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## The effects of educational intervention on the myths surrounding Alzheimer's disease

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THE EFFECTS OF EDUCATIONAL INTERVENTION  
ON THE MYTHS SURROUNDING ALZHEIMER'S DISEASE

by

Penelope Hallman

A thesis submitted in partial fulfillment  
of the requirements for the degree of

Master of Arts

in

Psychology

Department of Psychology

University of Nevada, Las Vegas

May, 1990

The thesis of Penelope Grace Hallman for the degree of Master of Arts in Psychology is approved.



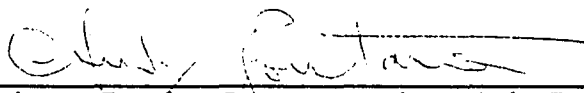
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### Abstract

Alzheimer's Disease affects millions of Americans and remains the most common form of dementia in the elderly. Due to its evasive origin, myths about the disease have arisen within the general population, creating the need for increased public exposure to the accurate information currently known about Alzheimer's. Toward this end, 58 undergraduates participated in an investigation aimed at examining the amount of accurate information obtained through the use of an educational video about Alzheimer's disease. Results indicate that previous interest in the topic of aging was not a significant factor in the amount of information subjects' possessed about Alzheimer's disease. Furthermore, viewing the video significantly increased the subjects' knowledge base about the facts of the disease. In addition, the knowledge gains evidenced by video viewers were retained over a time period of one month. The results and implications for future research are discussed.

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Penelope Hallman

## Introduction

Currently, Alzheimer's disease affects millions of adults in America. It usually claims its victims from the elderly population. Although persons over the age of 65 are the most commonly afflicted, cases have been documented in individuals in their 40's and 50's (American Association of Retired Persons, 1986).

Alzheimer's disease is a degenerative illness that destroys the individual both mentally and physically. Victims show symptoms such as memory loss, changes in personality and difficulties with language (Thorton, Davies & Tinklenberg, 1986). It literally destroys the brain and thereby attacks the physical functioning of the individual.

The origin of Alzheimer's disease is not known. Research indicates an association between the disease and abnormal protein structures in the brain, as a possible cause of the disorder. Other possible causes such as aluminum deposits and neurotransmitter breakdown, have also been indicated (Katzman, 1986), but none of the findings are conclusive.

Due to its increasing occurrence and still evasive nature, Alzheimer's disease has been the subject for which

many misconceptions have arisen. Myths circulating in the general public have indicated the need for increased awareness of the facts of the disease. Efforts to educate individuals about the disease needs to be examined as a means to dispell existing misconceptions.

The present study explores the usefulness of an educational intervention, in the efforts to eliminate myths surrounding Alzheimer's disease. Acquisition and retention of accurate information about the disease is the primary focus of the research endeavors. The investigation also examines previous interest in the aging process, as a possible influence on the individual's level of awareness of the disease. Results are discussed in terms of their implications for other educational interventions.

The Effects of Educational Intervention on  
the Myths Surrounding Alzheimer's Disease

Since its initial discovery in 1907, Alzheimer's disease has become what is now being called the disease of the century. It is estimated that 2.5 million Americans now suffer from the disease. Furthermore, Rickards, Zuckerman and West (1985) report that the incidence of Alzheimer's disease will increase at a substantial rate as the number of older persons in the national population increases.

The disease usually strikes individuals over the age of 65, although some individuals have developed the disease in their 40's and 50's. Currently, Alzheimer's claims 100,000 lives annually, making it the fourth leading cause of death in adults (Katzman & Karasu, 1975).

In response to such dramatic statistics, the past few years have seen a much more intensified commitment to research efforts aimed at understanding the various dimensions of Alzheimer's. Research has yet to uncover the origin of this devastating disease, although many clues continue to surface. The following review of the literature will present the latest information known about Alzheimer's,

as well as the myths and misconceptions that surround the disease.

### The Facts

Alzheimer's disease is a progressive, degenerative disease that attacks the brain, leaving its victim with impairments in memory, thinking, and behavior (McBroom, 1987). It is the most common form of dementia (i.e., a deterioration in mental performance) in the elderly. Powell (1985) states that 5 to 10 percent of the population over 65 years of age and 10 to 20 percent over 85 are affected by Alzheimer's disease. These victims all experience similar symptoms but rate of deterioration varies from person to person. These symptoms along with the possible cause of Alzheimer's disease will now be addressed. In addition, diagnostic procedures will be discussed.

Symptoms. Alzheimer's disease follows a relatively predictable course of progressive stages of deterioration, lasting anywhere from 3 to 20 years (Heckler, 1985). Thornton et al. (1986) state that common symptoms seen in Alzheimer's patients, at any point during the course of the disease, are changes in personality and mood, memory loss, and general intellectual decline. According to the Reisberg

(1983), the initial symptoms may be manifested by changes in the person's ability to learn, problems with communication, and difficulties with memories of recent events. The ASC further reports that individuals with more advanced cases of Alzheimer's exhibit symptoms of extreme language and communication difficulties, a moderate to severe decline in intellectual abilities, and increased disorientation to time and place. In the final stages of the disease, the Alzheimer's victim is apathetic, does not recognize others, has lost the ability to communicate and can no longer care for themselves. Although the gradual loss of functions and abilities is inevitable, the rate of deterioration varies from person to person. Nevertheless, death is ultimately the final result.

Cause. At present, the cause of Alzheimer's disease is not known. Several possibilities have been highlighted through research in this area. One such possibility is a genetic basis for the disease. Wurtman (1985) cites that families have been identified where ten or more members, spanning four to five generations, have all developed Alzheimer's. These cases indicate that a gene that affects both males and females equally, and need only be transmitted

by one parent, may be responsible for Alzheimer's disease. Ferrini (1989) states that inheritance clearly plays a role in about 10 to 15 percent of all cases of Alzheimer's, and the children of these victims carry a 50 percent chance of developing Alzheimer's themselves. In accord, Powell (1985) cites that the relatives of Alzheimer's victims are four times more likely to develop the disease than are individuals in the general population.

All in all, current estimates indicate that genetics seem to play some role in a number of cases of Alzheimer's disease. Breitner (1988) reports that genetic factors may be a powerful determinant of Alzheimer's disease. The possibility of a genetic link is further supported by the connection exhibited between Down's syndrome and Alzheimer's disease. Small and Greenberg (1988) report that nearly all people with Down's syndrome, who live beyond 30 years of age, show neurological changes identical to those that occur in Alzheimer's victims. It is with this in mind that Bell (1987) states that the only way to confirm a genetic link is by finding the gene responsible for the disease. In response, research efforts have turned in this direction, in hopes of making such an identification. The observation of

an association between Down's and Alzheimer's lead researchers to an examination of chromosome number 21 (abnormality in Down's syndrome) as the gene responsible for Alzheimer's disease. Although confirmation of this and any other genetic link remains tentative newly conducted research has lent further support for a genetic connection (New York Times, April, 1990).

Another possible cause of Alzheimer's could be the abnormal protein structures found in the brains of Alzheimer's victims. According to Wurtman (1985), these structures are the neurofibrillary tangles within the neurons, the amyloid-rich plaques, and the amyloid substance that surrounds and invades the cerebral blood vessels. All of these structures represent an accumulation of protein not usually found in the brain.

Neurofibrillary tangles (i.e., bundles of fibrous proteins) were first discovered by Alois Alzheimer in 1907 and deemed a hallmark of the disease (Katzman, 1986). They are fibrous masses within the neuron that distort the shape of the cell body. Lying outside the nerve cells in the brain are formations called plaques (i.e., patches of dying nerve fibers) that are clustered around a material known as

amyloid (Kent, 1983). These structures are most abundant in the cerebral cortex and hippocampus. The hippocampus is of primary importance because it is the key area in the brain that deals with the processing of new information and possibly the storage of information. The presence of these plaques, as well as the neurofibrillary tangles are telltale signs of Alzheimer's, although their identification does not indicate whether they cause or are the result of the disease process.

Finally, an abundance of amyloid in the brains of Alzheimer's victims is the third major sign of the disease. According to Wurtman (1985), amyloid deposits are the most common finding in research examining Alzheimer's diseased brains. He cites a major study out of the University of California at San Diego, conducted by George Glenner, that found amyloid deposits in abundance in 92 percent of the Alzheimer's diseased brains. This was in comparison to normal brains that do not exhibit vast amounts of amyloid. The substance collects on the walls of the blood vessels in the brain, sometimes taking over the walls completely. This in turn can lead to a weakening of the vessel and subsequent hemorrhages in the brain. Wurtman further emphasizes that

theories continue to be generated about the connection between the presence of amyloid and Alzheimer's disease, but once again, concrete evidence has not emerged.

In addition to the possible genetic link and the role of abnormal protein structures in the brain, research has investigated the possible connection between Alzheimer's and the breakdown in the production of the neurotransmitter acetylcholine. Katzman (1986) states that there is a 40 to 90 percent decrease in the enzyme choline acetyltransferase (i.e., an enzyme that prompts cells to make acetylcholine) in the cerebral cortex and hippocampus in the brains of Alzheimer's patients. According to Kent (1983) the degree of deficiency of this neurotransmitter in the brain corresponds directly to the degree of dementia evidenced. Upon closer examination, what is seen is that the cells that are responsible for production of acetylcholine show the hallmarks of Alzheimer's disease that is, the neurofibrillary tangles and plaques. What remains a mystery here is not the fact that abnormalities are occurring in the cells but why these cells are being damaged in the first place.

Attention in Alzheimer's research has also focused on the possible relationship between Alzheimer's disease and environmental toxins. Most of the investigations have centered on the role of aluminum in the brain. The inconsistent findings that have resulted in research concerning the possible association between Alzheimer's and aluminum deposits, have proven to promote a questionable connection between the metal and disease. First, although aluminum deposits were clearly identified in the brains of Alzheimer's patients by Henderson (1988), Katzman (1986) emphasizes that the concentration of aluminum in the human brain increases as a part of the normal aging process. Wurtman (1985) states that aluminum has been associated with the neurofibrillary tangles, yet this connection may be nothing more than an affinity for the metal, once the tangles were formed. Furthermore, a study conducted by McLachlan (1986) indicated that although there appears to be an association between aluminum and Alzheimer's disease, the evidence of the toxic effects of aluminum do not support an etiological role for aluminum in Alzheimer's disease.

Overall then, research on Alzheimer's disease has yet to identify a definite cause for the disease. Several

scientific endeavors have lead to some possible influences such as a genetic link, the role of abnormal protein structures, aluminum deposits, and the breakdown in production of a neurotransmitter, but nothing has been confirmed to date. This in turn, also makes diagnosis of the disease a complicated and elaborate process.

Diagnosis. Currently, there is no single diagnostic test available to ascertain the presence of Alzheimer's disease. Until recently, diagnosis could only be confirmed through brain biopsy or by autopsy. Presently, Positron Emission Tomography (PET) has been implemented in Alzheimer's identification, but use of such equipment is hindered by its limited availability (Friedland, Budinger, Brant-Zawadzki, & Jagust, 1984). Additionally, accurate diagnosis is confounded by the fact that the symptoms common in Alzheimer's, may be due to other conditions such as thyroid abnormalities, anemia, and vitamin B-12 deficiencies (Schneider & Emr, 1985). Furthermore, Alzheimer's disease has also been confused with psychological conditions such as depression and environmental conditions such as drug toxicity. However, over the past few years, the ability to diagnose Alzheimer's accurately has improved from a 10 to 50

percent error rate to a 90 percent assurance of accuracy (Katzman, 1986).

The diagnosis process consists of first eliminating other possibilities of illness. Once this information has been obtained, the suspected victim needs to undergo a thorough physical, neurological, and psychiatric evaluation. Based upon this comprehensive assessment, a proper diagnosis of Alzheimer's disease can usually be made.

Overall then, several questions about Alzheimer's disease still prevail. First, the cause of disease remains a mystery. Research has indicated a possible genetic link, an association with abnormal protein structures, and neurotransmitter difficulties. Secondly, with such uncertainty, diagnosis is very difficult. Although accuracy of diagnosis has improved, with so many variables missing, diagnosis can still only be confirmed after death or by brain biopsy. This state of uncertainty has led to the rise of misconceptions about Alzheimer's disease. With continued research efforts, perhaps answers to the questions surrounding the disease will help eliminate the misunderstandings currently present in the general population.

### The Myths

Misconceptions about Alzheimer's disease have arisen in the general public, most likely due to the many unanswered questions about the disease that still prevail.

Accordingly, one such myth is the belief that Alzheimer's disease is just part of the natural course of aging. The Alzheimer's Society of Canada (ASC) (1987) reports that if this were true, then all old people would exhibit severe memory loss, great physical immobility, and extreme intellectual impairment. Also, Alzheimer's has been known to affect individuals in their 40's and 50's, which is clearly well before the onset of old age.

Two other common misconceptions about Alzheimer's disease are that the disease is curable and that it is contagious. Research to date has not discovered the cause of Alzheimer's, so a cure is also unknown. If a definite cause were found, then a specific means to combat the disease might also be discovered. And secondly, research in this area has not found Alzheimer's to be a contagious disease, although some research has indicated support for the theory that Alzheimer's is generated by means of a slow-acting virus (Kent, 1983).

In addition, many people believe that Alzheimer's disease is the result of hardening of the arteries. Kent (1983) states that hardening of the arteries was once used as the "catch-all" explanation for symptoms of senile dementia, therefore many people simply assumed it was the cause of Alzheimer's disease. Similarly, Shalat, Seltzer, Pidcock and Baker (1987) state that tumors and blows to the head are also not responsible for the symptoms of Alzheimer's. This misconception arose from the similarity in symptoms between Alzheimer's disease and symptoms present after injuries to or discovery of tumors in the head.

Another common myth circulating in the public realm is that declining mental ability is due to laziness (i.e., individuals not using their brains). The truth is that the physical changes that occur in the brain of an Alzheimer's victim are responsible for the intellectual decline and memory loss that results. It is not the case that intellectual decline due to lack of use causes Alzheimer's disease.

Finally, other myths about Alzheimer's emerge in beliefs about the victims. One popular view is that victims of the disease do not suffer from the condition

because they are unaware of what is happening to them as the disease progresses. ASC (1987) reports that contrary to this belief, research seems to indicate that the victims of Alzheimer's do realize that something is wrong and in fact, may realize it long before anyone else notices a persistent change in the individual.

These myths, although dispelled by research findings, still exist in the general public today. The misconceptions continue to thrive due to the public's limited awareness about the facts of the disease. With this in mind, the present investigation was aimed at assessing the level of awareness individuals possess about Alzheimer's, as well as, examining the effectiveness of an audio-visual aid, as a tool for increasing the level of awareness of the audience about the disease.

#### The Current Study

The present study was an attempt to assess the level of awareness possessed by college students about Alzheimer's disease. Its aim was to determine whether an educational video on Alzheimer's would be an effective means of educating individuals about the facts of the disease. Increases in subjects' knowledge of the disease, as well as

the retention of that information, were the measures by which video effectiveness was examined.

Additionally, the investigation examined the possible influence subjects' previous interest in the topic of aging might have on the effectiveness of the video, and on increasing the amount of accurate information possessed by the subjects. For such an inquiry, subjects enrolled in two college level aging courses were compared to subjects in two non-aging courses, thus controlling for the variable in question. This design allowed for the examination of whether the effectiveness of the video presentation could be attributed to the subjects' previous interest or possession of knowledge about the disease, prior to the onset of the study. Furthermore, a measure of knowledge retention was implemented to determine whether previous interest and/or enrollment in an aging course might account for more retention of information over time.

In the present study then, it was predicted that individuals who viewed the video would, regardless of previous interest in the aging process, exhibit more knowledge about Alzheimer's in comparison to the subjects who did not view the video. Furthermore, any gains in amount of

knowledge acquired by video viewers would be retained over time, in spite of the subjects' previous interest in the aging process.

## Method

### Subjects

Fifty-eight subjects were recruited from two aging and two non-aging courses at the University of Nevada, Las Vegas. As indicated in Table 1, 23 subjects were enrolled in aging course (13 in Biology of Aging; 10 in Psychology of Aging). The remaining 35 subjects were enrolled in non-aging courses (23 in Methodology; 12 in Ethnic Studies). The total sample consisted of 34 females and 24 males ranging in age from 18 to 60. Furthermore, of the 58 sampled, 15 indicated knowing someone with Alzheimer's disease.

Table 1

Distribution of Subjects by Gender and Enrollment in the  
Aging or Non-Aging courses

Type of course	Gender	
	Male	Female
Aging classes:		
Psychology of Aging	5	5
Biology of Aging	4	9
Non-Aging classes:		
Methodology	10	13
Ethnic Studies	5	7

Materials

The Questionnaire. For the purpose of determining each subject's level of awareness about Alzheimer's, 25 true-false statements were assembled and distributed to all participants (see Appendix). Half of the test items were developed from materials provided by the Las Vegas branch of the Alzheimer's Disease and Related Disorders Association

(i.e., pamphlets, booklets, and information packets). The remaining test items were taken from the video "Alzheimer's Disease: Coping with Confusion". Three versions of the same questionnaire were used. The only difference in versions was the order of presentation of the items.

The Video. "Alzheimer's Disease: Coping with Confusion" is a 29 minute video distributed by the American Journal of Nursing (1985). It presents a comprehensive analysis of the information about Alzheimer's that has been compiled through extensive research efforts. The video highlights the possible causes, the identifiable symptoms, and the documented stages of deterioration (i.e., physical and mental) of the disease. It not only covers the information evidenced through data analysis but also the dimensions of the disease that still elude researchers today.

#### Procedures

All subjects first received a consent form and a demographic data sheet to be completed prior to participation in the study. The experimenter emphasized the confidentiality of subjects' responses as well as the

subjects' option to withdraw from participation at any time during the course of the study.

After signing the consent form and completing the personal data sheet, subjects in all four classes were asked to complete the Alzheimer's questionnaire (Q1) during a regularly scheduled class period. The average time taken to complete the questionnaire was approximately 10 minutes. The subjects in one aging and one non-aging class were asked to view the Alzheimer's video. After completing the questionnaire, the subjects in the no-video condition (i.e., one aging class and one non-aging class) returned to their regularly scheduled classroom activity. One class period later (i.e., two days), subjects in all four classes were given a randomized version of the original Alzheimer's questionnaire (Q2).

One month later, all participants were again given another version of the same Alzheimer's questionnaire (Q3). The resulting 2 (type of class - aging vs non-aging) by 2 (condition - video vs no-video) by 3 (time of test - session 1 vs session 2 vs session 3) mixed factorial design is shown in Table 2. After completing the questionnaire the third and final time, subjects were thanked for their

participation and were provided an answer sheet detailing the correct responses to each item included on the questionnaire.

Table 2

The 2 x 2 x 3 Mixed Factorial Design

Condition	Session Number		
	Session 1	Session 2 <sup>a</sup>	Session 3 <sup>b</sup>
Video:			
Aging	Q1 - video	Q2	Q3
Non-Aging	Q1 - video	Q2	Q3
No Video:			
Aging	Q1	Q2	Q3
Non-Aging	Q1	Q2	Q3

a session 2 was conducted 2 days after session 1

b session 3 was conducted 30 days after session 2

### Results

Means and standard deviations of questionnaire scores for subjects by type of class, viewing condition and session are shown in Table 3. Questionnaire scores were analyzed using a 2 x 2 x 3 mixed analysis of variance and post hoc tests using Tukey's HSD test. The between subject variables were type of class (aging vs non-aging) and viewing condition (video vs no video). The repeated measure was session (1 vs 2 vs 3).

Table 3

Means and Standard Deviations for Questionnaire Scores by  
Condition and Test Session

Condition	Session 1		Session 2		Session 3	
	Mean	SD	Mean	SD	Mean	SD
Video						
Aging	18.36	3.11	19.82	2.27	20.27	2.83
Non-Aging	17.14	3.08	19.36	2.17	19.18	2.44
No Video						
Aging	17.54	3.07	17.08	3.68	17.00	2.80
Non-Aging	16.17	4.11	16.67	3.14	15.67	3.50

Results of the analysis of variance indicated that the main effect for type of class was not significant ( $F(1,54) = 1.86, p > .05$ ). Subjects in the aging classes did not have more knowledge of Alzheimer's disease than subjects in the non-aging classes. Furthermore, type of class did not interact with either the viewing variable ( $F(1,54) = 0.01, p > .05$ ) or the session variable

( $F(2,108) = 1.03, p > .05$ ). Thus, students in the aging classes were similar to students in the non-aging classes in terms of how much they knew about Alzheimer's before starting the experiment, how much they learned from the video, and how much information they retained after one month. Consequently, the remaining analyses were done on data collapsed across type of class.

The analysis also resulted in a significant main effect for viewing ( $F(1,54) = 10.57, p < .05$ ); video viewers exhibited more knowledge about Alzheimer's than subjects in the no-video condition. Additionally, the main effect for the repeated measure of session was significant ( $F(2,108) = 4.33, p < .05$ ). The means for the three sessions collapsed across the video and aging conditions were 17.25 for session 1, 18.37 for session 2, and 18.17 for session 3. Recall that session 1 data was collected on the first day, session 2 data was collected two days later, and session 3 data was collected approximately one month later. Post hoc analyses of the mean knowledge of Alzheimer's scores indicated that only the difference between sessions 1 and 2 were significant ( $HSD_{.05} = 0.99$ ). Thus, knowledge about Alzheimer's disease increased between the first time the

questionnaire was taken and the second, but not between the second and third sessions. These results however, need to be interpreted in light of the significant viewing condition (video vs no-video) by session interaction ( $F(2,108) = 7.54, p < .05$ ). The means for the relevant conditions are shown in Table 4. Post hoc analyses indicated that the main effect of session was due entirely to an increase in scores by those subjects who viewed the video. No such increase was found for non-video viewers ( $HSD_{.05} = 1.33$ ). The post hoc analyses indicated an absence of gains in knowledge due to test-retest, history, and maturation as can be seen by the failure to find significant differences in the mean knowledge of Alzheimer's scores for the non-video group across sessions 1, 2, and 3.

Table 4

Means of Questionnaire Scores for Subjects in the Video and Non-Video Conditions by Session Collapsed across Type of Class

Condition	Session Number		
	1	2	3
Video	17.55	19.52	19.54
No-Video	16.88	16.88	16.36

The post hoc analyses also indicated that selection bias due to the self selection of people, the aging and non-aging groups, and the arbitrary assignment of subjects to the video and non-video condition were not evident. No differences in pre-video knowledge scores existed across either type of class or viewing condition. Furthermore, the knowledge gained from session 1 to session 2 was not lost by session 3 for those subjects who viewed the video.

Finally, the type of class by viewing and by session interaction was not significant ( $F(2,108) = .02$ ,

$p > .05$ ). Aging students and non-aging students benefited equally by the presentation of the information contained in the video and retained the gains in knowledge through to the final session.

### Discussion

The purpose of this study was to examine the acquisition of accurate information about Alzheimer's disease through the use of an educational intervention. More specifically, the main hypothesis tested was whether an educational video would significantly increase the subjects' knowledge base about Alzheimer's disease, thereby dispelling any myths previously held by subjects in the study. In addition, retention of knowledge over time and previous interest or exposure to information about the aging process were also examined. The following predictions were offered:

- 1) subjects in the aging classes would not differ significantly from subjects in the non-aging classes, in terms of amount of knowledge possessed about Alzheimer's.
- 2) subjects who viewed the video would show evidence indicating an increase in knowledge about Alzheimer's.
- 3) the retention of knowledge about Alzheimer's for viewers of the video, would be demonstrated in the analysis of information attainment over time.

The results indicate that subjects in the aging classes did not differ significantly from subjects in the non-aging classes in terms of amount of knowledge possessed about the disease. Prior to video presentation, subjects in the aging classes did not exhibit more knowledge about Alzheimer's disease than subjects in the non-aging classes. Furthermore, type of class (i.e., aging vs non-aging) did not significantly influence gains in knowledge or retention of knowledge in subjects, after video presentation. These results suggest that previous interest or exposure to information about the aging process (i.e., enrollment in an aging course) was not a significant variable in the amount of knowledge possessed, gained, or retained by the subjects, throughout the course of the study.

Analysis of the second hypothesis indicates that subjects in the video condition had higher scores on the Alzheimer's questionnaire than subjects who did not view the Alzheimer's video. In other words, subjects who viewed the video exhibited more knowledge about Alzheimer's than non-video viewers.

Scores on the questionnaire by video viewers significantly increased from session 1 (i.e., prior to video

presentation) to session 2 (i.e., 2 days after video viewing). The same increase between session 1 and session 2 was not seen in scores for non-video viewers. These results suggest that the Alzheimer's video was an effective tool for increasing the amount of knowledge held by subjects about Alzheimer's disease.

Additionally, results indicate that gains in knowledge exhibited by video viewers were retained over time. Questionnaire scores for session 3 (i.e., one month after video viewing) indicated that initial increases in accurate information attainment were present at the final administration of the Alzheimer's questionnaire. So gains in knowledge about Alzheimer's for video viewers were not lost as a result of the passage of time.

These results suggest that educational interventions such as the Alzheimer's video, may be a powerful tool for educators to employ in their efforts to increase the acquisition and retention of accurate information about a particular topic. The present study showed that video viewers not only exhibited an increase in amount of knowledge of Alzheimer's disease but that these gains were retained over the course of the semester. This fact further

emphasizes the potential effectiveness that educational interventions may have on attempts to promote audience awareness and secure long term retention of the information presented. These findings suggest that interventions such as the Alzheimer's video may be instrumental in other public awareness programs. For example, water conservation programs could benefit from an educational intervention that exposes individuals to the facts about the shortage of water, as well as ways to help promote water conservation.

Another environmental issue that might benefit from the use of educational videos is the problem of trash disposal. The general public's level of awareness of this problem could greatly increase with exposure to the present conditions of our environment. For instance, a video illustrating ways to relieve our overloaded landfills (i.e., by using recyclable products) could prove to be very effective in heightening the public's awareness of the existing conditions. The findings in the present study suggest that exposure to such an intervention could lead to increased knowledge about a particular subject, as well as continued retention of the newly acquired information.

Another area that may benefit from such an educational intervention would be programs dealing with AIDS. Efforts to increase public awareness about AIDS could benefit from the implementation of a similarly developed educational tool that targets the characteristics of its audience such as the age of the viewers. Questions about AIDS circulate in the general public, and without answers, myths and misconceptions arise. An educational video designed to expose the audience to the reality of AIDS may prove to be instrumental in the attempt to disseminate accurate information about AIDS throughout the American population.

Additionally, suggestions for future research should be directed at examining the influence of other variables not addressed in the present study. One suggestion might be to investigate whether exposure to people with Alzheimer's disease might influence the amount of knowledge initially demonstrated or thereafter attained by the audience, in a similar video vs no-video condition. Previous exposure to persons with Alzheimer's disease could play a significant role in increasing an individual's efforts to seek out information about the disease. Such efforts could in turn,

lead to increases in myth dispelling knowledge about the disease.

Besides previous exposure to victims of Alzheimer's, another variable that might deserve attention is the influence the age of subjects might have on the exhibition of knowledge about Alzheimer's disease. Perhaps older individuals may be more aware of Alzheimer's due to its increased occurrence in the older population and the increased probability that they have been exposed to someone with the disease.

Moreover, suggestions for future research are often times born out of the limitations, as well as the findings of a research investigation. Accordingly, one limitation of the present study was its relatively small sample size. The initial sample population was much larger, but several subjects were eliminated based on incomplete participation, due to inconsistent class attendance at the times of questionnaire administration. Future studies should be designed to accommodate the potential attrition by acquiring a very large sample at the onset of the investigation. In addition, thorough attempts should be made to encourage full

participation in the study, so reduction in sample size may be minimal, and results then, more clearly generalizable.

Despite the limitations, it is clear that educational interventions, such as the Alzheimer's video, are an effective means for acquiring and retaining accurate information about a particular topic. Additionally, the success of video interventions is not dependent upon the interest of the viewers. Lastly, retention of knowledge using a video intervention is sustained over time.

Appendix

- T F Alzheimer's Disease is ranked as the 10th leading cause of death in adults.
- T F Alzheimer's Disease is curable but many victims do not receive the care needed due to the expense of the medical treatments.
- T F It is estimated that Alzheimer's Disease affects approximately 2.5 million American adults.
- T F The onset of Alzheimer's has been documented as occurring only in people 60 years and older.
- T F Presently, there is no single diagnostic test for Alzheimer's.
- T F Due to several medical advances, about half of the patients with Alzheimer's eventually recover.
- T F Alzheimer's Disease can last anywhere from 3 to 20 years.
- T F Genetics have just recently been eliminated as a probable cause of Alzheimer's.

- T F Diagnosis of Alzheimer's can only be confirmed by examining brain tissue, which is usually done during an autopsy.
- T F The study of Alzheimer's has been greatly aided by the use of animal subjects that have developed Alzheimer's.
- T F Communication with an Alzheimer's patient is rarely affected by the disease.
- T F Bright colors help Alzheimer's patients to identify certain areas in and about their environment.
- T F In the 4th stage of Alzheimer's, the individual exhibits little or no response to stimuli.
- T F Drug toxicity and hypoglycemia are among the many disorders that mimic Alzheimer's Disease.
- T F Approximately 30-40 billion is spent annually for the care of Alzheimer's patients.
- T F Alzheimer's patients are thought to wander about their environment as expression of stress.

- T F The rate of change within an each individual with Alzheimer's varies.
- T F Alzheimer's is a brain disorder, resulting in sudden memory loss.
- T F People with Alzheimer's Disease don't suffer as a result of the condition, because they don't know that anything is wrong.
- T F Studies indicate that Alzheimer's is a contagious disease with several means of transmission already identified.
- T F Alzheimer's Disease is the most common cause of severe intellectual impairment in older people.
- T F Alzheimer's patients have been found to have high levels of aluminum in their brain tissue, therefore aluminum pots and pans should not be used because they transfer significant amount of aluminum into the human body.
- T F Significant memory loss is not an inevitable part of aging.

- T F An individual in the later stages of Alzheimer's can usually compensate for memory loss by writing notes and reminders.
- T F Memory loss may remain unchanged for years.

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