They go to die (2011)
Silent TB killer	Documentary	X	-	-	X	-	X	-	Frontline (2014)
TB Return of the plague	Documentary	X	-	-	-	-	X	-	True Vision (year)
We beat TB	TV advertisements	-	X	X	-	X	-	X	University research company (2010)
Siyayinqoba Beat It!	TV series	-	X	X	X	X	X	X	Siyayinqoba (2012)
Exposed	Documentary	X	X	X	-	-	X	X	AERES (year)

The mass media TB interventions reviewed varied notably in terms of media type, content focus and communication type. As such, it was important to examine existing literature on theories of health-related behavior change models.

2.3 Theoretical Approaches to Health-related Behavior Change

The Lucky Specials Movie was assessed by reviewing the literature of numerous models of behavior change that have been applied to health behavior, emanating from a wide array of disciplines including psychology, sociology, anthropology and behavioral economics. The models of behavior change included: a) theory of planned behavior; b) health belief model, and c) sociological model. These theories were reviewed to show how the movie can promote unintended and actual behavior change on the viewers. Most studies have focused on evaluating models in which the individual is regarded as the locus of control[5] (Morris et al, 2012).

2.3.1 Theory of Planned Behavior

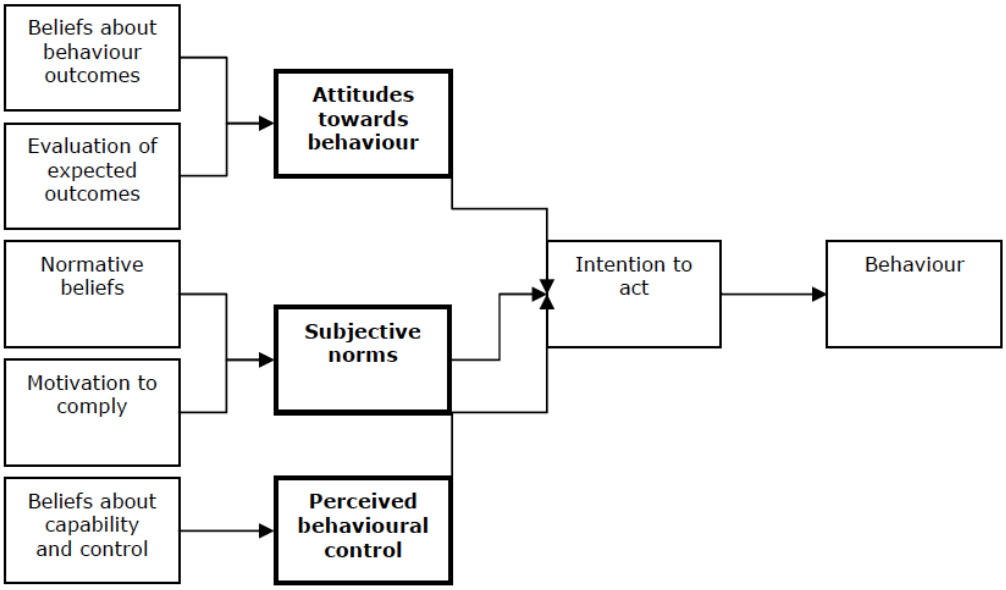
The theory of planned behavior (TPB) is perhaps the most researched behavior theory, and adopts a cognitive approach to explaining behavior in which it regards intention to act as the main predictor of behavior. The theory proposes that *intention* to act is the result of three factors as follows (Ajzen, 1985, 1991; Ajzen & Madden 1986; Bandura, 1997; Terry et al, 1993) (depicted in Figure 2):

- *Attitudes towards behaviors*, which is the positive or negative evaluation of the behavior and its expected outcomes;
- *Subjective norms*, which are the person's perceptions of social pressures or norms as well as the person's motivation to comply with these; and
- *Perceived behavioral control,* which includes beliefs about self-efficacy as well as perceptions of ease or difficulty of performing the intended behavior.

Research has demonstrated that this model is able to predict approximately 20-30% of behavior change following an intervention, and a larger percentage of intention to act, with the largest predictors in the model being attitudes towards behaviors and perceived behavioral control (Armitage & Conner, 2001; Taylor et al, 2007).

[5] Where 'locus of control' refers to the extent to which people believe they have power over events in their lives.

Figure 2: Theory of Planned Behavior



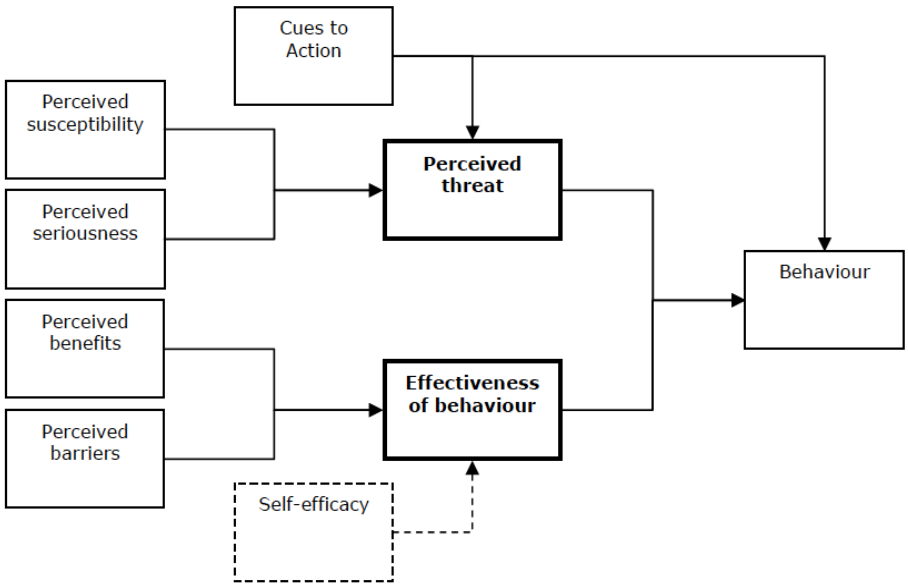
Source: Morris et al, 2012

Another model commonly used to conceptualize health behaviors is the Health Belief Model (HBM) (Hochbaum, 1958; Rosenstock 1966; Becker, 1974; Nisbet & Gick, 2008; Sharma and Romas, 2012). This model is similar to the TPB model, also focusing on individuals' beliefs about threats to their wellbeing as well as evaluations of the likely effectiveness and risks/benefits of taking particular actions.

2.3.2 The Health Belief Model

In addition to the TPB, the HBM adds a further component called 'cues to action', which catalyze individuals to move from *intended* action to action (as shown in Figure 3). The model identifies two types of cues in this regard; internal cues, such as developing symptoms of illness, and external cues, such as receiving new information from any source, including mass media campaigns. These cues serve to moderate the individuals' perceptions of vulnerability to the disease in question as well as their evaluation of potential outcomes should they adopt a new behavior. This model has been found to predict only 10% of behavioral variance, with perceived barriers to adopting the new behavior as the strongest predictor (Harrison et al, 1992). However, the model has been criticized for a lack of emphasis on the social norms that affect decision making.

Figure 3: Health Belief Model



Source: Morris et al, 2012

The HBM and TPM models are particularly useful in assessing the immediate and short-term outcomes of *The Lucky Specials* movie, as *The Lucky Specials* movie was intended to have a positive effect on the viewer's attitude resulting in them wanting to perform the behavior learnt from the movie (that is, exercising their locus of control in changing their attitudes and behavior towards TB-related health behavior).

It is however important to note that both the TPB and HBM models are significantly weakened by their lack of inclusion of economic and unconscious (habitual) determinants of behavior, with influences and perceptions of the social and environmental contexts viewed merely as competing influences weighed up by the individual in their decision-making process. (Jackson, 2005). As such, socio-ecological models of behavior change have also been included in the review.

2.3.3 Socio-Ecological Models

Models that draw on social theory regard behavior in individuals as largely an outcome of socially defined behaviors, a product of the complex interaction between people and their social and material environment (Morris et al, 2012). Social Practice Theory (SPT) shifts the focus away from the individual to *social practice* and its interaction with the environmental context, with the focus heavily on the material context (Jackson, 2005).

This is not dissimilar to the Ecological Model of Risk (EMR) (Dahlberg & Krug, 2002), which identifies the multiple levels of risk (and protective) factors that interact to affect behaviors related to disease outcomes. As shown in Figure 4, risk factors can exist at the individual, interpersonal, organizational, community and political level. The environmental context in which individual behavior occurs needs to be critically reflected upon if individual health behaviors are to be adequately addressed. Specifically, the ecological model demonstrates that the most effective interventions will be those that act at multiple

levels.

Figure 4: Ecological Model of Risk

Source:

For the purpose of evaluating *The Lucky Specials* movie, it was as such important to keep in mind not only the micro level (that is, the individual experiences level) at which *The Lucky Specials* movie was pitched to viewers, but also the meso (that is, interpersonal interaction and organizational levels) and macro levels (that is, at community and policy levels).

Each of the models discussed offered useful insights to the evaluation of a communication intervention that tries to change TB-related health behaviors. Firstly, they illustrated the multiple pathways through which an intervention might change attitudes, such as perceived risk, evaluations of changing behavior and perceptions of social norms. These changes were intended to affect intention to act and ultimately, behavior. Secondly, they demonstrated that there are multiple levels of factors that affect TB-related behavior, which are not amenable to change through educational interventions. These included, for example, long waiting times in clinics, ventilation of housing, or availability of proper protective equipment at mines, which will remain determinants of intention and behavior despite the potential ability of an intervention to affect individual's perceptions of risk.

The following section subsequently focuses on approaches to affect the effectiveness of health behavior mass media interventions, selecting media and platforms that can determine intention and behavior despite the potential unamendable factors that can't be changed through educational interventions.

2.4 Selection of the Most Effective Communication Media and Platform

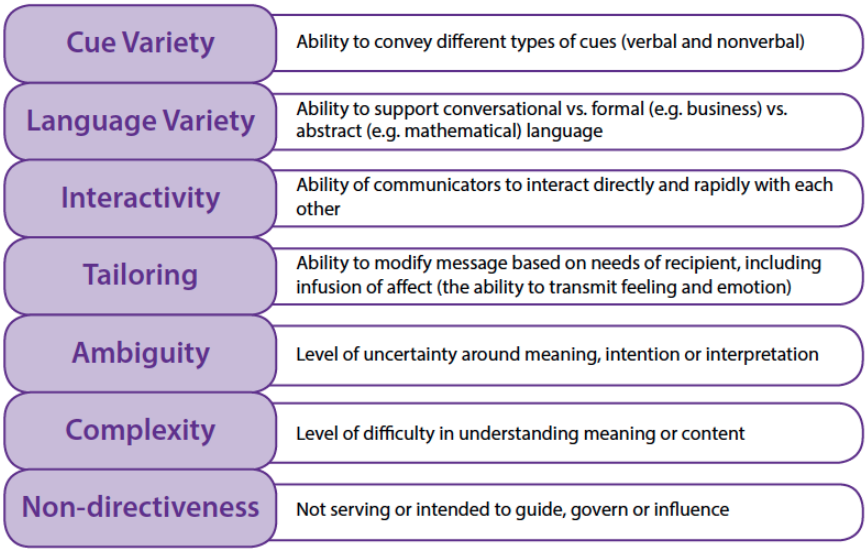
A major consideration in any communication campaign is the selection of the most appropriate format for the communication. In this regard, health promotion practitioners draw on two sets of communication theories, namely Media Richness Theory and Uses and Gratification Theory.

2.4.1 Media Richness Theory

Media Richness Theory (MRT) (Daft & Lengal, 1984) describes seven qualities or characteristics (shown

in Figure 5) of communication media that affect their ability to successfully transmit messages and cues to the target audience. A medium is considered rich if it conveys its messages with high variety of language and verbal and visual cues, allows for interactive feedback, can be tailored to individuals, is emotionally evocative and is able to convey messages that are ambiguous, complex and non-directive. Considering all these characteristics, interpersonal communication would be regarded as the richest form of communication with Short Message Service (SMS) campaigns, having lower richness scores (as shown in Figure 6).

Figure 5: Media Richness Theory: Characteristics of Communication Mediums



Source: The Health Communication Capacity Collaborative, 2014.

Figure 6: Media Richness Theory: richness of different media

None 0 Low 1 Medium 2 High 3

	Media Richness Criteria							Richness Score
Medium	Cue Variety	Language Variety	Feedback	Tailoring	Ambiguity	Complexity	Non-directiveness	
Face-to-face conversation	3	3	3	3	3	3	3	21
Video conference	2	3	3	3	3	3	3	20
Phone call	2	2	3	3	2	2	3	17
Facebook	2	3	2	2	3	2	2	16
YouTube	2	3	1	2	3	2	2	15
Television	2	3	0	1	3	3	3	15
Multimedia message (MMS)	2	2	2	2	2	2	2	14
Interactive voice response (IVR)	2	2	1	1	2	2	2	12
Radio	2	2	0	1	2	2	2	11
Twitter	2	2	2	2	1	1	1	11
Print materials	2	1	0	2	1	2	2	10
Short message service (SMS)	1	1	2	2	1	1	1	9

Rich ——— Lean

Figure 3: The richness of different media based on the sum of scores across Media Richness criteria. Each medium is given a score—1-Low, 2-Medium, 3-High—depending on its ability to address each criterion. For example, video conferencing allows for immediate feedback (3); depending on the scenario, Facebook can potentially allow immediate feedback (2); YouTube allows asynchronous feedback (1); and print materials do not provide any mechanism for feedback (0).

Source: The Health Communication Capacity Collaborative, 2014.

Depending on the complexity of the message being conveyed, it is important to select the richest medium necessary to convey the message, with simple messages (such as where one can get vaccinations) best suited to leaner mediums and more complex messages (such as HIV-related stigma) better suited to richer mediums. Consistent with the evidence that multi-media campaigns are most effective, the richness of the overall media environment is increased when different media are combined. This is seen, for example when text messages are combined with a radio talk show providing an opportunity for audience interactivity.

2.4.2 Uses and Gratification Theory

Uses and Gratification theory (UGT) considers the contexts of media use and focuses on why and how different groups of people use different types of media in specific contexts (Rubin, 2002; LaRose & Eastin, 2004). The needs of media users can include escaping daily realities, self-regulation of mood, socializing, being entertained and obtaining information. UGT is highly context specific, with needs and usage of different media dependent on geographic location and target audience (Rubin, 2002; LaRose & Eastin, 2004).

While MRT focuses on the qualities and/or characteristics of communication media that affect their ability to successfully transmit messages and cues to the target audience, UCT focuses on why and how different groups of people use different types of media in specific contexts. Both these approaches appeared to be important, which validates the Theory Informed Media Selection framework as a more

relevant approach to selecting the best medium and platform for mass communication.

2.4.3 The Theory Informed Media Selection framework

The Theory Informed Media Selection (TIMS) framework combines both the UGT and MRT. Under this framework, the ideal medium for communication is identified based on where the best medium for the message (MRT) intersects with the existing needs and uses of media by the target audience (as shown in Figure 7 below) (The Health Communication Capacity Collaborative, 2014).

Figure 7: A three-step process to apply TIMS Framework

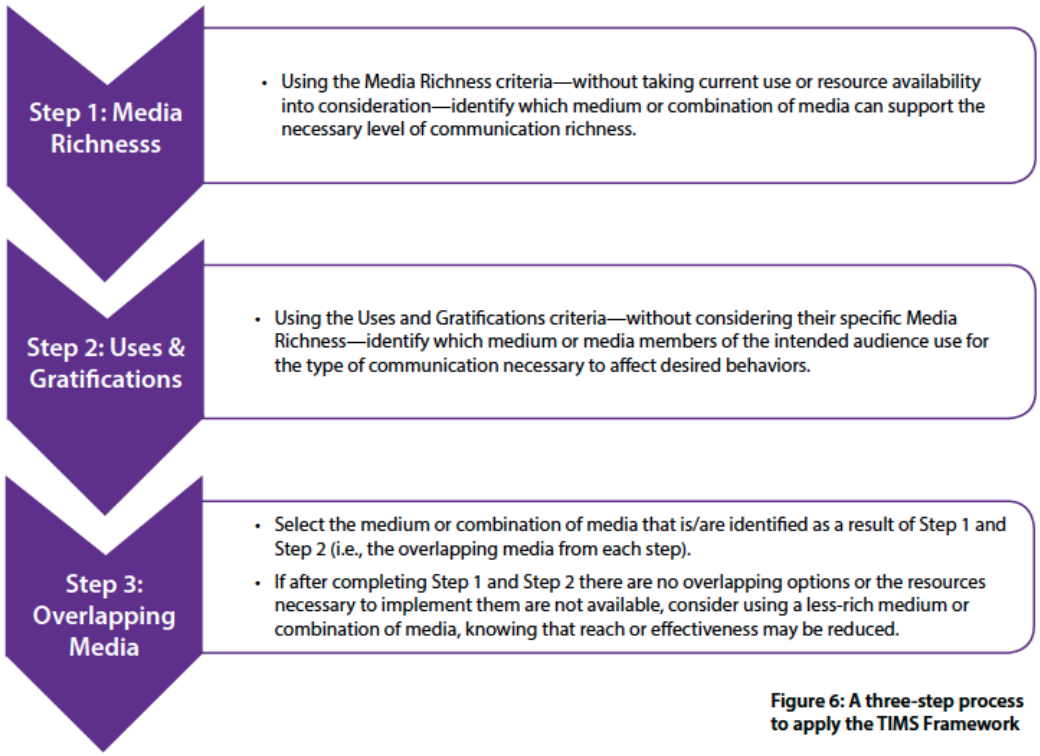


Figure 6: A three-step process to apply the TIMS Framework

Source: The Health Communication Capacity Collaborative, 2014.

After gaining an understanding of current literature, theories and approaches to using multi- and mass media as tools to change health-related behavior, CC&DW examined available evidence of mass media campaigns on changing TB-related health behaviors.

2.5 Evidence of the Effect of Mass Media Interventions on Health-related Behavior

The Lucky Specials movie health intervention was assessed on how it has been used to influence knowledge, attitudes and behavior on views. Mass media health interventions are designed to affect health behaviors and typically comprise of short messages most often on television or radio, but can also include billboards, posters and print media. Mass media campaigns are popular due to their potential to disseminate focused messages to specific target audiences repeatedly over a sustained period and at a relatively low cost per person reached. They are theorized to affect behavior change through two

pathways: either directly in individuals at risk through inciting cognitive and/or emotional responses that affect the decision making process of behavior change (as discussed above), or indirectly through, for example, changing social norms or provoking discussions that lead to policy change (Wakefield et al, 2010).

Although there has been no systematic review to date evaluating the effectiveness of mass media campaigns on changing TB-related health behaviors, one is currently underway (Nglazi et al, 2014). However, some evidence is available from smaller studies that have been conducted. A Nigeria-based study found, for example, that TB behavior change communication was associated with high levels of awareness and appropriate care-seeking behavior (Onyeonoro, 2013). In South Africa, Soul City developed multimedia communications specifically focused on HIV-prevention, which included a focus on TB. Results of the evaluation showed improved knowledge regarding TB symptoms and treatment, and over half of those who accessed Soul City discussed it afterwards with friends, family or at school (Soul City, 2001).

Given the lack of high quality studies on the impact of mass media on TB-related behavior, the review additionally draws on systematic reviews of similar and related health behaviors. The majority of studies evaluating effectiveness of mass media campaigns have evaluated their impact on tobacco use (Wakefield et al, 2010), which is also a risk factor for TB, as discussed above. Systematic reviews of controlled field studies (Bala et al, 2008; National Cancer Institute, 2008) have demonstrated that mass media campaigns lead to reduced uptake of smoking in young people as well as increased smoking cessation in adults. Several studies reported further increase in smoking cessation when mass campaigns were combined with other tobacco control interventions, such as increasing taxation on cigarettes. Importantly, sustained exposure to a campaign was also highlighted as a key factor, with a decline in the beneficial effects following the end of the campaign. Notably, the clear majority of studies were conducted in high-income countries and the generalizability of results to low and middle income settings is not clear, where access to various media platforms and interpretation of messaging may differ.

In contrast with the supporting evidence for mass media campaigns in smoking reduction, systematic reviews evaluating the impact of media campaigns addressing alcohol misuse (another risk factor for TB) have found that, except for campaigns targeting drunk driving, mass media campaigns have been largely ineffective (Barbor et al, 2003; Spoth et al, 2008).

Mass media campaigns to increase HIV testing, condom use and reducing the number of sexual partners have received significant funding but have shown mixed results. A systematic review of such campaigns in low-income countries by Bertrand et al (2006) showed small to moderate effects in some settings but no change in others. However, a more recent meta-analysis (LaCroix et al, 2015) evaluating the impact of mass media campaigns on condom use, transmission of HIV and prevention knowledge in both high and low income countries found consistent evidence of effectiveness. This study also demonstrated larger effects when campaigns were of greater duration and in countries with a lower human development index. Discrepancies in these two study findings may be due to the differences in the media interventions or behavioral outcomes being investigated, or may result from different selection criteria for studies reviewed.

As the film clearly targets early diagnosis and increased screening behavior for TB, studies evaluating mass media campaigns that target screening behavior bear relevance. Research into campaigns targeting

women to go for Papanicolau (Pap) smears and mammograms found that short-term campaigns that combined television campaigns with reminder letters and easy access to screening services were associated with short-term increases in the uptake of screening services (Black et al, 2002; Marcus & Crane, 1998; Mullins et al, 2008; Pasick et al, 2004). Campaigns without organized screening services were, however, not effective. This highlights the importance of co-ordination of campaigns with the screening services themselves to accommodate the increased demand for services during screening campaigns.

Notably, most of the research on television campaigns has evaluated the effectiveness of informational video material. *The Lucky Specials* movie is a fictional narrative film, so the generalizability of these findings to the current intervention needs to be considered. As a relatively new approach to health promotion, the evidence base for evaluating the impact of narrative-based mass media materials is small, with few studies having been conducted, particularly in low- and middle-income countries. However, a recent randomized trial in Los Angeles, comparing the effectiveness of narrative to non-narrative film in motivating women to go for a Pap smear provides compelling initial evidence for the use of the narrative approach. The study found significantly higher increases in knowledge, attitudes as well as behavior change in the group exposed to the narrative film when compared to the group exposed to the non-narrative film, and these changes were sustained up to six months after the intervention (Murphy et al, 2015). More locally, the recently screened MTV Shuga series improved knowledge and attitudes of viewers, as well as increased HIV testing and reduced risky sexual behaviors of Nigerian youth (Ref, 2016).

Based on the literature reviewed, including a) theoretical approaches to health-related behavior change, b) the possible impact of mass media interventions on health-related behavior, c) selecting the most effective communication medium and platform, as well as d) evidence-based mass media health behavior interventions, the evaluation team developed a model of constructs to inform the monitoring and evaluation assessment of *The Lucky Specials* movie.

2.6 Evaluation Model of Constructs

Evaluation constructs refer to broad concepts or topics specifically relevant to the study. Identifying constructs for the evaluation of *The Lucky Specials* movie was important, as behavioral outcomes were measured; where such outcomes could not necessarily be measured directly, a number of indicators and/or manifest variables were used.

Table 3: Evaluation model of constructs

Construct	Definition (for the evaluation)
Attitude towards behavior	A relatively enduring organization of beliefs, feelings and behavioral tendencies towards socially significant objects, groups, events or symbols
Subjective norms / perceived behavioral norms	The perceived social pressure to perform or not to perform the behavior (in question)
Cues to action (internal)	Internal factors which trigger action
Cues to action (external)	External factors which trigger action
Perceived susceptibility/threat	Belief about getting a disease or condition
Sustained exposure	Continuous contact and information relevant to the topic in question
Narrative approach	Stories, autobiographies, life experiences – the way people create meaning in their lives
Entertainment value	Ability to entertain, while being worthy and utilization-focused

The above constructs (however not mutually exclusive) were used to design and finalize the evaluation method, specifically designing and finalizing the data collection tools.

The following section subsequently provides the method CC&DW employed to conduct the M&E assessment of *The Lucky Specials* movie.

3. Evaluation Method and Design

This section provides an overview of the evaluation method employed to assess the movie. CC&DW applied a **mixed-methods approach** to the evaluation. The mixed-methods approach incorporated both qualitative and quantitative data collection and analysis methods that were inclusive and complementary. The mixed-methods approach allowed for data gathering in multiple ways with evaluation participants to elicit a variety of standpoints on the important achievements and recommendations of *The Lucky Specials* movie going forward.

CC&DW employed a **quasi-experimental, two-group pre- and post-assessment** design for this evaluation; including a follow-up post-assessment on the intervention group. The evaluation design is depicted in Figure 8.

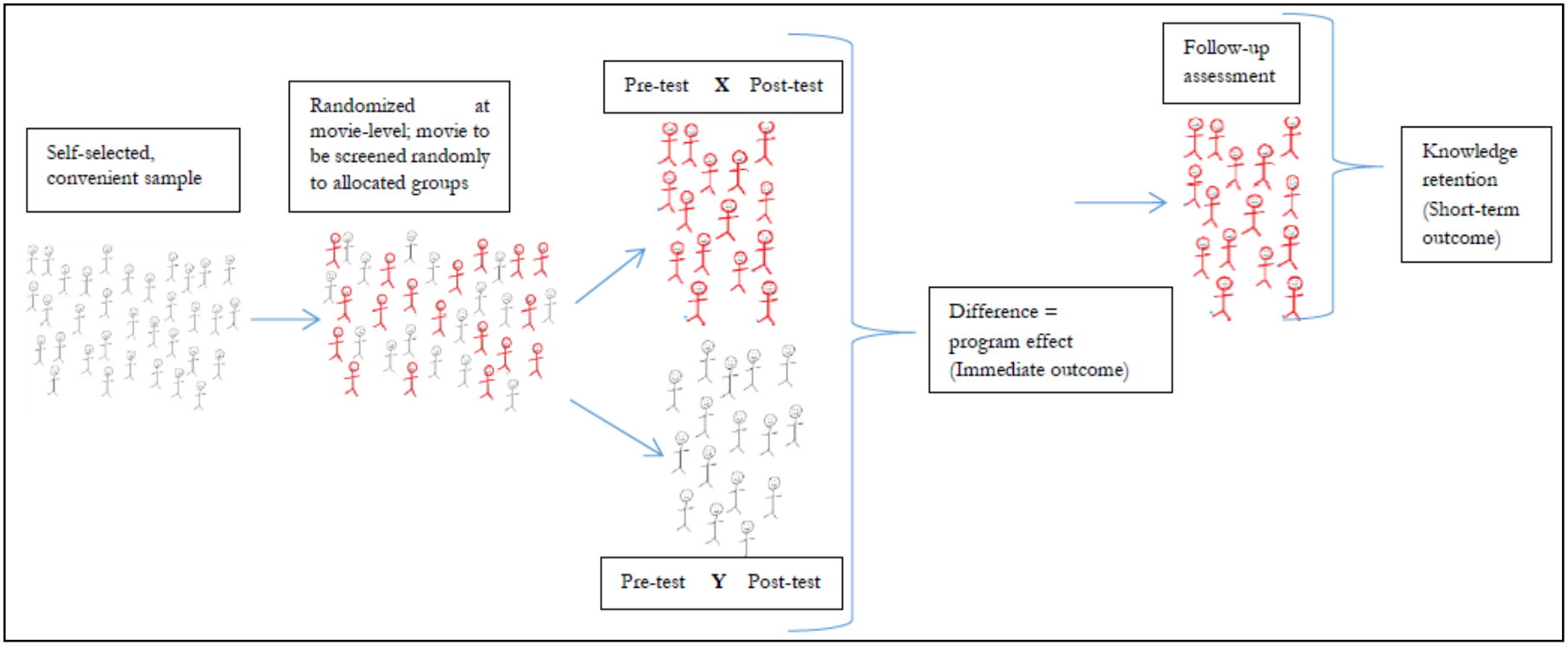
The evaluation included **comparison and intervention groups** to allow assessment of any bias within the study population related to their current TB knowledge, perceptions and behavior intention. The comparison group viewed the film *Inside Story*[6] during the screening, while the intervention group viewed *The Lucky Specials*.

Evaluation participants were invited to attend a screening of either *The Lucky Specials* movie or *Inside Story*. On the day of the screening, the evaluation team randomly selected what movie would be screened to the group of voluntary, self-selected participants. The movie selection was done on the flip of a coin. This process was followed until the pre-allocated number of participants for one of the movies was reached, where after the other movie was subsequently screened.

Each group received the same pre- and post-assessment. In South Africa, randomly selected members of the intervention group were additionally contacted and telephonically interviewed 30 days after they viewed *The Lucky Specials*, to explore viewers' knowledge retention, as well as some indication of change in behavior intent.

[6] *Inside Story* tells the story of a young soccer player, Kula, who is exposed to HIV, and his subsequent battle with the disease. *Inside Story* transfers HIV knowledge to viewers. Available from: www.insidestorythemovie.org

Figure 8: Employed Evaluation Design



Source: Self-generated by CC&DW

3.1 Sampling and Data Collection

The evaluation was conducted concurrently in **seven project sites**, namely Krugersdorp, Nigel and Sedibeng in South Africa's Gauteng province, Cape Town in South Africa's Western Cape province, as well as Maseru, Mazenod and Mokhotlong in Lesotho. These seven sites represented (as far as possible) respectively rural (including rural mining where possible), peri-urban, and urban communities in both South Africa and Lesotho.

During **initial stakeholder meetings** (face-to-face and/or telephonic) with local stakeholders, CC&DW as far as possible:

- Obtained buy-in from the local communities for participation in the study;
- Identified venues where the respective movies could be screened; and
- Embarked on the recruitment of eight local fieldworkers who met the minimum requirements for the position (four fieldworkers per country).

Table 4 depicts the data collection and sampling framework for the evaluation.

Table 4: Data Collection and Sampling Framework

Data source	Data collection tool	Type of data	n	Data collectors	Sampling strategy
Youth aged 18 to 35 (South Africa-based)	Self-administered pre- and post-assessment surveys (hard copy)	Quantitative	1191	4 x fieldworkers 2 x fieldwork supervisor	Socio-demographic stratification (urban, peri-urban and rural) → Proportionate gender sample → Convenient sample of 1191 → Randomized samples of intervention and comparison group participants
Youth aged 18 to 35 (Lesotho-based)	Self-administered pre- and post-assessment (hard copy)	Quantitative	770	4 x fieldworkers 1 x fieldwork supervisor	Socio-economic stratification (urban, peri-urban and rural) → Proportionate gender sample → Convenience sample of 770 → Randomized samples of intervention and comparison group participants
Youth aged 18 to 35 from intervention group (South Africa-based)	Structured telephonic interview questionnaires	Qualitative & quantitative	295	4 x fieldworkers 1 x fieldwork supervisor	Randomized sample

The final evaluation sample consisted of a total of 1,961 individuals aged 18 to 35, from urban, peri-urban and rural (mining) communities across South Africa (specifically Gauteng and Cape Town) and Lesotho. The sample considered (as far as possible) race, gender and other relevant

demographic stratification, relevant to the prevalence of TB in the identified project sites. The two movies were screened to a total of 2,121 youth. After data cleaning and quality assurance[7], a final evaluation sample of 1,961 participants were identified for data analysis. Of the final and total 1,191 participants in the intervention group (that watched *The Lucky Specials*), a sample of 295[8] participants were randomly selected and telephonically interviewed, one month after the intervention.

Table 5: Final Evaluation Sample

Biographical Variable		**Movie Watched**				**Sub Totals**	**Totals**
		Lucky Specials*		Inside Story*			
Gender	Female	670	56%	517	67%	1187	1,961
	Male	521	44%	253	37%	774	
Country	South Africa	637	53%	479	62%	1,116	1,961
	Lesotho	554	47%	291	38%	845	
Socio-Geographic Location	Urban	505	42%	364	47%	869	1,961
	Peri-Urban	360	31%	320	42%	680	
	Rural	326	27%	86	11%	412	
Employment Status	Employed	99	8%	156	20%	255	1,961
	Unemployed	1092	92%	614	80%	1,706	
Previously Tested For TB	Yes	319	27%	239	31%	558	1,961
	No	872	73%	531	69%	1,403	

*The breakdown of participants per movie, with reference to their demographic information is given in both number and percentage values, to make comparisons between the demographic composition of participants in the intervention (*The Lucky Specials*) and comparison (*Inside Story*) groups.

There was a relatively equal distribution of participants in terms of their gender, country, socio-geographic location, and employment status and whether they have previously been tested for TB, in the intervention and comparison groups respectively.

Data collection and fieldwork for the evaluation was undertaken between Monday 20 February and Friday 5 May 2017. Quantitative data for the immediate outcomes assessment of *The Lucky Specials* movie was collected through self-administered, structured pre- and post-assessment surveys (attached as Annexure B). The pre- and post-assessment surveys consisted of 20 questions each. Excluding participants' demographic and background information, the pre- and post-assessment surveys collected data on 10 key dependent variables (identified as important to report on the immediate outcomes of the intervention). These are shown below.

[7] Data cleaning and quality assurance included verifying accuracy of pre- and post-assessment surveys completed, ensuring both a pre and post-assessment were available for each participant included in the final evaluation sample, as well as where participants that viewed the movies were not recorded on the attendance registers and/or consent forms.

[8] CC&DW conducted 295 follow-up telephonic interviews, as this provided a representative sample of the intervention group. With this sample size for the follow-up interviews the margin of error was 5%, with a confidence level of 95%.

Table 6: Breakdown of 10 key variables assessed

Variable assessed	Questions (agree/not agree and true/false) used to compile the variable
TB myths	TB can be genetic – I can get TB from my parents or grandparents If someone with TB coughs I will automatically get TB TB causes lung cancer Only people with HIV/AIDS get TB If I don't cough a lot, I don't have TB Most patients with TB can be treated at home with traditional medicine Each and every TB patient spreads the disease A TB patient should immediately be admitted to a TB hospital/clinic TB stands for Tested Bacteria Only people who work/live in areas where it is dirty, stuffy, and there is no fresh air can get TB There is no cure for TB Only men get TB All people with HIV have TB TB is a way people behave TB infects the skin, lungs and muscles
TB risk factors	Coming into contact with someone who has TB Coming into contact with someone who is HIV positive, but TB negative Drinking alcohol occasionally Eating lots of unhealthy foods Forgetting to wash your hands after eating Living alone Not exercising enough Smoking cigarettes Staying in a house with many people (a 'crowded' house) Windows in the house are closed all the time Working in a mine Working in a store (such as a groceries or clothing store) Being HIV positive

TB protective factors	Checking your blood pressure regularly Drinking lots of milk Using a condom every time you have sex Wearing a mask when in contact with someone who has TB Getting tested for HIV regularly Keeping windows open to allow free flow of air in the house Living alone Not getting into arguments with people Eating healthy and taking vitamins Eating lots of meat Exercising every day Wearing a mask when working in a mine
TB and miners	Miners are exposed to dangerous dusts when they do their work Miners can be at high risk of HIV if they have sex with sex workers Miners work and live in spaces with poor air flow Miners move around a lot and so may lose track of their TB treatment Miners wear clothes that don't let the body breathe Miners don't eat properly Miners' bodies are weak because of all the hard work they do
TB symptoms	A cough for 3 weeks or longer Weight gain Constantly tired Increased appetite Fever Night sweats Sores on the skin and body Chest pain Red eyes Coughing up blood Skin changing color Weight Loss

TB spreading	Avoid touching other people Bathing regularly Coughing into your elbow Eating healthily Getting treatment as soon as possible Making sure they get treatment for TB as soon as possible Staying at home in a closed-off room for the whole time they have TB Taking all their treatment until it is finished Wearing a mask Taking herbs and traditional medicine such as 'muti'
TB positive people	Clean or Dirty Old or Young Lives in a town or Lives in a township Healthy looking or Sick looking Doesn't smoke or Smokes cigarettes Fortunate or Cursed Sober or Alcoholic Law-abiding or Criminal Living or Dying Full-bodied or Skinny
TB behavior intention	In the next 30 days, I will cover my mouth when I cough and sneeze In the next 30 days, I will be aware of the ventilation at home and at work If a friend/family member shows symptoms of TB, I will take them to the clinic/hospital If I experience symptoms of TB, I will tell a friend/family member immediately If I experience symptoms of TB, I will wait about 2 weeks to tell a friend/family member (if the symptoms persist) If I experience symptoms of TB, I will go to a clinic as soon as possible to be examined and tested If I get TB, I will only take treatment until I get better I expect people with cough of more than 2 weeks should visit a health facility I plan to go to a health facility and have a check-up for TB in the next 30 days If a friend/family member who has TB does not take his/her medicine, I will talk to them about it and explain why they have to take it In the next 30 days, I will find and read more information on TB In the next 30 days, I will tell my friends and family about TB (what it is, how it is caused, what the symptoms are, and how it can be treated)

TB prevention	Quitting smoking Opening windows in rooms Avoiding people who cough Avoiding greasy foods, alcohol and refined carbohydrates Wearing the proper protective equipment when working in a mine (masks) Eating a healthy diet People with HIV should be screened regularly for TB Exercising regularly
TB treatment	If you stop taking treatment too soon, you can get severe TB which needs treatment up to a year There is no urgency to start treatment if you have TB, you should just go to the clinic when you have time If you stop taking your TB medicine to soon your TB may change and no medicine will be able to treat your TB Only old people die from TB If you are on treatment for TB you should stop exercising If you are on treatment for TB you should stop drinking alcohol There are form of TB that cannot be treated with medicine All people with TB need to sleep in the hospital There are three different types of TB You cannot get TB which is not treatable by medicine from someone that has that type of TB; you will only get the TB that medicine can treat – as long as you take your medicine then, you won't get any worse TB can be cured by long-term prescribed medication (longer than 6 months) TB can be cured by long-term herbal medication (longer than 6 months

Quantitative and qualitative data for the short-term outcomes assessment was collected through a structured telephonic interview questionnaire (attached as Annexure C). The telephonic interviews were conducted using Computer Assisted Telephonic Interviewing (CATI), where participant responses were captured in real time using the online survey software, SurveyMonkey[9]. Key themes probed during the telephonic follow-up interviews included:

- TB knowledge retention (including main things learnt, recalled and shared after the intervention);
- TB perceptions;
- TB behavior intention; and
- Overall enjoyment of watching the movie as an edutainment tool.

3.2 Pilot Study and Fieldwork Training

After the evaluation method and data collection tools were approved in consultation with the client, the CC&DW team **piloted** the pre- and post-assessment survey tool with a small sample of five youth between the ages of 18 and 35 in the Western Cape, South Africa. Based on the pilot study results, it was not necessary to make any changes to the evaluation tool.

Upon finalization of the data collection tools, CC&DW ran an **intensive one-day training session with each fieldwork team** (South Africa and Lesotho respectively) in Krugersdorp, Gauteng and Maseru, Lesotho. The fieldworker training included 1) familiarization with *The Lucky Specials* movie (that is, watching and discussing the movie); 2) information about the purpose of the intervention, as well as an in-depth understanding of the data collection tools and evaluation protocol; 3) discussion and explanation on research ethics, principles, and the process to obtain informed consent (through role-play); and 4) familiarization and practice of the data collection tools (through roleplay).

3.3 Data Analysis

CC&DW employed both qualitative and quantitative data analysis methods. Data from the primary and secondary data collection processes was analyzed using:

- Excel and the Statistical Program for Social Sciences[10] (SPSS) for quantitative data – which was descriptive and inferential; and
- ATLAS.ti[11] for thematic analysis for qualitative data.

Excel and SPSS[12] were appropriate and sufficient to analyze the quantitative data collected in the pre- and post-assessment survey, while a thematic analysis for qualitative data was done using ATLAS.ti.

Analyzed data was organized and presented around key evaluation questions. Findings from the qualitative data were compared with the quantitative findings. This process of triangulation was

[9] Available from: www.surveymonkey.com

[10] SPSS is a software package used for statistical analysis of quantitative data.

[11] ATLAS.Ti is qualitative research software. For more information see http://www.atlasti.com/index.html

[12] Excel and SPSS are Microsoft Windows-based programs that can be used to perform data entry and analysis. Both programs are capable of handling large amounts of data and can perform various statistical analysis functions, including calculating means and totals of scores, correlations between variables, frequencies of answers, and comparisons between sets of data.

undertaken to ensure the validity and reliability of the findings. Triangulation refers to the process of double checking the reliability of data, by comparing data from different sources with each other and establishing the correctness of the data.

3.3.1 Immediate outcomes data analysis

The immediate outcomes of *The Lucky Specials* movie, namely the effect on the viewers' TB knowledge, perception and behavior intention, were analyzed through various comparisons of mean scores using t-tests[13]. Before t-tests could be employed, it was important to establish whether the pre- and post-assessment survey data violated any of the assumptions related to the data necessary for t-tests. The mechanism of the t-test and regression makes certain assumptions about the data (Tredoux & Durrheim, 2010). As such, assumptions about the quantitative pre- and post-assessment data included:

- Normality: refers to the assumption that all the samples analyzed have been drawn from a population that was normally distributed, that is, the mean scores of the participants in the sample were distributed in the shape of a bell curve when displayed in a histogram, with most scores around the center of the bell curve;
- Homogeneity of variance: refers to the assumption that the samples drawn from the population have similar variances; and
- Independence (where applicable, that is, between groups): refers to the assumption that the samples from where the mean scores were calculated from did not influence each other's scores in any way.

T-tests could subsequently be employed. These included:

- T-tests to compare the mean scores between the pre- and post assessments of respectively the intervention group (those who watched T*he Lucky Specials*) and the comparison group (those who watched *Inside Story*);
- A t-test to compare the means of pre-assessment scores between the intervention and comparison groups (in order to establish baseline equivalence);
- T-tests to compare the means of pre-assessment scores between groups from different backgrounds, such as gender, country, and previous exposure to TB information (to establish baseline equivalence); and
- A t-test to compare the means of post-assessment scores between the intervention and comparison groups (to establish).

To conduct the identified comparisons between mean scores of the intervention and comparison groups, a data analysis framework was drafted and finalized in consultation with MSH, to prepare the data for analysis.

[13] The mean is the arithmetic average of a group of numbers and equals the sum of all the scores divided by the number of scores.

Table 7: Quantitative data analysis framework

Question in PRE and POST surveys respectively	Variable probed	Score calculated per variable	Individual answers' values[14]
Question 9 & 7	1. TB myths	Score /15	Swop answer 15
Question 10 & 8	2. TB risk factors	Score /13	Swop answers 2,3,4,5,6,7,8
Question 11 & 9	3. Protection from TB	Score /12	Swop answers 1,2,7,10
Question 12 &10	4. TB and miners	Score /7	Swop answers 5,6,7
Question 13 &11	5. Symptoms of TB	Score /12	Swop answers 1,2,4,7,8,9
Question 14 & 12	6. TB spreading	Score /10	Swop answers 1,2,5,7,10
Question 15 & 13	7. TB positive people	Average /10	Swop answer 2
Question 16 & 14	8. Intended behavior	Score /12	Swop answers 5,7
Question 17 & 15	9. TB prevention	Score /8	Swop answers 3,4
Question 18 & 16	10. TB treatment	Score /15	Swop answers 2,5,6,10,12,14

For each variable, an average score was calculated for each participant's pre- and post-assessment survey answers to the questions that probed each of the ten key dependent variables[15]. These average scores were subsequently compared and analyzed. Participants could score between 1 (where 1 indicated less TB knowledge, negative perceptions or negative intentions) and 2 (where 2 indicated more knowledge, positive perceptions or positive intentions).

The analyzed quantitative data (depicted in the results section of this report) indicates the various mean scores of both intervention and comparison groups' pre- and post-assessments. In addition, the findings of the t-tests are depicted in terms of the significance[16] and correlation[17] of mean comparisons between participants' pre- and post-assessment scores of the movie watched and its effect on the TB knowledge, perception and behavior intention of the participants.

[14] 'Swop answer' here refers to changing (where necessary) the raw data figures from 1 to 2 or 2 to 1. This was necessary for survey questions that were asked in the negative, as opposed to other questions asked in the positive.

[15] These included: 1. TB myths; 2. TB risk factors; 3. TB protective factors; 4. TB and miners; 5. TB symptoms; 6. TB spreading; 7. TB positive people; 8. TB behavior intention; 9. TB prevention; and 10. TB treatment.

[16] A t-test's statistical significance indicates whether the difference between two groups' averages most likely reflects a "real" difference in the population from which the groups were sampled. Statistical significance means that a result from testing or experimenting is not likely to occur randomly or by chance, but is instead likely to be attributable to a specific cause. Statistical significance can be strong or weak. Statistical significance is calculated using a p-value, which tells you the probability of a specific result being observed. If this p-value is less than the significance level set, for this evaluation at 0.05, the means differences observed can be accepted as significant.

[17] A correlation coefficient has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated, whereas values closer to 0 indicate that there is little or no linear relationship. The sign of a correlation coefficient describes the type of relationship between the variables being correlated. A positive correlation coefficient indicates that there is a positive linear relationship between the variables: as one variable increases in value, so does the other. A negative value indicates a negative linear relationship between variables: as one variable increases in value, the other variable decreases in value.

Multiple regression analysis[18] was additionally employed to gauge the relative contribution of independent or predictive variables, such as gender and previous TB testing (or a combination thereof), on the dependent variables (that is, participants' TB knowledge, perception and behavior intention).

3.4 Short-term Outcomes Data Analysis

The short-term outcomes: TB knowledge retention, as well as a change in TB-related perceptions and behavior intention, were analyzed with descriptive statistics using Excel (for the quantitative data) and thematic analysis[19] using ATLAS.ti (for the qualitative data). Key themes probed during the thematic analysis of the qualitative data included:

- Symptoms;
- Protection and risk;
- Prevention;
- Treatment;
- Education and information;
- Behavior;
- Motivation and encouragement; and
- Entertainment.

Data analysis tools specific to ATLAS.ti were used for the qualitative data analysis. These included:

- Code occurrence tables;
- Multi-functional word clouds for all object types;
- Powerful Visual Query Editor;
- Split Codes or Sub-Codes; and
- Full project search (former "Word cruncher") with dynamic fade-in/fade-out hit categories.

[18] Regression is a technique that can be used to investigate the effect of one or more predictor variables on an outcome variable. Multiple regression allows us to find a (linear) combination of attribute independent variables that maximally predicts (or 'explains') a dependent variable.

[19] A qualitative analytic method for: 'identifying, analyzing and reporting patterns (themes) within data. It minimally organizes and describes a data set in (rich) detail.

4. Evaluation Ethics and Quality Assurance

CC&DW employed a number of general methods to ensure the necessary ethical considerations underpinned the evaluation. These included:

- The evaluation team consulted with the client throughout the evaluation, and particularly during the design and initial planning of the project. This ensured that all the relevant variables, issues, and stakeholders were identified and clarified;
- Potential emotional, psychological and/or social harms to the participants included in the evaluation, were minimized through providing the participants with detailed information on the purpose and procedures of the evaluation, as well as insurance that the names or identities of the participants would not be linked to their answers or made available to the evaluators and/or stakeholders;
- During the fieldworker training, CC&DW ensured fieldworkers understood and were sensitized to working with youth in this evaluation; CC&DW used roleplay as a quality assurance method to confirm the fieldworkers' abilities to gather data from the evaluation participants;
- An informed consent form (attached as Annexure A) was presented to and signed by each participant, and only once it was signed, was the participant included in the evaluation. The consent form was applicable to both the self-administered survey and the (possible) follow-up telephonic interview;
- All participants were encouraged to participate on a voluntary basis. They were informed what the information provided was for and how it would be used. Participants were free not to answer questions without any negative consequences.
- Participants' anonymity was protected in that no responses were linked to any names. Each participant received a participant code that was recorded on their pre- and post-assessment forms (as such, no personal details were recorded on completed survey questionnaires);
- Where telephonic interviews were held, verbal consent was obtained and recorded;
- Evaluation data and data sets were managed, stored and shared (where appropriate) on a shared project Google folder;
- Data collected was captured by CC&DW data capturers; and quality checked with a random sample of 20% of the collected data; and
- An internal peer review process has been followed with the drafting of this report; including a professional internal language editor.

5. Evaluation and Data Limitations

This section provides an overview of the limitations that should be noted when interpreting the evaluation findings. Please see attached Annexure E for a detailed account of the data collection limitations and mitigation strategies employed to alleviate such limitations. The main **data collection challenges** included:

- Lengthy survey questionnaires;
- The apparent focus on tuberculosis in both questionnaires (specifically for the comparison group);
- Short invitation period (given short timeframe for fieldwork based on original timeframe for *The Lucky Specials* movie public release scheduled on 1 March 2017; later rescheduled for 24 March 2017 after fieldwork was completed);
- Unreasonable expectations from some local partner recruiters;
- Natural occurrences, such as bad weather conditions;
- Logistical challenges, including travel between sites, venue allocations and set-up;
- Participant challenges, such as literacy levels and language understanding, unengaged participants, and self-report bias;
- Challenges with screening the film, such as venue lighting, sound quality and volume, and length of the film; and
- Lengthy data collection process.

6. Evaluation Results

The main purpose of the evaluation was to assess the **immediate outcomes** of *The Lucky Specials* movie on viewers' TB-related knowledge, perceptions and behavior intentions. In addition, the evaluation aimed to assess whether the movie achieved its **short-term outcomes**, namely to increase young people's knowledge, as well as their ability to retain such knowledge, about TB transmission, prevention and treatment. MSH and DLA envisaged *The Lucky Specials* movie to be an invaluable tool for reaching people infected and affected by TB and HIV; including both policymakers and the public.

To make a value judgement on the intended immediate and short-term objectives of *The Lucky Specials* movie, the evaluation identified and documented expected and unexpected outcomes specific to immediate and short-term knowledge, perceptions and behavior intent as a result of the target audience viewing the film.

In addition, the evaluation focused on addressing the below objectives:

- Evaluate the effect of the film on viewers': knowledge (transmission, prevention, and treatment adherence), attitudes (stigma), and behavior intentions (prevention, screening, and treatment adherence);
- Evaluate the effect of the movie on viewers' **intended** behavior changes (prevention, screening, and treatment adherence);
- Evaluate the effect of the movie on viewers' **actual** behavior change (prevention, screening, and treatment adherence); and
- Evaluate the effect of the film on audiences from different backgrounds (urban, peri-urban and rural) in the following locations:
    - South Africa
    - Lesotho

The main evaluation findings and results are provided in this following section. The discussion of results and recommendations are subsequently provided in Sections 7 and 8 respectively.

6.1 Biographical Profile of Evaluation Participants

This section provides an overview of the demographic information of the evaluation participants for the pre- and post-assessment survey.

6.1.1 Demographic Profile of the Final Evaluation Sample

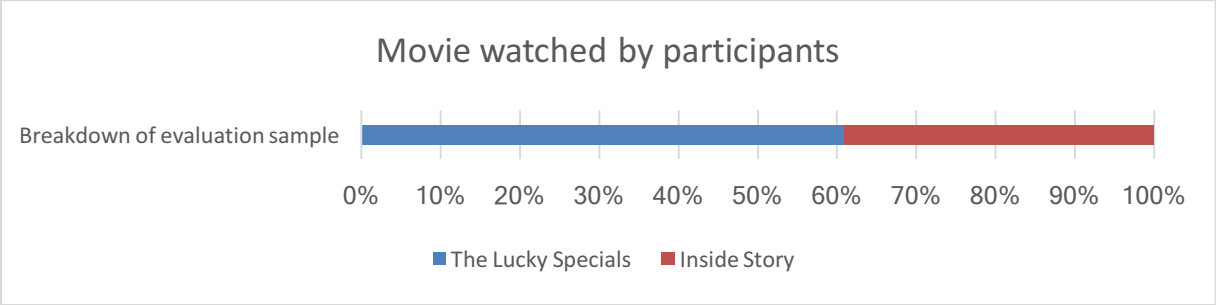
Demographic information includes gender, country of residence and whether they have been for a TB test in the past. An indication of how many participants viewed *The Lucky Specials* and *Inside Story* respectively is also given. In addition, the pre-assessment data collected is depicted as a baseline indication of all participants' knowledge, perception and behavior intent before watching either movie, with reference to the probed demographic variables.

It is important to note that, owing to the nature of the data collected, all findings are based on participants' self-reported responses to survey and telephonic questions and that there was no additional method to verify whether these responses were entirely factual or based on some kind of empirical truth. As the evaluation included such a large sample, this should be representative of the

views of the entire target group under study, however the responses to the survey and the telephonic interviews alone are not necessarily a statistically valid or reliable basis for the conclusions of this evaluation. Despite this, the results do offer a proxy for the variables under study in the evaluation, albeit via self-reported data.

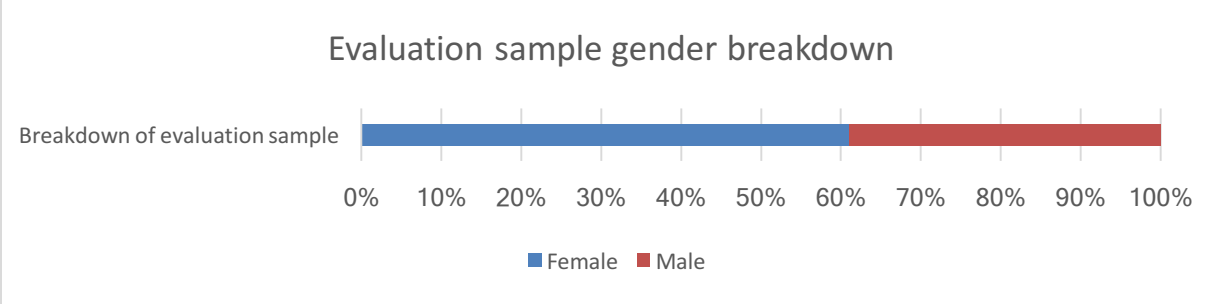
Approximately two thirds (61%; n=1,196) of the total evaluation sample watched *The Lucky Specials* movie and one third (39%; n=765) watched the *Inside Story* movie for the evaluation.

Figure 9: ***Movie watched by participants***



The gender breakdown of the final evaluation sample was not equal, as 61% (n=1,187) of the participants were female and 39% (n=774) were male.

Figure 10: Gender of Participants



Of the total evaluation sample, 1,191 participants (57%) were from South Africa, while 770 participants (43%) were from Lesotho.

Figure 11: Participants' country of residence

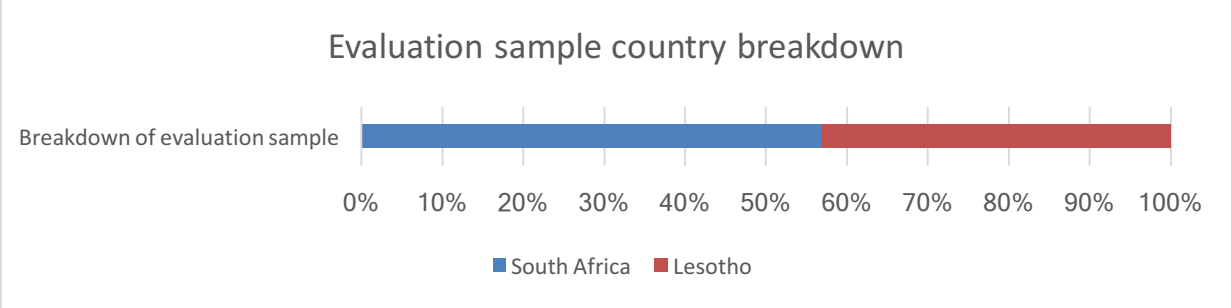
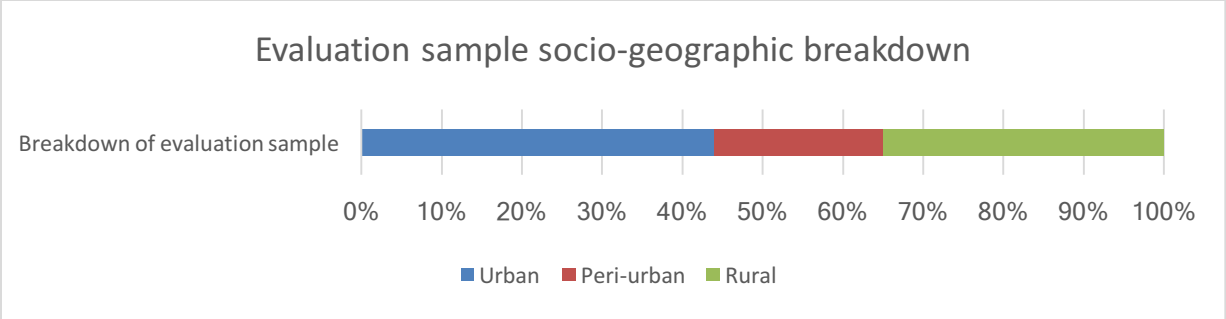


Figure 11 provides a breakdown of participants' socio-geographic location, that is, whether participants were living in urban, peri-urban or rural areas.[20]

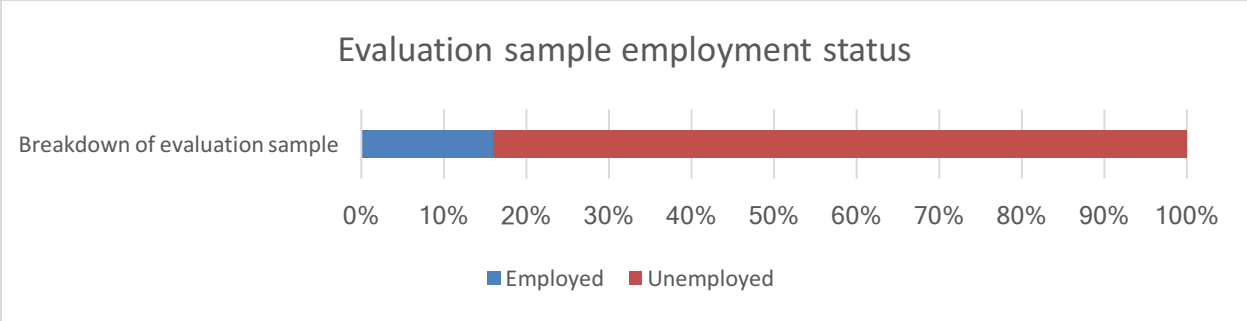
[20] For this report, the concepts urban, peri-urban and rural are used loosely, as the data collection and fieldwork challenges impacted on where data could be collected.

Figure 12: Participants' socio-geographic location



Less than half (44%; n=863) of the participants from the total evaluation sample reported living in urban areas, while 35% (n=686) and 21% (412) were from peri-urban and rural areas respectively.

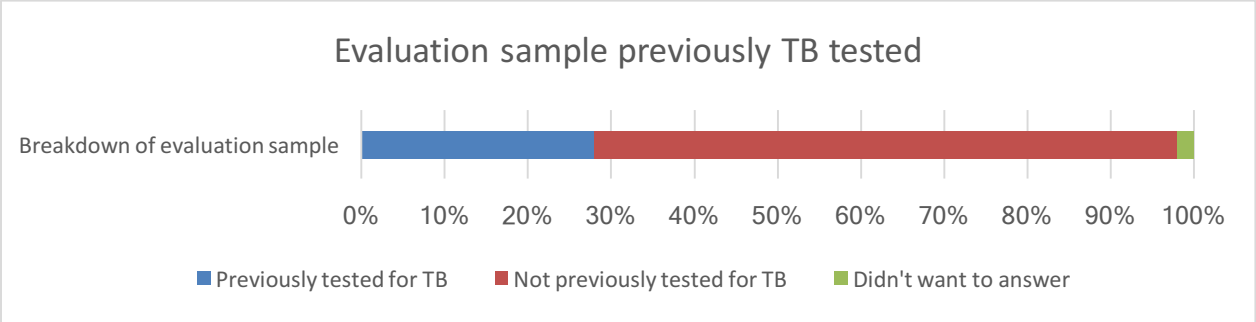
Figure 13: Employment status of participants



Most participants (84%; n=1,647) reported being unemployed at the time of the evaluation. In addition, a small number of the participants (n=57; 3%) indicated they have worked in the shaft of a mine previously.

Lastly, it was important to gain an understanding whether any of the evaluation participants had been tested for TB previously, as this exposure to TB-related information may affect these participants' responses during the evaluation. It was found that the majority of participants (70%; 1373) had not been tested for TB in the past; while 2% (n=39) refrained from answering the question.

Figure 14: Participants being tested for TB



To establish whether the intervention and comparison groups were equal to start with in terms of their knowledge and perceptions on TB, as well as their subsequent intended behavior, the data from the pre-

assessment survey was used as a baseline study. ANOVA (analysis of variance) tests[21] were conducted on the baseline study data and the respective biographical variables included in the evaluation (refer to section 4.1.1 above).

It was found that the intervention and comparison groups were equivalent at baseline (pre-assessment) in terms of the ten main dependent variables assessed with the pre- and post-assessment survey (that is comparing baseline data and the different movies watched). This can be concluded based on the respective pre-assessment mean scores of each variable that was relatively similar across the intervention and comparison groups, with no statistically significant differences where scores differed between groups.

This is an important finding as the immediate outcomes of *The Lucky Specials* movie were assessed by comparing the pre- and post-assessments of the intervention and comparison groups. As the comparison group represents the counterfactual[22], this group had to be similar in terms of their TB knowledge, perceptions, and behavior intention before the intervention began (that is, at baseline). The similarity before the intervention is referred to as baseline equivalence (Avellar & Thomas, 2014).

It was found that the intervention and comparison groups were equivalent at baseline and immediate outcomes may be as the result of a contribution from to the intervention (that is, *The Lucky Specials* movie).

However, the assumption was that there were no confounding variables that may have affected the equivalence of the intervention and comparison groups. As such, to assess the accuracy of such assumption, differences in mean scores in the baseline data of groups with different confounding variables, were probed.

In terms of gender differences at baseline, it was found that female participants had more knowledge at baseline of TB symptoms and how TB can be spread (with statistical significance at p=.000 and p=.000 respectively).

[21] ANOVA is used to test for differences between means of two or more groups, as well as in designs with more than one attribute independent variable.

[22] Referring to what would likely have happened to participants if they had not participated in the Program.

Table 8: Comparison of baseline data and participants' gender

Dependent variable	Attribute independent variable	Mean	Mean difference	p-value	Significant findings*
TB symptoms	Female	1.6638	.02578	.000	Female participants knew more about the symptoms of TB than their male counter parts
	Male	1.6380			
TB spread	Female	1.7716	.03727	.000	Female participants knew more about the spreading of TB than their male counter parts
	Male	1.7344			

*p < .005

However, in terms of the remaining eight dependent variables assessed, there were no statistically significant differences at baseline between female and male participants.

Table 9: Comparison of baseline data and participants' country of residence

Dependent variable	Attribute independent variable	Mean	Mean difference	*p*-value	Significant findings*
TB miners	SA	1.6739	-.03986	.000	Participants from Lesotho had more knowledge on and positive perceptions about TB and miners
	Lesotho	1.7137			

*p < .005

Only one statistically significant difference (p=.000) between participants from Lesotho and participants from South Africa was found. Participants from Lesotho knew more about TB and miners, as well as had more positive perceptions about TB and miners when compared to their South African counterparts. This may be because the data collection sites in Lesotho were in closer proximity to mines (such as Mokhotlong) than data collection sites in South Africa.

Table 10: Comparison of baseline data and participants' socio-geographical location

Dependent variable	Attribute independent variable	Mean	Mean difference	Sig	Significant findings*
TB miners	Urban	1.6856		.005	Peri-urban participants had more knowledge on and positive perceptions on TB and miners, followed by urban and rural participants
	Peri-urban	1.7083			
	Rural	1.6685			
	Total	1.6913			
TB symptoms	Urban	1.6569		.002	Peri-urban participants had more knowledge on TB spread, followed by urban and rural participants
	Peri-urban	1.6621			
	Rural	1.6334			
	Total	1.6540			

*p < .005

With two variables (knowledge on TB symptoms, as well as TB-related knowledge and perceptions toward TB and miners), statistically significant (respectively p=.005 and p=.002) differences were found at baseline between participants from different socio-geographic backgrounds. With both these variables, participants from peri-urban socio-geographic locations had more knowledge than their urban and rural counterparts.

No statistically significant differences were found at baseline between participants who indicated they were employed or unemployed at the time of the evaluation (as indicated in Table 10, Annexure F).

In addition, where participants indicated to have previously worked in a mine shaft, no apparent differences at baseline on any of the 10 key dependent variables were found (as indicated in Table 11, Annexure F).

It was shown that just over a quarter (28%) of the participants reported having been tested for TB before the intervention. It appeared that this attribute independent variable did not affect the evaluation sample at baseline (as indicated in Table 12, Annexure F). There were no statistically significant differences at baseline between participants who have been tested for TB previously and their counterparts who have not previously been tested for TB, regarding the ten dependent variables assessed.

Table 11: Baseline data and previous exposure to TB information[23]

Dependent variable	Independent variable	Mean	Mean difference	*p*-value	Significant findings*
TB miners	>= 1.50	1.6560	-.04157	.002	Participants' who have had previous exposure to TB information knew more about and had more positive perceptions about TB and miners
	< 1.50	1.6976			

*p < .005

It was found that participants who have previously been exposed to TB information knew more about and had more positive perceptions toward TB and miners (p=.002). This was the only statistically significant difference at baseline between participants who have or have not previously been exposed to TB-related information.

As such, it was found that four biographical attribute independent variables had some statistically significant effect on the equivalence of the evaluation participants at baseline. However, it is also important to note that these differences were in the minority (considering all ten dependent variables), which relates to the findings in Table 6 that showed the intervention and comparison groups were equivalent at baseline. The four biographical attribute independent variables included:

- The gender of participants (two of the ten dependent variables were statistically significantly different);
- The country from which participants where (one of the ten dependent variables was statistically significantly different);
- The socio-demographical location of participants (urban, peri-urban and rural) (two of the ten dependent variables were statistically significant different); and
- Previous exposure to TB information (one of the ten dependent variables was statistically significantly different).

It was important to consider the effects of these attribute independent variables during the interpretation of the evaluation findings in terms of the immediate outcomes of *The Lucky Specials* movie on the participants. As noted in the evaluation method section (and as further discussed in Section 4.2), multiple regression analysis was employed to gauge the relative contribution of these attribute independent variables, such as gender, on the dependent variables (participants' TB knowledge, perception and behavior intention).

[23] Previous exposure to TB information here refers to the mean score of a participant's answers to Question 9 in the pre-assessment (that is, whether the participant has received or obtained TB information over the past six months; whether the participant or someone they live with has TB and/or is on TB treatment; and whether the participant works with or volunteers at an organization or in a community educating people on TB).

Based on the effects of the attribute independent variables on the equivalence of the intervention and comparison groups at baseline, it was important to gauge whether these variables affected the intervention group (the group that viewed *The Lucky Specials*) at baseline. This analysis was essential specifically to establish the effect of the movie on participants from different backgrounds (including gender and socio-geographic location) (as discussed in Section 4.3).

Table 12: Comparison of The Lucky Specials baseline data and participants' gender

Dependent variable	**Attribute independent variable**	**Mean**	**Mean difference**	*p*-value	**Significant findings***
LSpreProtect	Female	1.6879	.02669	.002	Female participants from the intervention group had more knowledge at baseline on TB protective factors
	Male	1.6612			
LSpreSymptoms	Female	1.6536	.02983	.000	Female participants from the intervention group had more knowledge at baseline on TB symptoms
	Male	1.6237			
LSpreSpread	Female	1.7759	.02911	.001	Female participants from the intervention group had more knowledge at baseline on how TB can spread
	Male	1.7468			

*p < .005

It can be seen that female participants from the interventions group had statistically significantly more TB-related knowledge on protective factors (p=.002), how TB spreads (p=.000) and the symptoms of TB (p=.001), than their male counterparts.

Table 13: Comparison of The Lucky Specials baseline data and participants' country of residence

Dependent variable	Attribute independent variable	Mean	Mean difference	*p*-value	Significant findings*
LSpreMyths	South Africa	1.6106	.03632	.000	South African participants from the intervention group knew more at baseline about TB-related myths
	Lesotho	1.5743			

*p < .005

One statistically significant difference (p=.000) on the ten assessed dependent variables was found at baseline between intervention group participants from South Africa and Lesotho. South African participants from the intervention group were more knowledgeable about TB-related myths than their Lesotho counterparts.

Table 14: Comparison of The Lucky Specials baseline data and intervention group participants' socio-demographic location

Dependent variable	Attribute independent variable	Mean	Mean difference	*p*-value	Significant findings*
LSpreMyths	Urban	1.6124		.000	Intervention group participants from urban areas had more TB-related myths knowledge at baseline, followed by their rural and peri-urban counterparts
	Peri-urban	1.5722			
	Rural	1.6009			
	Total	1.5935			
LSpreRisk	Urban	1.5942		.004	Intervention group participants from urban areas had more knowledge on TB risk factors at baseline, followed by their peri-urban and rural counterparts
	Peri-urban	1.5857			
	Rural	1.5578			
	Total	1.5806			
LSpreSymptoms	Urban	1.6401		.004	Intervention group participants from peri-urban areas had more knowledge on TB symptoms at baseline, followed by their urban rural counterparts
	Peri-urban	1.6547			
	Rural	1.6228			
	Total	1.6409			

*p < .005

Three statistically significant differences between intervention group participants from different socio-geographic locations were found. These included differences at baseline between knowledge related to TB myths (p=.000), knowledge on TB risk factors (p=.004) and knowledge on TB symptoms (p=.004)

As such, it was found that three biographical attribute independent variables had some statistically significant effect on the equivalence of the intervention group's evaluation participants at baseline. These included:

- The gender of participants (three of the ten dependent variables were statistically significantly different);
- The country from which participants were (one of the ten dependent variables was statistically significantly different); and
- The socio-demographical location of participants (urban, peri-urban and rural) (three of the ten dependent variables were statistically significant different).

It was important to consider the effects of these attribute independent variables during the interpretation of the evaluation findings in terms of the immediate outcomes of *The Lucky Specials* movie on participants from different backgrounds. As noted in the evaluation method section (and as further discussed in Section 4.3), multiple regression analysis was employed to gauge the relative contribution of these attribute independent variables, such as gender, on the dependent variables (participants' TB knowledge, perception and behavior intention).

6.2 Immediate Effect of *The Lucky Specials* Movie on TB Knowledge, Perceptions, and Behavior Intention

An indication of the immediate effect of *The Lucky Specials* movie on viewers' TB knowledge, perceptions and behavior intention was firstly established by conducting an independent sample t-test on the mean scores of the intervention and comparison groups' answers from the post-assessment surveys. Gauging the differences in post-assessment mean scores between the intervention and comparison groups was relevant as it was seen earlier that these two groups were equivalent at baseline and so this would show whether it was the effect of the movie or not that caused observed differences in key dependent variables.

Table 15: Intervention and comparison group post-assessment scores

Dependent variable	Experimental independent variable	Mean	Mean difference	p-value	Significant findings*
TB myths	The Lucky Specials	2.1813	-.00297	.002	Participants from the intervention group's perceptions on TB were more positive than their counterparts from the comparison group, after watching The Movie
	Inside Story	2.0897			
TB risk factors	The Lucky Specials	1.5067	-.00773	.729	None
	Inside Story	1.4877			
TB protective factors	The Lucky Specials	1.4636	-.03974	.000	Intervention group participants' knowledge on TB protective factors was better than their comparison group counterparts, after watching The Movie
	Inside Story	1.4097			
TB and miners	The Lucky Specials	1.5076	.01979	.005	Participants from the intervention group's perceptions on TB and miners were more positive than their counterparts from the comparison group, after watching The Movie
	Inside Story	1.4572			
TB symptoms	The Lucky Specials	1.4234	-.01454	.216	None
	Inside Story	1.4482			
TB spreading	The Lucky Specials	1.3522	.10383	.000	Intervention group participants' knowledge on TB spreading was better than their comparison group counterparts, after watching The Movie
	Inside Story	1.2953			
TB positive people	The Lucky Specials	1.9756	.07279	.002	Participants from the intervention group's perceptions on TB positive people were more positive than their counterparts from the comparison group, after watching The Movie
	Inside Story	1.9727			
TB behavior intention	The Lucky Specials	1.6514	.03725	.426	None
	Inside Story	1.6879			

TB prevention	The Lucky Specials	1.3184	.01529	.275	None
	Inside Story	1.3464			
TB treatment	The Lucky Specials	1.7233	.04957	.004	Intervention group participants' knowledge on TB treatment was better than their comparison group counterparts, after watching The Movie
	Inside Story	1.67373			

*p < .005

Statistically significant immediate results of *The Lucky Specials* movie included that participants from the intervention group's perceptions on TB myths (p = .002), TB and miners (p = .005), as well as TB positive people (p=.002) were statistically significantly different and more positive than their counterparts from the comparison group, after watching *The Lucky Specials* movie.

In addition, participants from the intervention group knew statistically significantly more about TB protective factors (p = .000), TB spreading (p = .000), as well as TB treatment (p=.004) than the participants from the comparison group, after watching the movie.

It was noted in Section 4.1.1.1 that there were attribute independent variables that may have affected some of the dependent variables (such as TB knowledge, perception and behavior intentions) at baseline. These attribute independent variables included gender, country, socio-demographic location, as well as previous exposure to TB.

Before the immediate effect of *The Lucky Specials* on viewers' TB knowledge, perceptions and behavior intention could be established and concluded, it was important to assess to what extent the effects could have been influenced by these attribute independent variables. As such, multiple regression[24] analysis was conducted on the identified attribute independent variables and the post-assessment scores of the ten key dependent variables assessed in the evaluation.

6.2.1 TB Knowledge

Participants were asked whether they had learnt anything they didn't already know about TB from watching their respective movies. Respectively 91% (n=1,084) and 83% (n=638) indicated in the affirmative after watching *The Lucky Specials* and *Inside Story* movies. As there was no TB-related information in the *Inside Story* movie, it may be concluded that self-report bias may have influenced the answers from the comparison group, as the participants may have answered what they thought would have been the socially desired response in terms of learning more about TB during watching the *Inside Story* movie.

More specifically, the immediate changes in participants' knowledge on TB risk factors, protective factors, symptoms, spreading, prevention and treatment were assessed by comparing the change in the mean scores of both groups from the pre- to the post-assessment surveys.

[24] Multiple regression assist to find a (linear) combination of attribute independent variables that maximally predicts (or 'explains') a dependent variable. From this the relative contribution of variables in the combination can be gauged.

Figure 15: The Lucky Specials pre- and post-assessment scores on TB knowledge

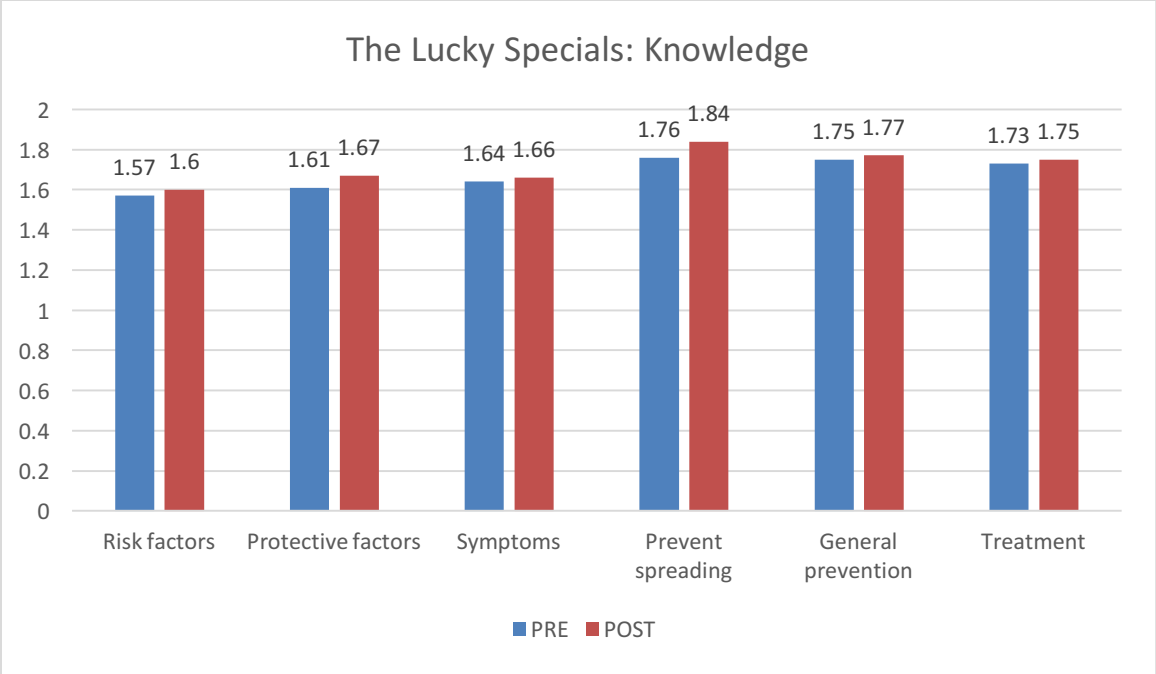
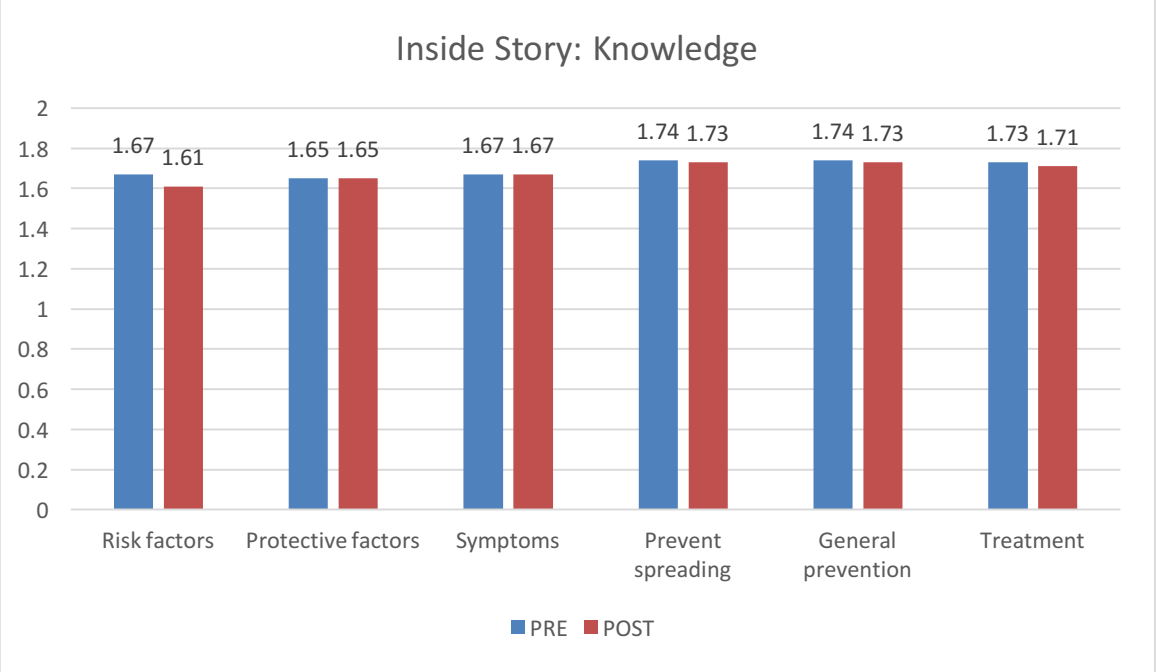


Figure 16: Inside Story pre- and post-assessment scores on TB knowledge



It was found that the mean scores on all the post-assessment TB knowledge dependent variables assessed increased from their pre-assessment scores. The post-assessment TB knowledge scores on these dependent variables, of the comparison group, either stayed the same (specifically their knowledge on TB protective factors and symptoms) or decreased.

While the changes in the mean scores of the dependent variables that assessed TB knowledge from pre-

to post-assessment were important to note, the statistical significance of these changes in mean scores are critical in quantitative data analysis and interpretation.

It was found that the changes from intervention group participants' mean scores on TB knowledge on risk (p=.000) and protective (p=.000) factors, symptoms (p=.001) and spreading (p=.000) were statistically significant.

Table 16: Paired Samples T-Test of intervention group's pre- and post assessment scores on TB knowledge

Variable assessed	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)*
				Lower	Upper			
LS TB risk factors	-.02462	.16361	.00482	-.03408	-.01517	-5.108	1151	.000
LS TB protective factors	.06485	.18383	.00544	.05418	.07552	11.926	1142	.000
LS TB symptoms	-.01742	.17576	.00517	-.02757	-.00728	-3.371	1155	.001
LS TB spreading	-.07995	.43317	.01292	-.10530	-.05460	-6.188	1123	.000
LS TB prevention	.02369	1.33057	.03930	-.05343	.10081	.603	1145	.547
LS TB treatment	-.01113	.72790	.02152	-.05335	.03109	-.517	1143	.605

*p < .005

The following section provides the evaluation results relating to the immediate effects of *The Lucky Specials* movie on viewers' TB-related perceptions.

6.2.2 TB Perceptions

As with TB knowledge, the immediate changes in participants' TB-related perceptions were assessed by comparing the changes in the mean scores of both groups from the pre to the post-assessment surveys, with regard to the identified dependent variables. Evaluation participants' perceptions of TB were probed by asking them questions on TB-related myths, TB and miners, as well as their image of TB positive people.

Figure 17: The Lucky Specials pre- and post-assessment scores on TB perceptions

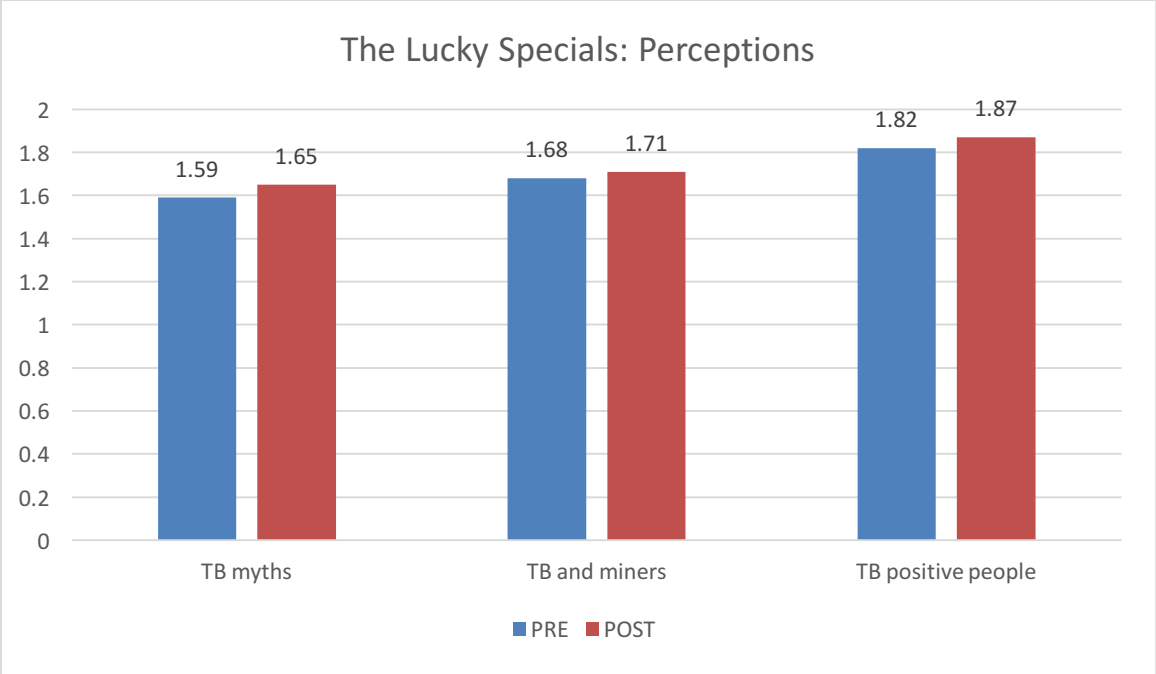
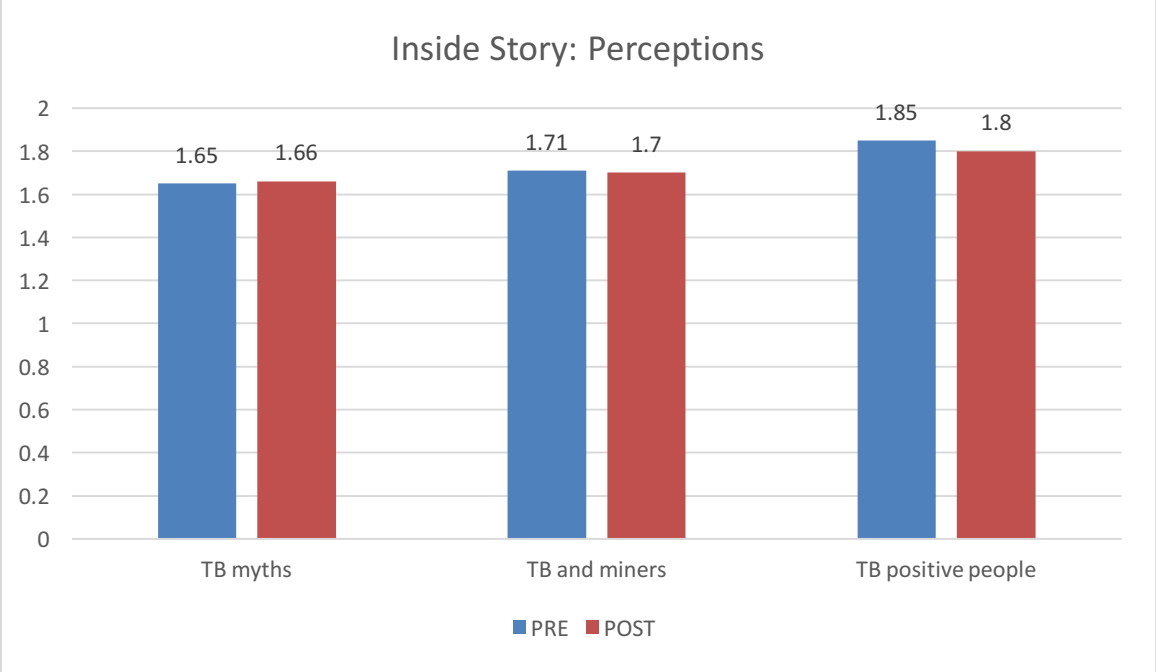


Figure 18: Inside Story pre- and post-assessment scores on TB perceptions



The findings in Figures 16 and 17 depict no changes in comparison group participants' TB perceptions in terms of TB myths, TB miners or TB positive people. However, participants from the intervention groups' TB-related perceptions improved after watching *The Lucky Specials* movie.

More specifically, the paired samples t-test for TB perceptions-related changes in the intervention group showed that one of these changes (that is, TB and miners) was statistically significant (p=.000). As such,

it can be concluded that while *The Lucky Specials* movie did not statistically significantly positively change viewers' TB perceptions on TB positive people and TB-related myths, it also did not negatively affect these.

Table 17: Paired Samples T-Test of pre and post-assessment scores on TB perceptions

Variable assessed	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)*
				Lower	Upper			
LS TB myths	-.05780	.72438	.02111	-.09921	-.01639	-2.739	1177	.006
LS TB and miners	-.02888	.24507	.00732	-.04323	-.01452	-3.947	1121	.000
LS TB positive people	-.05062	.76914	.02292	-.09559	-.00565	-2.208	1125	.027

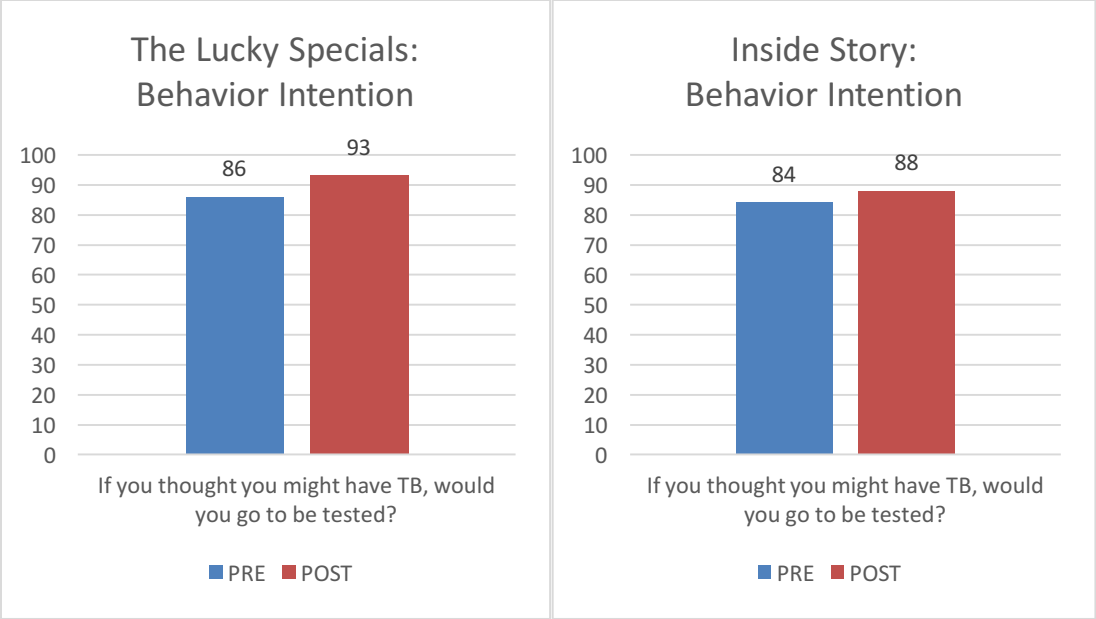
*p < .005

6.2.3 TB Behavior Intention

Lastly, the immediate effect of *The Lucky Specials* movie on participants' TB-related behavior intentions were assessed by comparing the change in the mean scores of both groups from the pre- to the post-assessment surveys on the identified dependent variables.

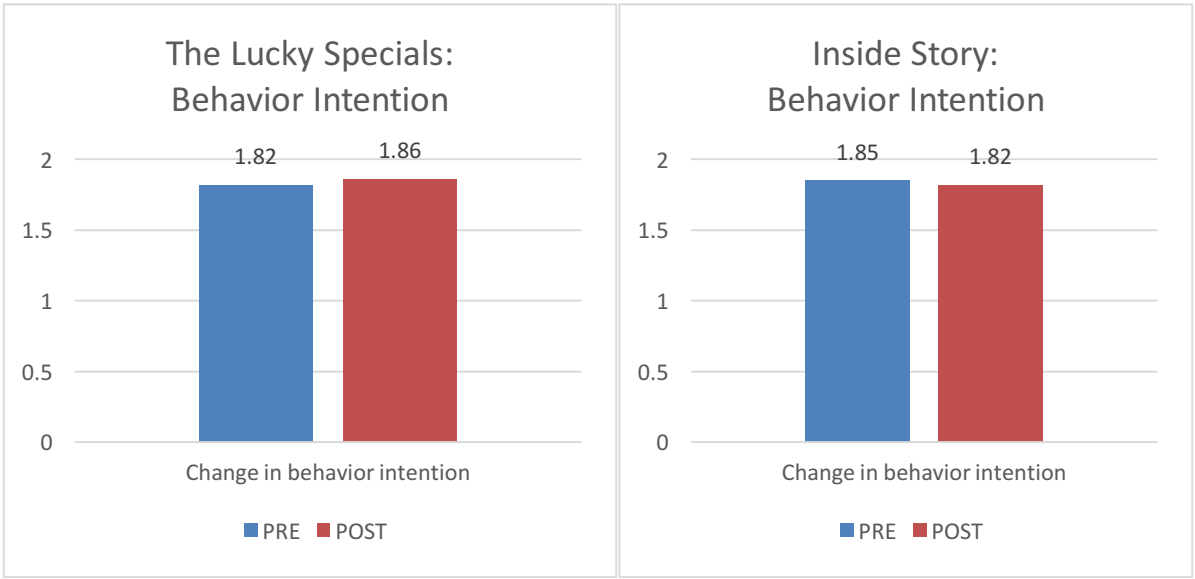
Participants from the intervention and comparison groups were asked both before and after watching their respective movies whether they would go for a TB test if they thought they might have TB. In both groups, more participants answered in the affirmative after they watched their respective movie. However, this change was higher: 7% in the intervention group, compared to the 4% from the comparison group. It is also important to note here that self-report bias may have had an effect on the answers from the comparison group, as the participants may have answered what they thought would have been the socially desired response. In addition, the 4% increase (n=31) in participants from the comparison group showed in Figure 18 below, may have been because of increased awareness of overall health and health-related status (including both HIV and TB).

Figure 19: Participants' indication of whether they would go for a TB test if they thought they had TB



In addition, it was found that participants from the intervention group's intent to engage in responsible behavior (in terms of TB and safety) improved positively from the pre- to post-assessment, while their counterparts from the comparison group's changed negatively.

Figure 20: Pre and post-assessment scores of TB behavior intent



It can be seen that the positive change in TB-related behavior intention amongst participants from the intervention group was statistically significant ($p = .000$).

Table 18: Paired Samples T-Test of pre- and post-assessment scores on TB behavior intent

Variable assessed	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)*
				Lower	Upper			
LS TB intent	-.02872	1.28201	.03771	-.10270	.04526	-.762	1155	.000

*p < .005

In addition, to gauge immediate changes in participants' behavior intent, participants were asked a question based on a scenario. Participants were asked to select from a list what the five most important things would have been that they would have done if they have been coughing for two weeks. The options included:

- Wear a protective mask
- Wait one more week and see if my cough gets better
- Test for the HIV disease
- Drink my TB medicine daily for at least 6 to 9 months
- Go for a blood test for TB at a health facility
- Drink more vitamins and eat healthy
- If my TB test is positive, get my medicine at the clinic
- Drink my TB medicine until my cough goes away
- Do a skin test for TB at a health facility or NGO
- Avoid greasy foods, alcohol and smoking

The observed, immediate outcomes were subsequently gauged to understand how these changes may have affected participants from different backgrounds.

6.3 Immediate Outcomes on Audiences from Different Backgrounds

This section provides an overview of the effect (and possible differences thereof) of *The Lucky Specials* movie on audiences from different backgrounds. These specifically included differences in gender, country and socio-demographic location of participants from the intervention group.

Table 19: Gender and The Lucky Specials Effect

Dependent variable	Attribute independent variable	Mean	Mean difference	Sig	Relevant findings*
LSpostSymptoms	Female	1.6713	.03055	.001	Female participants' knowledge of TB symptoms was better than their male counterparts, after watching the Movie
	Male	1.6407			
LSpostPrevent	Female	1.7796	.06084	.001	Female participants' knowledge of TB prevention was better than their male counterparts, after watching the Movie
	Male	1.7187			

*p < .005

It was found that TB knowledge on symptoms (p=.001) and prevention (p=.001) were better received by female participants from the intervention group, as they knew statistically significantly more about these two dependent variables, than their male counterparts, after watching *The Lucky Specials* movie.

Table 20: Country and The Lucky Specials effects

Dependent variable	Attribute independent variable	Mean	Mean difference	*p*-value	Significant findings*
LSpostProtect	South Africa	1.6276	.02929	.001	South African participants' knowledge on TB protective factors was more than their Lesotho counterparts, after watching the Movie
	Lesotho	1.5983			
LSpostPositiveP	South Africa	1.9376	.12327	.000	Lesotho participants' perceptions about TB positive people were more positive than their South African counterparts, after watching the Movie
	Lesotho	1.8143			
LSpostPrevent	South Africa	1.7952	.09045	.000	Lesotho participants' knowledge on prevention was more than their South African counterparts, after watching the Movie
	Lesotho	1.7048			

*p < .005

It appeared that *The Lucky Specials* movie was more effective amongst South African participants in terms of transferring knowledge on TB protective factors, as South African participants' knowledge on TB protective factors was statistically significantly (p=.001) better than those of their Lesotho counterparts.

In addition, Lesotho participants' perceptions about TB positive people were statistically significantly

more positive (p=.000) than their South African counterparts, after watching *The Lucky Specials*. Lesotho participants also had statistically significantly (p=.000) more knowledge on TB prevention after watching *The Lucky Specials*, than that of their South African counterparts.

Table 21: Socio-demographic location and The Lucky Specials Effect

Dependent variable	Attribute independent variable	Mean	Mean difference	Sig	Relevant findings*
LSpostRisk	Urban	1.6515		.002	Urban and peri-urban participants had more knowledge on TB risk factors after watching The Movie, than their rural counterparts
	Peri-urban	1.6164			
	Rural	1.6120			
	Total	1.5807			
LSpostProtect	Urban	1.6046		.003	Urban and peri-urban participants had more knowledge on TB risk factors after watching The Movie, than their rural counterparts
	Peri-urban	1.6269			
	Rural	1.5954			
	Total	1.6239			

*p < .005

A significant difference on the immediate outcomes of *The Lucky Specials* movie on participants from different socio-demographic backgrounds was found only in terms of knowledge on TB risk and protective factors. Urban and peri-urban participants displayed more knowledge on these two dependent variables (p=.002 and p=.003 respectively) after watching *The Lucky Specials* movie, when compared to their rural counterparts.

6.4 Short-term Effect on TB Knowledge and Behavior Intention

The short-term outcomes of *The Lucky Specials* movie on viewers' TB knowledge (and subsequent retention thereof), perceptions and intended behavior change were probed through follow-up telephonic interviews with a random sample of 295 participants from the intervention group.

Telephonic Interviews Sample

The randomly selected participants for the follow-up telephonic interviews were (as far as possible) selected according to key biographical strata, such as gender, socio-demographic location and country. There was a relatively even split between female (53%) and male (47%) participants. More than half of the participants (57%) were from a peri-urban area, while a third (34%) were from an urban area. Approximately three quarters (73%) of the participants were from Gauteng, whilst 25% were from the Western Cape. There were some evaluation participants who were, at the time of the follow-up telephonic interviews, living in another province, including Limpopo and KwaZulu Natal. Similar to the final evaluation sample for the pre- and post-assessment surveys, a small percentage of the telephonically interviewed participants (12%) were employed at the time of the evaluation. The other participants were either studying (44%), in school (4%) or unemployed (40%).

The qualitative data collected were analyzed and are presented thematically in this section, with specific reference to the key focus areas of the evaluation, such as TB risk and protective factors, symptoms, prevention and treatment, as well as behavior intent, motivation and encouragement, and education or information received.

It is important to note that the frequency tables depicting the analyzed qualitative data in this section reflect the frequencies of key words/phrases/themes mentioned in a given code/context; as such, it does not reflect the number or percentages of participants that mentioned such words.

6.4.1 TB Knowledge Retention

During the follow-up telephonic interviews, participants were first asked whether they shared anything from the movie with anyone who didn't watch the movie; and if so, what they shared and with whom.

83% of the 295

The majority, 83% of the participants (n=245), answered in the affirmative when asked whether they had shared something from *The Lucky Specials* movie after watching it, with someone who did not watch the movie. Participants reported having discussed the movie with (amongst others) brothers and sisters, classmates and friends, colleagues at work, cousins, siblings and parents, spouse and partner, as well as local community members.

In addition, participants were asked what some of the main things were that they have learnt about TB from watching the movie that they didn't know before.

Table 22: Occurrence of codes reflecting what intervention group participants learnt and shared

Codes:	What about the movie did you share?	**Sub-codes:**	What did you learn that you didn't know?	**Sub-codes:**
TB prevention	93	Coughing (28) Awareness (21) Status (5) Tested (20) Windows/ ventilation (19)	136	Spreading (21) Necessary steps you must do (29) Coughing (47) Ventilation (10)
TB protective factors	11	Wear a mask (2) Ventilation (6)	15	Necessary steps you must do (11)
TB risk factors	22	Smoke/drink (5) HIV (15) Mines (3)	19	HIV (16)
TB symptoms	89	2 week cough (21) Awareness (15) Night sweats (4)	30	Physical signs (7)
TB treatment	73	Wear a mask (3) Clinic/doctor (6) Stopping early (9)	65	Cured (24)

It was found that the main things participants learnt and/or shared after watching the movie included TB information on prevention, symptoms and treatment. In terms of newly acquired knowledge on how to prevent TB, it appeared that participants specifically remembered information on coughing, the importance of ventilation in a room, knowing one's HIV status, as well as regular TB tests.

In terms of TB risk factors, HIV as a risk factor was noted frequently. In addition, participants highlighted that they learnt that TB can be cured, which they didn't know before watching *The Lucky Specials* movie.

Quote Box 1: Examples of what participants shared or didn't know before

Quote Box:

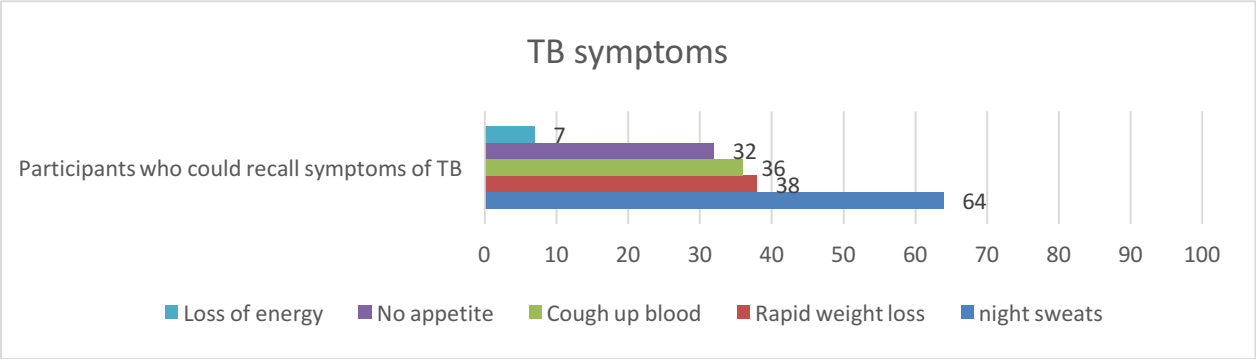
"I shared the importance of getting tested. If you are coughing for two weeks or more, you must go get tested."

"I discussed the main character - if someone in the house has TB, they must go get treatment immediately."

"I shared how keeping windows open can be helpful in stopping the spread of TB."

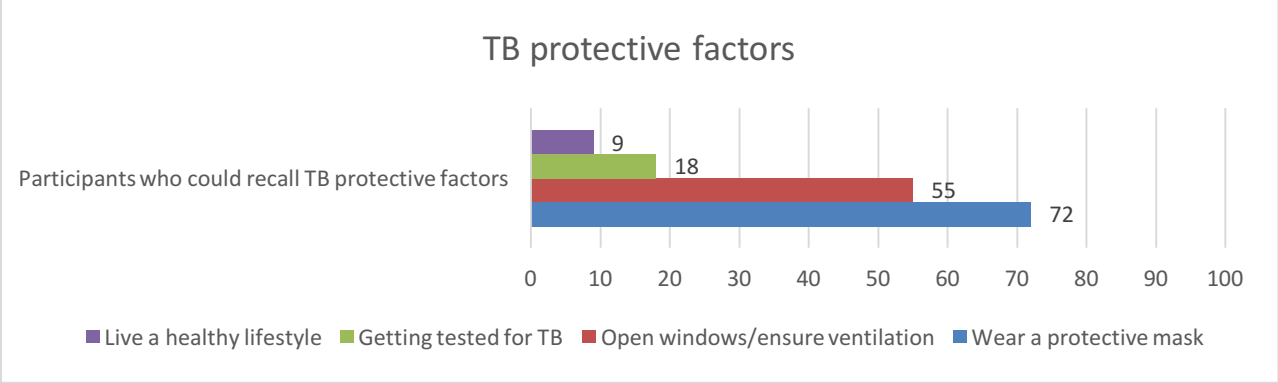
Knowledge retention was additionally probed during the follow-up telephonic interviews by asking participants to recall what they have learnt in terms of the symptoms of TB, TB protective and risk factors, as well as important TB treatment elements.

Figure 21: Percentage of Intervention group's recollection of TB symptoms



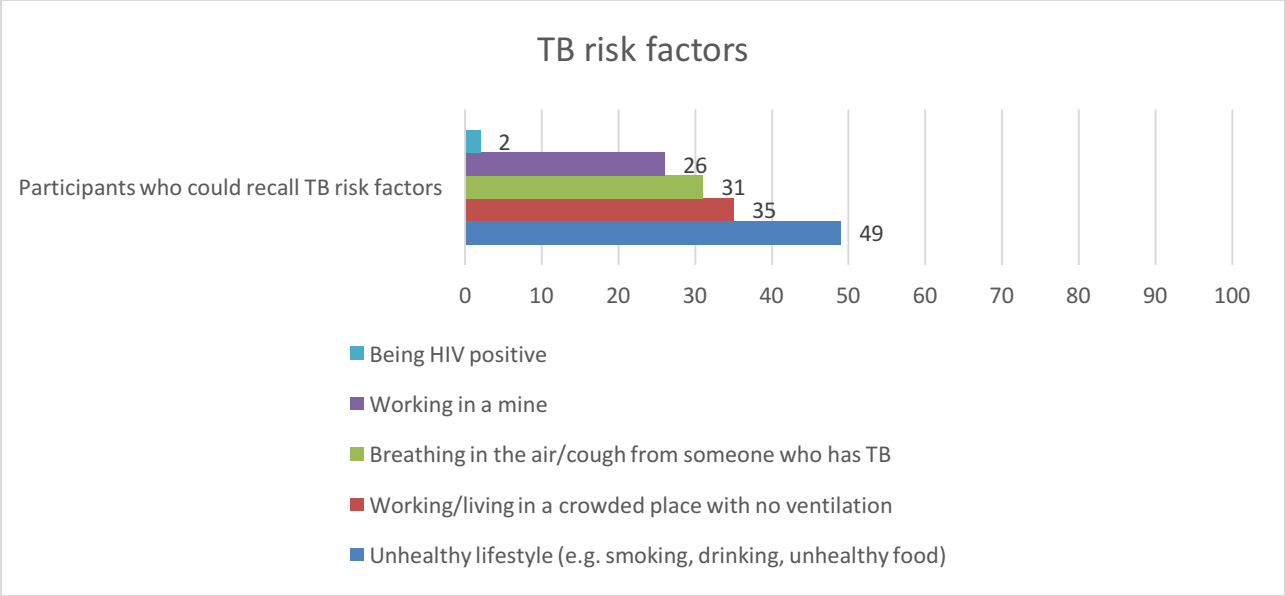
Almost two thirds of the participants (64%) could recall having night sweats as a symptom of TB. One third of the participants (respectively 38%, 36% and 32%) could recall rapid weight loss, coughing up blood, and having no appetite as symptoms of TB.

Figure 22: Intervention group's recollection of TB protective factors



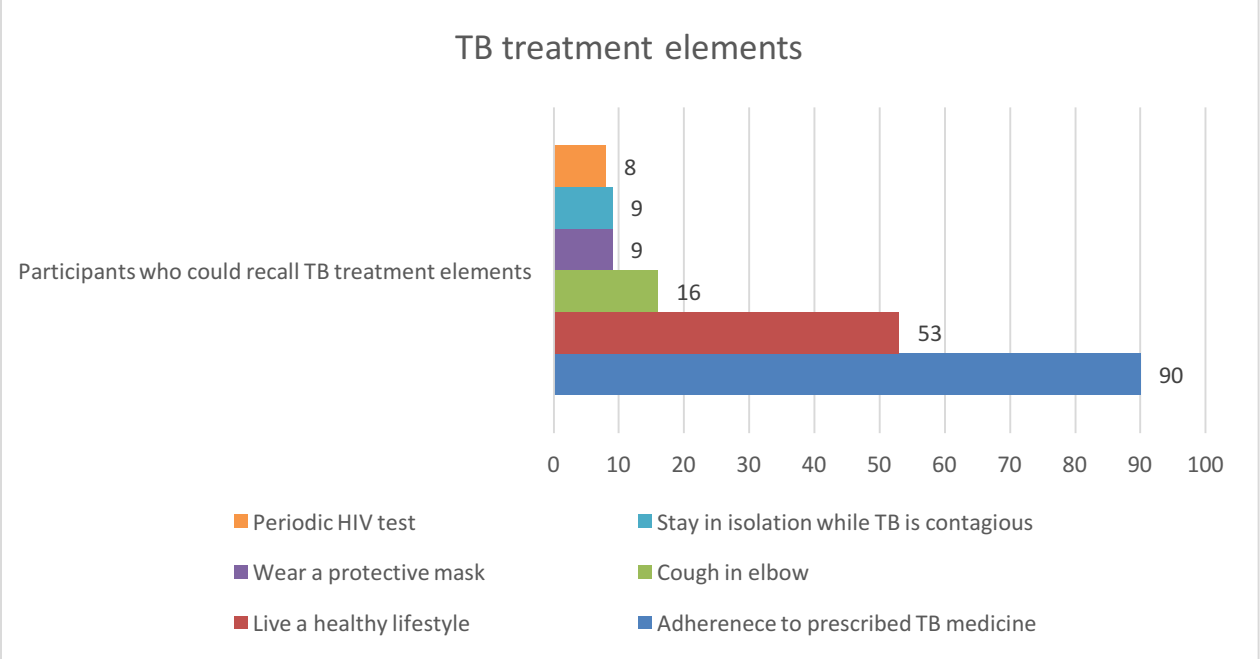
The majority of participants remembered that wearing a protective mask (72%) and opening windows for ventilation (55%) were methods to help protect oneself from contracting TB.

Figure 23: Intervention group's recollection of TB risk factors



Participants were asked to recall anything they could remember that may put them at risk of getting TB. Half of the participants (49%) noted that an unhealthy lifestyle (which includes smoking and drinking) can put a person at an increased risk to get TB. In addition, working/living in a crowded space with no ventilation (35%) and breathing in the air/cough from someone who is TB positive (31%) were also TB risk factors recalled by the participants.

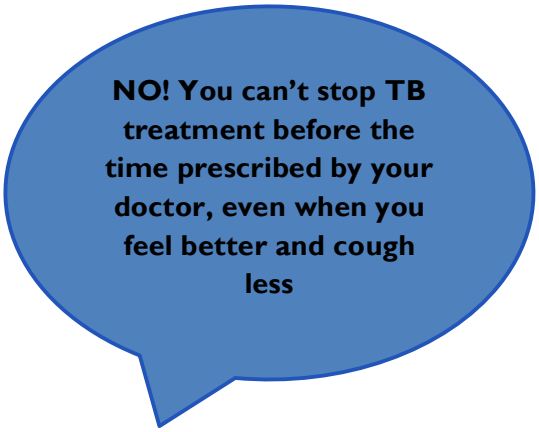
Figure 24: Intervention group's recollection of TB treatment elements



The large majority of participants (90%) recalled that adhering to prescribed TB medicine was an important element in TB treatment. In addition, more than half of the participants (53%) noted that living a healthy lifestyle (including not smoking or drinking, exercising regularly, and eating healthy) is a

critical element in the treatment of TB.

Drug-resistant and multiple drug-resistant TB was an important element in *The Lucky Specials* movie and TB treatment knowledge. As such, retention of knowledge in this regard was also gauged during the telephonic follow-up interviews. Participants were asked whether a TB positive person who was told by their doctor to take their medication for six months, but felt better after one month, could they stop taking their medication.



98% of the 295

98% of the participants (n=295) recalled that people with TB feel better after some time on their medication and have stopped coughing, cannot stop their TB medicine earlier than prescribed by their doctor.

Participants were subsequently asked why someone cannot stop their TB medication early. The findings hereof are shown below.

Table 23: Occurrence of codes reflecting intervention group participants' understanding of drug-resistant TB

Code:	Why can't someone stop their TB medication prematurely?	**Sub-Codes:**				
TB treatment	404	Resistant/ resistance (36)	Prescribed medicine/ drugs finished (103)	Virus (45)	Back/ return/ worse (105)	Healed/ cured (37)

The two most mentioned reasons given why someone cannot stop their TB medication when they feel better and/or cough less, were because prescribed medicine or drugs must be finished, as the bacteria can come back or return in a worse way.

Quote Box 2: Examples of reasons why TB medication cannot be stopped early

Quote Box:

"Being or feeling better does not mean you are cured. If you stop anyway, the TB will grow to the next level, XDR or MDR, which means medicine won't help."

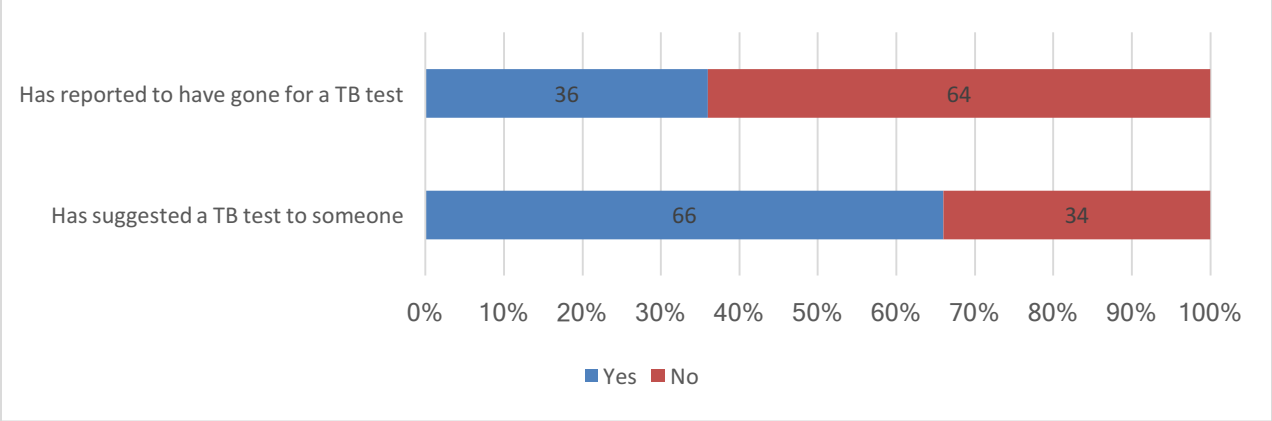
"Finish the treatment because the TB is not yet cured when you stop coughing. The TB will multiply if you stop taking your medication."

6.4.2 TB-Related Behavior Intention

To get an understanding of participants' change in behavior intention 30 days after watching *The Lucky Specials* movie, they were asked whether they have gone for a TB test or have advised someone to go for a TB test, after watching.

It was found that more than a third (36%) of the participants reported having gone for a TB test after watching the movie, while two thirds of the participants (66%) reported having advised someone to go for a TB test, as a result of watching the movie.

Figure 25: Intervention group Participants' indication of whether they have gone or have suggested to someone to go for a TB test after watching The Lucky Specials



Participants were subsequently asked to provide reasons for why they went for a TB test and/or why the advised someone to go for a TB test, after watching *The Lucky Specials* movie.

Table 24: Occurrence of codes reflecting why intervention group participants went for or advised someone to go for a TB test after watching The Lucky Specials

Codes:	Why did you go for a TB test?	**Sub-codes:**	Why did you advise someone to go for a TB test?	**Sub-codes:**
Behavior motivation	43	Movie (30) Awareness (8)	71	Encouraged (10) Status (45) Not aware (20)
TB prevention	17	Coughing (15) Scared (2)	60	Test/ know status (47)
TB risk factors	26	HIV (14) Live/work (11)	3	Unhealthy lifestyle (3)
TB symptoms	19	Coughing (14) Night sweats (5)	84	HIV (3) TB signs (19) Coughing (54)

The most mentioned reason for participants going for a TB test included that *The Lucky Specials* movie motivated or encouraged them to do so, and that they were more aware of TB-related information. In addition, participants reported advising someone else to go for a TB test mostly because the other person(s) showed symptoms of TB (such as coughing for longer than two weeks) or because the movie motivated the participants to encourage others to know their TB status.

Quote Box 3: Examples of reasons why participants went for or advised a TB test

Quote Box:

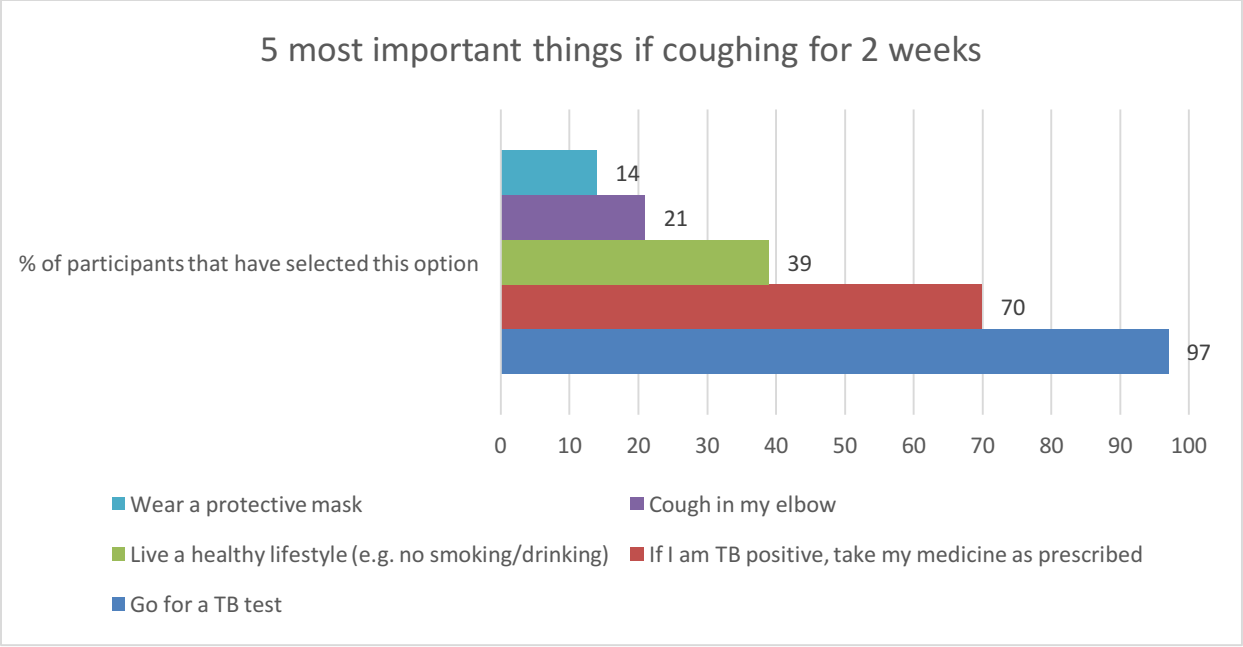
"After seeing the movie, I felt motivated to go and test. It was negative."

"Before the movie, I didn't think I can get TB, but after the movie I felt like TB could affect anyone and I therefore needed to know if I also have the disease and I was thinking about other people that I stay with."

"I encouraged my sister to get tested after she told me she had some of the symptoms of TB (night sweats/ loss of appetite)."

During the follow-up telephonic interviews, participants were again asked what the five most important things would be that they would do, had they been coughing for two weeks.

Figure 26: The 5 most important things to do when coughing for two weeks



It can be seen that most participants, respectively 97% and 70%, reported intended behavior of finding out their TB status, and if positive, committing to medication adherence, if they have been coughing for two or more weeks.

Lastly, the evaluation probed treatment adherence from participants interviewed in the follow-up telephonic interviews. However, only two participants (n=294) indicated they have been on TB treatment at the time of the interviews and both started TB treatment before watching the movie. Both indicated they have not missed taking any medication during their treatment to date. As such, collecting and analyzing treatment adherence data from the participants was not relevant.

6.4.3 The Lucky Specials Entertainment-Value

Participants from both the intervention and comparison groups were asked whether they found the movie entertaining, and what the best thing about the movie was for them.

Figure 27: The Lucky Specials entertainment value

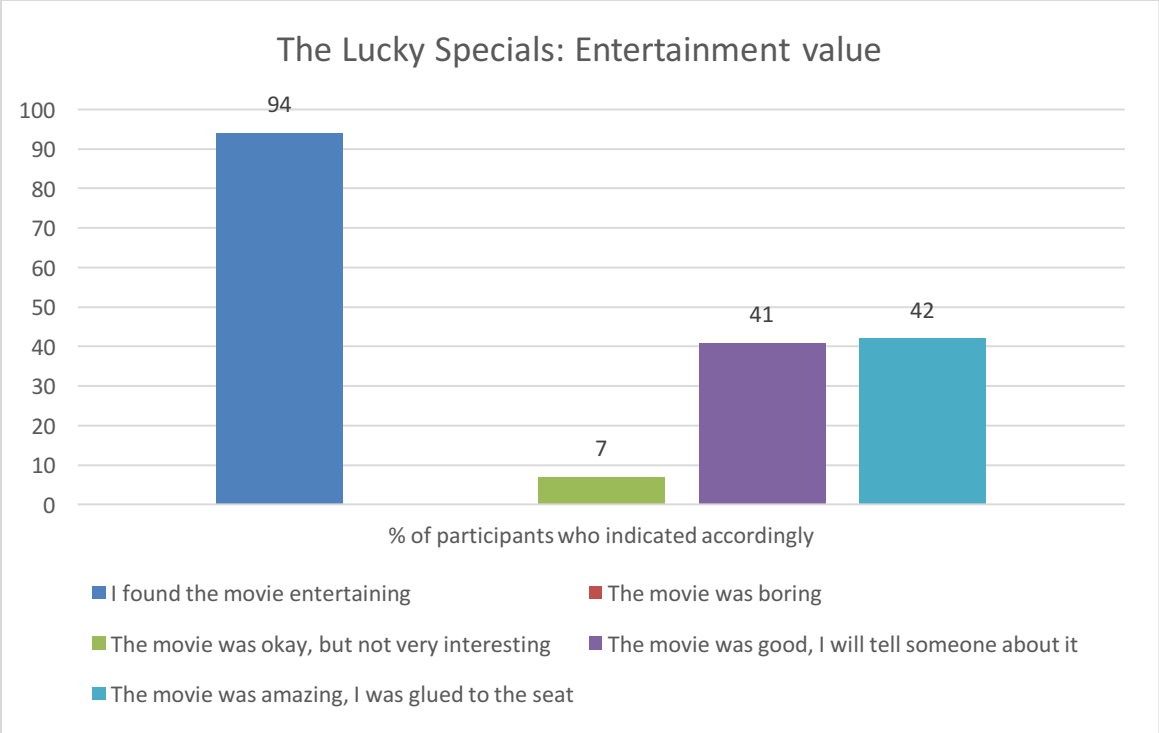
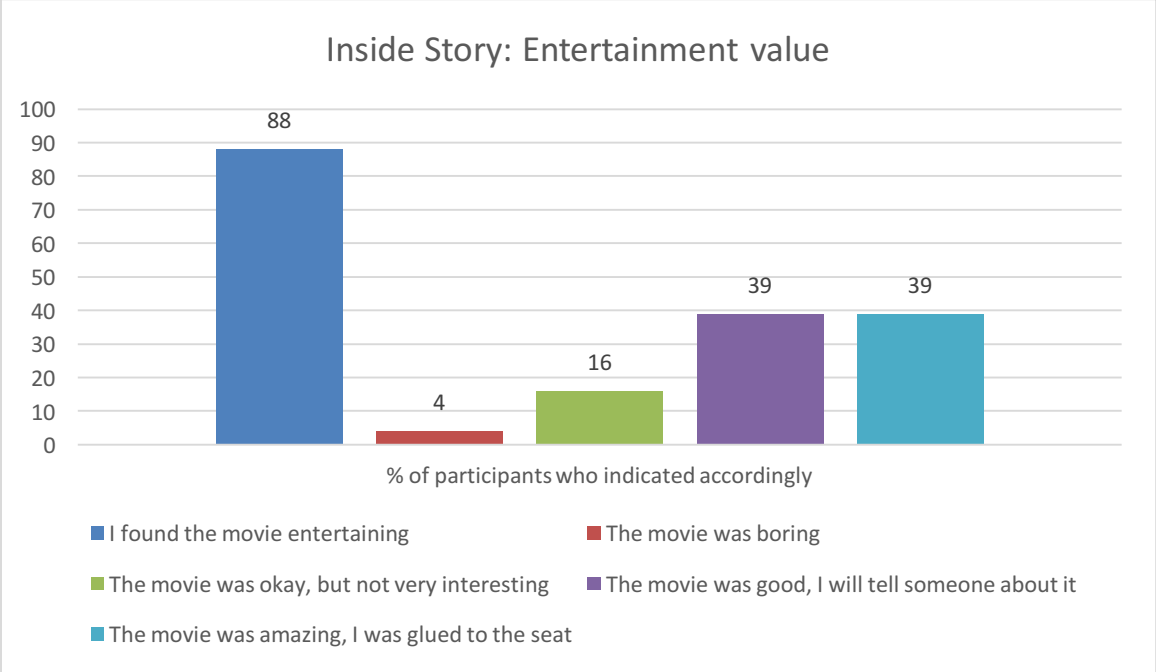


Figure 28: Inside Story entertainment value



Feedback from participants from both the intervention and comparison groups indicated that they enjoyed the movie. More specifically, participants reported that they could relate to the main characters in both movies and that the portrayel of TB and HIV in a 'real world setting' made it easier to understand and emphasized that this can happen to anyone.

Quote Box 4: concluding quotes from participants

Quote Box:

"If you are diagnosed with TB, follow all the given procedures, do not do things your own way."

"The movie was very important because people do not know about TB (how to get it, the treatment and how to take care of people with TB)."

"I found the movie entertaining and helpful. Previously I did not notice symptoms of TB, but now I am aware of how to spot the signs."

"It should be shown to the whole world because its an eye opener."

"I seriously enjoyed movie. I feel there are many ignorant people especially around TB. I hope the movie will help shed some light to those people."

"Very important movie, especially in townships. The stigma when you start losing weight is that you are HIV positive."

"I learnt that if someone at home has TB you can still prevent getting TB even though you continue to reside in the same house."

"'Friends and family' support is important when you are sick. Be open to other people when you are sick. The movie emphasized about arts and learning. You can get TB from anywhere (work,home,community)."

"I think the movie is very educational and fun to watch. I think you need to reach more people with the TB education by visiting malls, townships and households because people need to know about TB and be aware of how to get help when they are sick."

7. Key Evaluation Findings and Discussion

The Lucky Specials movie aimed to convey complex messages to a large target audience, which consisted of youth aged 18 to 35 from urban, peri-urban and rural communities in South Africa and Lesotho. The overall target audience for the movie is individuals across southern Africa, where there is a heavy tuberculosis burden. As such, the movie is envisaged to be screened and broadcast across the continent.

It is firstly important to emphasize that the intervention and control groups were equivalent at baseline in terms of their TB knowledge, perceptions and behavior intention. As such, any immediate term differences in the changes in these variables from the pre- to the post-assessment could be attributed to *The Lucky Specials* movie.

A number of attribute independent variables were found to have had an effect on participants' TB knowledge, perceptions and behavior intention at baseline, as such these were considered in the interpretation and discussion of the key findings. These attribute independent variables included gender, country, socio-demographic location, employment status, previously being tested for TB, as well as previous exposure to TB-related information (whether through living with someone who is TB positive, or working in a related environment).

In addition, it is also important to refer back to the evaluation limitations in Section 3.7, specifically challenges faced during the data collection and fieldwork phase of the evaluation which may have negatively affected and/or diluted the immediate effect of *The Lucky Specials* movie. As such, effects found and reported in the evaluation should be interpreted with these limitations in mind.

Based on the relevant literature consulted as well as the evaluation findings it can be concluded that selecting film as a TB-related health learning tool was appropriate and effective. When referring back to Section 2 (the literature review for the evaluation) the richest multimedia mediums (face to face conversations, video conferencing and phone calls) were not feasible, given the size of the target audience. Facebook and Youtube, the media with the next highest scores in media richness, require high smartphone penetration, which is unlikely in this target audience. Given these considerations, television followed by radio were clearly identified as the ideal mediums for communication with people at high risk for TB.

In addition, several constructs were identified based on the consulted literature review that guided the evaluation. These included:

- Attitude towards behavior;
- Subjective norms/perceived behavioral norms;
- Cues to action (internal);
- Cues to action (external);
- Perceived susceptibility/threat;
- Sustained exposure;
- Narrative approach; and
- Entertainment value.

The above constructs, in addition to the specific evaluation objectives, were similarly considered during

the discussion of the key evaluation findings and recommendations, with specific reference to:

- Did *The Lucky Specials* movie achieve its immediate and short-term outcomes to change viewers' knowledge (transmission, prevention, and treatment adherence), perceptions, and behavior intentions (prevention, screening, and treatment adherence)?
- Did *The Lucky Specials* movie achieve its immediate and short-term outcomes to change viewers' intended behavior (prevention, screening, and treatment adherence)? and
- Did *The Lucky Specials* movie achieve its mid-term outcomes to change viewers' actual behavior (prevention, screening, and treatment adherence)?

7.1 *The Lucky Specials* Movie Achieved its Outcomes in Terms of the Transfer and Retention of TB-related Knowledge

Literature consulted on multimedia interventions aiming to provide young people with health-related knowledge and information showed that successful interventions were characterized by (amongst others) a high variety of verbal and visual cues, were emotionally evocative, tailored to individuals and able to convey complex, non-directive messages. These characteristics are in line with the Media Richness Theory on communication media that successfully transmit messages (knowledge and information) to a target audience.

It was found that *The Lucky Specials* movie successfully transferred TB-related knowledge to participants, using features in line with the Media Richness Theory[25].

Key findings on the immediate transfer of TB-related knowledge to participants included:

1. Mean scores on all the post-assessment TB knowledge dependent variables assessed increased from their pre-assessment scores. The post-assessment TB knowledge scores on these dependent variables, of the comparison group, either stayed the same (specifically their knowledge on TB protective factors and symptoms) or decreased.
2. The changes from intervention group participants' mean scores on TB knowledge on risk ($p=.000$) and protective ($p=.000$) factors, symptoms ($p=.001$) and spreading ($p=.000$) were statistically significant.
3. Participants from the intervention group knew statistically significantly more about TB protective factors ($p = .000$), TB spreading ($p = .000$), as well as TB treatment ($p=.004$) than the participants from the comparison group, after watching the movie.

Key findings in terms of the short-term outcomes of TB-related knowledge transferred to participants included:

1. The majority, 83% of the participants (n=245), answered in the affirmative when asked whether they had shared something from *The Lucky Specials* movie after watching it, with someone who did not watch the movie. Participants reported having discussed the movie with (amongst others) brothers and sisters, classmates and friends, colleagues at work, cousins, siblings and parents, spouse and partner, as well as local community members.
2. It was found that the main things participants learnt and/or shared after watching the movie included TB information on prevention, symptoms and treatment. In terms of newly acquired knowledge on how to prevent TB, it appeared that participants specifically remembered

[25] These include: cue variety, language variety, interactivity, tailoring, ambiguity, complexity and non-directiveness.

information on coughing, the importance of ventilation in a room, knowing one's HIV status, as well as going for regular TB tests.

3. In terms of TB risk factors, HIV as a risk factor was noted frequently. In addition, participants highlighted that they learnt that TB can be cured, which they didn't know before watching the movie.
4. It was found that almost two thirds of the participants (64%) could recall having night sweats as a symptom of TB. One third of the participants (respectively 38%, 36% and 32%) could recall rapid weight loss, coughing up blood, and having no appetite as symptoms of TB.
5. The majority of participants remembered that wearing a protective mask (72%) and opening windows for ventilation (55%) were methods in which one can protect oneself from contracting TB.
6. Participants were asked to recall anything they could remember that may put them at risk of getting TB. Half of the participants (49%) noted that an unhealthy lifestyle (which includes smoking and drinking) can put a person at an increased risk to get TB. In addition, working/living in a crowded space with no ventilation (35%) and breathing in the air/cough from someone that is TB positive (31%) were also TB risk factors recalled by the participants.
7. The large majority of participants (90%) recalled that adhering to prescribed TB medicine was an important element in TB treatment.
8. In addition, more than half of the participants (53%) noted that living a healthy lifestyle (including not smoking or drinking, exercising regularly, and eating healthy) is a critical element in the treatment of TB.
9. 98% of the participants (n=295) recalled that people with TB feel better after some time on their medication and have stopped coughing, cannot stop their TB medicine earlier than prescribed by their doctor. It was found that the two most mentioned reasons given why someone cannot stop their TB medication when they feel better and/or cough less, were because prescribed medicine or drugs must be finished, as the bacteria can come back or return in a worse way.

Summary Box:

Based on the evaluation findings, it can be concluded that ***The Lucky Specials* movie did transfer TB-related knowledge** to the viewers, who increased their knowledge when compared to a comparison group that did not watch the movie. The differences between the intervention and comparison groups were found to be statistically significant, which can be interpreted as an effect of *The Lucky Specials* movie. Such newly acquired TB-related knowledge also appeared to have been retained by the intervention group, as the majority of viewers could recall such information 30 days after watching the movie.

7.2 *The Lucky Specials* Movie did Change Participants' TB-related Perceptions to Some Extent

The main outcome of *The Lucky Specials* movie was to relay useful information to motivate personal and systemic behavior change that lowers TB infection rates and increases access and adherence to TB treatment. Literature on health-related behavior change consulted for the evaluation (specifically the

TPB and HBM theories) emphasized the relevance and importance of *attitudes* and *perceptions* of individuals and their ability or willingness to change their behavior.

As such, *The Lucky Specials* movie addresses TB-related attitudes and perceptions, with the aim of aiding behavior intent and subsequent behavior. Here constructs such as subjective and perceived behavioral norms, as well as perceived threat were challenged through *The Lucky Specials* movie.

Overall the evaluation findings suggested participants from the intervention groups' TB-related perceptions improved after watching the movie, while there were no changes in comparison group participants' TB perceptions in terms of TB myths, TB miners or TB positive people.

Key findings on the immediate TB-related perceptions of the participants included:

1. Participants from the intervention group's perceptions on TB myths, TB and miners, as well as TB positive people were statistically significantly different and more positive than their counterparts from the comparison group, after watching *The Lucky Specials*.
2. More specifically, the paired samples t-test for TB perceptions-related changes in the intervention group showed that one of these changes (that is, TB and miners) was statistically significant (p=.000)
3. While the movie did not statistically significantly positively change viewers' TB perceptions on TB positive people and TB-related myths, it also did not negatively affect these.

Summary Box:

Based on the evaluation findings, it can be concluded that *The Lucky Specials* movie **did have some immediate effect on viewers' TB-related perceptions**. However, no statistically significant changes were found between the intervention and comparison groups' perceptions on TB myths or TB positive people. This may have been because *The Lucky Specials* movie appeared to have focused more on TB-related information and knowledge, than addressing specific TB-related perceptions and stereotypes.

7.3 *The Lucky Specials* Movie Achieved its Outcomes in Terms of Changing and Maintaining TB-related Behavior Intentions

The longer-term outcome of *The Lucky Specials* movie is to bring about TB-related behavior change amongst young people at risk. The evaluation timeframe did not allow for an assessment of the long-term outcomes of the intervention; however, gaining an understanding of the short-term outcomes of *The Lucky Specials* movie (changing and maintaining TB-related behavior intentions) provided an indication of the intervention's ability to change participants' behavior. The Theory of Planned Behavior (reported as one of the most researched behavioral theories) adopts a cognitive approach to explaining behavior in which it regards intention to act as the main predictor of behavior.

As such, *The Lucky Specials* movie aimed to address TB-related behavior intent through the intervention. Overall, the evaluation found that participants from the intervention group's intent to engage in responsible behavior (in terms of TB and safety) improved positively from the pre- to post assessment,

while their counterparts from the comparison group's changed negatively. It was found that the immediate positive change in TB-related behavior intention amongst participants from the intervention group was statistically significant.

Key findings on the immediate TB-related behavior intention of the participants included:

1. Respectively 91% (n=1,084) and 83% (n=638) indicated that they would go for a TB test after watching *The Lucky Specials* and *Inside Story* movies. As there was no TB-related information in the *Inside Story* movie, it may be concluded that self-report bias may have influenced the answers from the comparison group, as the participants may have answered what they thought would have been the socially desired response in terms of learning more about TB during watching the *Inside Story* movie.

In addition, key findings from the follow-up telephonic interviews suggested sustained TB-related behavior intentions. These included:

2. It was found that more than a third (36%) of the participants reported having gone for a TB test after watching the movie, while two thirds of the participants (66%) reported having advised someone to go for a TB test, as a result of watching the movie.
3. It was found that the most mentioned reason for participants going for a TB test included that *The Lucky Specials* movie motivated or encouraged them to do so, and that they were more aware of TB-related information.
4. Participants reported advising someone else to go for a TB test mostly because the other person(s) showed symptoms of TB (such as coughing for longer than two weeks) or because the movie motivated the participants to encourage others to know their TB status.
5. It was found that the majority of participants, respectively 97% and 70%, reported intended behavior of finding out their TB status, and if positive, commit to medication adherence, if they have been coughing for two or more weeks.

Summary Box:

Based on the evaluation findings, it can be concluded that *The Lucky Specials* **achieved its immediate and short-term outcomes to change viewers' TB-related behavior intention**. It is however important to note that all data was gathered through self-reporting methods and socially desirable answers may have been provided.

8. Evaluation Recommendations

The Lucky Specials movie was released by the South African Broadcasting Corporation to the public on World TB Day, 24 March 2017 [Note from DLA: Incorrect airing date. SABC license set to begin Sept. 2017]. In addition to being screened on television, the movie formed part of the 2017 San Francisco Black Film Festival. It appears at the time of the evaluation, that the movie would be screened on an ongoing basis and on a variety of platforms across southern Africa. As such, the evaluation recommendations specifically focused on strengthening the intervention in the immediate future, as well as strengthening similar interventions in the longer-term future.

8.1 Transfer and Retention of TB-related Knowledge

Recommendations to specifically improve the transfer and retention of TB-related knowledge, for both *The Lucky Specials* movie going forward and other TB-related edutainment movies, include an emphasis on key constructs such as perceived susceptibility and threat, as well as perceived social norms. It is recommended that edutainment movies use a narrative approach with high entertainment value to relate such information and knowledge using rich media tailored to the intended target population.

Key recommendations for the transmission and retention of TB-related knowledge through an edutainment movie include:

- Distribution across as many TV channels as possible (community TV networks, taxi TV, online TV stations and popular websites that host films and allow free streaming of content);
- Distribution across relevant learning networks (not only on television, but relevant non-governmental organizations, schools, tertiary institutions);
- Include relevant stakeholders in the future screenings of *The Lucky Specials* movie (and similar future films), such as Departments of Basic and Higher Education, as well as Department of Health, to provide TB-related support (both educational and bio-medical) in schools, tertiary institutions and hospitals/clinics;
- Repackage *The Lucky Specials* movie content into shorter versions (90 minutes and perhaps 3 episodes) and communications products, such as online short video clips, information posters and flyers. This will allow the film to be utilized in more diverse ways;
- Screen *The Lucky Specials* movie (and similar future films) in relevant public spaces (such as prisons, banks, clinics, hospitals or any space with a television and a long waiting time);
- Consider the length of an edutainment movie (one of the main critiques of *The Lucky Specials* movie was its length) and be cautious that such movies are not too long; and
- Identify and include policy-making specific information in edutainment movies.

8.2 Change Participants' TB-related Perceptions

One of the key constructs derived from the consulted literature that specifically showed successful changes in health-related perceptions and attitudes included sustained exposure; thus referring to ongoing exposure to the information shared and concepts challenged in a multimedia intervention. As such, one of the main recommendations for TB-related edutainment movies going forward is to include an element of sustained exposure to the initial screening of the movie. This can be done through (amongst others):

- Supplementing the screening of the film with TV and/or radio talk shows or community

screenings followed by group discussions to increase interactivity with the material. Community screenings and discussions will be especially important in high risk areas, and TV and/or radio talk shows or community screenings followed by group discussions could be added to increase interactivity;

- Including a short focus group facilitation guide with the movie, that focuses specifically on TB-related stigma and behavior intentions;
- Co-ordinate TV screenings with multi-pronged TB campaigns run by government or NGOs to maximize the impact of both and to align with increased screening at clinics; and
- Include an 'after care' manual and facilitated peer discussion groups for a period after screening the movie, to encourage discussion and reinforcement of behavior/perceptions change.

8.3 Changing and Maintaining TB-related Behavior Intentions

Behavior change, as was shown in the targeted literature review, is a multiphase and complex process, including critical components such as newly acquired knowledge, changed attitudes, beliefs and perceptions, perceived threats and behavioral control, as well as the complex interaction between people and their social and material environment.

However, the evaluation found that edutainment movies, such as *The Lucky Specials* movie, can change TB-related behavior intent which can be an indicator of behavior change. Recommendations specific to changing and maintaining TB-related behavior intentions include:

- Recognizing that behavior change is best achieved through multimedia campaigns that are also aligned with coordinated health service provision (such as planning for an increase in TB screening); and
- Partnering with relevant organizations or governmental departments that can run a sustained multimedia campaign that also links to the service provision that will need to match any increased demand in services.

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