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Analysis and development of the videos will be a collaborative effort between Morehouse School of Medicine and Georgia State University which will also provide expertise in focus group leadership, audience analysis, and lay health worker training. The collaboration of two institutions creates unique strengths that do not currently exist elsewhere in Georgia. Further, working collaboratively will enable us to combine communications theory with public health research practice.

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FOREWORD

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Introduction

The Breast Health Intervention Evaluation (BRIE) Study will evaluate the relative effectiveness of three different approaches to breast health messages--a fear appeal, a positive affect appeal, and an affectively neutral, cognitive appeal. The three interventions will be structured as three 10-12 minute videotaped presentations targeting 450 African American women residing in three rural communities in Georgia (150/community). Each site will receive one of the three intervention approaches, randomly selected, to be presented within a 60-minute workshop format. Workshops will be coordinated by a Community Lay Health Worker at each site. Pre-/post-intervention KAP surveys will be administered. Participants will be provided with breast self-examination information and breast screening referral information. A 12-month follow-up will be conducted. We will provide referral services to ACR-approved sites for study participants. Community access and participant recruitment will be facilitated through the MSM Health Promotion Resource Center.

Analysis and development of the videos will be a collaborative effort between Morehouse School of Medicine (MSM) and Georgia State University (GSU) which will also provide expertise in audience analysis and lay health worker training. The collaboration of two institutions creates unique strengths that do not currently exist elsewhere in Georgia. Further, working collaboratively will enable us to combine communications theory with public health research practice.

Relatively little research has been devoted to identifying effective strategies for increasing breast cancer screening rates among black women. Black and white women alike are regularly exposed to health-related messages through the mass media and the work of public agencies and nonprofit organizations. Commonly used health education materials and approaches, however, may be inappropriate for minority populations.

Research examining the efficacy of health promotion message appeals, content, and channels of delivery has likewise been very limited in public health research. Social scientists and health promotions professionals have maintained that if health promotion campaigns are to influence the audience as intended, they must be culturally, demographically, and geographically appropriate. In response, many health educators working with African American populations have simply substituted images of black models for those of white models in printed material, or have restructured health promotion efforts with little attention, if any, to theoretical foundations or guiding principles of health communication formulation.

Finally, research examining the defining variables of cultural sensitivity is also very limited regarding health promotion efforts specifically targeting African American audiences. Culture has been described in numerous ways, often giving the appearance that the concept is difficult to define empirically. For the purposes of this research, we will define culture as a set of interlocking cognitive schemata that construct and give meaning to what people do in their everyday lives. In order to understand how culture works, it is necessary to examine the storage and transmission of information and beliefs shared by a group of people. These strategies are used to guide health seeking behavior and give it meaning to people's lives. Cultural knowledge provides "local logic" by which people make sense of their world and solve their health problems by providing a bounded set of options that motive specific, help-seeking behavior. Finally, cultural knowledge and practices are both reproduced and transformed within specific social environments and are constrained by the economic and political context of a specific group. Given the complexities of everyday life, cultural knowledge and practices are constantly being generated, thus creating shifts in the knowledge that is used for guiding behavior responses to disease, or threat of disease.

PREVIOUS EXPERIENCE

A Morehouse cancer screening project entitled, *Avoidable Mortality from Cancer in Black Populations* (AMCBP) targeted black women in the inner-city. The study sought to determine if an in-home educational intervention conducted by a lay health worker could increase adherence among low-income black women to breast cancer screening schedules as well as increase the women's knowledge and change their attitudes regarding these cancers. The results of the study showed a 2.9% increase in Pap smear screening, and a 34.5% increase in breast screening. AMCBP's study method of educational intervention differs from those in the proposed project (in-home vs. community group); however, the target group is the same, and the proposed study emphasizes culturally appropriateness and is based on a philosophy of empowering low-income black women to help themselves and one another.[1,2]

Through a subcontract with Meharry Medical College in Nashville, Tennessee, the *Cancer Prevention Awareness Program* at Morehouse School of Medicine is currently testing an intervention designed to increase awareness of preventable cancer risk factors among African American Atlantans. The intervention involves a decentralized approach with program staffers regularly visiting 5 health centers, as well as numerous churches, libraries, restaurants, and the Atlanta University Center schools. At each of the health centers, staffers distribute literature on cancer prevention either directly to clients, or in conjunction with the quarterly re-certification process of the Women, Infant, & Children (WIC) Program. Evaluation of this program involves completion of a brief questionnaire assessing whether cancer screening was performed, and whether the client received the cancer prevention literature. At the other locations, program implementation is designed to accommodate the needs and circumstances relative to each site. Stressing the black college as a community resource, the program targets lung, breast, prostate, and colon cancer, risk factors for these cancers including smoking, low fiber/high fat diets, and sedentary lifestyles. The program emphasizes that risk factors involving lifestyle issues are under an individual's control, and it seeks to provide the motivation and specific, culturally appropriate, attainable approaches toward the adoption of healthier lifestyle practices.

The Drew/Meharry/Morehouse Consortium Cancer Center represents a major commitment to cancer research by three of the four minority medical schools in the U.S. The overall objective of the Cancer Center is to mobilize the intellectual and scientific resources into a collaborative research effort aimed at reducing the high cancer rate among blacks. To strengthen this effort, each of the participating institutions has created ongoing relationships with local and regional health agencies and organizations with demonstrated cancer control and related research interests and capabilities. For example, Morehouse enjoys the full cooperation of the Georgia Center for Cancer Statistics at Emory University, the Centers for Disease Control and Prevention, the Georgia Division of Public Health, Fulton County Health Department, and Georgia Division and National Offices of the American Cancer Society, and the National Black Women's Health Project.

Experimental Methods

The three interventions will be structured as three 10-12 minute videotaped presentations targeting 450 African American women residing in three rural communities in Georgia (150/community). Each site will receive one of the three intervention approaches, randomly selected, to be presented within a 60-minute workshop format. Workshops will be coordinated by a community lay health worker at each site. Pre-/post-intervention KAP surveys will be administered. Participants will be provided with breast self-examination information and breast screening referral information. A 12-month follow-up will be conducted. We will provide referral services to ACR-approved sites for study participants.

Community access and participant recruitment will be facilitated through the MSM Health Promotion Resource Center.

Assumptions (Hypothesis)

A culturally appropriate breast health promotion message will motivate increased compliance to recommended cancer screening schedules, and changes in knowledge and attitudes. Affectively positive and negative messages will result in greater change than will affectively neutral, cognitive messages. The relative ordering of the two affective messages is unknown.

This hypothesis incorporates the following sub-hypotheses:

- Knowledge of breast cancer risks and prevention among women aged 45-65 will increase by approximately 30% from baseline to immediate post-test.
- At follow-up, the percentage of women aged 45-65 who have had a clinical breast examination within the past year will increase by at least 20%.
- At follow-up, the percentage of women aged 45-65 who have had a mammogram within the past year will increase by at least 20% and will be at least 50%.

Procedures

The GOAL of the proposed Morehouse School of Medicine Breast Health Intervention Evaluation Study is: To evaluate and determine the relative efficacy of three different approaches to breast health education messages--a fear appeal, an appeal using a positive affect, and an affectively neutral, cognitive appeal--among African American women residing in three rural communities in Georgia. The project will aim:

1. to provide information on breast cancer screening to women in the community and motivate them to seek screening;
2. to increase access to breast cancer screening services;
3. to determine the most effective breast health communications approach (among three under investigation) to use in African American populations.

This proposed work will be achieved by the following procedures/objectives:

OBJECTIVE 1: Develop the culturally appropriate breast health communication tools, lay health worker training materials, and data gathering instruments.

Sub-Objective 1.1: Develop and pre-test a breast health message based on a fear appeal, a message based on an affectively positive appeal, and a message utilizing an affectively neutral cognitive appeal.

Sub-Objective 1.2: Develop and pre-test a lay health worker training curriculum.

Sub-Objective 1.3: Develop/Revise data gathering instruments.

OBJECTIVE 2: Organize each of the three rural intervention communities around the problem of breast cancer.

Sub-Objective 2.1 Define and describe the sociodemographics of each community.

Sub-Objective 2.2 Identify, hire, and train one lay health worker for each community.

Sub-Objective 2.3 Recruit study participants according to established guidelines and selection criteria.

OBJECTIVE 3: Implement the intervention in the three target communities.

Sub-Objective 3.1 Train three community lay health workers.

Sub-Objective 3.2 Provide an intervention to 150 women aged 45-65 in each of the 3 target communities.

Sub-Objective 3.3 Increase access to breast cancer screening services for low-income women in the intervention communities.

OBJECTIVE 4: Evaluate the impact of the comprehensive intervention on breast cancer screening knowledge, attitudes, and practices by measuring these parameters at baseline, and following the intervention.

Sub-Objective 4.1 Through pre- and post-intervention questionnaires, measure changes in breast cancer knowledge, attitudes and practices (including obtaining breast exams and mammograms) among women aged 45-65 in the intervention communities.

Sub-Objective 4.2 Through follow-up data gathered one year post-exposure, measure long term changes in knowledge, attitudes, and actual practices.

Results & Discussion

According to the Statement of Work, Months 13-24 (Year 02) involved the following activities:

Month	
13 - 15	Video Production
16 - 18	Establish relationships with target communities Assess sociodemographics and comparability of communities
19 - 20	Recruit study participants Identify mammography and clinical breast exam sites
21 - 27	Organize and conduct 5-7 workshops in each target community

VIDEO PRODUCTION

In Year 01, the videoscript was completed and appropriately amended following valuable input from two levels of process evaluation: (1) health educators, nurses, physicians, a gerontological researcher, and other faculty members at Morehouse School of Medicine and faculty members and graduate students in GSU Department of Communication, and (2) professionals whose occupations involve breast health promotion and education among African American populations, specifically, the National Black Leadership Initiative on Cancer, BreasTest and More, Emory University Breast Health Program, Bosom Buddies, Inc.

We determined that each viewing condition should be as close to the others in every way possible except in terms of valence (our independent variable). The way we decided to control for this problem was to use the same script for all three viewing conditions. The story line was open-ended so that the viewer is left uncertain about what happens to the main character after she gets her breast cancer screening. This element responds to the focus group finding that a diagnosis of breast cancer seemed to be more frightening than having the disease itself. Differences among the different viewing conditions were accomplished through manipulation of the formal features of the audio and visual channels to convey a positive, neutral, or negative valence. For example, in the positive video condition, warm, glowing lighting should be used and should be accompanied by upbeat, gospel music. In the negative video condition, darker (i.e., more ominous) lighting should be used and should be accompanied by slow, somber music. In the neutral video condition, the lighting should be essentially flat, and music omitted altogether. In this way, valence of the videos can be manipulated while all other aspects of the videos are kept the same.

We were also concerned that manipulation of only the formal features might be too subtle for study participants to discern. Therefore, adhering closely to the finalized videoscript, each key scene was shot three times from differing affective positions. For example, in the positive video condition, the main characters are seen smiling, and appear more upbeat and engaging. The pacing is slightly more brisk. In the negative video condition, a darker, somewhat apprehensive mood pervades the story, and this is exemplified in the way characters deliver their lines and in character interactions (the speeches themselves are identical throughout all three videos).

A key element in the videoscript was the careful and controlled telling of a story, and not merely the recital of breast cancer facts coupled with recommendations for mammographic screening. A story creates numerous opportunities for affective manipulation, dramatic stress, enhanced credibility, and viewer identification and involvement. In our (untitled) story, there are four main characters (all of whom are African American): Ruby, an overweight woman in her last 40's/early 50's who lives with her husband in an unidentified rural community. She is very involved in church and community activities. Ruby's best friend is Mary, a middle-aged women who initially raises the issue of the importance of mammograms, and encourages Ruby (who reluctantly admits to never having had a mammogram) to schedule an appointment. Both Mary and Ruby's husband provide varying degrees of emotional support (strong in the positive condition; weak in the negative condition). Finally Dr. Lee is the physician whom Ruby sees and who administers her mammogram. Dr. Lee also serves as the vehicle for providing factual breast cancer information and screening recommendations. Based on our initial focus group data, important themes present in our video stimuli are: humor, denial, internal struggle regarding the importance of regular screening and the scheduling of an appointment, apprehension about keeping the appointment, curiosity about the procedure, discomfort involved in the procedure, and anticipation (during the subsequent wait) of the results. Each video ends with Ruby receiving a telephone call from Dr. Lee's office to discuss the results of her mammogram. Viewers, however, are not informed or given any indication as to what the results are.

Throughout Months 13-15, Evan Lieberman, the videographer on the GSU Team, took care of the numerous pre-production details that are necessary before a film shoot can begin. These include: development of a detailed video budget and shooting schedule, selection of the film crew (camera, sound, set, props, costumes, etc.), casting, location selection, and the selection and purchase of film stock.

Casting occurred in four separate sessions. One of the challenges of the casting session was to find actors and actresses who would be age and ethnically appropriate (i.e. African American actors/actresses older than 45). The main character, Ruby, and her husband were played by two members of the Screen Actors' Guild who had appeared together as a couple in several previous feature films.

The principal location for the film shoot was Rockdale County, a distant rural suburb of Atlanta. In selecting the location for the home of the main character, Ruby, it was essential to select a locale that would most closely resemble the rural communities in which members of the target audience live. Consequently, we selected a modest white frame house with a large yard including a rustic barn and nearby pasture with a horse in it. Locations for other scenes in the films included a local clinic, a cemetery, and a church.

Shooting for the three films took place in Month 17 (December 20-23, 1997). The shooting process was extremely complex. Each scene had to be shot three times in three different ways. To convey the appropriate tone for each condition, the lighting, set design, set composition, mise-en-scène, camera movement, camera angle, and performance by the actors were all carefully varied and controlled. For example, in the negative condition, the lighting of the sets was darker (especially in Ruby's home), the furniture was covered in cooler color tones, shots of Ruby tended to be taken from a lower camera angle, etc. These changes in set-up both within and between scenes took many more hours to complete than if only one condition had been shot. In one case, shooting took over 20 continuous hours to complete.

Upon completion of the production aspects, the GSU Team contracted with Cinepost of Atlanta to provide the post-production facilities. When the initial contract was signed, an Avid Editing System had been promised for completion of the films. Shortly after editing began, the Cinepost contractor replaced the Avid Editing System with a Windows NT Workstation. Unfortunately, this alternative system was not a satisfactory substitute for the one that had been initially promised to us. Problems with the Windows NT system included: (1) an inability to capture sound and video at high definition levels, (2) improper ordering of the edited sequences, and (3) system-wide crashes of the hard disk. These and other technical problems delayed the post-production editing of the films for several months. Eventually, owing to the contractor's inability to address these problems satisfactorily, we were forced to move post-production to another company, Cats Eye Productions. Monies paid to Cinepost were not recoverable. Because Evan Lieberman is an established filmmaker in Atlanta, we were able to obtain a substantial discount from Cats Eye for completion of the editing. Thus, the GSU Team was able to stay within the overall GSU budget for Year 02. Rough cuts of the films were delivered to the MSM Team on June 30, 1998.

Pending completion of the final versions of the video stimuli, informal pre-testing was conducted among age/gender/race appropriate faculty and staffers at both MSM and GSU. Surveys were developed and are included in the Appendix of this report. Participants were asked to view all three videos (designated A, B, & C) and to complete the same survey after viewing each video. Finally, participants were asked to avoid as much as possible the tendency to make comparisons between and among the videos (since the study participants will view only one of the three). Preliminary

results from this activity are very encouraging. All pre-test participants were able to correctly identify the affective position of each of the videos, and all were engaged by the story, and all felt that from a cultural perspective, the portrayals were sensitive, accurate and credible.

At the current time, final versions of the video stimuli are projected to be completed in Month 26.

ESTABLISH RELATIONSHIPS WITH TARGET COMMUNITIES
ASSESS SOCIODEMOGRAPHICS AND COMPARABILITY OF COMMUNITIES

As indicated last year, establishment of relationships with target communities and assessment of sociodemographics and comparability of communities occurred earlier than projected, i.e., in Months 13 and 14 instead of 16 through 18. The recruitment and hiring of the community lay health workers provided an excellent opportunity to establish strong and positive relationships, a key element to community-based research in rural, African American communities.

RECRUIT STUDY PARTICIPANTS
IDENTIFY MAMMOGRAPHY AND CLINICAL BREAST EXAM SITES

Because of the delays in video production, we have not yet attempted to formally recruit study participants in any of the three target sites. We have, however, identified several low-cost or no-cost mammography and clinical breast exam sites in the target areas by utilizing the knowledge and involvement of the community lay health workers.

ORGANIZE AND CONDUCT 5-7 WORKSHOPS IN EACH TARGET COMMUNITY

Originally the implementation phase of the Study was projected to occur during Months 21-27. Because of delays in video production, we now project that the implementation phase will occur during Months 27-29. The relationships that we have established with the target communities, local gatekeepers, and with our community lay health workers will enable us to reduce the time needed to complete this activity from 7 months to 3 months. Community cultivation has already been accomplished and workshop sites secured.

OTHER ACCOMPLISHMENTS

In the Progress Report for Year 01, the following activities were reported as unfinished.

PRE-TESTING OF MESSAGES

As reported above, we have been able to conduct an informal pre-test of the rough cuts of the videos among faculty and staffers at MSM and GSU. While data from this pre-test has been has been very helpful and encouraging, we feel that a pilot test among groups demographically matched to the target population should be carried out. We will utilize our contacts with the Older American Council of Middle Georgia, an African American community-based organization providing a variety of health services (including home health care, Meals-on-Wheels, etc.) to 13 rural counties. This organization was very helpful in assisting us with the organization of the focus groups in Year 01. While we had originally planned to carry out this activity using representative video clips, production delays precluded this approach. Therefore, we will organize three groups, each viewing one of the videos, to ensure that viewers demographically matched to the target population will be able to understand the message, and to identify the affective valences. At the current time, this activity is projected to occur in or near Month 26.

LAY HEALTH WORKER TRAINING CURRICULUM & PROCEDURES MANUAL

We initially experienced some difficulties in the development of a training curriculum and procedures manual in terms of accessing the materials that were needed to formulate these documents. This work has now been completed using elements from (1) *Do the Right Thing...The Right Way*, a user's guide for community programs on mammography screening and education developed by The National Project Awareness℠ Partnership, the National Cancer Institute, DeBor and Associates, Inc., Birch & Davis Associates, Inc., Prospect Associates, Inc., (2) *BreasTest & MORE* developed by the Georgia Department of Human Resources, Division of Public Health, Cancer Control Section, and (3) *The Heart of a Healthy Life*, a cardiovascular health education program for people over 50 developed by the American Association of Retired Persons and the American Heart Association. All of these materials provide a basic, tested guide to effective health education. To this, we added elements relative to health communication issues, e.g., workshop leaders will be sensitized to the possible confounding nature of incidental affective remarks, and presentation methods that support or undermine the videotaped message.

RECRUIT, HIRE, & TRAIN COMMUNITY LAY HEALTH WORKER

The process of recruitment, hiring, and training of the community lay health workers was slightly impacted by the decision to devote greater time and more intense effort to the development of the structural components of the videotaped messages. Originally, we expected to recruit, hire, and train the community lay health workers in the second half of Year 01. After some consideration, we decided to delay this activity until the beginning of Year 02. Recruitment and hiring of these individuals has been accomplished, and they have been involved with identification of mammogram sites pending completion of the video stimuli. The three community lay health workers have been hired on a temporary, hourly basis, and have submitted timesheets only for the time expended in regard to the work assigned. Since completion of the videos is now imminent, we are planning the training session which is now projected to occur in Month 26.

SURVEY QUESTIONNAIRE ASSESSMENT & MODIFICATIONS
PRE-TESTING OF QUESTIONNAIRE

While the modifications to the survey questionnaire were completed in Year 01, items measuring some communicational attributes were provided by the GSU Team in Year 02. Pre-testing of the questionnaire will be carried out simultaneously with the pilot test of the videos.

Recommendations in Relation to the Statement of Work

Inasmuch as the development of the script for the videotaped stimuli was of key importance to the successful conduct of this study, we elected to devote more time to the developmental aspects of the stimuli. This slightly changed the timeline for the study since it was originally intended to develop three scripts and shoot three videos exemplifying the three different emotional valences under investigation. Given our decision to manipulate the cues and heuristic elements of the videotaped stimuli (as discussed above) only one script was developed, but three videos were shot. The emotional valence codes were manipulated during the shooting as well as the post-production phases of video development. This approach has enabled control of a wider variety of cognitive and

affective variables and has resulted is a more sharply focused message, and intervention components of greater and more accurate comparability.

The delays encountered in the video production have impacted all subsequent activities in the Study. We now project that pilot testing of the videos will occur in Month 26, and the implementation phase (recruitment of study participants, and conduct of the workshops) will occur in Months 27-29, thus putting the Study two months behind schedule.

While the production delays have affected the Study's timeline, we were able to avoid cost overruns frequently associated with video production. Along related lines, recruitment and hiring of the community lay health workers occurred in Month 13 and 14. This approach has enabled us to save Year 01 funds originally allocated for lay health worker salaries against the expectation that more hours will be required than originally projected at 10 hours/week. Further, since we are behind schedule with regard to the implementation phase, much of the Year 02 allocation for lay health worker salaries has also been unexpended.

In terms of Year 03 activities, we anticipate that the implementation activities will be completed by Month 29 at the latest, and evaluation of data gathered in the workshops will be carried out in Months 30-31. However, the delay in the initiation of the implementation phase will have an impact on the follow-up activities since these activities cannot occur sooner than 12 months post intervention. Therefore, follow-up activities cannot begin prior to Month 39--three months after the proposed termination of the Study. In view of this, we will request a 12-month, no-cost extension in order to complete the follow-up, analyze these data, and prepare reports of the Study's findings and outcomes.

Conclusions

The most crucial component of the BRIE Study--the videotaped stimuli--has been virtually completed. Informal pre-testing has yielded positive and encouraging results. Three excellent community lay health workers (all with community-based health promotion experience) have been identified and hired. Community liaisons have been established with regard to the logistics of workshop conduct, and appropriate venues have been secured. The survey materials have been completed except for pre-testing and final refinements.

While the unforeseen delays in video production have impacted the implementation and follow-up phases of the Study, careful and conservative management of the Study's financial resources thus far will support a no-cost extension of the Study to enable successful completion of follow-up activities, data analysis, and report preparation.

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A

	Very positive	Mostly positive	Somewhat positive	Neither positive or negative	Somewhat negative	Mostly negative	Very negative
How did the video make you *feel* about the importance of screening and early detection of breast cancer?	1	2	3	4	5	6	7
How did the video make you *feel* about getting a mammogram?	1	2	3	4	5	6	7
How did you *feel* about the characters?	1	2	3	4	5	6	7
How did you *feel* about the story?	1	2	3	4	5	6	7
How would you rate the overall tone of the video?	1	2	3	4	5	6	7

Rank the following elements that contributed to your opinion in order of importance to you.
1 = most important

_____ Music
_____ Actor statements
_____ Actor attitudes
_____ Scenery
_____ Story

Did anyone in the video remind you of someone you know? Y N

Put a check (✓) next to the character you liked best, and an X next to the character you liked least.

Ruby Mary Husband Dr. Lee

What do you think the Ruby's mammography results are? Positive Negative Don't Know

B

	Very positive	Mostly positive	Somewhat positive	Neither positive or negative	Somewhat negative	Mostly negative	Very negative
How did the video make you *feel* about the importance of screening and early detection of breast cancer?	1	2	3	4	5	6	7
How did the video make you *feel* about getting a mammogram?	1	2	3	4	5	6	7
How did you *feel* about the characters?	1	2	3	4	5	6	7
How did you *feel* about the story?	1	2	3	4	5	6	7
How would you rate the overall tone of the video?	1	2	3	4	5	6	7

Rank the following elements that contributed to your opinion in order of importance to you.
1 = most important

_____ Music
_____ Actor statements
_____ Actor attitudes
_____ Scenery
_____ Story

Did anyone in the video remind you of someone you know? Y N

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Ruby Mary Husband Dr. Lee

What do you think the Ruby's mammography results are? Positive Negative Don't Know

C

	Very positive	Mostly positive	Somewhat positive	Neither positive or negative	Somewhat negative	Mostly negative	Very negative
How did the video make you *feel* about the importance of screening and early detection of breast cancer?	1	2	3	4	5	6	7
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How would you rate the overall tone of the video?	1	2	3	4	5	6	7

Rank the following elements that contributed to your opinion in order of importance to you.
1 = most important

_____ Music
_____ Actor statements
_____ Actor attitudes
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