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The *Journal of Research Reports* is produced and published annually by the Wichita State University McNair Scholars Program to further the objectives of the program. The mission of the McNair Scholars Program is to provide quality services which encourage students who are underrepresented in higher education to graduate with bachelor's degrees from WSU and to pursue post baccalaureate degrees.

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The McNair Scholars Program is pleased to disseminate this publication and to congratulate all of the students whose research reports are included in this second issue of the *Journal of Research Reports*. The reports in this journal represent a broad range of disciplines and subject matter. I believe even the most critical reader will find that these reports are scholarly, engaging, and introspective.

Much gratitude is to be extended to all of the WSU faculty who served as research mentors to the students. For without their guidance and support, this publication would not be possible. It is my hope for the future that many more faculty will become involved with preparing eligible students for graduate studies through the program.

Larry Ramos
Program Director



It has been my pleasure to serve the Wichita State University McNair Scholars Program as Graduate Assistant for the summer of 1997. The staff and students spent laborious yet rewarding hours working together to produce the second edition of the *Journal of Research Reports*. With the support of their faculty mentors, the McNair Student Scholars persevered through busy schedules and difficult circumstances to complete their investigative research and final manuscripts. It was a job well done.

To the McNair Scholars, I extend my best wishes in the lifelong journey of pursuing knowledge and excellence. I encourage each Scholar to hang on to his or her dreams and aspirations, to pursue them with fervency, and to continue to strive to make a difference in society. Carry on, Scholars!

Jan Peterson
Graduate Assistant



Exploring the Need for Education on Male/Female Psychology During Adolescence from a Social Work Perspective

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Abstract

This research project obtained data as to whether adults believe they needed to have learned more about male/female psychology as adolescents. Due to the lack of information to be found in the literature in this specific area, this research was exploratory. The available research indicates that in contrast with females, males value the development of their sense of independence more than they value a sense of intimate connection, particularly during adolescence. This could have far-reaching implications in terms of the ability of the genders to understand one another and achieve positive outcomes in their relationships. The findings of this project support the idea that adolescents could benefit from education in male/female psychology. Further research, focusing on the beliefs of adolescents and educators in regard to male/female psychology, would be helpful in establishing a knowledge base required to create educational programs in this area.

Exploring the Need for Education on Male/Female Psychology During Adolescence from a Social Work Perspective

This research began to assess whether young people, who are just beginning to get involved in relationships with the opposite sex, could benefit from being educated about male/female psychology. There was no existing literature found that had operationalized a definition of male/female psychology. Consequently, male/female psychology was defined as the mental or emotional characteristics of males and females that may affect any aspect of a male/female relationship.

If adolescent females were taught about male/female psychology, and knew from the outset that their male peers were at a stage in development that made it unlikely that they would be reliable in satisfying the needs of a mature relationship, the females may be less likely to risk becoming pregnant or contracting sexually transmitted diseases. Others might profit by having learned how to communicate with the opposite sex, thus preventing some of the communication problems that may lead to eventual marital difficulties or divorce. Social workers deal with such problems on a regular basis in their line of work. Experience has shown that "an ounce of prevention is worth a pound of cure" as the saying goes. Thus, the members of this profession should have a keen interest in interventions that may be preventative.

The conceptual model (see figure) shows how habit patterns formed during childhood, formal or informal education, and life experience may contribute to the degree of understanding partners in a relationship have towards one another. The amount of understanding influences the attitudes and behaviors partners display to each other. Therefore, the degree to which partners understand one another, in turn, may effect the outcomes in the relationship whether positive or negative. It may effect the level of commitment, stability, and satisfaction in the relationship. The quality of the relationship between the partners then may affect whether they are prepared or unprepared to become parents. Education on male/female psychology may help partners be better prepared to have successful relationships.

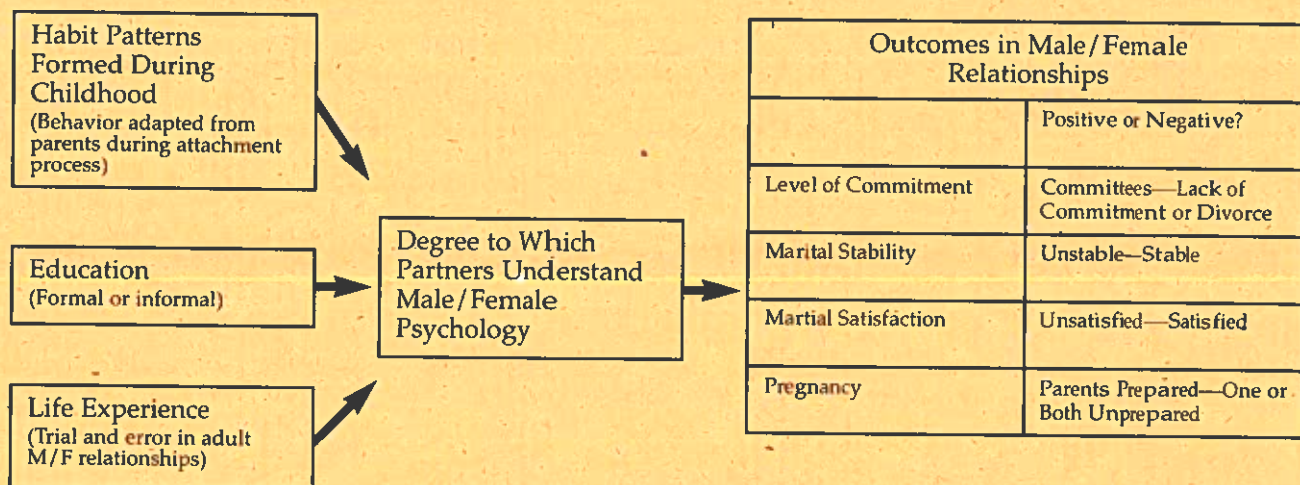


Figure: Conceptual Model

Literature Review

There is a scarcity of literature to be found that is directly related to educating adolescents about male/female psychology. Hence, this research is exploratory in nature, and its purpose is to begin to establish a base of knowledge on the subject. The literature review will examine some of the knowledge that we currently have from related fields. This information may prove useful in the assessment of ways male/female psychology could be important for adolescents.

The high rate of divorce in the U.S. is a major source of evidence demonstrating the magnitude of difficulties encountered in relationships between men and women. Parker and Drummond-Reeves (1993) confirmed the findings of a 1978 study that indicated that communication was the primary problem area that led to divorce. Communication has been defined as "a process of self disclosure" and "the mutual and reciprocal sharing of feelings, ideas, attitudes, and aspects of one's self" (p. 98). Likewise, in Kincaid and Caldwell's (1995) study, both men and women agreed that communication problems were the primary cause of their marital separations.

In 1987, Hazen and Shaver theorized that romantic love is an attachment process similar to the attachment that occurs between an infant and the primary caregiver, and that three types of attachment—secure, avoidant, and anxious-ambivalent—exist in infancy and adulthood. These styles of attachment in adulthood cause people to experience their romantic relationships differently depending upon which type they are. These observations have been replicated by many later researchers (Brennan, 1995). Therefore, the bonding process in infancy may play a strong role in forming the foundation of an adult's ability to communicate.

Differences in psychological needs of men and women would also likely contribute greatly to the difficulty in communication between marriage partners. Quintana and Kerr's (1993) study corroborates earlier work that suggested that for women the fulfillment of nurturance and dependency needs is important in preventing depressive symptoms, while men struggle more with the need to demonstrate their independence. Similarly, Rice and Mulkeen's (1995) research found that for females, intimacy was related to their social self-image throughout adolescence, while male identities were tied to perceiving themselves as autonomous and independent; intimacy only began to effect males social self image at young adulthood. It is probable that much of the basic differences remain and continue to affect communication in adult relationships.

Quintana and Kerr (1993) point out that in counseling research there is an inclination to view independence as desirable, while connectedness is deemed immature. They argue that there are "adaptive forms of

connectedness and maladaptive forms of separateness" (p. 349). This seems a reasonable supposition, and may contribute to the fact that females seek out counseling far more than males. If males feel that independence is the desirable quality when it is in some cases maladaptive, they will have no incentive to investigate the matter. This may mean the problem would not be dealt with and divorce would become more likely.

Currently, in the field of family life education, there are general marriage education programs, premarital education programs, and educational counseling with individual couples. However, if half of each couple does not see the possibility of maladaptive behavior on their part, they will not be as motivated to utilize these resources, and if they do they might only believe their partner was in need of help.

Learning about psychological gender differences and maladaptive forms of independence as well as connectedness in adolescence could increase the likelihood of enhanced communication between the sexes throughout life. Another reason that this knowledge is critical at adolescence is because this is typically when parent and child communication is undergoing a period of stress and change. Benson, Arditti, Reguero De Atilas, and Smith (1992) demonstrated that positive and negative parental attributions are associated with the patterns that develop in intimate relationships. Therefore, the possibility exists that an appropriate intervention made in adolescence could not only ease the adolescent into mature communication with their parents, but could also lessen the transference of stress patterns from the parental relationship to the intimate relationship.

Research Question

The question that forms the basis of this research is: Do adults believe they needed to have learned more about male/ female psychology as adolescents, if so what and why? It would be premature to hypothesize at this time, since there first needs to be a body of knowledge accumulated in this area of study.

Methodology

Participants

The sample originally consisted of a total 15 men and 15 women who had completed the survey. Data from one of the female survey participants was excluded from analysis. She had commented that she didn't have her glasses and was having difficulty seeing the survey. Later, when the data from the surveys was being entered into the computer, it was apparent that she may have misread at least some of the survey because there was a contradiction in her answers.

Of the remaining 14 women, ages ranged from 30 to 50. The 15 men ranged in age from 30 to 48. The average age for the men was 37.7. The average age for the women was 41.2. The percentage of divorced participants was 51.7. Due to the limited time and funds available for this project, a convenience sampling procedure was utilized.

Apparatus

Since there was no known data collection instrument for this topic, it was necessary to devise one. This data collection instrument was designed as a self-administered survey (see Appendix). It has a variety of questions including basic demographic questions and those utilizing a Likert scale that can be used in quantitative analysis. In addition, it has two open-ended questions at the end to explore qualitative aspects of the participant's perception of anything they wished to have understood better or sooner about male/ female psychology and/or any negative consequences that could be attributed to the lack of knowledge.

To improve reliability, the survey was pilot-tested by a group of social work students who discovered a few errors and suggested a minor change in the wording of one sentence. In addition, two faculty members who have had experience in constructing surveys were consulted. They suggested a few more minor revisions including clarifying the instructions for filling out the survey. The suggested changes were implemented in the revised survey.

Procedure

The design was exploratory because problems have been identified, but our understanding of them is limited in this area. It was also cross-sectional in order to control for threats to internal validity such as testing effects, maturation, history, instrumentation, and experimental mortality. To obtain data, a table was set up at the Campus Activities Center at Wichita State University, (a medium-size university in the Mid-West), with a sign asking for survey participants over the age of 30. Most of the participants had come to the table on their own volition and were quite willing to complete the survey. Several people asked if they needed to be a student to participate, and they were assured that being a student was not a requirement.

Results

Those who strongly agreed with the statement that "it would be helpful for adolescents to be taught about male/female psychology" comprised 48.3 percent of all the respondents. Another 44.8 percent agreed, but less strongly. None of the respondents disagreed or strongly disagreed.

Survey participants who agreed with the statement that "males and females have a different level of need for emotional closeness" comprised 31 percent of the total. Another 41.4 percent strongly agreed with it. Therefore, the majority of those surveyed may be aware of the same differences between men and women as those described in the literature, but this is not definitive as the results do not indicate what the respondents believe the differences are.

Respondents who agreed with the statement that "males and females have a different level of need for emotional independence" comprised 41 percent of those surveyed. Another 27.6 percent strongly agreed with the statement. Again, the majority of respondents recognize a difference between males and females. For those who recognized a difference in the level of need for emotional closeness or independence, it would have been helpful to have them specify in which way they felt there was a difference. There was a significant difference in the way males and females responded to the statement about emotional independence. Further research could be done to analyze the reason for this.

Those respondents who agreed that they would have made different choices in a relationship if they had known more about male/female psychology when they began to date comprised 20.7 percent. An additional 37.9 percent strongly agreed that their choices would have been different. Only 6.9 percent each disagreed or strongly disagreed that their choices would have been different. Only 2 of the 29 respondents felt they were very knowledgeable about male/female psychology when they began to date.

The highest percentage of respondents (75.9 %) felt they had learned about male/female psychology by observing others (such as parents). The next highest category of response indicated that 58.6 percent had learned about it from friends. Several (17.2 percent) wrote in the "other" category that they had learned through experience. If this survey were to be utilized again, it would improve the survey to add experience as one of the choices explicitly stated. Talking with parents would be another choice that may be added. Respondents who felt they currently lacked understanding about male/female psychology were 62.1 percent.

On the open-ended questions, 17 of the 29 responded in the affirmative when asked if there was anything they "wished they had understood better or sooner about male/female psychology." 2 people answered no, and the rest were left blank. When asked if they had experienced "any negative consequences due to having a lack of knowledge about male/female psychology," 18 answered in the affirmative, 2 answered no, and 9 remained unanswered. Divorce was the most common negative consequence mentioned.

Discussion

The purpose of this research project was to discover if enough is being done to help teens deal with the psychological implications of their new-found interest in the opposite sex. It appears that in many cases adolescents are being allowed to go out on uncharted waters without the benefit of adequate guidance. As young adolescents embark upon their journey into relationships with the opposite sex, they could benefit

from what is known about the differences in the psychological development between males and females, how these differences can affect their relationships, and how to manage those differences. To provide additional guidance, a base of knowledge about educating adolescents on the psychological dimension of relationships must first be developed.

Implications for Social Work Practice

It would be helpful to approach this search for knowledge from the social work perspective, since social work is most fully cognizant of the complex interaction between the individual and the environment. In addition, social work draws from a variety of disciplines that could be integrated to best meet any discovered needs. Social workers could have an important role in creating a curriculum of issues related to male/female psychology drawing from social work, sociology, psychology, education and other relevant fields. Social workers could conduct such an educational program in conjunction with the sex education being taught in the schools. It would be helpful if the sex education teacher and the social worker could work together to integrate the way in which the teaching is organized. This would give students a more balanced view of all of the considerations inherent in becoming involved with the opposite sex.

A fresh approach needs to be considered. If teens were taught to better understand themselves at this crucial stage in their lives, perhaps they would make wiser life choices. As a rule, people are not and have not been adequately prepared psychologically to enter male/female relationships. Programs and counseling to help males and females communicate are usually sought only after major problems have occurred—if at all. Many likely avoid seeking assistance due to the stigma associated with getting professional help. It is reasonable to question whether some of these problems could be prevented through education during adolescence, that being compulsory and taught to everyone, would lack the stigma. Learning to communicate with the opposite sex during adolescence could reduce the high incidence of divorce.

Currently, our educational system stresses the biological aspects of male/female relationships. The focus seems to be on the mechanics of reproduction and the proper use of birth control, safe sex, and prevention of sexually-transmitted diseases. Some people believe that teaching about the mechanics of sex without teaching about values and moral codes is tantamount to giving the message that society endorses teen sex.

Since there is such little agreement on what values should be taught in school, adolescents are taught basically only the mechanics of safe sex and birth control in their sex education classes, or they are not allowed by their parents to be taught anything at all. This would be acceptable if parents consistently did a responsible and thorough job of teaching their adolescents themselves. However, many teens may be falling through the cracks between what parents and the schools actually are able to accomplish. This could contribute significantly to the high rate of teen pregnancy. For students who neither have moral instruction from their parents nor access or permission to take sex education classes, teaching about male/female psychology would be a way to provide some guidance for those who otherwise would have little or none.

Further, if we give adolescents this guidance about the implications of psychological gender differences, we need to determine the optimal time for it. For example, we have reason to believe from recent research that males value the development of their independence more than they value a sense of intimate connection, particularly during adolescence. Are the implications of this being adequately impressed upon the minds of adolescent females before they become sexually active and begin to risk pregnancy and disease? Or are they in a fog, being confused into thinking that sexual equality means that adolescent boys feel the same way they do, when the research shows that the female adolescent has the greater need for connection? Could people benefit from the accumulated knowledge about male/female psychology or must they learn by trial and error?

Knowledge in these areas could mean the difference between a well-planned future and a bleak one, since without it the result is often unwanted pregnancies, absentee fathers, and the children who pay the price. Social workers are often the ones to help pick up the pieces when poor life decisions are made. Therefore, social workers ought to be interested in preventing poor life choices through educating adolescents about male/female psychology.

Limitations

As previously mentioned, due to time constraints and lack of funding, a convenience sample was used, which is least likely to produce representativeness and generalizability. Conducting research at the university may have produced a sample of respondents that are more knowledgeable than the general public. Another limitation was due to the fact that the measuring instrument was newly constructed for this project. It would have been an advantage to have existing knowledge about the quality of the measurement.

Conclusions and Recommendations

This research supports the idea that adolescents may benefit from education in male/female psychology. The majority of those surveyed felt that, generally, adolescents are not being taught what they need to know about male/female psychology and that being taught about it would be helpful. Several said they wished they would have known more sooner, and most felt that there was more that they could learn even now. Some of the common themes expressed included a desire to better understand the differences between male and female psychology and communication styles, to have the ability to express one's own needs, and know how to better meet the needs of one's partner.

This research represents only a small beginning on what can be learned about the needs related to teaching male/female psychology during adolescence. Further exploration is warranted. It is hoped that in the future, research that could be considered representative and generalizable would be conducted. This research concentrated on people over the age of 30 who would have had time to gain some life experience; however, it may be helpful to study the attitudes of adolescents themselves. In addition to studying junior high and high school students, other important areas may include researching the various school curricula and interviewing persons responsible for developing curriculum such as teachers, school social workers, and the general public. Social workers and other helping professionals should work together to contribute to a knowledge base which could be used to create educational programs that can be implemented in our schools while recognizing this need in their individual areas of practice.

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Appendix

Dear Research Participant,

Thank you for volunteering a bit of your time to complete this survey. Your responses are very important to the success of this project. Your identity will be kept strictly confidential.

This research is being conducted through the Department of Social Work. The results of the research will be published in the Journal of Research Reports sponsored by the McNair Scholars Program.

If you would like to receive a copy of the research report, please give your name and address below:

Research Survey

This research is about discovering what people believe about male/female psychology as it relates their own experience and knowledge. For this research male/female psychology is defined as the mental or emotional characteristics of males and females that may affect any aspect of a male/female relationship. Please carefully read the following questions and statements. Answer by circling the letter of your choice.

1. Please indicate your current age in years.

I am ____ years of age.

2. Please indicate your gender.

- a. male
- b. female

3. What is your current marital status?

- a. single, never married
- b. living together with partner
- c. married
- d. separated
- e. divorced
- f. widowed

Please rate your level of agreement or disagreement with the following statements by circling the number of your choice.

4. In general, adolescents are being taught what they need to know about male/female psychology to enable them to make wise life choices.

Strongly Agree					Strongly Disagree
5	4	3	2	1	

5. It would be helpful for adolescents to be taught about male/female psychology.

Strongly Agree					Strongly Disagree
5	4	3	2	1	

6. Males and females develop their sense of identity in the same way.

Strongly Agree					Strongly Disagree
5	4	3	2	1	

7. Males and females have a different level of need for emotional closeness.

Strongly Agree					Strongly Disagree
5	4	3	2	1	

8. Males and females have a different level of need for emotional independence.

Strongly Agree					Strongly Disagree
5	4	3	2	1	

9. Male and female communication styles are the same.

Strongly Agree					Strongly Disagree
5	4	3	2	1	

10. I would have made different choices in a relationship if I had known more about male/female psychology when I began to date.

Strongly
Agree

Strongly
Disagree

5 4 3 2 1

11. Please rate yourself on your level of knowledge about male/female psychology when you began to date.

a. Not knowledgeable b. Somewhat knowledgeable c. Very knowledgeable

12. Please rate yourself on your current level of knowledge about male/female psychology.

a. Not knowledgeable b. Somewhat knowledgeable c. Very knowledgeable

13. If you feel you are currently very knowledgeable about male/female psychology, at what age did you feel you had sufficient understanding of it?

a. Age in years _____
b. Still lack understanding.

14. Please finish the following statement: I learned about male/female psychology by:
(circle all that apply).

- a. observing the relationships of others (such as parents)
- b. being taught in Junior High
- c. being taught in High School
- d. being taught in college
- e. attending seminars, workshops, etc.
- f. talking to friends
- g. reading books, magazine articles etc.
- h. seeing a psychologist, social worker, or therapist
- i. other (please specify). _____

15. a. Is there anything you wished you would have understood better or sooner about male/female psychology? (Please use the back of the page to answer questions if you need more space).

b. Did you experience any negative consequences due to having a lack of knowledge about male/female psychology? Please explain.



Save the Children

Marc Davis
WSU McNair Scholars Program

Dorothy Billings, PhD
Faculty Research Scholar



Abstract

In response to the suggestion that television viewing negatively influences children, this research focuses on the possible relationship between television viewing and its adverse effects on children.

The first portion of the research focuses on the observation of 19 1st and 2nd grade children (10 girls and 9 boys) at Holy Savior Catholic Academy, of Wichita, Kansas. The second portion of the research consists of a review of journals, books, and periodicals. Examination of the research supports the theory that television may have detrimental effects on the lives of children. This manuscript covers three areas of negative influence: (a) television as a hidden competitor (Winn, 1985) (e.g., television becomes a rival competing with more physically oriented activities), (b) television viewing and its effects on aggressive behavior, and (c) television as a catalyst in the creation of stereotypes (Goldman, 1996). In addition, other research suggests that television is as influential in children's lives as friends and family, which may lead to a distorted world view (Hedinsson, 1981). The purpose of this research is to provide the audience with a heightened awareness concerning television and its influences on children.

Save the Children

Over the last ten years, there has been much debate about television and its effect on society. Parents, teachers, and researchers have argued whether television is harmful to children, and if so, what can be done to remedy these problems. Comparing television and its harms to children is like comparing smoking and its relationship to cancer; neither link can be conclusively proven. Because it isn't readily accepted that television has detrimental effects on youths and adolescents, television's harms aren't easy to detect. For example, Dineh Davis (1995) writes "exposure to violent depictions influences the audience, an assertion that seems simple on its face; however, violence can be presented in a variety of ways, and there is substantial evidence that many differences in message characteristics may hold important implications for the impact of particularly violent scenes on viewers" (p.517). In short, television messages can be harmful depending on the context of the violent act or message. It is reasonably assumed that television viewing may be potentially harmful to children.

Television is a significant source of information and entertainment in children's lives. It plays an important part in the acculturation process of many children (Billings, 1997). For example, children are exposed to countless hours of nonmonitored, unregulated television viewing, most never considering how television might affect them. Zylke (1988) states that by the age of fifteen, most children will have spent more time in front of a television set than in school, and they will have spent more hours on only one other activity--sleeping (p.31). William Dietz, MD, explains that "television becomes a tremendous influence on many children's lives, some watching as much as twenty-eight hours of television a week" (cited in Zylke, 1988 p.1831).

Further examination of the research supports the theory that excessive television viewing may influence children in harmful ways. Without parent or guardian supervision, television is potentially harmful to

children because television is a hidden competitor (e.g., television becomes a rival competing with more physically oriented activities), which stunts their creativity, and contributes to the creation of stereotypes, all of which may lead to aggressive behavior and a distorted view of reality (Hedinsson, 1981).

This research provides the audience with a heightened awareness concerning television and its relationship with children. The investigation focuses on both primary and secondary methods in its aim to explain television and its harms to children. The goal of this research is to discuss and explain the relationship between television viewing and its influence on the lives of children.

Literature Review

The research consisted of various journals, books, and periodicals. The literature concentrated on television and its negative effects on children. Not all journals reviewed were incorporated into this journal. The collection of literature came from several different persuasions and schools of thought: the majority of the journals viewed television and children from a sociologist's perspective, the books reviewed were written from an anthropological point-of-view, and the periodical articles come from a gamut of different sources. The different sources made it possible to consider television and children from several different perspectives. The literature indicated three major areas of harmful influence on children: (a) television as a hidden competitor, (b) television viewing and its influences on aggressive behavior, and (c) television as a catalyst in the creation of stereotypes.

Television as a Hidden Competitor

For those who might question whether or not television stifles creativity, it should be stated that during their school years, children watch an average of fifteen to twenty-thousand hours of television (Holden, 1990; Walling, 1990). Children often choose to watch television instead of playing outside. "Television is a hidden competitor for all other activities," says Marie Winn (cited in Alexander, 1993 p.34). If children aren't watching television, they are forced into finding alternate forms of entertainment.

Children didn't always have television. Their entertainment usually centered around playing and creating interesting games. It is evident that without television there would be a large void that would inevitably be filled with more resourceful activities, some physically oriented. Condry states, "Every hour a kid spends in front of the television represents an hour he's not reading books, exploring the world and, most importantly, socializing with other kids" (cited in Goldman, 1995, p.42).

In addition, children who sit idly watching the television increase their chances of being overweight. Children are constantly subjected to advertisements for junk-food high in fats and calories, and the act of television watching promotes a sedentary lifestyle; both of which lead to an increase in obesity (Walling 1990). William H. Dietz, M.D., Ph.D. states, "merely parking in front of the television can be detrimental" to children who are overweight (cited in Goldman, 1995, p.42). Frustration generally tends to build in an overweight child, because they are ridiculed and denigrated by peers. Obese children commonly experience feelings of inadequacy which lead to future problems.

Television and Its Effects on Aggressive Behavior

Huesman and his co-workers found that for United States' children, aggression, academic problems, unpopularity with peers and violence-viewing feed on each other to promote violent behavior (cited in Bower, 1985). Aggressive behavior is arguably the most dangerous influence of television, since it may lead to violence (Primavera & Herron, 1996). Several studies have focused on television's effects on aggressive behavior and violence. Aggressive behavior needs to be defined first, since it is considered by some to be linked with violence. In 1993, Berkowitz described aggressive behavior as "any form of behavior that is intended to injure someone physically or psychologically" (p.35).

Anderson (cited in Primavera & Herron, 1996) purported that television violence does have a relationship with aggressive behavior. From this and other data, it can be reasonably assumed that violence and aggression are causally related. Anderson is certain that controlled laboratory experiments are most effective for

studying aggressive behavior. Andison states, "laboratory experiments provide much stronger evidence for a relationship between television violence and subsequent aggression than did either field studies or questionnaire methods" (p.91).

Along with aggression, violence must also be explained. Primavera and Herron (1996) state, "opinion polls indicate that violent crime is high on the public's list of concerns (p.91). For a working definition, violence is "the overt expression of physical force against self or other, compelling action against one's will on pain of being hurt or killed, or actually hurting or killing" (Gerbner & Signorielli, 1980 p.278). For example, some violent and aggressive acts include "(1) serious assault, (2) minor aggression, (3) harm to property, (4) intimidation, (5) deception, (6) hostile remarks, (7) societal harm, and (8) accidents or natural disasters" (Potter & Vaughan, 1995, p.496).

Realizing the scope of violence and aggression, Albert Bandura (cited in Primavera & Herron, 1996) conducted an experiment to elucidate that television violence is contextual. In the famous study, children were allowed to watch a film of a man attacking a doll. The children were then put in a room alone with a doll. A large percentage of them began to beat the doll, just as they had seen on television. Children were also shown the same film, with the man being punished at the end of the film. The children who saw the man being chastised were less likely to beat the doll. From this it can be concluded that television violence is contextual. However, if we look at the case of the doll we will see that twice as much violence made children less aggressive. What this means is that violent acts on television cannot be counted as if they were cattle or coins. Even if it is true that television violence is contextual, possible ramifications of violence and aggression must be considered.

Television and stereotypes

Stereotyping of women, adolescent girls and minorities is a problem that is potentially dangerous to children. Hedinson (1981) states,

differences in people's access to economic and cultural resources lead to differences in media use and media consequences, which in turn, working as a catalyst, further widens the gap of socially desirable knowledge and skills between the different groups in society engaged in mass media use. (p.41)

Television causes children to stereotype individual people and groups. Television usually portrays men and women in their traditional and tightly stereotyped roles (Lovdal, 1989).

Despite recent increases in the number and variety of female roles on television, a tendency still exists for women to be under-represented and generally classified as subservient to men (Walling, 1990). Women are usually portrayed as weak or as housewives dependent upon their husbands. Traditionally, programs and commercials have promoted and reinforced conventional sex role stereotypes (Lovdal, 1989). The National Commission on Working Women of Wider Opportunities for Women criticized television for the way in which adolescent girls are constantly portrayed on television (Lovdal). Adolescent girls are characterized as being obsessed with their physical appearance (Zylke, 1988). Young girls are too often cast as "gold diggers" waiting to cash in or marry someone rich, which leads to misconceptions. Several children's shows help to create and perpetuate sexual and racist stereotypes (Goldman, 1995).

Not only are women and young girls stereotyped on television, but minorities must be acknowledged also. Hesse (cited in Goldman, 1995) states, "The heroes are usually white, blonde and blue-eyed; the enemies are non-Caucasians with thick accents" (p.42). The heroes are constantly under siege by the enemy, and must often defend themselves. The "good guys" always triumph, and the "bad guys" threaten to return (Goldman, 1995). This type of scenario "teaches white children that the world is a frightening place, they must not trust anyone that looks different or has an accent and that there is no such thing as peaceful compromise," says Hesse (p.42). This gives nonwhite children the idea that "dark-skinned" people are dangerous and can't be trusted. In addition, this gives children a confusing view of themselves (Goldman, 1995). By promoting traditional stereotypes, television has been shown to influence sex role values and perceived life options.

Methods

To examine the theory that television is harmful to children, a sample group of children was selected to be observed in their natural school environment. The observation was subtle, and the students were not asked to take surveys, watch movies, or do anything that they wouldn't normally do. The sample was comprised of 19 children (10 girls, 9 boys) who were students of Holy Savior Catholic Academy. The students were chosen primarily because of their age group, which is 6-8 years old.

The study ran for 14 weeks, two to four hours a week. The data was extracted by first-hand observation as well as limited questioning. Without time constrictions, there was no need to rush or pressure answers from the subjects. The students shared information at their own convenience. The children became accustomed to having a researcher around them, and in very little time, the students used the researcher as another source of information. For example, the researcher assisted with reading assignments and homework. For this research, the observer became a friend to the students as well as an aid to the teacher. By offering assistance to the teacher (e.g., recess, reading hour, homework help, authority figure), this researcher was able to benefit from proxemics by positioning himself in a role which was conducive to the learning environment, thus facilitating the research.

Results

Results from the field research derived minimal conclusive evidence to support the theory that television is harmful to children. Due to the religious environment and the rigid structure of Holy Savior Academy, the atmosphere is one which is not conducive to the observation of negative behavior (e.g., violence, aggression, insubordination). Further research may be continued to observe children and their mannerisms, but in a less structured setting.

Discussion

Comparing television and its harms to children is like comparing smoking and its relationship to cancer; neither link can be conclusively proven. There is overwhelming evidence to support the claim of a substantial relationship between television and its harmful influences on children, but there are still doubters who debate whether these arguments are true; however, when taken contextually, their own arguments tend to purport the theory that television contributes to aggressive behavior.

Without parental guidance, television can have several damaging effects which inevitably alter a child's perspective of reality. Television is harmful to children because it stunts their creativity and contributes to the creation of stereotypes, which leads to violent behavior and a distorted view of reality. It is generally advised that parents limit the amount of television their children watch, be aware of what they are watching, and most importantly, watch it together (Zylke, 1988). "The children are the future"; what they learn now, they will teach to others later.

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The Effects of Writing "The Color Purple in a Field: A Conversation"

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Abstract

This paper explores the effects of writing my McNair research project entitled "The Color Purple in a Field: A Conversation." I worked on the project for two semesters with Dr. Beth McCoy, associate English professor at WSU. Through working on the long-term paper, I found myself being recreated and others around me being influenced by my research investigation, and finished paper. This exploration into the effects of the paper sheds light on the phenomenon of the dramatic and encompassing personal transformation of the author and, to a lesser degree, those around her.

Introduction

For my research project, I worked for two semesters with Dr. Beth McCoy, associate English professor at WSU. The first semester I worked on comparing the novel and the movie The Color Purple. I eventually decided to compare the role of religion in each work. Through this analysis, I began to see parallels between the main character's life and some of my own experiences. Because of this, and because I am a creative writer, Dr. McCoy recommended that I incorporate into the paper my own life story and creative writing. I started thinking about my mother's life and began to think her story was in many ways more like Celie's than my own. Again, Dr. McCoy suggested I talk with my mother to find out more about her experiences. I began making long-distance calls to my mother in which I interviewed her about her life with my real father and his family. I was shocked, angered, and amazed at the things my mother experienced. I began to truly see the similarities between the fictional and the actual stories. From these conversations and from looking at my life within a new context, I was able to see the underlying social issues that played out in my life and my mother's life as well as the fictional life of the character Celie. I started to think about how my story was not alone or separate from those of other women. Instead, my story was anchored in something very ominous and pervading. I started to see the overall societal patterns that were being played out in these lives as represented by Celie in The Color Purple.

Research: the opportunity for change

The research consisted of first reading the novel then watching the movie The Color Purple. Next, I began gathering and reading academic articles about the novel and movie. The research moved out from there to include works about the novel and movie, encompassing videos of movies which echoed themes presented in the original works and to embodying social critiques in the form of books, articles, and literature. Next, the research was comprised of writing journal entries, short response papers, and an extensive academic paper and of interviewing my mother about her life. In addition, I attended Dr. McCoy's "Multiculturalism" class as a guest student and experienced my most intense internal changes.

While still in the midst of the first semester research, I stumbled upon the idea that I, as a woman, with no specific understanding of my ethnic heritage, had my own culture. At this point, I became very

interested in leaning about it. Up to this point, I had never seen myself as having a culture or being in any way affected by a heritage. I became intrigued with that part of my upbringing which I like to define by using the pejorative term "white trash." My curiosity peaked when I looked at the list called "On the Invisibility of [White] Privilege" compiled by Dr. Peggy McIntosh, Wellesley College Center for Research on Women. It is a list of privileges whites have of which they are usually not aware. Upon reading the list I noticed that my background did not afford me some of the privileges listed, such as "I can do well in a challenging situation without being called a credit to my race" (10). Here, by changing the word "race" to "culture" or "background" I identify more closely with non-whites. For example, in academia, I feel that my successes are seen as exceptions to the expectations of me as a poor woman. In addition, I feel that I am judged as a lesser person because of my background which lacks "high cultural," privileged experiences. Or, "I can talk with my mouth full and not have people put this down to my color" (10). Again, changing "color" to "upbringing" I identify with non-whites. The members of the low, socio-economic, white culture is viewed as being without social graces, and manners, but is seen as being rough and vulgar. Or, "I can swear, or dress in second hand clothes, or not answer letters, without having people attribute these choices to bad morals, the poverty, or illiteracy of my race" (10). Again, here, I am considered the rejected segment of my race, that which is unable to meet the high morals, values, wealth, and literacy of the superior (middle, upper-class) whites.

When my curiosity about my reactions prompted me to ask Dr. McCoy about these incongruities, she pointed out that the "white trash" culture is more similar to the African-American culture than it is to the white, middle-class culture. Members of the "white trash" culture are taught to believe they are "less than" the middle-class whites as are those of African-American culture and other non-whites. With this comes overt and covert suggestions that poor whites are immoral, unclean. She helped me understand that poverty and lack of education is paralleled with immorality, promiscuousness, vulgarity, criminality; in short, everything the pejorative connotes—filth. At the same time, she explained, poor whites are not allowed the positive representations of their richer counterparts, they are told, in an attempt to "divide and conquer," that they are at least better than the darker skinned minorities, and therefore, are allowed many privileges cited on the list such as "I can if I wish arrange to be in the company of people of my race most of the time" and "I can be casual about whether or not to listen to another person's voice in a group in which s/he is the only member of his/her race" (10).

Once Dr. McCoy pointed out that my background was closer to the experiences of the character's in Walker's novel than to those of characters like the privilege, white, male, speaker in Eliot's poem, "The Love Song of J. Alfred Prufrock" who dares not eat a peach, I began to relate to and identify with Celie, the main character of the novel and movie, and Walker's work in a very real way. This understanding was the seed for incorporating the personal narratives into my final paper. This seed was what began to take root in the form of making connections between Celie, myself, and my mother.

"Multiculturalism": a course in the self

Nearing the end of my first semester research, Dr. McCoy invited me to be a guest student in her two-week summer class. The class was very intense and was the part of my research that most affected change in me. The class time consisted of discussions of the readings, book reports, and videos; in addition, we discussed personal experiences related to the issues brought up in the readings. I was able to observe the microcosm of society on the level of an eleven-person class. Here, various voice, different stories, conflicting opinions, and both authentic and defensive representations of experiences were presented. The most important aspect of the class was the journal Dr. McCoy required us to keep. We were assigned a nightly journal entry, which was to be a reaction to the day's class or reading. This journal became the voice for my own personal narrative in the final paper. Dr. McCoy gave extensive feedback on each journal entry which we turned in daily. Her comments and questions on the journal entries became my motivation and inspiration in the class. She was interested in me both emotionally and intellectually, and therefore put me at ease in writing my journal entries, which allowed me to delve into experiences that I had previously

discounted or forgotten. I began to take more and more emotional risks in those writings. Through both the journal writing and the class discussions, I began to solidify my own beliefs and had the opportunity to announce and defend them.

I continued to make journal entries even after the class was over, most of which I kept to myself, as they became more personal and threatening as I dealt with such complex, emotive issues, but which ultimately contributed to my final project in an indirect way. The main thing I learned from this class was that the voice of literature, the voice of people, the voice of the individual is the primary tool through which an oppressed group can resist. It is, therefore, the first tool which is threatened or destroyed by the oppressors.

Friends: the courage to question

Family: the strength to listen

As I struggled and explored the issues brought up in my project, I began to develop a friendship with a student of anthropology who was also a McNair student at the time, Marcus Monenerkit. He and I had many conversations in which we talked about the concerns I and he had been thinking about. He taught me the concept of the "folk model," which is the myth around which our society is built. He showed me that all societies or cultures are built around myths, but that many of the myths are different, even conflicting with the myths that are accepted as truth in the U.S. We spent much time talking about cultural "norms," expectations, systems, and institutions. In essence, we made connections between the ideology of the myth or folk model and the actuality of how it is played out in systems or institutions such as marriage, religion, education, the mental health field, and more.

About this time, I began to interview my mother. We would have extensive telephone interviews in which I would ask questions and she would answer me in as much detail as possible. My main focus was on her relationship with my biological father, which I knew little about but was aware was an abusive, violent relationship. This tied directly to Celie's relationship with Mister and into the systematic oppression Marcus and I talked about. I started to become even more aware of how personal were the issues revealed in the literature, movies, textbooks, and classes I was researching. I started to notice the issues coming up in my other classes in which I would observe the systematic oppression as represented in videos shown in my Spanish class. I could see the nuances of privilege and oppression play out with students in the classroom through reactions from other privileged students or students who failed to question the myth. I started to read oppression or reactions to it in poetry and hear it in lectures. I found it in medieval and romantic works. I began to look for it in advertising and found it there, easily. I began to hear it in conversations with friends and acquaintances. In short, I was changed. I began to buy and read anthropology books. My own poetry took a socially conscious turn. Most profoundly, I began to see the oppression playing out in my own relationship with my husband and my children, and I tied it directly back to my own upbringing and that of my husband. My marriage has been strained for years, but this was the first time I was beginning to see some of the reasons for the problems and understand my relationships with his family and others. Eventually came the separation between my husband and me, and the intentions of divorcing. I continued my project. I found other friends with similar interests; Marcus moved away. My mother revealed more and more of her story.

I began, for the first time, to understand my mother. I began, for the first time, to forgive her. I changed from a judgmental stance to one of admiration, respect, and the ability to see a vast reservoir of strength, courage, intelligence, and determination in my mother. I saw what she gave up in order to survive and in order to do what she thought must be done by society's standards. And finally, I was able to see how the abuses I suffered as a child were caused by a system that promoted and fostered such abuse in my mother's life and in the lives of countless others.

I am no longer the person you think I am; I am changed

The process of researching and writing this paper has affected me greatly. In short, it has changed my

life. I found a quote by Sam Keen in his book *Fire in the Belly: On Being a Man* that describes in an apt way what the project has done for me:

The task of any individual who wants to be free is to demythologize and demystify the authority or myth that has unconsciously informed his or her life. We gain personal authority and find our unique sense of self only when we learn to distinguish between our own story—our autobiographical truths—and the official myths that have previously governed our minds, feeling, and actions. This begins when we ask: "What story have I been living? What myth has captivated me?" It ends only when we tell our own story, and authorize our own life rather than accept the official view of things. (164)

This project allowed me the opportunity to do what this quote advises. The research process of reading *The Color Purple*, comparing it to the movie, watching other movies and analyzing them, reading articles, attending Dr. McCoy's class, interviewing my mother, and mostly, thinking, forced me to analyze my view of myself, my own culture, and where that view came from. I realized through this process that my entire self-concept was based on something outside of me. I like to call it the "Myth." I had been living my life by the myth that was taught to me by society. I had been defined as unintelligent, incapable, ugly, pretty, sexual, laborer, mother, passive, submissive, without opinion, without self, insane, failing. I was almost entirely defined by family, the media, acquaintances, religion, therapy, earlier education, strangers, work experiences, and relationships. I had accepted the myth completely although with much defiance, reservation, and discomfort. And because of this acceptance, I had come to a point in my life when this myth had almost destroyed me. Up until I met Beth McCoy, I had still not identified the myth and put it where it belonged—outside of myself.

Once I recognized that my self-hatred, self-rejection, and self-punishment stemmed from a distorted, mythic view of me as a poor, white female in our society, I began to see the direct tie between my experiences and the view of others had of me as fitting into these general categories. The process of delving into my past, as well as my mother's history, confirmed much of the painful mythology. I explored my experiences in elementary school and the abusive treatment I received from one of my teachers there. Viewing my childhood years enabled me to look at the impact my mother's many marriages had on me and enabled me to see how society affected, even created, the destructive forces of those marriages. I could then see that the stigma relating the many marriages to shameful secrets was taught by society's, religion's unrealistic and oppressive expectations of marriage. I saw the societal forces that created the cynical characteristics of the relationships. I looked at my early adulthood and the "mental illness" that had plagued me then. I looked at the same period of time and the reactions of my family, religion, education, and therapists and found that their repeated rejections stemmed from a societal problem which repudiates emotional problems, pain, or "negative" feelings in general, and isolates sufferers. I recognized again the courage of my then husband to support me and stay with me during that time. By learning more about my mother's history, I saw how the religious and social expectations of her as a white, working-class woman created the abusive situations that she felt obligated to suffer even and the expense of her very life.

Upon viewing these experiences within the context of society and the myth perpetuated therein, I was able to begin questioning and eventually rejecting that myth. I began to see the times in my life where I did not fit into the mythic structure in which I was forced. I started to see myself mostly outside the myth. At this moment, I became free. It was not literally a moment, it was a matter of months, and the process is still continuing over a year later, but within the overall span of my life, the change took place momentarily. Once I "demythologized and demystified" the authority that had defined me, I recognized the terrible farce, the sickening trick that had been played on me. My teacher, Dr. McCoy merely helped me see the chains that were binding me, and at that moment, I set myself free. Once I authorized my own life, everything around me changed. I was and am still full of fear because I know the consequences of the myth are very real, but now I am imbued with a personal power that is not easily discounted. This is how that project affected me.

In a practical sense, as well, the project changed my life. It gave me the confidence and courage to let go

of an empty marriage. It inspired me to further my education and delve deeper into projects which will assist me in my future goals. It has helped me to see what I feel is important to give to my children. It has helped me to let go of things that would stand in the way of my ultimate goal—self-actualization. Essentially, it has empowered me in every part of my life.

Sharing the paper: afraid, I enter the battle without armor

Upon completion of the paper I had given copies, in addition to Larry Ramos, Director of McNair, and the three professors on my honors committee, to two other professors. The minute I did this, I regretted it. After sharing the paper with two different male teachers I began to worry that they would read the paper and reject it either because it was pseudo-academic or distastefully personal. I felt as if I had passed out nude photos of myself and was waiting for the reactions to get back to me. From one of those teachers I have never heard a comment. I think this is an act of mercy on his part because he would disapprove of such exposing of the self in an academic setting, after all it is not group therapy. And the other teacher, because he is a very busy scholar himself, has not been able to read my seventy-page paper, so I gave him a copy of my thirteen-page presentation, which he read and commented on favorably later. He thanked me for sharing it with him and said it was very good.

The Director of the McNair program, Larry Ramos, had read the paper and admired it deeply. He had been very moved by it and read it repeatedly, and he encouraged me to keep researching history. He gave suggestions on future revisions; he told me what caught his interest in the story and pointed out areas which might use elaboration. With Larry, my paper led to an ongoing conversation between the two of us about how personal experience and self-concept is formed by society. With him I have been able to elaborate through conversation on my personal experiences and fit them into the overall societal structure, while he has given personal feedback on his experiences, offering a different view and a more complex picture. His honesty and courage has given me much insight as well as admiration for him as a person. This conversation with Larry has been a source of healing and encouragement.

The next to receive my paper was my mother. I waited apprehensively to hear from her by long-distance telephone. I had agreed to her that if there were any parts of the paper of which she disapproved I would delete or change it without hesitation. I dreaded her call because my paper did not always show my mother in a favorable light, and I feared she might be offended. She called me in California when I was visiting my sister and said she loved my paper and approved of every word of it. She later told me that going through the process of interviews with me was very painful because it forced her re-experience those horrible moments from her past. She said it made her feel better at the same time and that she was glad to share her story if it would help someone else. I told her that it was helping many others but that it was mostly helping me, that I was coming to terms with my past experiences and making sense out of my life for the first time.

When I was visiting my sister in California, I was excited about sharing my paper with her, because I knew she would admire Moma, our mother, for surviving such dreadful circumstances, but a part of me dreaded sharing it only because the basis of my paper is to reject the "traditional, fundamentalist, Christian view of God—white, male, father, judge." And I knew that my sister defined herself as a fundamentalist Christian who believed in the Bible as the inspired word of God. I was fully aware that my sharing of the paper could be threatening or offensive to her. And the last thing I wanted to do was hurt or offend my sister. In dealing with such difficult issues it is risky to share because ideas, questions, revelations can come between family members. I knew this as I had experienced similar circumstances in the past and had written some of them in my paper. I was afraid. But I shared the paper. As expected, it was difficult. After reading the paper, my sister said she admired my mother for everything she had survived. I agreed. We decided our mother had been very strong, and we hoped that we might have gotten some of that strength. But she said she disagreed with my basic argument. She said that after talking to me lately and after reading my paper she wanted to let me know that she was worried about me, that essentially she felt I was moving away from God. We discussed, disagreed, and talked until we were both blue in the face, and then we were

both in tears. Finally, we decided to agree to disagree. We loved each other very much, and that's all that mattered. The disagreements were painful for each of us.

After I had arrived home, however, my sister gave me a very touching compliment over the telephone. She told me that she could not help but notice I was happier than she'd ever seen me. She said I smiled the entire time, that I was more relaxed and confident than she had remembered. I thanked her for telling me this and explained that I did feel this way now, that I *was* truly happy and confident and relaxed. I told her that I noticed something in her as well. I told her when she sang in church that her sincerity and love for God spoke beyond any of the things we disagreed about, and I told her I was proud of the courage and strength I had witnessed in her during my visit. My paper brought out our differences; more importantly, it showed us how alike we are.

Next, I shared my paper with a person I did not know very well. But I shared my paper and later regretted it. I decided later that this person was not one who had the internal understanding or power to appreciate my paper and the risk I took. The acquaintance, after reading the paper, presented me with a copy and the accompanying "notes" the person had taken which included the following:

"bleeding heart"

"self promoting"

I zeroed in on these two otherwise inconspicuous notations after we had talked about the other's perspectives of the paper. I was told flatly, while sitting in my living room, in my house, that the entire paper was defense and not revealing at all. I was told that I had talked a lot about the fact that I was taking a risk in the paper and that I had much reason to be afraid, and yet, I had not revealed myself at all, but I had in fact, managed to protect myself through the entire paper. I was utterly offended by such a summation of a paper that had caused me such anguish and fear both in writing, sharing on the page, and in presenting. I struggled with the impulse to ask this person to leave my home because I felt that such comments did not deserve an explanation. I felt I had thrown pearls before swine and there would be no point in arguing. But either out of learned passivity, sheer human decency, or maybe just curiosity, I defended myself. I told that person that, on the contrary, I had risked much in writing and sharing such a paper, that the sheer fact that I talked about such issues was in and of itself against societal expectations of what is "proper." I was told that my story may have been "different" but it was not "unique." I stated that this truth was exactly what I was trying to show, that my story is not unique and therefore, shows the common thread of a societal problem of epidemic proportions. I also admitted that there was much of my personal story that I had left out of the paper, much of the story that I was not ready to share, but that this fact by no means lessened the risk I was taking. Later, I thought about this comment and became disgusted by the reprimand that I did not share my most painful experiences with someone who would reject the difficulties I had already shared.

Of course, in all fairness, I must say this is my perception as the author of the paper, but nevertheless, I feel that his reaction only proved my point, that talking about such issues is so threatening to certain people that they must negate, devalue, diminish, disrespect, and completely obliterate such voices speaking out, so that they themselves can live in a (falsely) protected world of sterility and (unearned) privilege. This reader was keen enough to go for the jugular of my psyche and not only attempt to erase everything I had accomplished by first calling it a farce, then saying I had no story of substance ("unique" quality) in the first place. Later, when looking over the "notes," these two statements jumped out at me and seemed to sum up the critic's entire view of my work. I was viewed as a "bleeding heart" who was crying over spilled milk. And I must be doing this in a "self-promoting" attempt at receiving attention. I address this very issue in my paper when I quote Paul Rivel's book, Uprooting Racism: How White People Can Wish for Racial Justice in his chapter called "Who is a Victim?":

There is nothing, absolutely nothing, good about being a victim. Being a victim means you were not powerful enough to protect yourself from someone else's abuse. It means your life, livelihood

or family was threatened and possibly taken away. Those of us who have been raped, robbed, battered, harassed, or discriminated against know how painful and long-lasting the effects can be. Nor is it necessarily safe to step forward and describe one's victimization. Survivors of abuse are routinely not believed, blamed and revictimized. (47)

Thus, the person who read my paper proved my point, utterly—victims have more to lose than gain by declaring their victim status. The day after this conversation, I called my mother and asked her if she would continue taking notes on her life history. She said, "You mean write about all this yucky stuff?" I said, "Yes," and added that I really wanted her to do so although I knew it was difficult. She said that the interviews had caused more memories to surface and she, herself, was astounded by what she had survived.

Next, I shared my paper with Kevin Clark, my friend and mentor. When I asked him what he thought of it later, he told me that he had read it over several times. He said that when he was having a difficult time with his health, he would read the paper from beginning to end, then start over again, or else he would read over and over the parts that seemed most to speak to him. He said he could relate to my experiences. He said that although he identifies very much with his religion, he has a firm understanding of how religion can victimize some people and chooses to approach and practice religion in a way that does not victimize others. He thanked me for sharing the paper with him and said he admired my courage in sharing it. He said that he could understand my struggles and had lived through very similar experiences of his own and still wrestles with some of the same issues. Kevin supports me by allowing me to talk to him about these ideas, and he, like others, courageously shares his own feelings and experiences with the points my paper addresses. I thank Kevin for being a person of immense strength and astounding personal beauty.

The other main person who was influenced by my paper was my ex-husband, Scott. He read it after we were separated and before we were divorced. His initial reaction was to be astounded. He told me how proud he was of both me and my mother. He said that reading the paper made him understand my mother much better than he had before. He wanted me to apologize to her for him for all the things she had suffered. He told me that the paper was very effective and very moving. As I said, this was his initial reaction, and I believe it to be his authentic and most courageous reply. But since that time, when we have argued, as divorcees will do, he has dredged up the paper and thrown it in my face with an ugly and hurtful twist. He has said that my paper was a list of half-truths, that it was manipulation, that I only told what I wanted to say; (at these times he echoes the critic that ridiculed me while sitting on my couch). I really do not know what he believes is a half-truth, unless he believes, like the other critic, that the only effective way to communicate these ideas is to expose myself so completely that I am destroyed. I think this basic argument is a way of saying, "I will not confirm your experiences until you become so vulnerable, powerless, and weak that I have control over you." Understand, I believe that neither my ex-husband nor the other critic are aware of their cruelty, on the contrary, because of their privilege, they are not even conscious of the implications of what they are saying. Therefore, their responses are completely understandable, yet very destructive. Again, in the paper I was speaking from my point of view. I showed him in both a good light, as being one person who supported me through my "mental illness," and bad, as being one of the two contributors to a bad, empty marriage (the other contributor, of course, being myself.) Nevertheless, in the arguments, specifics never come into play, and essentially I believe he thinks the paper is courageous and so am I. If he does not think so, it is still nevertheless true.

Authenticity: a true self

The main thing that speaks about my paper, about the change it has had on myself and others, is the authenticity with which most other people respond. And this authenticity is charged by the sincerity of my paper. Those who find it moving and inspiring are affected by the same thing as those who find it threatening—it's candor. Since the research process and writing of my paper and since presenting the work several times, I have been imbued with a personal authenticity and power that has made my life better in every way. Writing the paper and doing the research was, at times, a very painful process. It was never

easy, not at any point in the process. But what the paper, through Dr. Beth McCoy and the McNair Scholar's Program at WSU, has given me is much more than I can articulate in a short paper. How the process has allowed me to grow can only be revealed through my life as a mother, student, friend, daughter, sister, and acquaintance. This is where I believe the change has been most affected. I carry my research project "The Color Purple in a Field: A Conversation" with me everywhere. It has changed me. It has made me whole.

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Pain Perception in the Elderly

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This study is designed to give background procedural research for future investigations in the area of measuring pain perception in the elderly. It describes the Thermal Sensory Analyzer 2001 (TSA) as the standard for testing pain perception. Many clinicians who treat patients with limited range of motion (ROM), excoriations,

ankylosis, and sprains or tears of ligaments need to know whether they are pushing their clients for medical benefit, or just simply hurting them when performing ROM maneuvers. Elderly people comprise a large portion of clients that a physical therapist or a physical therapist assistant (PT/PTA) sees daily. It has been well documented that they receive poor quality of care because of unfounded allegations of low pain perception or higher pain thresholds in the elderly. According to a study done by the Institute of Medicine (IOM), there are too many people suffering from severe pain and distress simply because of inadequate care (PT Bulletin, July 4, 1997; 12(27):4). For this reason, this procedure may be helpful in determining adequate care of pain by developing a quantitative means of measuring pain perception.

The feature story in the July 4, 1997 PT Bulletin stated that 40%-80% of patients with cancer, AIDS, or other diseases report inadequately treated pain. More than 1/3 of Americans suffer from recurring or persistent pain, also called chronic pain.¹ Chronic pain is pain which persists beyond a 3-month period of healing. Because this condition is associated with depression, social isolation, disruption of intimate relationships, and prolonged disability, chronic pain sufferers may seek the help of health professionals, including psychologists, social workers, chiropractors and many others. The cost of the health care system is enormous.

Pain is a complex phenomenon. Therefore, it is important that the perception of pain be studied more closely. Morris (1991)² (p121) takes the sophisticated view that:

"anything beyond the most commonplace acute pain is a complex perceptual experience located not strictly within the individual nervous system, but also within the open-ended social field of human thought and action. Pain . . . is far more than merely a medical issue. It exists within us only as it wraps itself up . . . in meaning."

This suggests pain is more than a pain receptor response. It is more than the reaction to a punch in the arm. Pain is what we make it out to be as individuals. Pain is the product of bodies, cultures, and minds. "It is not 'single, coherent, unified': Aristotle considered it an emotion; Descartes a sensation"² (p121). It is an experience of interpretation, formed by gender, religion, anger, depression, social class, and many other factors. It is influenced by psychological, social, and biological factors that combine and interact in ways unique to a given individual.¹

Influencing Factors

The first influencing factor of pain is psychological. It is often associated with anxiety and emotions such as fear. Webster's II (1988) defines anxiety as an intense fear or dread lacking a clearly defined cause or a specific threat. Anxiety increases when you focus on the pain, whether it is present or impending, and it can result in increased intensity of perceived pain.¹ Over time, feelings of anxiety become such a part of pain

that people have difficulty differentiating the two. Emotions do not cause pain, but may affect it by increasing intensity levels or undermining coping abilities.¹ Scudds et al.³ noticed when using the Minnesota Multiphasic Personality Inventory (MMPI) scale or the Basic Personality Inventory (BPI) on individuals with fibrositis there was considerable elevation of mood and personal emotional adjustment such as hypochondriasis, depression, and anxiety.

The social aspect of pain is the second factor, and it is very costly, taking its toll in business and in families. Pain is a billion-dollar business. It is estimated that 700 million work days per year are lost, with health care costs and compensation totaling \$60 billion a year.¹ It seems to be common to hear of Dr. Kevorkian assisting in the death of a chronically ill person suffering from pain and a general poor quality of life. According to the July 4, 1997 issue of PT Bulletin, the IOM is worried that if assisted suicide became legal, many people would opt for death instead of dealing with pain. The report noted that physicians concentrate on acute illness and heroic rescues rather than assessing and managing pain. Out of 156 medical schools, only five require a separate course dealing with end-of-life care.

The third influencing factor of pain is biological. Everyone's perception of pain is different, and there are opposing cases where people have either extreme pain or very little pain. Fibromyalgia or fibrositis is a condition that affects 3-6 million Americans.⁴ It mostly affects women between the ages of 20-50. These people have a high number of reproducible tender points in at least three anatomical planes when firm pressure is applied. These symptoms must persist for more than three months. Fibromyalgia is a chronic condition with symptoms of chronic muscular aching and muscle weakness. There is a presence of pain from the tender points in absence of laboratory, radiographic, and examination evidence of inflammatory disease. The patient with fibrositis shows significantly reduced pain thresholds and tolerance to a needle prick as compared to a normal group. Sixty to 90% of patients have disturbed sleep patterns resulting in non-restorative sleep. This means they awake feeling tired and with morning stiffness and achiness. The pain usually affects the neck, shoulders, lower back, and lower girdles.

People with very little pain may have pain insensitivity or react indifferently to it. Case studies of two brothers with a congenital indifference to pain are documented in a rare disorder of pain perception.⁵ Congenital indifference is when a patient has adequate perception of painful stimuli, but is indifferent to it centrally (i.e., they do not recognize it as noxious). Congenital indifference is usually manifested in childhood by a history of unrecognized trauma, indifference to painful stimuli, or self-mutilation. Congenital insensitivity occurs where a patient cannot perceive pain or poorly differentiates pain (i.e., sharp from dull). This likely indicates a spinal or peripheral nerve abnormality.

The Elderly and Pain

Closs⁶ has stated that little information on the experience and control of pain in the elderly is available in medical or nursing texts. This is a disturbing fact because elderly people comprise the group most likely to suffer both chronic and acute painful diseases, to have several diseases and to take multiple medications.

Demographic changes show that a larger number of elderly people are living longer and will require more effective means of controlling chronic pain.⁶ The total population has tripled since the 1900's.⁷ Thirty-one million people (or 12% of the U.S. population) is 65 and over. In another 35 years, the elderly should double in number again. The Census Bureau anticipates 62 million people will be 65+ by the year 2025. That is one in five Americans. By the year 2045, the number of elderly will reach 77 million. The very elderly, people aged 85+ are the fastest growing age group. There were 4 million elderly over age 85 in 1996 (NBC Nightly News. June 21, 1997). By the year 2020, it is estimated to increase to 7 million, and by the year 2045 they will constitute 1 in 5 of the total number of elderly. By the year 2050 it is estimated that 19 million people will be over the age of 85.⁷

It is commonly believed that elderly people perceive pain less intensely and at a higher threshold than their younger counterparts, simply because they have experienced these pains for so long.⁶ It is also commonly held that older people can tolerate more pain than younger people. This may be due to faulty diagnosis instead of facts. Researchers found that although 57% of communicative elderly reported chronic pain, physicians only diagnosed 43%.⁸ By comparison, chronic pain was diagnosed in 17% of

non-communicative patients. Sengstaken and King (1993) indicate that chronic pain estimates in nursing home patients are high, but physicians neglect to identify their patient's pain.

The elderly population is significantly under-represented at major chronic pain centers because they are viewed as poor candidates for treatment. This under-representation may be reflected in increased death rates among the elderly due to the added stress of chronic pain.⁹

Researchers have found that the mortality rate of the elderly (78.4) was two times that of younger (53.3) patients. The mortality rate of the very elderly (84.5) was three times that of younger patients.¹⁰ As suggested by these statistics, the assumption that elderly people perceive less pain may have an effect on their health care management, especially if they have a medical condition in which pain is a symptom.

The elderly who have not died, and who live alone or reside in nursing homes often have inadequate means of controlling or treating their pain. Older patients over the age of 70 with chest pain wait longer before seeking medical attention than younger patients, who seek help within 4 hours.¹⁰ Older patients wait an average of 76 hours.

Many cases of severe pain are treatable with prescription opioids that decrease the sensation of pain. Pharmacologic treatment of pain causes some degree of cognitive impairment in all age groups.¹¹ But in the elderly, we do not know how much impairment already exists. As cognitive impairment increases, patients report fewer pain problems. Pain intensity and the number of localized complaints decrease with increased impairment.

Measuring Pain

Measuring pain perception quantitatively is a complex task and requires several steps. The first step may be setting a measurable standard for pain. We must discover if pain is perceived differently in people aged 65 and people aged 85. Ascertaining this would help us decide whether treatment should be different for each patient.

In addition, older people are often viewed as being a homogenous group, i.e., a person who is 65 is viewed the same physiologically and psychologically as one who is 90 years old. This may not be true. Here, we outline a procedure for future experiments to compare pain perception in different age groups. One possible null hypothesis is that there is no significant difference in pain thresholds in a group of subjects between the ages of 65-74, 75-84, 85+, and a sex-matched group of subjects under the age of 65. If this is the null hypothesis, then the alternate hypothesis may be that there is a significant difference between the age groups.

Methods

Subjects

A sample of healthy male and female subjects ages 18-64 should take part in the control portion of the study. The variable group should consist of subjects age 65+. Two females to every male should be used for the study. This ratio reflects the actual geriatric population in the U.S. Today, it is well known that women outlive men into old age by a ratio of nearly 2:1. There are 1.5 women for every male aged 65 and above. Among people aged 85 and above there are 2.6 females to every male.⁷

Apparatus

The Thermal Sensory Analyzer (TSA 2001) device should be used to deliver and measure the heat and cold sensation and the heat and cold pain thresholds of the subjects. The TSA-2001 system consists of a rectangular thermode through which cold and heat stimuli can be administered, and an IBM compatible PC with Windows-based software. The TSA-2001 was developed by Medoc Ltd; Advanced Medical Systems; Compass Medical Technologies, Inc; 7300 France Avenue South; Suite 310; Minneapolis, MN 55435. The system is designed for quantitative sensory testing of slow and fast nerve fibers. The thermode is heated or cooled within manually preset limits of 52 degrees Celsius and 0 degrees Celsius, and the rate at which the thermode increases or decreases the temperature should be set at 1.5 degree increments. A slow linear

thermal ramp should be used to give acceptable results. A pyramidal or flat-topped pyramidal waveform of thermal change is ideal.¹² The baseline or accommodating temperature of the thermode should be set to 32 degrees Celsius. The TSA-2001 provides automated calculations of averages, trends, and variances for each subject.

Procedure

Each subject should be seated in a chair with his/her arm resting on a table. The thermode should be placed on the superficial brachioradialis, approximately 5cm from the olecranon process, and held in place by a Velcro strap. Once the thermode is in complete contact with the surface of the forearm, the subject should be given a hand-held signaling device for the hand opposite the arm being tested. The arm to be tested should be randomly chosen, and injury or abnormal trauma or events to the arm chosen should be recorded in the comments section. The subjects are not allowed to touch any other part of the machine and are instructed not to look at the monitor.

During the experiment, each subject should be given four tests: cold sensation (CS), heat sensation (HS), cold pain threshold (CPTH), and heat pain threshold (HPTH). A sample test should be given for each stimulus to reduce subject anxiety and to allow them to become accustomed to the thermode and to the bell which signals that the test is about to begin. The sample tests are followed by a test for cold sensation which consists of four trials or stimuli. The test for CS should be immediately followed by an identical test for heat sensation. The subjects are instructed to push the hand-held button as soon as they feel the thermode become cooler. During the four trials of each sensation, the TSA-2001 records the mean, standard deviation, and variance of the subject's response (this will give the mean value for 1 sensation) and displays the temperature at which the subject presses the button. There should be approximately a 5-8 second wait between trials.

The cold pain threshold test should be administered, followed by the heat pain threshold test, and the instructions given should vary only slightly. The tests are performed in three trials each, and the subjects are instructed to press the hand-held button just as they began to feel pain. The results of these tests are again recorded and displayed in the same manner as above. The total time for the experiment should be less than 15 minutes, each test taking approximately 3.0 minutes. The results of these tests are used as the control group figures and are compared to the old age groups.

Discussion

Threshold variability may be caused by differences in the amount of tissue overlying receptors, the space between receptors, the physiologic properties of receptors, the speed of transmission of impulses, or how fast the brain processes the impulse and the speed of the persons hand triggering the button.¹² Previous studies indicate that subjects whose threshold values are near the upper range of preset stimulus parameters frequently do not press the button fast enough and their thresholds are unable to be determined. In such patients, it will not be possible to get the appearance/disappearance thresholds.

The reason the trials should be divided into temperature groups and run in succession is that there is considerable evidence that there are separate receptors and fibers for cold sensation, heat sensation, cold pain threshold, and heat pain threshold.¹² This procedure is intended to provide time for the subjects to distinguish between CS and CPT, as well as HPT and HS. Random switching of the temperatures would not give them that ability. Previous testing has shown that differences in thermode size, sites of testing, and thermal ramps significantly affected threshold responses.¹² So, these factors should be held constant, and the age and sex of each subject should be recorded, since they seem to have an effect on response differences too.

Since individuals often lack abundant warm receptors at some sites such as the hands, legs, and feet, these areas may not be tested.¹² Often, the subject feels heat pain without ever recognizing the warm sensation appearance.

The Analysis of Variance should be used to determine whether there are statistically significant differences between the four age groups on each of the four variables. The four variables are cold sensation,

warm sensation, cold pain threshold, and heat pain threshold. A confidence interval (CI) should be used to show that the population mean will be in the range of values defined by the sample mean plus or minus twice the standard deviation of the mean, 95% of the time.

Future studies using the above mentioned procedure might provide healthcare workers with base-line information for performing less painful rehabilitation, especially on older patients. Future studies may also tell us whether pain is more biological, social, or psychological. People aged 65 and above are becoming one of the fastest growing sectors in our population. With this information, therapists might be able to improve quality of life of the elderly in nursing homes or in treatment centers.

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Administrators' Perceptions of School Effectiveness in the Wichita Public Schools

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Abstract

As public education enters the next century, school administrators need to adjust their perceptions and ideas regarding school effectiveness in a culturally diverse environment. Cultural awareness and understanding are vital issues in addressing the needs of the "entire" school population. Today, schools are fragmented because of a hierarchal system with minimal sensitivity to diverse students. Based on this bureaucracy, the equal opportunity for expression of ideas and solutions may become stymied and neglected, thereby impacting the students' morale and success. Data in this study were collected from 38 Wichita area schools in which principals were asked to respond to a list of items to measure their perceptions with regard to school effectiveness. Results indicate that priority issues include sports, balancing the budget, and school competition. Unfortunately, cultural awareness and sensitivity ranked low. This observation calls for caution and a rethinking of priorities in education, especially as we enter the new century, where cultural diversity and globalization will be foremost.

Administrators' Perceptions of School Effectiveness in the Wichita Public Schools

Establishing healthy academic relationships, open dialog between people of different cultural backgrounds, and success for all students is a major challenge for school administrators. Addressing the needs of a diverse student population is a vital issue due to the growing numbers of ethnic minorities and immigrants who demographically change school populations each year. For example, the United States Bureau of Census (1994) projects that by the year 2005, nearly four out of ten youths under the age of 18 will be minority. Despite the fact that we live in an ethnically diverse nation, schools have tended to overlook cultural understanding as a strategy to increase their effectiveness. Schools still fall short in preparing students of diverse backgrounds to succeed. For example, in 1995, only 40 percent of Hispanic high school students graduated, and according to Tunstall (1995) this number will continue to decrease unless school administrators intervene. It is imperative that educators implement strategies to encourage academic success for the entire school community.

According to Dometrius and Sigelman (1988), "in recent years the deteriorating quality of public education has occasioned widespread alarm and pressure to introduce new programs" (p.70). Establishing more effective lines of communication between administrators, teachers, parents, and students, and initiating effective ways of addressing the educational concerns of diverse students will help to combat stereotypic attitudes toward minority students and to create a cohesive and positive learning environment.

School administrators, with the help of government agencies, have introduced programs designed to alleviate these growing educational concerns. ESL (English as a second language), site-based magnet schools, and various volunteer programs have been implemented to address such issues as language differences, demographic changes, and cultural diversity. Unfortunately, this is not enough. The United

Nations Children's Fund Executive Board (1984) states: "Children are suffering needlessly because of partial and narrow approaches used for helping children (fragmentation), rather than an all-out encompassing approach" (cited in Tunstall, 1995, p. 11). For schools to effectively support all students, administrators need to evaluate their perceptions, ideas, and attitudes regarding academic success and cultural diversity. This study poses one major question: Where is cultural awareness and sensitivity ranked among other issues of importance such as budgeting, sports, and school competition?

School Effectiveness and Cultural Understanding

School effectiveness and cultural understanding are broad terms which need to be defined. In this study, school effectiveness refers to what school administrators consider to be important in preparing students to effectively serve society. Cultural understanding, awareness, and diversity refer to the healthy relations and dialog between people of different cultural backgrounds.

The Importance of Culture

Culture influences who a person is and how he or she thinks and behaves in a particular environment. It is represented and symbolized by groups of people who "share common values, attitudes, and perceptions—a way of life" (Kabagarama, 1993, p.5). Culture influences learning and prepares people to serve society. Culture may also be a hindrance to learning, especially if minority cultures are not represented in mainstream society. For example, those whose learning styles differ from the mainstream must either adapt (assimilate) to the situation or risk being labeled, stigmatized, and alienated. According to Boykin:

Black children are exposed to "high activation levels" characterized by noises from television, stereos, and a steady flow of people in and out of the home. Consequently, they learn verbal concepts better through instructional movement rather than through passive learning, which is typical of American schools. Such an orientation creates or magnifies difficulties, [in which] children are often placed in "low-ability or special education classes" (cited in Joseph, 1996, p. 344).

For those who have been historically labeled "inferior," the damage is two-fold. Due to the lack of understanding, "some students may begin to perceive themselves as intellectually incompetent, which in turn heightens low achievement, motivation, and school failure" (Joseph, 1996, p. 344). This may have lasting negative influences on these students and on society.

Focus of Study and Methodology

Thirty-eight elementary, secondary, and high school principals from Wichita, Kansas participated in this study in the spring of 1995. Most of the public schools in Wichita have diverse populations of students due to immigration and busing. A questionnaire was mailed to the principals by Dr. Daisy Akiiki Kabagarama of Wichita State University, who was the principal investigator.

Although the questionnaire had several sections focusing on different areas of school performance, this study utilized the twenty-seven items that dealt specifically with effective schooling. The principals responded to the following question: To what extent does your school stress the following areas of effectiveness? Each item was weighed according to a 4-point Likert scale ranging from: 1. Not at all important 2. Somewhat important 3. Important 4. Very Important.

Results

The table below shows each item and its score.

Table I: The ranking of each item.

ITEM	SCORE
Minimizing cost	3.8
Using scarce resources effectively	3.7
Balancing the budget	3.7
Ability to pay attention to individual employee's goals and motivations	3.7
High quality sports	3.6
Ability to resolve conflicts among members of the school	3.5
*Happiness among students	3.5
Harnessing needed resources	3.4
High quality academic program	3.4
Ability to compete with other similar schools	3.4
Ability to cater to employee's physical and emotional needs	3.3
High graduation rates	3.3
Ability to serve the community well	3.3
Ability to please all our constituencies	3.3
Meeting our stated goals	3.2
Coordination of all school's departments	3.2
High school retention rates	3.2
Open lines of communication among employees	3.1
Having up-to-date technology	3.1
*Promoting cultural understanding among members of the school	3.1
Involving employees in the decision-making process	3.0
Ability to adopt to the changing needs of the environment	3.0

Ability to improve society	3.0
Ability to adhere to rules and regulations	3.0
Ability to improve people's lives	3.0
Ability to obtain and process information	2.9
*Open lines of communication among employees and administration	2.7

Discussion and Conclusion

Data obtained from this study suggest that areas of top priority include minimizing cost, balancing the budget, implementing high quality sports and using scarce resources effectively. Unfortunately, cultural understanding and sensitivity ranked among items of lower priority. Further analysis reveals that happiness among students and the ability to resolve conflict among school members were also among the top priority items. On the other hand, open lines of communication among employees and administration ranked last. This raises the question, "How can happiness be achieved for all students and conflicts among school members be resolved if open lines of communication and cultural understanding are not among top priority?" This observation calls for a rethinking and reordering of priorities in order for schools to serve the students more effectively.

Although this study was limited in size and scope, it reveals key issues with regard to school effectiveness. Future research needs to focus attention on the following issues: mentoring programs, funding allocated for cultural diversity programs, and site-based magnet schools that incorporate cultural diversity into the school curriculum.

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Communication and Learners

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Abstract

This study explores connections between methods of communication (e.g., oral, written, visual, and kinesthetic) and learning at the elementary school level. It considers communication skills used to teach diverse learners as well as effective teaching strategies. This was accomplished by observing students and teachers in the classroom and by interviewing teachers and administrators. In addition, this study investigates methods of communication utilized in third and fourth grade classrooms at a communication magnet elementary school and at a traditional elementary school. The research questions examine the following: (a) How do teachers define communication skills? (b) What forms of communication are used in classroom instruction? (c) How do teachers put these forms of communication into practice? The research provides information to help educators gain an understanding of the teacher's instructional choices and expand their knowledge of how communication methods are used effectively in the classroom.

Communication and Learners

Communication is a vital part of the world, whether it is communicating one on one or communicating across the world. Communication is happening in all forms and in a variety of technologies. H. Bee (1995) states that "from very early, probably from the beginning, child's language is meant to communicate, and the child adapts the form of his language in order to achieve better communication" (p. 243). This study examines communication methods related to teachers in classrooms, for what is education without communication? In exploring communication and education, this study considered the theory of multiple intelligence in David Lazear's *Seven Ways of Knowing*, which is a practical application of Howard Gardner's research. Learning style theories also deal with communication and learners: "The key issues include: people are different, learners will respond differently to a variety of instructional methods, and we need to respect and honor the individual differences among us" (Brandt, 1992, p. 12). Even though these theories were examined, research was not limited to them. The research was designed to discover the teacher's definition and use of basic communication skills.

This study explored three questions, (a) How do teachers define communication skills? (b) What forms of communication are used in classroom instruction? and (c) How do teachers put these forms of communication into practice? Research involved teacher and administrator interviews and observations of third and fourth grade classrooms at two different elementary schools.

In exploring communication and learners, this study found that the communication skills mentioned most often were oral, written, visual and kinesthetic. How we communicate with people and how we learn to communicate is valuable in every part of our lives. Through understanding and evaluating teachers' instructional choices, educators will increase their knowledge of communication methods and their effectiveness in classrooms.

Methods

Subjects

Five female teachers were observed and interviewed in their classroom environments. There was an average of 25 students in each classroom observed. Interviews were also conducted with the administrators from each school; both administrators were male. The two school sites in this study involved a communication magnet elementary school in an urban area (population 300,000) and a traditional elementary school in a small town (population 8,500). The magnet school has two campuses; one campus houses kindergarten through second grade and the other campus houses third through fifth grade. The traditional school has grades kindergarten through fifth, all at one campus, with each grade level inhabiting a different hallway. At the magnet there were multi-age-level classrooms with third and fourth grades combined, while at the traditional site there was a looping program, in which the teacher moves with the students to the next grade level. Classrooms, hallways, and art fairs were observed at both schools. There was more diversity in socio-economic status, ethnic backgrounds, language programs (ESOL) and teachers (an ESOL teacher and an art teacher) at the magnet school than at the traditional school.

Materials

Observation checklists and interview schedules were used for teachers and administrators (See Appendices A through E). A matrix was used to examine a variety of documents such as newsletters, school brochures, parent handbooks, photos of art work and hallway displays, and procedure posters (See Appendix F).

Procedures

One-hour observations were made in classrooms with teachers instructing students in a typical lesson or lessons. Interview schedules were used in which the teachers were asked the same questions. These interviews were taped and notes were taken. The same procedure was used in interviewing administrators, with a similar set of questions. The taped information was transcribed and categorized. The data collected was analyzed during and after the observation for content and patterns. Triangulating sources, the act of putting all the pieces together from different points of view, provided information to draw conclusions.

Results

This study asks the following questions: (a) How do teachers define communication skills? (b) What forms of communication are used in classroom instruction? and (c) How do teachers put these forms of communication into practice?

Definitions

In exploring the first question—"How do teachers define communication skills?"—this study examined and analyzed the interviews conducted with teachers and administrators. According to the data, the teachers and administrators were in agreement (98%) on the following definition of communication: Communication, expressing meaning to others, involves oral, written, and visual skills. The educators involved in this study indicated that these were important skills to use, as well as ones they wanted their students to understand and apply. In addition, kinesthetic communication was a skill mentioned by 60% of those interviewed. They considered this skill important because of the value of hands-on learning.

Relationships were mentioned as another important subject regarding communication skills. Communication was described as important in building solid relationships that encourage learning. One administrator stated,

If there is any thing wrong in this country it is with relationships or the lack of . . . People are resources and one place that can change this [lack of relationships] is the public schools and how we

treat each other and model for the students how people should treat each other . . . is this communication? You bet it is, at its greatest.

Communication Forms

The second question—"What forms of communication are used in classroom instruction?"—was primarily answered by the observations. The teachers used a variety of communication forms in instructing their students. There were strategies that used unique approaches to oral, written, visual, and kinesthetic communication. Oral communication was observed with a teacher going over papers with students sitting around her on the carpet. Another teacher worked with a small group instructing them on a poetry assignment. When students were writing in their journals on daily oral language (DOL), written communication was observed. Visual communication was observed with artwork on bulletin boards and in procedure posters. One teacher used the overhead projector with a lesson on "I" and "Me", demonstrating the work sheet for the students. The use of kinesthetic communication skills was observed in the classroom to a higher degree than what was reflected by the teachers in the interviews. For example, the classroom used centers (the students were allowed to move around the room), manipulatives (e.g., math fraction circles), and group discussions. There was diversity in the classrooms with students and learning styles, so there was a variety of instructional choices.

Practice

The third question—"How do teachers put these forms of communication into practice?"—was answered by examining the data collected. Strategies like SQ3R's, the 5 Step Problem Solving Plan, the McRat program, Book Report Projects, the Buddy Program, and programs like Junior Great Books and Education Management Group (EMG) were communication forms put into practice.

The communication magnet school was involved in strategies like the McRat Writing Program (Multicultural Reading and Thinking) in which students analyze elements in a story and develop their writing skills. Junior Great Books, a program in which the leaders are trained before they enter the classroom, covers different communication strategies. The leaders book, *Shared Inquiry* (1992) explains: "The goal of Great Books programs is to instill in adults and children the habits of mind that characterize a self-reliant thinker, reader, and learner. Great Books programs are predicated on the idea that everyone can read and understand excellent literature . . . As a leader, you will develop you own mind as you help your participants think for themselves and learn from each other" (p. ix). The students read a story then participate in a discussion with the leader. A question starts the discussion, there are no right or wrong answers and the leader does not express his or her opinion. The leader graphs the discussion and the students can then visualize how the discussion has progressed. The leader (teacher), sometimes take a sentence or a paragraph and the students illustrate it. One teacher stated: "by illustrating, they caught a lot more in the story than just reading the story." The illustrations were then put in sequence in a display in the hallway. This program enhances the exchange of ideas, which is communication.

During a math lesson, students were working with a packet of fraction circles. These circles were divided into multi-colored areas to visually show the students different fractions. There were fraction work sheets which helped the students with oral, written and visual communication. The teacher used the overhead projector with the same work sheets and fraction circles used in the demonstration. This activity addressed all forms of communication, and students were involved with the fractions, the teacher, and each other.

The traditional school has incorporated Survey, Question, Read, Recite, and Review (SQ3R's) and 5 Step Problem-Solving Plan (a) Identify the problem, (b) Gather information, (c) Develop a plan, (d) Evaluate alternatives, and (e) Draw conclusions) into the curriculum. These two strategies are designed to help students with study skills and to help them see how a strategy can be used in various domains. Oral and written communication is emphasized in these strategies. In addition, a Buddy program was utilized in some classrooms in which the older students from one class work with the younger students. The buddies do some journal writing and work on projects together (e.g., book reports and writing stories or poems with

illustrations).

An unusual tool is the Educational Management Group (EMG), which is a service that provides a satellite and a TV. The class goes to the EMG room, and the students watch a video of the topic the teacher has chosen. One class watched an African safari; another class had a discussion with Blackbeard. The children also participated in an interview with Miss USA in which she emphasized the importance of reading.

Both schools were setting goals and looking toward the future. The magnet school is considering the following four goals for students to accomplish: (a) a non-fiction science report with visual aids, (b) a three minute oral presentation with props, (c) publish a book, and (d) a group activity graded with a state rubric designed for group activities. The traditional school has increased their technology with a new computer lab and a teacher. This will give the students more hands-on experience with technology. They will be continuing the looping program because of the impact that it is having on developing good communication skills between teachers and students. These goals address the communication skills examined in this study.

Discussion

Communication is a vital issue to education; if information is not being communicated effectively, then learning does not occur. The teachers in this study were observed using a variety of instructional strategies to provide an effective environment for learning.

The educators in this study were highly involved in teaching communication, meaning and information, and reaching out to these children and looking at the best ways to inspire children to want to learn. They were implementing a variety of communication skills and instructional strategies. When asked her favorite way to communicate, one teacher said it like this:

The most direct way is person to person, and I guess I would have to say that is the best because it is one to one. I try to convey this individually, group, or small group, because if you don't touch a child today you don't touch a child. By contact—if you don't touch them, you don't make contact, I mean teach them, touch their minds.

What better way to make contact, than to touch their minds?

This study has given a new insight into the classroom for the researcher. As a future art teacher, I envision an art classroom in which oral, written, visual, and kinesthetic communication skills are being used to create art as well as to enhance learning. Communication and learning has taken on a whole new dimension: Communication is a key element in educating, motivating, and reaching children

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Appendix A

McNair Scholars Program
Dr. Cheryl Hamilton and Pamela Bauer-Kane

Observation Checklist

Teacher Code:

Date:

Time:

Title:

Where (room setting):

Setting

Arrangement/Grouping

Displays (theme/subject)

What (resources available):

Books

Visuals

Media/Technology

Materials (supplies)

Who (participants):

Number of students

Diversity

How (activities/events):

Focus

Procedure

Appendix B

McNair Scholars Program
Dr. Cheryl Hamilton and Pamela Bauer-Kane

Interview Schedule

Teacher Code:

Date:

Time:

Thank you for taking your time to participate in this interview. We really enjoyed observing in your classroom and appreciate your sharing your teaching experience with us. We would like to begin with a background question about your teaching career.

1. How many years have you taught?
 - at what grade level?
 - how long at Price-Harris?
2. What was typical about the lesson I observed?
3. What is your favorite way to communicate in your class?
 - what is your children's favorite way to communicate?
4. What do you think of as communication skills?
 - how do you communicate with parents?
5. Could you describe any changes at Price-Harris that relate to its focus on communication as a magnet?
 - in your teaching methods?
 - in your assessment methods?
6. You've talked about (oral, written, kinesthetic,) do you do any visual (or other) communication?
7. Do you have doodlers?
8. Do you do brainstorming with words or symbols?

Thank you for your time and thoughtful consideration of these questions. Could I call you if I have a question as I listen to the tape? I really appreciate your information.

Appendix C

McNair Scholars Program
Dr. Cheryl Hamilton and Pamela Bauer-Kane

Interview Schedule

Teacher Code:

Date:

Time:

Thank you for taking your time to participate in this interview. I really appreciate your sharing your teaching experience with me. I would like to begin with a background question about your teaching career.

1. How many years have you taught?

-at what grade level?

-how long at Rex?

2. What do you think of as communication skills?

-how do you communicate with parent, co-workers?

3. What is your favorite way to communicate in your class?

-what is your children's favorite way to communicate?

4. You have talked about (oral, written, kinesthetic), do you do any visual (or other) communication?

5. Do you have doodlers?

6. Do you do brainstorming with words or symbols?

7. Could you describe any changes at Rex since you have been teaching here?

-in communication?

-in your teaching methods?

-in your assessment methods?

Thank you for your time and thoughtful consideration of these questions. Could I call you if I have a question as I listen to the tape? I really appreciate your information.

Appendix D

McNair Scholars' Program
Dr. Cheryl Hamilton and Pamela Bauer-Kane

Interview Schedule

Teacher Code:

Date:

Time:

Thank you for taking your time to participate in this interview. We really enjoyed observing your classroom and appreciate your sharing your teaching experience with us. We would like to begin with a background question about your teaching career.

1. How many years have you taught?
 - at what grade level?
 - where?
 - how long at Price-Harris?
2. Could you describe some of the communication methods used at Price-Harris?
 - how do you communicate with parents?
3. Could you describe any programs for teachers you offer that relate to communication?
 - who
 - how influenced teaching?
4. Could you describe any changes at Price-Harris that relate to its focus on communication as a magnet?
 - in teaching methods?
 - in assessment methods?
5. What are your goals for incorporating communication further into Price-Harris?

Thank you for your time and thoughtful consideration of these questions. Could we call if we have a question when reviewing this tape? We really appreciate your information.

Appendix E

McNair Scholars Program
Dr. Cheryl Hamilton and Pamela Bauer-Kane

Interview Schedule

Teacher Code:

Date:

Time:

Thank you for taking your time to participate in this interview. I really appreciate your sharing your teaching experience with me. I would like to begin with a background question about your teaching career.

1. How many years have you taught?

-at what grade level?

-how long at Rex?

2. What do you think of as communication skills?

3. How do you communicate with your students?

-how do you communicate with parents and co-workers?

4. Could you describe any changes at Rex since you have been teaching here?

-communication?

-teaching methods?

-assessment methods?

Thank you for your time and thoughtful consideration of these questions. Could I call you if I have a question as I listen to the tape? I really appreciate your information.



Guide to Psychophysiology Laboratories

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Abstract

The last comprehensive description of a laboratory designed for recording, enhancing, and interpreting bioelectric events within the human brain was published in 1980. Since then, digital technology

has continued its rapid advances and left instructional literature far behind. The advent of powerful processors, sophisticated software, and precision instrumentation has created a need for an updated description of a laboratory suitable for psychophysiological research. To that end, this tutorial will serve as a guide for graduate students responsible for organizing the hardware and software required for a psychophysiology laboratory.

A User's Guide to Establishing Psychophysiology Laboratories

Ever since the 19th century, anatomist and physician Franz Joseph Gall proposed palpating the contours of the skull in order to characterize the brain, researchers have gradually developed techniques that have allowed them to study bio-cognitive mechanisms without invasive surgery or direct electrical stimulation. With the discovery of the electrical properties of the nervous system by Galvani and further exploration by Vigoroux, researchers abandoned attempts to characterize the brain by "braille-reading" the curves of the human skull with their fingertips and embraced the use of the new electrodes, voltmeters, and galvanometers. As skilled circuit builders and perceptive researchers, the psychophysicologists of the early 20th century, such as Jung, investigated the involuntary electrical responses of the human body during various emotional states. At this point, strong scientific evidence for the mutually-dependent connection between psychological and physical states began to emerge.

With the advent of integrated circuits, microchips, and personal computers during the last 20 years, today's psychophysicologists are skilled computer programmers as well as observant cognitive-psychologists. Among other advantages, digital computers can easily manipulate the vast amounts of data gathered by the instrumentation of modern laboratories and have allowed researchers to analyze bioelectric recordings with exacting precision. In fact, the use of computers facilitated the expression of cognitive events in numerical or quantified terms and strengthened the foundations of psychophysiological theory.

The rapid advances in digital technology, however, have left instructional literature far behind. The last comprehensive description of a suitable psychophysiology laboratory was published in the early 1980's. Since then, powerful processors and sophisticated software have appeared within today's laboratories, creating the need for an updated description of how current psychophysiology research is done. To that end, this tutorial is intended to serve as a user's guide for students responsible for organizing the electrical instrumentation, computer hardware, and scientific software required for the recording of bioelectric signals within the brain. Modern psychophysiological research necessitates understanding the components of the nervous system as well as the anatomy of a research laboratory. This tutorial will offer a basic approach to getting acquainted with the latter.

The Electrical Equipment

The initial task of psychophysiological research, the recording of bioelectric events, involves an array of electrical equipment. In order to follow the course of the recordings from the skin of the participant to the computer, the electrodes will be considered first. Put simply, electrodes are small circular disks (approximately 2 centimeters in diameter) that are placed in contact with the skin. Since they are designed to detect voltage differences within the body, electrodes are made of an electrically-sensitive metal. Stern, Ray, and Davis (1980) point out that electrodes made of silver-chloride have been shown to give the best readings. Electrodes usually induce a charge, or polarize, the material they contact, therefore offsetting the data gathered during recordings. Silver-chloride electrodes, however, produce very negligible amounts of this type of interference and are the standard in today's laboratories (Stern, 1980).

The sensitivity of electrodes is greatly enhanced when used in conjunction with a conductive paste. The site where the electrode is to be affixed to the skin is treated with a creamy amalgam of conductive chemicals which reduce the impedance of the bioelectric signal and facilitate adhesion. The type of conductive paste used is left to the experimenter's discretion because different types yield different kinds of electrical information. The primary function of the conductive pastes, however, involves the enhancement of faint voltage signals.

The signals detected by electrodes are weak, residing in the microvolt (millionth of a volt) range, consequently, recording these signals requires amplification (Thompson, 1975). Each electrode is connected directly to a specific channel within an amplifier. The amplifier, usually consisting of eight to thirty-two channels, simply increases the amplitude of the voltage frequencies that meet the electrodes. Amplifiers should be configured to increase bioelectric signals to the range of approximately one volt.

After the signals have been retrieved and amplified, they are visualized using an oscilloscope. This instrument does not record any information from the amplifier. Instead, the oscilloscope displays the electrical fluctuations in a florescent wave-form as they occur. Proper and accurate recordings are insured through the detailed visualization of the voltage waves as they are recorded. The oscilloscope is often used to troubleshoot flaws in the electrical connections that precede it, so it is of high diagnostic value.

Before the amplified readings can proceed to the computer, the signals must be filtered. There are many sources of interference within the laboratory set-up as described so far. The power source, usually a conventional electrical outlet, provides very 'noisy' electricity. 'Noise' is the term used to describe the non-physiological electric signals that are detected by the instrumentation. According to Dr. Darryl G. Humphrey, associate professor at Wichita State University an accomplished researcher, the fact that the instrumentation itself produces undesired voltage frequencies, coupled with the 'noisy' contribution of the typical power-source, demands that all readings be filtered. Filters attenuate bioelectric signals by blocking the frequency of known sources of interference. For example, filters are often configured to block signals with a frequency of 60 Hz, the frequency of AC line currents from outlets within the U.S. (Stern, 1980). Filters can also be configured to allow only certain types of voltage waves to proceed to the computer, allowing researchers to focus on one of the many types of 'brain-waves.' This type of filtering (called off-line filtering) is accomplished through an electrical device, however, filtering can also be done by the computer itself (called on-line filtering). Computers can be programmed to rapidly measure the electrical signals they read, highlight the signals with desired frequencies, and gloss over signals that do not meet the researcher's criteria (from discussions with Dr. Humphrey, 1997). The role of computers in today's psychophysiology laboratories will be discussed further in the sections that follow.

The Hardware

Thompson's text Introduction to Psychophysiology contains a photograph of the typical laboratory preceding the advent of personal computers (Thompson, 1975). A towering assortment of bulky equipment and a baffling array of tangled wires appear in this depiction of the now obsolete laboratory. Computers have greatly economized research by integrating the functional components of the laboratory and hence have reduced noise interference. Besides precision filtering of bioelectric signals, computers have facilitated the analysis of the vast amounts data gathered in psychophysiological research. Laverne C. Johnson (1980) states,

The psychophysiologicalist seeking computer assistance in analysis of data . . . hopes to find new and useful information from the data, information not necessarily known to be present, but which might be. The computer's manipulative and mathematical capabilities are substituted for the limited human abilities in the attempt to correlate data with other factors. (p.333)

The crucial element that has fueled the movement towards computer-based laboratories is the analogue-to-digital converter. This component of research computers is the integral connection between bioelectric fluctuations and malleable, coherent data. The analogue-to-digital converter reads the continuous signal from the amplifier and converts (digitizes) it into discrete data-points (Stern, 1980). By sampling the electrical signal at a fast rate and then storing each value, the analogue-to-digital converter allows bioelectric data to be saved into the computer's memory for later evaluation. Needless to say, this device has rendered useless the polygraphs that recorded the "wiggling" of analogue needles and the cumbersome graphs they produced. Bioelectric data, in this way, can be stored in a more easily interpretable form and manipulated by highly sophisticated software.

As mentioned before, computers can be used to search for information that is not obvious on initial examinations. Any attempt to reveal information from recorded data must be carried through advanced software. Prevalent in the analysis of psychophysiological data are spreadsheet programs. Ranging from the simple, such as Microsoft Excel®, to the complex, such as Sigma Plus®, these programs organize the data-points provided by the analogue-to-digital converter. Graphing and statistical evaluation can also be accomplished with spreadsheet programs, facilitating the exposure of information not readily observable in the data. A prospective researcher would benefit greatly by becoming familiar with the intricacies of these programs.

Computer software also plays a part in establishing the experiment-participant interface. Programs such as Turbo Pascal® have been designed not only to control the instrumentation and direct the flow of data into the spreadsheets, but to configure experimental tasks that may be set before the participants. Again, although the program is complex, familiarity with it would be considered an asset by other researchers (Humphrey, 1997).

Discussion

Since bioelectric research began, effective psychophysiologicalists have been required to have many different skills. Today, as before, the same holds true, and researchers have had to juggle computer skills and neurological knowledge in the face of continued technological advances. For now, psychophysiological research has intertwined with computer science.

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Abstract

This study explores parents' and children's perspectives of academic achievement. To accomplish the purpose of the study, the research question addressed the factors that Mexican American parents and children consider influential on scholastic success. The research was conducted through ethnographic interviews with the participants (a family of four—a mother, a father, and two teenage boys, 18 and 19 years of age). Data analysis of these interviews revealed the following themes: (a) there are similar beliefs between the parents and the children that directly relate to academic achievement; (b) academic achievement is facilitated through parent and student involvement; and (c) school support assists involvement of the parents and the students. The participants stated both common and unique factors that revealed the preceding themes.

Mexican American Parents' and Children's Perceptions of Academic Success: A Case Study

A strong public interest has driven research regarding the academic achievement of our country's children. The focus of much research has involved the education of minority children. Among these minority children are the Mexican American students who are faced with scholarly challenges such as low attendance, low motivation, and poor role models. According to the most recent publication from the United States Census Bureau (1994), the lowest percentage of all minority groups to graduate from high school were Mexican American students at 46.7 percent. For those high school graduates, the assumption cannot be made that the possession of a diploma ensured student success. Student success involves more than just the required classes and grades. In a study conducted by Matute-Bianchi (1986), successful Mexican-descent students said that "doing well in school" meant having regular attendance, cooperating with teachers, being willing to ask for help, trying their best, and completing assignments. Scholastic responsibilities, involvement, and parental support highly relate to success of this kind.

Not surprisingly, the parent and teacher relations also play a major role in this achievement. Cummins (cited in Shannon, 1996) relates that a determining factor of student success is involvement of the parents in the schools. Taking steps toward the needed cooperation and support between school and family proves to be a challenge. A study by Gandara (cited in Duarte, 1997) states that educators are needing to capitalize on the positive characteristics of parents instead of imposing their views upon them. An investigation by Valdes (1996) reveals high parental expectations upon students yet a low level of involvement between parents and teachers. She also revealed that when a Mexican American child arrived at school with below average comprehension of certain academic skills, the parents "in good faith" assumed the teacher would educate the child on these skills without additional help from the parents. In turn, the school personnel suspected lack of interest, distress at home, and parental inattentiveness. Rivera (personal communication, 1995) also adds that the parents do not involve themselves in their children's education because they see the teachers and the schools as the academic experts. These examples by Valdes and Rivera demonstrate cases of misinterpretation, hesitancy, and lack of cooperation between parents and teachers.

Nevertheless, a lack of parental involvement does not outweigh the parents' expectations and desires of

an education for their children. Valdes (1996) expressed that

they (the parents) had little formal schooling and few notions about what schools expected of them and their children. And yet, they valued education. The collective family wisdom had already instilled in them a sense of the importance of high school graduation. They wanted their children to have good jobs, and they wanted them to have whatever education they would need in order to get such jobs. (p. 167)

However, this study makes no mention of the expectations of the children upon themselves. To better understand the factors which determine the educational performance of Mexican American students, a close, vital examination of parental expectations coupled with the child's own expectations must be made.

This study explores Mexican American parents' and children's perceptions of academic success. To accomplish the purpose of this study, the researcher interviewed a family considered to highly value student achievement (this family indicated that they valued student achievement through an initial interview with Rivera, personal communication, Oct. 24, 1996). The family involved in the study was composed of a mother and father, both in their mid-forties, who were college educated, and their two sons, 18 and 19 years of age. The data was obtained through a series of open-ended questions. The questions addressed the participants' opinions on student responsibilities, involvement, and expectations.

Analysis of these interviews revealed the following themes: (a) there are similar beliefs between the parents and the children that directly relate to academic achievement; (b) academic achievement is facilitated through parent and student involvement; and (c) school support assists involvement of the parents and the students. The participants stated both common and unique factors that revealed the preceding themes.

Method

Participants

This research focused on a Mexican American family selected from a sample of a study exploring parental viewpoints on their children's academic achievement. The family chosen consisted of a biological father and mother in their mid-forties and two sons, 17 and 19 years of age. This particular family was highly involved in education, the children were able to comprehend and respond to questions, and the family used English as the first language; therefore, this family was chosen for the study. The names of the participants have been changed for confidentiality.

Mrs. A was born in Mexico and came to the United States at age four. She came from a dual-income, Spanish-speaking household. Mrs. A was raised and educated in Kansas along with her two other siblings. She obtained a master's degree in counseling and now works in a public high school. Mr. A is fourth-generation Mexican American in the United States. He came from a single-income, English-speaking household. Mr. A was raised in Kansas and is the oldest of six children in the family. He was educated in a strict Catholic school system and later graduated from Wichita State University. Mr. A now works for an aviation corporation. The sons grew up in Kansas in a dual-income, English-speaking household. They have been educated in the public school system; the youngest now attends high school and the oldest now attends a community college. The children consistently earn A's and B's.

Interviews were conducted in the participants' home. The home environment was clean and comfortable. Attention was focused on the researcher and the questions. During the interviews, the participants accommodated one another by listening and not interrupting.

Materials

The materials used were participation consent forms, an audiotape recorder, a questionnaire, a transcriber, and a personal computer. Consent forms explained the confidentiality of the study and requested the participation of family members with the optional use of an audiotape recorder. A set of ten to fifteen interview questions was chosen based on a literature review from a prior study (Rivera, personal

communication, Oct. 24, 1996). The questions related to responsibilities, involvement, and expectations of academic success. (see appendix). A transcriber and personal computer were later used for transcription of the interviews.

Procedure

Ethnographic interviews with the participants were used to obtain the qualitative data necessary for the study. First, through a telephone conversation, an explanation of the research and a request for participation was presented, and then a date was scheduled for the interview. Second, the study was conducted in the participants' home at the arranged day and time. The family was insured that the previously signed consent forms from a related study (Rivera, personal communication, Oct. 24, 1996) extended to this research. A series of 10 to 15 questions were asked of the parents and children on their perspectives of the responsibilities, involvement, and expectations of academic success. Audiotapes and field notes were used for the collection of data. Along with a prior study (Rivera, personal communication, Oct. 24, 1996), a series of two interviews was conducted with the family. A third interview was requested but unable to be completed due to time limitations. Third, the audiotapes were transcribed and summarized in combination with the field notes (the identity of the participants was held in complete confidence, in compliance with the ethical requirements for such research methods). The summarization was then broken down into units of information. The information was then categorized into specific themes. The summary was used as a key to uncover common and unique educational factors between the parents and children.

Results

The parents and children stated that parent and student involvement is a major factor for success. A major element, the parents stated, was that reading (e.g. newspapers, magazines, and books) developed the family's learning process. The children individually stated that through academic involvement, they focused on scholastic events, gained responsibilities, and developed an increased level of commitment. They also stressed that teachers who involved the students in the learning process and created interest in the subjects were the educators they learned the most from. The parents singularly acknowledged that they most wanted school assistance in teaching their children at least the basic skills for the appropriate grade level.

Common factors were uncovered by similar responses to questions from both the parents and children. These responses pertained to the importance of the following elements: parental role models, open communication, high levels of motivation, and equal amounts of scholastic and extracurricular involvement.

Unique factors involved distinct responses to questions from both the parents and children. The parents emphasized a desire for the children to have a higher degree of academic commitment and for the teachers to provide positive reinforcement. The children stressed the importance of entertaining teaching strategies and the determination involved in academic success.

From these unique and common factors, the following three themes were uncovered concerning the Mexican American student's educational success: (a) there are similar beliefs between the parents and the children that directly relate to academic achievement; (b) academic achievement is facilitated through parents and student involvement; and (c) school support assists involvement of the parents and the students.

Discussion

The results of this study suggest similar beliefs related to academic achievement, such as good communication between the parents and children, positive parent-child relationships, and scholastic motivation through encouragement. Good communication levels between the parents and the student is a reliable way the parents can follow the student's performance and provide guidance. Communication coupled with encouragement motivates the student to perform at higher academic levels. Haug and Wright (1991) explain that articulate and continuous communication between the parents and children improves the learning process by allowing the child to feel better about him/herself. Jones (1990) explains that a parent

provides a child with his first role model for language. Every parent hears his own words and phrases, both desirable and undesirable, echoed by a youngster eager to learn to use language. It is therefore important that a parent take care to provide the best model possible for his child. (p. 100) Consequently, this exemplary role stimulates involvement in the educational experience. When parents are highly involved in their children's education, the stage is set for student involvement in learning.

Parent and student involvement, such as participating in extracurricular and academic activities and reading as a family, facilitates success in academics. A study by Haug and Wright (1991) found that support of the students' participation is given through the support and participation of the parents. The participants commented that activities such as volunteering in and out of the classroom, attending open houses and school meetings, and involvement in reading programs give a sense of the significance of education. Supporting data by Ganadara (cited in Daurté, 1997) reports that just one ardent reader in the family promotes education. Student interest is catalyzed when the parents are involved. Student and parent participation is found to be promoted when schools become active as well.

School assistance through encouragement, involvement, and enjoyable teaching methods also relates highly to student achievement. Consistent encouragement and hands-on work between the parents, students, and teachers is found to be a positive strategy in academic success. Croft (cited in Haug and Wright, 1991) comments that strong school and family relationships strengthen the children's educational goals. Unger (1991) states that the primary job of the parents is to instill a sense of responsibility in their children, but educators believe the schools must also contribute to this job.

In conclusion, the study has provided the researcher with insight regarding the attitudes, beliefs, and priorities of a family with academically successful children. This success was displayed indirectly through the communicative, stable environment the researcher observed when conducting the interviews. The information received does in no way generalize Mexican American families. However, this study may provide researchers with a foundation to develop more quantitative instruments to survey a larger sample, in hopes of informing more Mexican Americans on the steps to academic success.

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Appendix

1. Why do you want to go to school?
2. How do you perceive yourself doing in school?
3. Who are your role models?
4. How would you describe your communication level with these people?
5. What role(s) do you consider yourself and your parents to play in scholastic activities?
6. What dreams, fears, and nightmares do you have in relation to education involvement?
7. What do you feel the responsibilities should be for academic success?
8. What do you consider are the scholastic strengths and weaknesses of your family?
9. What kind of sacrifices do you consider you need to take in order to be academically successful?
10. What kind of stress factors do you consider can or are affecting your scholastic achievement?
11. What are some of the things that you think can help other families succeed academically?



The Self-Perceptions of Individuals Aging with Cerebral Palsy

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Abstract

The aging process has been of great interest in the last decade due to the increase in life expectancy and the increased number of elderly individuals. Typically, research has been limited to individuals who enter the latter stages of the aging process as able-bodied.

However, this research investigates the aging process in individuals who enter these stages with congenital cerebral palsy. The focus is on the perceptions and unique experiences of individuals who are age 40 or above (age 40 is an arbitrary age, chosen due to the common belief that the elderly stage of aging occurs earlier in people with disabilities.) By utilizing a questionnaire, this study generates insight into the self-perceptions of the (a) social support, (b) functional ability, (c) personal needs, and (d) sense of well-being of individuals with cerebral palsy who are experiencing the unique events associated with the latter stages of the aging process. This research identifies and examines these experiences in a comprehensive format to provide future researchers information into the concerns of this population. Furthermore, this will help assist service providers in the development of services that will be beneficial in maintaining and improving the quality of life in the population.

The Self-Perceptions of Individuals Aging with Cerebral Palsy

The study of aging has been a significant topic in research for the past few years. However, there has been very little research on aging in individuals with lifelong developmental disabilities (DD). Except for a few institutionalized individuals, the life expectancy of people diagnosed with cerebral palsy is comparable to that of the general population (Overeynder, Turk, Dalton, & Janicki, 1992). As a significant amount of individuals with DD are reaching the latter stages of their lives, research on what they can expect during their latter years is becoming more important. This study provides a qualitative analysis of the self-perceptions of individuals with cerebral palsy who are experiencing the latter stages of the aging process.

A 26 item questionnaire was utilized to gather information on the individual perceptions of the subjects. The subjects had cerebral palsy of varying severity and ranged in ages from 40 to 80 years old. The focus of this study is on the experiences of individuals, exploring the following perceptions:

- a) social support
- b) functional ability
- c) personal needs, which include medical resources and technological assertive devices
- d) sense of well being

Through these perceptions, similarities in individuals can be ascertained and differences can be explored.

Cerebral Palsy

Cerebral palsy (CP) refers to a group of motor disorders that results in the loss of muscular control (United Cerebral Palsy of New York City, 1997). This non-progressive disability is due to damage in areas of the brain that control motor function, either during fetal development, birth, or early infancy (Tortora, & Anagnostakos, 1990). CP ranges from mild symptoms, such as slight speech impairment, to severe, a total inability to control body movement. The severity depends on the region of the brain that is affected. Manifestations of this disorder may include the following: muscle tightness or spasms, involuntary movement, or disturbance in gait and mobility.

Cerebral Palsy can be one of the three types or a combination thereof. Rarely, if ever, does an individual exhibit all three types. The categories of CP are (a) spastic, which includes stiffness and difficulty in movement; (b) athetoid, an involuntary or uncontrollable movement; and (c) ataxic, a disturbed sense of balance and depth perception (Tortora, & Anagnostakos, 1997). It is estimated that there are approximately 500,000 children and adults in the United States who have some degree of CP, and an estimated 5,000 babies and infants are diagnosed each year (1997). Estimates of the prevalence of individuals with DD and mental retardation (MR) who are considered elderly range from 200,000 to 500,000 (Ansello, & Rose, 1989). There is disagreement over this estimate, but current figures suggest that 10 of every 1000 adults over the age of 60 have a developmental disability (1989).

Aging

Aging can be defined as a normal physiological process that is accompanied by the progressive change in the body's homeostatic adaptive responses (Tortora, & Anagnostakos, 1990). It is a response that produces an observable alteration in structure and function marked by an increased susceptibility to disease and environmental stress (1990). Because entitlements begin at 60, this age is most commonly identified as the chronological age that is used to define the onset of old age (Ansello, & Rose, 1989).

Age 60 may be the common denominator for governmental entitlements for the general population, but it has been recognized that individuals with developmental disabilities began to experience age related discomforts and functional losses at a much earlier age (Overeinder, et.al, 1992; Seltzer, 1993). It is because of this dissimilarity and even because of the similarities in the aging process between DD individuals and the general population that issues need to be identified and research developed. This study raises awareness of the areas that directly concern individuals with developmental disabilities who have reached the latter stages of their lives.

The fact must be faced that the individual who has cerebral palsy lives a different kind of life than do the members of his family, his friends and the professionals interested in his habilitation. No matter how much these people want to help him live a happy and useful life, the result of their efforts will be limited until they are given some insight into the complex problems with their client faces every day of his life. (Berger, 1981)

Specific Aims/Hypothesis

This study provides insight into the elderly stages of aging as it pertains to people who have entered this stage with the added burden of a disabling disease. The prevalence of individuals with disabilities entering the latter stages of aging is becoming comparable to that of the general population. Therefore, this subject is gaining a greater amount of interest. Previous gerontological research has had little focus in this area, which has limited the amount of knowledge available to other researchers, health care professionals, and individuals facing this issue.

This research generates information about the concerns of individuals with disabilities using the following hypothesis:

1. Functional ability will be greatly deteriorated.

2. Social support will be limited to paid attendant care.
3. Family contact will be limited.
4. Sense of well being will be one of uncertainty.

The knowledge and insight gathered through this study may be used in future research.

Methodology

Subjects and Settings

The sample population (n = 6) were volunteers from an independent residential community in Wichita, Kansas. The sample consisted of 4 men and 2 women. All of the participants have varying degrees of CP. The population's age ranged from 40 to 80. The age of 40 was chosen as an arbitrary point due to the common belief that individuals with CP start the aging process at a younger age than the general population.

Study Instrument

A questionnaire was developed and utilized for data collection (See Appendix). The instrument consisted of 26 questions with one of the four following structures: (a) direct, (b) open ended, (c) key word or (d) Likert scaled. Seven questions were multi-layered so that answers could be elaborated. Questions were developed with the help of Don Malzahn, PhD (Wichita State University) due to his expertise in the field of rehabilitation engineering and research.

Data Collection

A semi-structured interview was conducted either in the subject's residence or at a meeting place chosen by the subject. Interviews were conducted in a comfortable atmosphere to promote a relaxed rapport between the participant and the interviewer. This type of atmosphere is conducive to the participant's expressing of his or her own ideas without restraint. Elaboration of answers was encouraged so that all aspects of the self-perceptions of the subject could be explored. The interviews were audio-taped for the purpose of transcription to ensure that important information was not omitted. The interviews were taped with the participant's consent.

Analysis

A qualitative analysis was conducted to assign the information into one or four categories and appropriate subcategories:

1. Functional ability
2. Personal needs
 - (a) assistive devices
 - (b) medical care and medications
3. Social support
4. Sense of well being

Relevant data from the individual interviews were compared to examine significant similarities and differences. Questions 14, 20, 21, 22, 23, 24, and 25 measured perceptions of social support. Questions 1, 2, 3, 8, 9, and 10 were used to measure perceptions of functional ability. Questions 4, 5, 6, 7, 13, 15, and 16 measured perceptions of personal needs, while questions 11, 12, 17, 18, 19, and 26 measured perceptions of

sense of well-being.

Results

Social Support

All of the subjects utilized personal care attendants. One half of the subjects utilized an outside professional service, while the other half received their attendant care from the living facility in which they resided. Rarely did any of the subjects receive care from family or friends.

One of the individuals did not have contact with friends or family. Many of the subjects meet with friends on a daily basis. Most of their friends, however, are residents of the same living facility, which is primarily for individuals with disabilities. Three of the six subjects had contact with family members on a semi-regular basis. Of the five individuals who did have outside contact, two felt that the amount of contact was sufficient. Of the subjects who expressed they would like more contact, two conveyed that the contact they do have is sufficient, even though more would be "nice."

All except one of the subjects participated in recreational activities. These activities included playing cards and bingo, talking to people, "running around outside", writing letters, visiting friends, and going out to eat. One person expressed, "I love to go to the grocery store by myself and get things for people." The individual who did not participate in recreational activities is confined to his bed with amyotrophic lateral sclerosis (ALS) (more commonly known as Lou Gehrig's disease).

Two people expressed that the changes in their recreational activities since reaching the age of 40 are more satisfying.

"I have more time to do [activities] and take more time to do them."

However, three of the subjects believed their activities were more limited since reaching the age of 40.

"I used to bowl and take rides."

"I can't walk; I used to run like a deer, get up and down, and I was more skinny."

Others perceived limitations to participating in recreational activities including lack of money and limited transportation.

Social activities reported included social events held at the facility, church activities, residential committees, and interaction with friends. Four of the six subjects stated that their social activities have increased since reaching the age of 40 due to retirement. They reported having more time for social activities, while living in a residential facility that promoted activities. Two of the subjects reported participating less in social activities.

"I went from walking to sitting down. I can't do as much. I think about walking a lot."

Four of the subjects reported participating in activities away from their living facility at least once a week or every other week. One subject communicated that he did not participate in outside activities very much, and another subject reported not participating at all. Four of the individuals reported that participation away from the living facility has decreased since the age of 40. However, one subject stated,

"I was gone six days a week, if you count my job. In a way I had more social activities, but these are much more enjoyable."

Two of the subjects in the sample reported participating in activities more often. Reasons for the increase in activities included being able to get out more since the children were grown, having a van for transportation,

and having a greater amount of friends to do things with.

I would have never become the person that I am had it not been for his [grandfather's] influence. The way he lived his life in his relationship to me and to others taught me the meaning of being a real man and made me want to try to be one. (Berger, 1981)

Functional Ability

The average age in which the subjects reported decreasing functional ability was 39.3 (the lowest age reported was 35 and the highest was 70). Perceived changes that indicated functional decline included muscle spasms, increased difficulty with speech, weakness, loss of mobility, and increased pain. Some of the subjects perceived that his or her cerebral palsy had become more exacerbated. On a scale of 1 to 5, with 1 not being at all and 5 being greatly, three rated decline of physical ability since reaching age 40 as a 3. Two subjects reported a 4 and one subject reported a 5. The subject who rated his physical ability as declining greatly believed this had more to do with ALS than with the aging process.

The reasons associated with the decline in physical ability include weakness and fatigue, increases in pain and medications, decrease in mobility, and trouble feeding oneself. One subject reported,

"Sometimes it is hard for me to move in certain positions."

Another subject related lack of energy, arthritis, increased stuttering, and decline in memory as a source of functional decline.

On a scale of 1 to 5, with 1 being not at all and 5 being at all times, the subjects were asked to report how often they required daily self-care. Five of the subjects chose 3 as their rating while one of the subjects chose 5 as his rating. Four of the subjects reported requiring more assistance since reaching the age of 40, while two perceived that they required the same amount of assistance.

For the individual who has been handicapped from birth, there is no former state of normalcy to which he can be restored. He only can become an active member of society by learning to make his body do what it could not do before. (Berger, 1981)

Personal Needs

Assistive Devices

The subjects were asked to identify the types of assistive devices they required. This was asked once with a keyword question (Table 1) and again at a later time with an open question. Devices other than those identified by keyword included speaker phones, clothes that do not have fasteners, and automatic door openers. Other devices identified to be adaptive consisted of a big cup with a straw, specialized dishes, a button hook, velcro shoe closures, a hospital bed, a computer, and a typewriter. Five of the individuals perceived that they required these devices more now than before the age of 40. It was reported the devices had improved in quality and number.

"At the age of 40, they didn't have the devices they have now. I've had the patient lift since the age of 38, which has helped a lot of people lift me."

Of the devices required, it was revealed that the wheelchair was the most important device used.

Table 1

DEVICES	YES	NO
Cane or Crutches	0	6
Manual Wheel Chair	6	0
Electric Wheel Chair	4	2
Scooter	1	5
Glasses	4	2
Magnifying Glass	0	6
Braces	0	6
Writing Devices	3	3
Voice Synthesizer	0	6
Hearing Aid	1	5
Other Communication Devices	2	4
Patient Lift	3	3
Grab Bars	3	3
Shower Chair	6	0
Hand-Held Shower	4	2
Pressure Relief Cushion	5	1
Oxygen	0	6
Modified Eating Utensils	1	5
Reaching or Grabbing Devices	2	4
Other	6	0

Medical Care and Medications

Five of the subjects perceived that they required more medical care now than they did before the age of 40. The types of care involved personal attendants, physicians, range-of-motion therapy, and mammography. All of the subjects believed they required more medications since reaching the age of 40. Types of medications included muscle relaxers, heart medication, pain relievers, stool softeners, and anti-hypertension medication.

Four subjects indicated that adequate resources are available to meet their daily living needs. None of the subjects reported that there are too many resources, but several subjects found it difficult to access them either because services are fragmented and not paid for by Medicare. The two subjects who reported that not enough resources were available suggested that higher-skilled attendants were needed.

Four of the subjects conveyed that they are currently satisfied with the care that they receive. Reasons for their satisfaction included directing their own care and residing in a facility structured to meet their needs.

"I just love it here. Before I was living with a friend taking care of me and I couldn't get out too easy. This is a very sensible place to live. I can push a button and get an aid. Although, aids are not what they use to be with the constantly changing rules and regulations."

The subject who reported dissatisfaction indicated that attendant care was the source of the problem. High staff turn over rate was expressed as the problem with obtaining satisfying care.

The subjects were asked to identify services they require by keyword. Attendant care, case management, and physicians were utilized by all of the subjects. None of the subjects utilized speech or respiratory therapy (Table 2).

Table 2

SERVICE	YES	NO
Attendant Care	6	2
Companion	2	4
Cleaning Services	5	1
Nurses Aide	1	5
Home Health Nurse	3	3
Physical Therapist	3	3
Occupational Therapist	1	5
Speech Therapist	0	6
Respiratory Therapist	0	6
Social Worker	1	5
Case Manager	6	0
Counselor	1	5
Personal Physician	6	0
Other	0	6

Sense of Well-Being

The subjects reported the most dramatic changes in their lives since reaching the age of 40. Two of the subjects reported that retirement was the most dramatic change. One of the subjects conveyed that it was a negative experience, while the other subject believed retirement was more satisfying. Three of the subjects reported that physical decline was the most dramatic change in their lives. Increases in muscle spasm and pain and decrease in mobility were cited as dramatic changes.

Perceptions of satisfaction with life at this time were positive for the majority of the subjects. Four of the subjects reported being generally satisfied with their lives due to independence. However, two of the subjects stated that life could be better if they had a companion or significant other who would participate in activities with them.

"I really wanted to have a family and get married."

"I wish I had a companion. One to take me out and go places. I still love to go places."

Two subjects expressed dissatisfaction with their lives at this time. One of the subjects reported,

"I can't do what I want such as daily living because of my loss of independence."

The other subject stated,

"I don't like my speech and my walking."

The subjects reported varying answers to the question: "How could your life be more satisfying?" The answers can be classified in two categories, physical and social/companionship. The responses that fell in the physical category included:

"If I could walk. Other than that I'm happy as I am."

"I would like to be able to walk and talk as well as I did 20 years ago."

"I don't know. Now I have ALS. That is about all that I can think of."

The responses that fell in the social/companionship category included:

"I would like to be married to a man who truly loves me for me and not for his convenience."

"I'm sometimes confused about things. Sometimes I don't know which way to go or who to talk to. If I was married and had a wife to take care of me instead of a bunch of people, she would get to know me more personally."

"I would like to travel more. I would like to be able to write more on my computer. I would like to be able to add a voice command system because typing on the keyboard is slow."

Independence was a common theme in response to the question, "What are the most satisfying aspects of your life?" Aspects such as setting one's schedule, being able to move and "get around," being able to choose with whom and when to associate with others, and being able to make one's own decisions were conveyed as being satisfying. One subject revealed that being able to read and watch documentaries related to subjects of his interest were the most satisfying aspects of life. Two of the subjects reported that the most satisfying aspects have not changed since reaching the age of 40. One subject reported that she was more lonely because of the death of her husband. Another subject reported that since reaching the age of 40, he is unable to work in his garden which used to be the most satisfying aspect of his life. Two subjects reported that aspects of their lives at this time are more satisfying because of the ability to participate in more enjoyable activities since reaching the age of 40.

When asked about personal concerns for self and future, the subjects expressed a universal tone of concern over continued independence and the consequences of government cutbacks.

"There is only one thing I'm concerned about which has nothing to do with living here. The government keeps downsizing. Now there is going to be more people that are mentally handicapped that are prone to violence that may move in."

"I hope that I will always be easy to take care of. I think I have lived a very normal life in spite of my handicap and I'm very proud of that."

In reality, it is the small things and experiences which are with us from day to day which make life rewarding. The handicapped individual can do no better than to cultivate an interest in things he can see, or hear or read. Doing so will make it impossible for time to hang heavy on his hands.
(Berger, 1981)

Discussion

The most obvious finding of this research is that the population with cerebral palsy is heterogeneous in the aging process like the general population. There are no clearly defined criteria for what individuals with disabilities can expect as they reach this stage in their lives. However, with adequate resources and social support, individuals with disabilities may look forward to satisfying life experiences in the latter stages of aging.

The hypothesis that functional ability will be perceived as greatly deteriorated is supported by this research. Although the sample size is considerably small, all of the subjects reported perceptions of physical deterioration. Many of the subjects reported a great increase in muscle spasms and pain. However,

perceptions of deterioration may not always be consistent with the realities actual physical function. Therefore, it would be prudent to devise a study that can measure this aspect quantitatively.

The hypothesis that social support will be limited to paid attendant care is not supported by this study. Many of the subjects reported satisfying interactions between themselves and their peers. However, this population resides in a community that was developed for individuals with physical disabilities. Therefore, this hypothesis may not be valid for a sample that consists of individuals who live in the general community or for those in skilled nursing facilities.

The hypothesis that family contact will be limited is supported. The majority of the subjects reported limited or no contact with their family members. Many of the subjects rationalized this lack of contact with issues of traveling distance and time limitations for the absent family member.

The hypothesis that the perception of sense of well-being will be one of uncertainty is not supported. For the most part, these individuals perceive their lives as satisfying. Because the facility in which they live promotes social activities and a sense of safety with attendants on call 24 hours a day, many of the subjects are quite content with their lives.

Issues of continued independence are of the utmost concern. Many subjects conveyed that being able to live with little outside assistance is an aspect of their lives that gives them great satisfaction. The use of assistive devices such as wheelchairs, eating utensils, and grab bars greatly enhances their ability to maintain independence. Throughout many of the interviews, subjects reported frustration with the lack of funding for obtaining or maintaining these devices. Frustration was also conveyed over the fragmentation of funding sources and services, which creates difficulties in obtaining needed care and equipment.

Another significant issue that was raised during the interviews was that of personal, intimate relationships. One person felt that the overprotection of his parents did not allow him to develop intimate long term relationships. The subject of intimate relationships, mentioned frequently throughout the interviews, was identified as a great source of dissatisfaction. Of the six subjects, three reported a desire to be in an intimate relationship. Only one of the subjects had not been previously married. The issues surrounding intimate relationships and sexuality warrant further investigation.

Summary

This research focused on the perceptions and life experiences of individuals with cerebral palsy in the latter stages of life. Previous gerontological research has had minimal focus on this population, which has led to limited information for health care providers, researchers, and individuals with disabilities.

Since this area of study has been all but overlooked in the past, many opportunities exist for researchers of various disciplines to develop new research projects. Issues for further study involve social implications, outcome effectiveness, and program development. This subject will be increasingly important as the population of individuals with disabilities entering the later stage of aging increases. Many existing programs will need to be reevaluated and new programs will need to be developed. It is only through intensive research that appropriate decisions can be made concerning these areas.

Somehow, beneath my handicap, seeming helplessness and maladjustment, she saw potentialities for independent living and felt it would be wrong not to give to me a chance to succeed.
(Berger, 1981)

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Appendix

1. At what age do you feel your functional ability began to decrease?
2. What kind of changes have you experienced as indicators to aging?
3. On a scale of 1 to 5, 1 being none and 5 being greatly, how much has your physical ability declined since you have reached age 40?

1 2 3 4 5

In what ways?

4. Do you require the following assistive devices to function in your day to day activities?

	YES	NO
Cane or crutches	_____	_____
Manual wheel chair	_____	_____
Electric wheel chair	_____	_____
Scooter	_____	_____
Glasses	_____	_____
Magnifying glass	_____	_____
Braces	_____	_____
Writing devices	_____	_____
Voice synthesizer	_____	_____
Hearing aid	_____	_____
Other communication devices	_____	_____
<hr/>		
Patient lift	_____	_____
Grab bars	_____	_____

	YES	NO
Shower chair	_____	_____
Hand-held shower	_____	_____
Pressure relief cushion	_____	_____
Oxygen	_____	_____
Modified eating utensils	_____	_____
Reaching or grabbing devices	_____	_____
Other _____	_____	_____

If yes

a) Do you depend more or less on these devices now than you did before reaching age 40?

b) In what ways?

5. Do you seek out more medical care now than you did before the age of 40?

If yes

a) What type of medical care do you require more?

b) How often have you utilized these services in the past month?

6. Do you feel that adequate resources are available to help you meet your daily living needs?

If no

a) What other resources do you feel you require?

If yes

b) Do you feel there are too many resources or redundant services available?

7. Who provides you with daily attendant care such as eating, hygiene, and dressing?

8. How often do you require daily self care from others?

On a scale of 1 to 5, with 1 being none at all and 5 being at all times.

1 2 3 4 5

9. Do you require more, less, or the same amount of assistance now than before you reached the age of 40?

10. Do you require more, less, or the same amount of medications, either over-counter or prescriptions?

11. Tell me about the most dramatic changes in your life since you reached the age of 40?

12. Do you feel satisfied with your life at this time and why?

13. Do you require the services of:

	YES	NO
Attendant care	_____	_____
Companion	_____	_____
Cleaning services	_____	_____
Shopping services	_____	_____
Nurses aide	_____	_____
Home health nurse	_____	_____
Physical therapist	_____	_____
Occupational therapist	_____	_____
Speech therapist	_____	_____
Respiratory therapist	_____	_____
Social worker	_____	_____
Case manager	_____	_____
Counselor	_____	_____
Personal physician	_____	_____
Other _____	_____	_____

14. Do you have contact with people other than professionals that participate in your care such as family and friends?

If yes

a) Who do you have contact with and how often?

b) Do you feel that the amount of contact is enough?

15. What type of assistive devices help you with your day to day living activities?

16. Are you satisfied with the care you receive? Why?

17. Tell me how your life could be more satisfying.

18. What would you say is the most satisfying aspects of your life?

19. How has this changed since you have reached the age of 40?

20. What do you do for recreation?

21. How has this changed since you have reached the age of 40?

22. What type of social activities do you participate in?

23. How has this changed since you have reached the age of 40?

24. How often do you participate in activities away from your living facility?

25. How has this changed since you have reached the age of 40?

26. Tell me about any concerns that you may have for yourself and your future?



Impact of Urban Renewal

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Abstract

In the mid 1960's, the city of Wichita was divided racially into regions. The purpose of this report is to provide preliminary research and a description of the neighborhood that had 3rd street as the south border, 9th street as the north border, Main street as the east border, and Waco street as the west border. The above area was commonly known to be heavily populated by an African-American population, prior to Urban Renewal. This location consisted of businesses, churches, and residences. Currently, this area is the home of various structures ranging from a television station to a veterinarian clinic. Additionally, this area shows little evidence of any African-American existence, residential or commercial, that was there in the past. This study provides data deemed useful in future examinations of the area noted.

Impact of Urban Renewal

This research investigates the area within the boundaries of 3rd street north to 9th street north, and from Main street to Waco street, in Wichita, Kansas. The project focuses on the existence of the people, businesses, building structures, and basically the atmosphere prior to the mid 1960's.

In the early to mid 1960's, a transition period occurred that gradually changed the research area from a place rich in religion, family life, and business, to what it is now, and that is the destruction of the above elements. The transition period can be called Urban Renewal, which is formed by Demolition and Rehabilitation. Urban Renewal is the combination of wholesale clearance of an area and the rehabilitation and conservation of existing structures and neighborhoods (Toothaker, 1973).

Prior to Urban Renewal, the area was rich with the African-American culture that existed in the residences and businesses (see Figure 1). Some of the businesses were barbershops, churches, pool halls, and clothing stores, just to name a few. Some of the more notable building structures were Jackson Mortuary, Harry Shepler's Saddle Company, and the Frederick Douglas School.

Currently, the area displays a smaller number of businesses, structures, and residences (see Figure 2). It is nothing like what it was in the past. There is no comparison, in quality (richness in resources), of the targeted area of past and present. What is physically gone is the ability to enrich the targeted area with what once existed, and that was a community family full of the African-American culture with a dash of Hispanic American and European American cultures intertwined. The ability to be on the outside of this area and view it from different perspectives has also diminished.

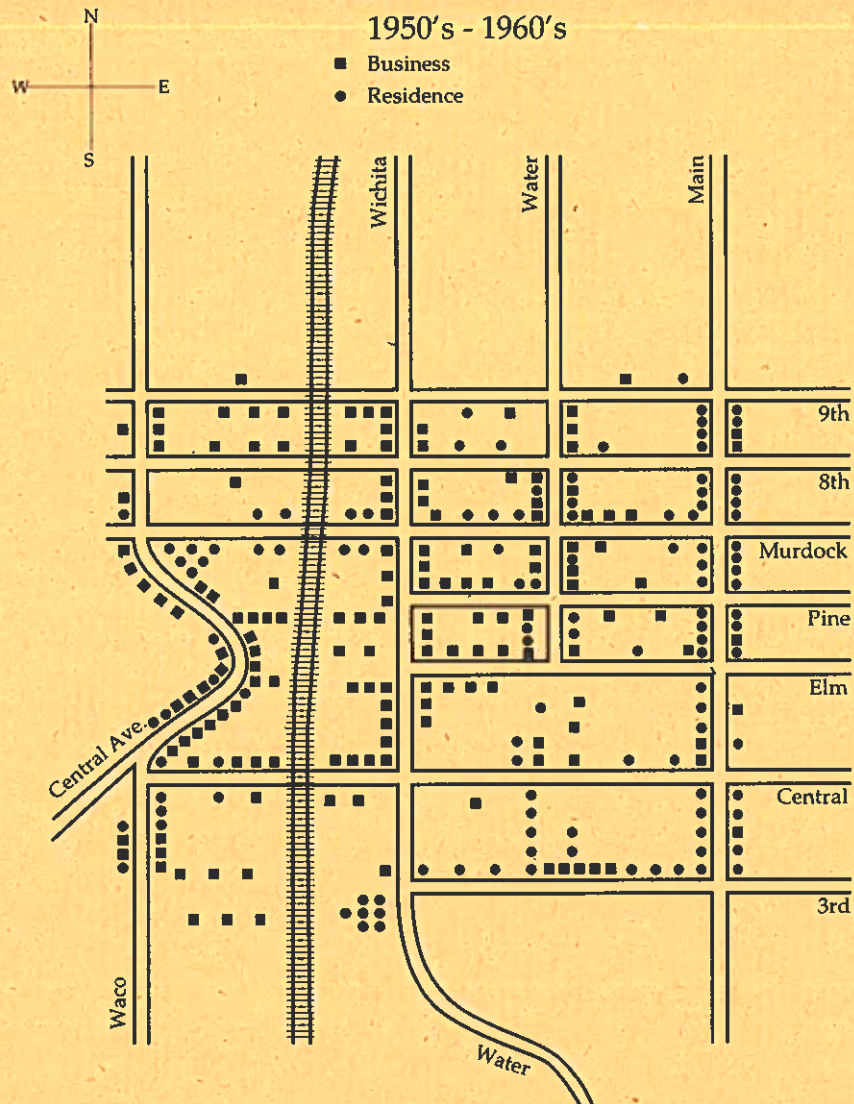
The purpose of this research is to strengthen the awareness of this once prosperous area that existed in the late 1950's and early 1960's. It cannot visually recreate these resources, but it attempts to verbally recreate what was once a proud African-American community.

Background

Urban Renewal was a grant program that attempted to beautify a community that had great social and physical needs. All neighborhoods were analyzed for statistical data. If a community showed a need for

assistance towards their social and physical concerns, then an individual council would be formed to represent the community. Each council, and therefore each community, was prioritized by the level of assistance for their territorial problems. The higher level of assistance would be granted first, and the lower level of assistance would be granted last, if at all.

Figure 1



Methodology

The tool that worked best with this research was interviewing on a casual basis. The interviewing process was the dissection of minds that remembered and recreated what existed. Mr. Val Jackson and Mr. Gene Jackson, presently owners of Jackson Mortuary, and past residents in the targeted area described what it felt like to live in the area, to walk into the businesses, and to know the people who lived in the area. These findings can be described as oral history.

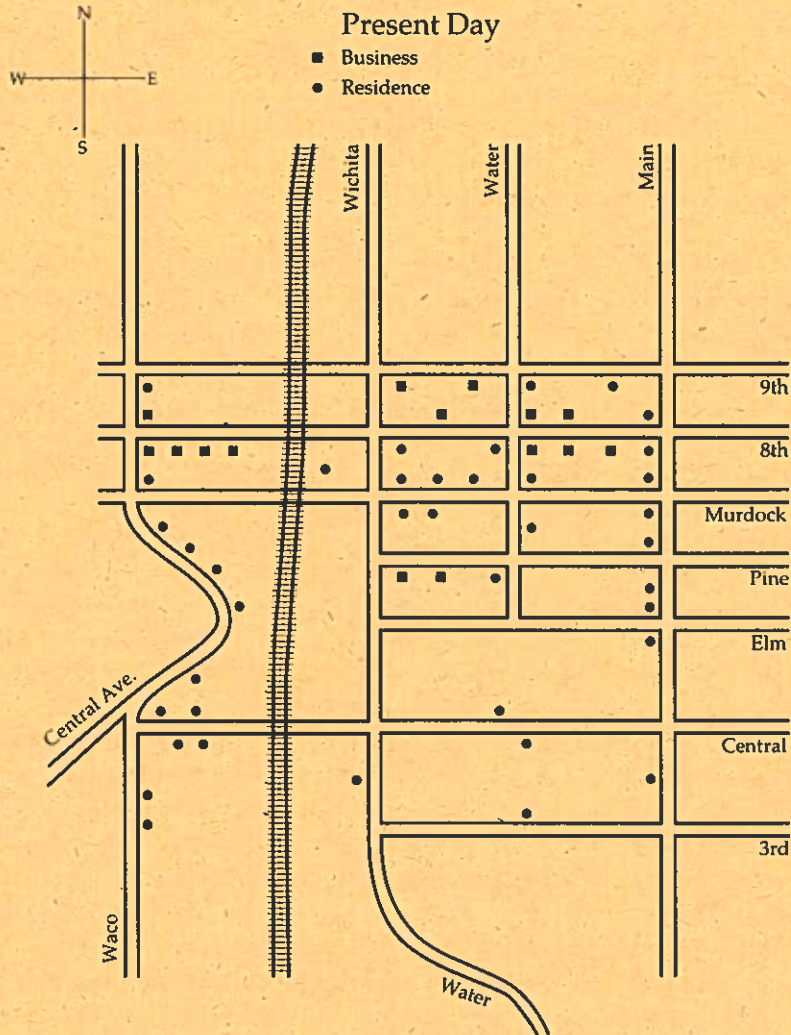
Interviewing also supplied the research with an overall presence, the full existence of the businesses and individuals over a time span of approximately eight years. It covered the whole transition period of Urban

Renewal.

The findings derived from the interviews were compared with the 1955 Business City Directory. The information from the Business City Directory and interviews provided a focal point for the research to describe a specific snap shot of time.

The last tool utilized was a present day viewing of the targeted area. The area was analyzed to compare and contrast the territory in two different time periods in its history. The building structures, residences, and overall atmosphere was compiled to form a mental picture with their locations plotted on a map.

Figure 2



Results

The first portion of the research considers the past area by streets, starting from the east and finishing to the west. The southern border is 3rd street going westward to north Waco street. There were 11 residences and 14 businesses. This strip of land had a variety of businesses, such as Hub Tool and Supply Company, Steve's Cabinet Shop, the Fire Department Headquarters/Fire Station #1, United States Naval Reserve Armory Training Center, and the Kansas Foundation for the Blind.

On Central street going westward to north Waco street, there existed 11 residences and 6 businesses.

Some of the businesses were Hundley and Miller Real Estate, Robert Salmon's Liquor, Royal Cleaners, The Hitchin Post, and the Independent Ice and Cold Storage Company.

On Elm street going westward to north Waco street, there existed 15 residences and 1 business. The lone business on this street was the Citizen's Funeral Home.

On Pine street going westward to north Waco street, there existed 16 residences and 1 business. The lone business on the street was Nelson's Grocery.

On Murdock street going westward to north Waco street, there existed 6 residences and 21 businesses. Some of the businesses were Murdock Beauty Shop, Maurine's Cafe, Wichita Laundry and Dry Cleaners, the Chevrolet Motor Division, Esta McComb's Liquors, and Harlan Refrigeration. The Chevrolet Motor Division occupied most of the economic space heading the top of the retail business in this area.

On 8th street going westward to north Waco street, there were 6 residences and 3 businesses. The businesses were Morris Printis Inc., the Church of Christ, and the Church of God in Christ. This area can be viewed as having had a spiritual atmosphere.

The northern border was 9th street going westward to north Waco street, where there were 8 residences and 2 businesses. The businesses were Bob Debose's Barber shop and Marbelite Tile and Brick Company Incorporated. The area gave people a chance to beautify not only themselves, but also to remodel their households.

The eastern border was Main street going northward to 9th street, where there were 16 residences and a large number of businesses in the area. Some of the businesses were Harry Shepler's Saddle Company, Elk's Hall and Club, American Cancer Society, Main Street Cafe, Small Fry Restaurant, Fred Helm Lawyer, the Federal Building and the Court House. Some of the offices in the Federal Building were the U.S. Post Office, Wichita Postal Employee Credit Union, Probation Office, Selective Service, and the Armed Forces Offices, just to name a few. The Court House had offices of the County Coroner, Jury Rooms, the Marshal of City Court, the County Registrar of Deeds, and the County Treasurer, to name a few. The Federal Building and the Court House created an atmosphere of governmental services.

On Water street going northward to 9th street, there existed 50 residences and 23 businesses. Some of the businesses were McDonald's Small Animal Hospital, Water Street Cafe, Water Street Hotel, Frederick Douglas School, Calvary Baptist Church, St. Paul's African Methodist Church, McMullin Inc. Aircraft Parts, Jackson Mortuary, Bethel Beauty Salon, Tabernacle Baptist Church, Fredrick's Plumbing, and the YWCA, just to name a few. This area was a place for enrichment of the mind (Douglas School), the spirit (the churches), and the soul (Jackson Mortuary).

On Wichita street going northward to 9th street, there existed 81 residences and 1 business. The lone business was Hellums Furniture Company. The area was mainly a residential area.

The western border was Waco street going northward to 9th street, where there were 120 residences and 17 businesses. Some of the businesses were Frank's Barbershop, Medley Standard Service, Rice Apartments, Parish Apartments, Boyle Apartments, Waco Court Apartments, Rynder Apartments, Merle Young Chiropractor, Ed's Conoco Service, and Taylor's 66 Service. This area had more of a condensed living arrangement with all of the apartments in the area.

The targeted area had a compilation of residents, businesses, and venture creations. The residents were established in apartments and houses. The Court House and the churches were some of the more established services. The venture creations were some of the smaller shops such as the barbershops, cafes, and beauty salons.

Discussion

The research was viewed as a person consisting of three elements: the body, the personality, and the appearance. The Business City Directory was the body of information. This body of information came to life (personality) with the verbal pictures created through interviewing and through describing the existence of the structures and the atmosphere of the targeted area. The present day viewing of the area revealed shape (appearance) of the after effects of Urban Renewal.

The advantage of this research is that it provided information that showed the existence of the African American community in this area. The proving of this existence shows the importance and the strong ties, physical and emotional, that the African-American community had with this specific area.

Another advantage of doing this research is that it can now be a resource for other research projects. This will fill some of the void or lack of written information that exists on the African-American family.

The disadvantages of doing this research is that it is not possible to meet the people who were actually there in the same location. There were too many elements that changed over the course of time. This deadened the effect that the individuals would have when talking to people about this area in terms of the citizens, the community, and the overall atmosphere of the area.

Another disadvantage is that I had to rely heavily on oral history and then work backward. It is very difficult to remember what took place even one week ago. I had to ask individuals to remember things dating back 40 years. The accuracy tends to be skewed and misleading in terms of matching information with the exact time in history.

The research findings are beneficial to future projects in two ways. The first way is that it is a basis to build on. It proves that there existed an active community by the many small businesses that were established. The second way is that this data could be broken down to pinpoint when the community was bought out, partially rehabilitated, and demolished.

I felt the warmth of the area when interviewing the Jackson brothers, not only in the way they talked about the area and its accessibility to do practically anything in a small place, but also in the passion with which they talked. The casualness made it easier for them to open up about an area that is important to them. It gave them a chance to express their feelings about their experiences in the community.

I felt eager to learn about not only the targeted area, but also the Jackson brothers and what they were willing to let me absorb. I felt I was actually there walking the streets and looking into all the shop windows.

With this research, I found out how important it is to interview people in the community. The interviewing process provided insight about people, friendships, and important historical information.

Urban Renewal is an integrating form of Rehabilitation and Demolition of land funded by the government. It occurs as a transition period that stretches over many years. One view says it renews the land and beautifies the community. Another view calls it Urban Removal by creating hardship on the citizens who are removed from the area. You be the judge.

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Perceptions of Exercise

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Abstract

In America, millions of people are plagued with chronic, long-term illnesses such as cardiovascular disease, diabetes and hypertension. Research suggests that 70% of the illness Americans suffer are preventable. More exercise, less fat in the diet and smoking cessation would curb the prevalence of cardiovascular disease, diabetes and hypertension significantly. The problem is attempting and maintaining a behavior change; it is very difficult and it often takes many unsuccessful attempts before the goal behavior is attained. An important determination of the success of a behavior change is the individual's attitude toward the desired behavior. The evidence suggests that men tend to have more chronic, debilitating health problems than women. Comparing attitudes toward exercise by gender may provide a better understanding of why men and women are disproportionally susceptible to certain illnesses.

Perceptions of Exercise

In America, millions of people are plagued with chronic, long-term illnesses. In particular, coronary heart disease is the leading cause of death among Americans (Morbidity, and Mortality Weekly Report (MMWR), 1993). Physical inactivity (along with the factors of genetic susceptibility, high cholesterol, cigarette smoking, uncontrolled hypertension and obesity) is one of the major risk factors associated with coronary heart disease (1993). The risk for coronary heart disease is twice as high for individuals who do not exercise (1993). Despite these facts, 60% of Americans polled in 1990 stated that they participated in little or no leisure-time physical activity (1993).

Sedentary lifestyles have become the norm in this society, and the problem is attempting and maintaining a behavior change; it is very difficult and it often takes many unsuccessful attempts before the goal behavior is attained. A behavior change model has been described by James Prochaska, Ph.D. to explain the process of behavior change (Prochaska, & Marcus, 1994). The Behavior Change Model has five phases: precontemplation, contemplation, preparation, action and maintenance. Precontemplation is the first phase, in which an individual has no intentions of changing and is unaware of any problem with their current behavior. Contemplation is the second phase, in which the individual recognizes the behavior as problematic and *intends* to make a change. The preparation phase occurs when an individual makes plans to change in the near future but has not fully implemented those plans. Action is the next phase, which is perhaps most difficult because it requires much time and energy to initiate and attempt the desired behavior. Also, the action phase is most unstable and has the potential for many relapses back into the undesired behavior. The final stage of this theory is the maintenance phase. This occurs when an individual suffers no relapse into old behaviors and the gains made are continuous.

An important determinant of the success of a behavior change is the individual's perception of the desired behavior. This perception includes any barriers the individual perceives, the pros and cons of the desired behavior change, and the individual's confidence in their ability to adopt a behavior change. These combined perceptions help to determine the individual's readiness for change, which is

a good predictor of behavior.

Moving from a sedentary lifestyle to one which involves regular exercise is a process that follows the behavior change model. Because black women have a higher incidence of cardiovascular disease than white women (Morrison, 1994), and lack of exercise is a risk factor for cardiovascular disease, this study examines whether or not blacks and whites have varying perceptions of exercise. An insight on racial differences concerning perception of exercise may help explain why there is a disproportionate prevalence of cardiovascular disease between the races.

In a 1991 survey, the percentages of men and women who live sedentary lifestyles were almost identical; 57.7% of the men surveyed were classified as sedentary and 58.5% of the women were classified as sedentary (MMWR, 1993). Though the number of sedentary men and women is about the same, this study uses sex as a variable to explore whether or not perceptions of exercise are different in men and women. Because the prevalence of sedentary lifestyle increases with age (1993), this study keeps the variable of age constant by only surveying individuals between the ages of 25 and 35.

With the current changes occurring in the medical field, especially managed care, medical recommendations ought to be as efficient and effective as possible. A study which examines individuals' perceptions of exercise and their readiness for change will allow healthcare providers to better assist their patients in the prevention of many deadly diseases.

This research investigates perceptions of exercise and whether perceptions of exercise are influenced by sex and race. This project also assesses the subject's readiness for change. Though exploratory in nature, this project will attempt to support the notion that individuals with a negative view of exercise are least likely to be involved in exercise (and are least ready to begin exercising regularly) than individuals with a non-negative or positive view of exercise.

Methods

This descriptive, exploratory research used a non-random sample of forty-eight adult volunteers between the ages of twenty-five and thirty-five. There were twenty-four males and twenty-four females. Half of the males were African-American and the other half were Caucasian. The twenty-four females consisted of the same ethnic diversity. Each volunteer participated in an approximately thirty-minute interview using a thirty-nine item questionnaire on perceptions of exercise developed by Dr. Lescoe-Long. The questionnaire consisted of mostly open-ended questions that provided each subject the opportunity to explain their feelings in their own words without the limitations or restrictions of numerous multiple-choice or categoric response options. Each interview was tape-recorded and later transcribed. Upon transcription of the data, the subject's responses were reviewed to discover any general trends or differences based on gender or ethnicity.

The confidentiality of each subject was maintained by the use of a coding system in which, after the interview, the subject's name was not associated with their data. Also, each subject received and signed a consent form which explained the purpose of the study and their rights as participants in the project.

Results

Of the forty-eight subjects, only one stated that they did not exercise. The other forty-seven reported involvement in some type of exercise either occasionally or regularly. The entire sample stated that they believed exercise was beneficial to peoples' health and that exercising or not exercising had an impact on their current state of health. In general, attitudes toward exercise were positive, and every subject was able to name many different benefits to exercise. The three most common reasons for exercising were improved health (sixteen respondents), weight maintenance or improved physical appearance (thirteen respondents) and stress reduction (four respondents).

The greatest barrier to exercise was time or other obligations. When asked for the reason they might

decide not to exercise, time or other obligations was mentioned by sixteen of the respondents. Twelve respondents stated that just laziness or a mood of "I don't feel like it" would stop them from exercising. Injury or health reasons (nine respondents) was the third major reason why individuals in this sample would decide not to exercise.

The majority of respondents recognized many ways in which society has made it easier to exercise and also how society's views on exercise have changed. The availability, accessibility and affordability of health clubs along with more walking paths were cited as examples of how society is making exercise more appealing and convenient to the entire family. The media was reported as playing a large role in informing society of the benefits of exercise and the harms of inactivity. As a down side to the increased value placed on exercise, a few respondents noted how recently exercise has been used as a discriminatory factor. That is, those who do exercise look down upon those who don't as individuals who lack self-control and are not concerned about their bodies. A few of the women in this sample were involved in weight-lifting, and they noted how society's view on this issue has changed:

When I first started lifting weights, for instance, eight or nine years ago, it was pretty uncommon for women to lift weights, at least here in the midwest, and I met with some opposition to that. There were people who weren't very approving of it that would say 'You're too big' and 'You look like a man' and 'What are you doing that for?' and I have noticed within the last couple of years that that's becoming more acceptable for women and more women are starting to think being muscular is okay and society is accepting it.

Two interesting gender differences arose from this study. First of all, men and women do not perceive free time in the same way. Women often stated that their inability to exercise as often as they would like was due to lack of time. They brought up issues of child-rearing or taking care of the household, whereas men seldom addressed this topic. In fact, some men made it a point that they exercised in spite of family commitments. Secondly, though both males and females stated they engaged others to help them exercise by inviting someone to come along, males and females utilized the influence of a partner in different ways. For some of the men, their friends motivated them in a competitive manner. One male respondent stated: "It's a competition thing, it makes it more fun. In weightlifting we try to see who can lift the most and who can lift the longest and then jump in a mirror and see who's developing."

Ethnic differences were even less notable in this sample. Perhaps with a larger study a difference in family values may emerge. One interesting point that was addressed by one of the black-female respondents was the commonplace obesity among the women in her family: "My mom, I think if anything she thinks [exercise] is more of a waste of time. Growing up in her era, it wasn't really important. If you were a big woman, that was good, that was healthy. My mom's from Oklahoma, all the women I know from Oklahoma are big." In this woman's family, exercise was not valued in the generation before her, but it is important to her and her husband and they will most likely pass that value on to their children. In contrast, two of the white respondents (one male and one female) stated that exercise was highly valued by them because it was valued by their parents.

Discussion

According to this study, both men and women, blacks and whites are aware of the benefits of exercise. All of the respondents in this sample are also aware that exercise or inactivity affects their personal health. Ninety-eight percent of the sample was involved in some type of exercise, which would place them at either the action or maintenance phase of the Behavior Change Model. These results are not representative of society as a whole because many of the subjects were recruited from a fitness center.

The gender difference in concepts of free time may have implications on women's health. In this

study in particular, some of the women seemed to have issues of childcare and household responsibilities that the men did not. Women may be exercising less than men and thus losing out on the benefits of exercise as a result of socialization. The unspoken rule is that women should make child-rearing and other domestic responsibilities top priority even above their own health. This idea restricts women's free time and inhibits their ability to exercise regularly.

Further study should include a random sample of individuals to assess their perceptions of exercise. This study should also test the effectiveness of different interventions. For individuals in the precontemplative and contemplative phases, data to further support the need to exercise would be beneficial. Data would make them more aware of the harms of their current practices and illuminate the need for exercising on a regular basis. A buddy-system would be an appropriate intervention for those individuals in the preparation and action phases of the cycle of change. For many, it is much easier to begin and maintain regular exercise with the motivation and assistance of a friend.

Although moving through the Behavior Change Model may be a lengthy process that requires energy, the individuals in this study were aware of the many benefits of exercise, as research also suggests. Despite heightened awareness and studies that support this fact, the question still remains: "Why do so many Americans live a sedentary lifestyle?" Perhaps our fast-paced society is detrimental to our health. Along with the leaps and bounds that we have made in technology, our patience has grown thin; we don't have to wait for anything anymore. As a group we are very convenience-oriented. The major prescription to prevent and alleviate many of America's common illnesses, exercise, is an endeavor that requires energy, and the results do not appear quickly. We as a society should discard the notion that "Convenience is King" and focus on the long-term goals of exercise, which include reduced risk of heart disease and a better quality of life.

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A New Sensor for Dissolved Dioxygen: Gold Electrode Modified with a β -Cyclodextrin Polymer Film Hosting Cobalt Tetraphenylporphyrin

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Abstract

A gold electrode, coated with a thin supramolecular complex of β -cyclodextrin and cobalt tetraphenylporphyrin polymer film, is used as an electrocatalytic sensor for determination of dioxygen dissolved in aqueous solution.

Introduction

There is a growing demand for new and improved dioxygen sensors for various medicinal, environmental, and industrial applications. In the medical field oxygen sensors are used routinely to monitor dioxygen level in blood. With respect to the environment, sewage treatment plants need constantly detect the oxygen concentration in the sewage so that effective microbial breakdown of the waste is guaranteed. Food and pharmaceutical companies need oxygen sensors to determine spoilage and avoid unwanted reactions.¹

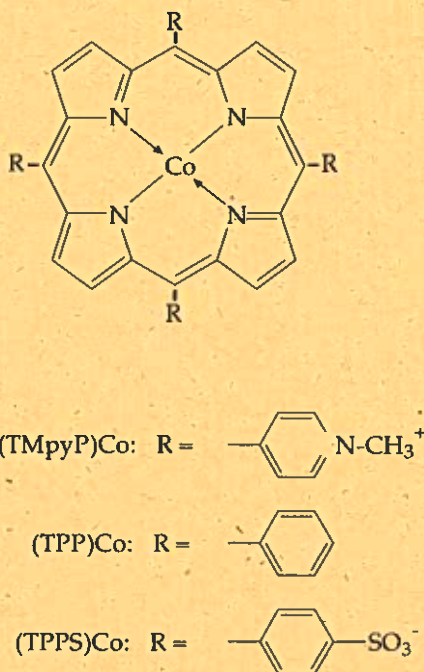
Development of supramolecular transducing systems for catalytic sensor applications is an area of active research.² Cyclodextrin (CD) hosts are very appealing because they can form supramolecular complexes with a broad range of organic and inorganic, both ionic and neutral compounds.³ Additional advantages arise if a thin cyclodextrin polymer (CDP) film is cast on an electrode surface.^{4,5} The stability of supramolecular complexes of CDS embedded in polymer matrices (e.g., by polycondensation) is virtually the same as the solution complexes, and in some cases the stability is even better.⁶ CDP is soluble neither in aqueous nor in non-aqueous solvent solutions and is resistant to a wide range of pH changes, from 2 to 12 pH. The structure of CDP is relatively open, so the CDP films are readily permeable to small molecules or ions present in solution while large ones are repelled.⁴ The shelf lifetime of CDP film-coated electrodes reaches months if films are stored in air of sufficiently high humidity.

Metalloporphyrins, due to their rich and well-defined redox behavior,⁷ are suitable for developing redox catalysts and sensors. Monomeric cobalt porphyrins reversibly bind dioxygen and catalytically electroreduce it to peroxide both in homogeneous and heterogeneous systems.⁸ Recently, formation of supramolecular complexes of β -cyclodextrin (β -CD) and free-base tetraarylporphyrins have been reported,⁹ thus opening opportunities to develop new catalytic sensor devices. In the present study, we exploit this approach by demonstrating that a polymer film of supramolecular complex of β -CD and cobalt tetraphenylporphyrin, (TPP)Co, coated on the surface of a gold electrode, (β -CDP)-{(TPP)Co}/Au, can operate as a voltammetric sensor for determination of dioxygen dissolved in aqueous solution.

Experimental Section

Three different metalloporphyrins bearing different peripheral charges (Figure 1) and two different cyclodextrin polymers were used to make modified electrodes. The (β -CDP)-{(TPP)Co}/Au electrode was prepared according to a simple one-step procedure developed earlier for the β -CDP films hosting other organic compounds.¹¹ About 0.1mM (TPP)Co ((TPP)Co was synthesized according to the literature

Figure 1. Structural formula for cationic, neutral, and anionic cobalt metalloporphyrins employed in present study.



procedure,¹⁰ wherein chloroform solution was equilibrated by xonication for a few minutes, with a stock solution of 2% β -cyclodextrin soluble prepolymer (β -CDPS). The β -CDPS was from Cyclolab, Cyclodextrin Research and Development Laboratory (Budapest, Hungary). After partition equilibrium was attained, the stock solution turned pale red-orange. This solution was used to prepare the castin solution, which was 1.5% in β -CDPS, hosting (TPP)Co, 15mM in glutaric dialdehyde and 10mM in HCl. Then, about $3\mu\text{m}$ thick polymer film was prepared by dispensing a $5\mu\text{L}$ sample of the casting solution on the Au electrode surface to form about 4mm diameter circular spot.⁴ Polycondensation was carried out for about an hour in a water vapor filled container (ca. 40% humidity), to allow for slow water evaporation. The small thickness of the β -CDP film used in the present study is advantageous with respect to the response time of the fabricated sensor.^{11a}

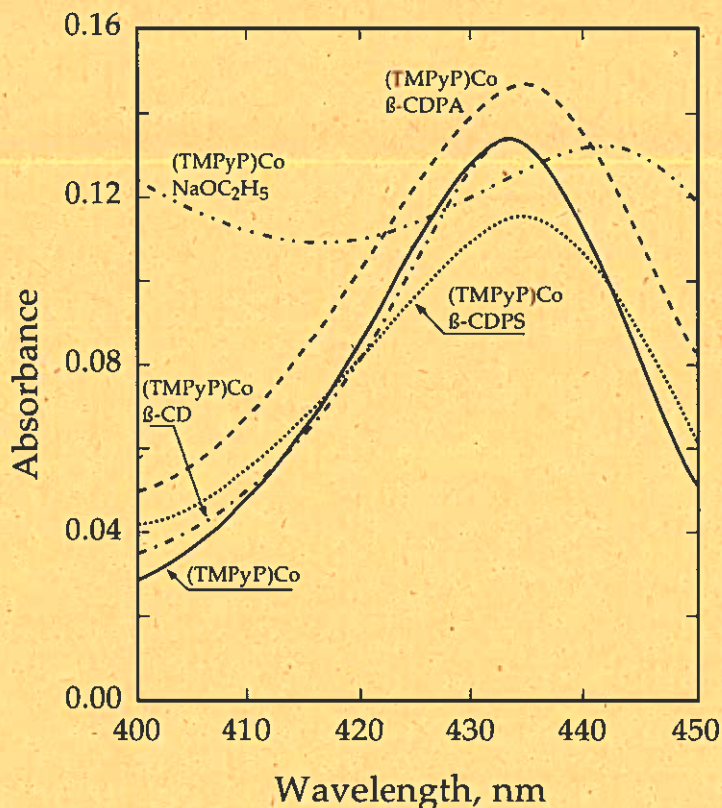
Cyclic voltammetry was performed by using either a Model EC/225 Voltammetric Analyzer from IBM Instruments, Inc. (Danbury, CT) or a Model 263A potentiostat/galvanostat of EG&G PAR (Princeton, NJ) and a typical three-electrode electrochemical cell. A 1.6mm diameter gold disk electrode from Bioanalytical Systems (West Lafayette, IN) was used as the working electrode. A platinum wire and sodium chloride saturated Ag/AgCl electrode served as the auxiliary and reference electrodes, respectively. All potential cited were against the Ag/AgCl reference electrode. All measurements were performed for a 0.1M phosphate buffer (pH5.6), 0.1M NaCl solution, at room temperature, $20\pm 1^\circ\text{C}$. The other porphyrin systems were prepared in the same manner as described above.

UV-visible absorption spectroscopy spectra were recorded on a Shimadzu (Tokyo, Japan) Model V-1601 UV-visible spectrometer with a matched pair of cuvettes. The concentration of the cyclodextrin monomer and polymer were kept constant, and the porphyrins' concentration was increased.

Results and discussion:

An aqueous solution of $5\mu\text{M}$ (TMPyP) Co in excess β -CD, β -CDPS, or β -CDPA shows a 1 to 2nm red shift

Figure 2. UV-visible spectra of (TMPyP)Co in cyclodextrin solutions, water, and sodium ethoxide.



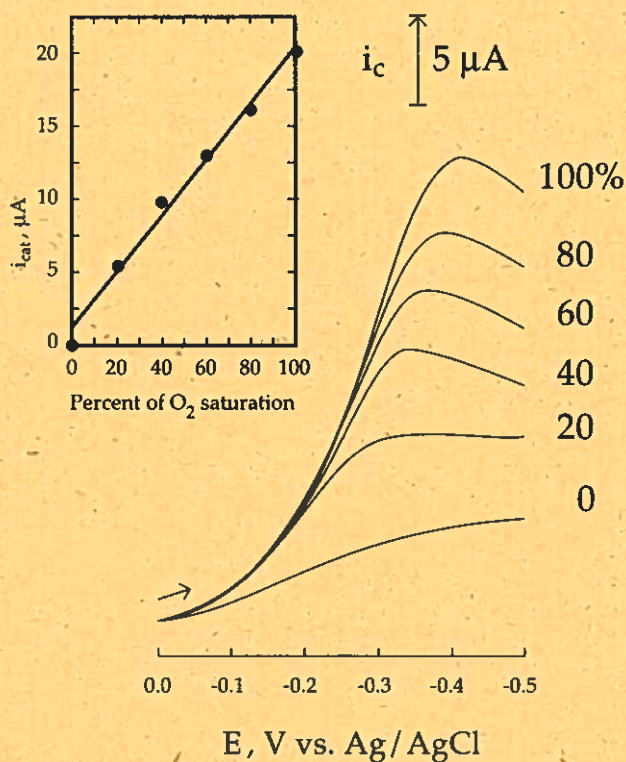
of both Soret band and visible band (Figure 2), compared to the porphyrin in the absence of the cyclodextrin compounds. A similar red shift of 3 to 5 nm is also observed for (TPPS)Co. The small shift indicated that the supramolecule complex formation is between the peripheral substituent and the cyclodextrin. If the axial ligation of the cobalt center and the hydroxy group of the polymer is expected, there should be a pronounced red shift. A control experiment was performed in which ethoxide was added in excess to the cobalt porphyrin solution. Ethoxide is known to bind axially to the Co(II) center of the porphyrin, and under this condition, a red shift of 10nm is expected and observed (Figure 2).

Cyclic voltammetry (CV) experiments performed with the use of the $(\beta\text{-CDP})\text{-}[(\text{TPP})\text{Co}]/\text{Au}$ electrode in deaerated 0.1M phosphate buffer (pH5.6), 0.1M NaCl, exhibited an electro-oxidation peak located at $E_{pa}=0.09\text{V}$ (potential scan rate, $v=0.1\text{Vs}^{-1}$) corresponding to the $(\text{TPP})\text{Co(II)}/(\text{TPP})\text{Co(III)}$ redox couple.⁷ A multicyclic voltammetry experiment showed no decay of $(\text{TPP})\text{Co(II)}/(\text{TPP})\text{Co(III)}$ peak currents with the scan number. This indicates that $(\text{TPP})\text{Co}$ is not released from the film to solution, as expected for this water insoluble catalyst. Logarithmic dependence of the $(\text{TPP})\text{Co(II)}/(\text{TPP})\text{Co(III)}$ electro-oxidation peak current against the potential scan rate was linear, with a slope close to 0.5, indicating a semi-infinite diffusion controlled charge transport within the polymer matrix. By analogy to the earlier reported supramolecular CD-porphyrin complexes in solution,⁸ one may expect that $(\text{TPP})\text{Co}$ is complexed predominately by inclusion of its one or more phenyl rings by the cyclodextrin host site of the polymer rather than through axial ligation of the cobalt center. Because of the semi-infinite, and not finite, diffusion control of the CV peak current, it is also unlikely that the $(\text{TPP})\text{Co}$ solid in the form of suspension is present in the film.

The voltammetric peak corresponding to electroreduction of dissolved dioxygen at a blank $(\beta\text{-CDP})/\text{Au}$ electrode, e.g., in the absence of the $(\text{TPP})\text{Co}$ catalyst in the film, occurs at $E_{pc}=-0.70\text{V}$ ($v=0.1\text{Vs}^{-1}$). Interestingly, with the $(\beta\text{-CDP})\text{-}[(\text{TPP})\text{Co}]/\text{Au}$ electrode, i.e., in the presence of the catalyst in the film, this

peak is positively shifted due to electrocatalysis and occurs at $E_{pc} = -0.45V$ ($v = 0.1Vs^{-1}$). A peak current dependence on $(\text{potential scan rate})^{1/2}$ for the latter peak is linear, with zero plot intercept, for constant dioxygen concentration, indicating that dioxygen catalytic electroreduction is controlled by diffusion. Figure 3 shows the effect of the dioxygen concentration on the voltammetric peak current of catalytic dioxygen electroreduction measured at the $(\beta\text{-CDP})\text{-}[(\text{TPP})\text{Co}]/\text{Au}$ electrode. The catalytic peak current is linearly dependent on the dioxygen concentration for the entire range of dioxygen concentration for the entire range of dioxygen concentration.

Figure 3. Voltammograms of (TPP)Co system with increased O_2 percent; potential scan rate $0.1 Vs^{-1}$. Inset is dependence of catalytic peak current, i_{cat} , of O_2 electroreduction versus the percent of O_2 in solution.



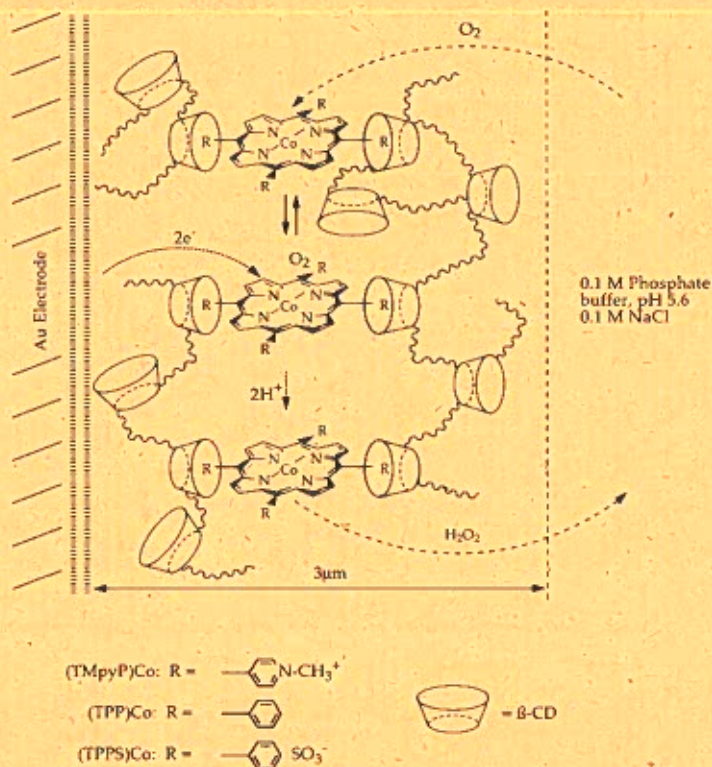
That is, ring current was observed corresponding to the electrooxidation of hydrogen peroxide, which is the electroreduction product at the disk when its potential is scanned from 0.2 to -0.7V and the ring potential is kept constant at $E_R = 0.8V$.²

Conclusion:

The (TPP)Co catalyst and the similar porphyrin catalyst can be immobilized in a thin $\beta\text{-CDP}$ film, then cast on the Au electrode surface, and the sensor thus fabricated can be successfully used for detection of dioxygen dissolved in aqueous solution. Studies on cobalt porphyrins bearing different peripheral charges hosted by the $\beta\text{-CDP}$ matrix were done with UV-visible spectra and showed that the $\beta\text{-cyclodextrin}$ and the porphyrin interacts at the peripheral sites of the porphyrin. The catalyst is molecularly dispersed in the polymer matrix, forming a supramolecular complex with the $\beta\text{-CD}$ sites. The immobilization is irreversible in aqueous solutions. The catalytic peak current of dioxygen electroreduction is proportional to the dioxy-

gen concentration. The $(\beta\text{-CDP})\text{-}[(\text{TPP})\text{Co}]/\text{Au}$ electrodes show reproducible results with respect to dioxygen determination after storage for several days in air atmosphere of high humidity.

Figure 4: A representation of the porphyrin and $\beta\text{-CDP}$ matrix and the mechanism of the dioxygen reduction to peroxide.



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The Approach/Withdrawal Theory and Stimulus Complexity: Spiny Mice (*Acomys cahirinus*) Reactions to Visual Stimuli

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Abstract

T. C. Schneirla (1959/1965) developed the Approach/Withdrawal Theory, which states that for animals in the higher phyla, young animals will approach a weak stimulus and withdraw from a strong stimulus. Greenberg, Radell, and McCarthy (1991) suggested that the definition of stimulus intensity needs to be more precise and that stimuli be defined in terms of their complexity. In this study we presented young and old spiny mice (*Acomys cahirinus*) with 2 stimuli differing in complexity. Young and old spiny mice spent approximately the same amount of time orienting toward each stimulus. Our results were statistically insignificant. This research does not support Approach/Withdrawal Theory but does not disregard it either. More research needs to be completed in this area before any conclusions can be made.

The Approach/Withdrawal Theory and Stimulus Complexity: Spiny Mice (*Acomys cahirinus*) Reactions to Visual Stimuli

T.C. Schneirla developed the Approach/Withdrawal (A/W) Theory, which explains adaptations of the biphasic processes of approach and withdrawal with three main postulates (McGuire & Turkewitz, 1979; Schneirla, 1959; Schneirla, 1965; Greenberg, McCarthy, & Radell, 1991). The main focus of this experiment is the A/W Intensity Hypothesis. Schneirla proposed that in the course of evolution, approach and withdrawal behaviors were crucial for the survival of an individual (Schneirla, 1965). A strong stimulus would be more likely than a weak stimulus to elicit a deleterious situation (Schneirla, 1965). For example, a rodent in an open area in daylight (high intensity) has a higher potential of becoming prey than a rodent in an open area in the dark (low intensity). This has led toward adaptations in all animals, in all phylogenies, favoring approach responses to a weak stimulus and withdrawal responses to a strong stimulus (Schneirla, 1965).

Approach responses involve a decrease in the distance between an individual and an extrinsic stimulus and an orientation towards the stimulus, while arousing those physiological systems which are "energy conserving" or "vegetative" and are associated with the normal physiological states of an organism (Schneirla, 1965). In mammals, these states are associated with those responses involved with the parasympathetic nervous system such as an increase in digestive activities, a low or normal heart rate, and normal blood pressure (Schneirla, 1959). Withdrawal responses increase the distance between an extrinsic stimulus and the individual with an orientation away from the stimulus (Schneirla, 1965). Withdrawal behaviors are related to those physiological states that utilize high levels of energy and are "interruptive" (Schneirla, 1965). For example, in mammals, the sympathetic nervous system causes an increase in heart rate and blood pressure and a decrease in digestive activities. This theory is supported by the findings of Jennings, Cannon, Sherrington, McGuire & Turkewitz, 1979; Schneirla, 1965; Turkewitz & Gardner, 1984; and Greenberg et al., 1991.

The A/W Intensity Hypothesis states that intensity of stimulation basically determines the direction of reaction with respect to the source, and thereby exerts a selective effect on what

conditions generally affect the organism . . . or all organisms in early ontogenic stage, low intensities of stimulation tend to evoke approach reactions, high intensities withdrawal reactions. (Schneirla, 1959, p. 344)

It should be noted that A/W theory only applies to the early stages of life for animals in the "higher" phyla (Schneirla, 1965/1959; Turkewitz et al., 1984). This is caused by a move toward responses to qualitative aspects of a stimulus as animals in the higher phyla gain experience (Turkewitz et al., 1984). For animals in the lower phyla, A/W theory applies throughout life (Schneirla, 1965/1959; Turkewitz et al., 1984).

The A/W theory suggests that approach and withdrawal behaviors result from differential neuronal stimulation caused by stimulus intensity (Schneirla, 1959). This is caused by differential arousal thresholds of different neuronal pathways, as demonstrated by Stough (1936) and Bullock (1948) (as cited in Schneirla, 1959) in the earthworm, or simply by a greater number of neuronal firings (both by quantity of neurons firing and by the number of firings per neuron) in response to a stimulus of greater intensity (Schneirla, 1959). This has also been supported by Stough 1936, Bullock 1948, and Hess 1924 (as cited in Schneirla, 1959).

Stimulus intensity has been defined in many different ways. For example, stimulus intensity has been defined according to the amount of stimulus present, the physical characteristics of the stimulus, and through the character of a stimulus (Walker, 1980). Any one of these definitions may yield very different values (even when using the same definition) (Walker, 1980). For example, a shadow moving toward a subject may be defined as increasing in intensity because the shadow is increasing in size. However, as the shadow increase in size, the amount of light decreases and decreases in intensity. These problems suggest a necessity for a precise definition of stimulus intensity.

Schneirla proposed that stimulus intensity should be viewed in quantitative terms. Often qualitative definitions involve an experimenter's bias. Schneirla defined stimulus intensity for A/W theory as effective stimulus input "affecting neural input under the given conditions" (Schneirla, 1965). Effective intensity depends not only on the quantitative aspects of the stimulus, but also on the organism itself (Schneirla 1965; Gardner & Turkewitz, 1982). The characteristics of the organism that must be taken into consideration when defining stimulus intensity are the characteristics of the receptor system and the state of the organism when a stimulus is presented (Schneirla 1965; Gardner & Turkewitz, 1982). This definition allows an experimenter to define a stimulus by the way the animal reacts, allowing experimenter bias to invade research.

Karmel (1969) proposed a more reliable approach to determine stimulus intensity by looking at a stimulus in terms of its complexity (the number of transitions and randomness present in a stimulus). His definitions were based on rules of information-theoretic measures (Karmel, 1969; Atteneave, 1957). Random patterns are more complex (stronger) than uniform patterns and the more transitions a pattern has the more complex the stimulus (Karmel, 1969). These definitions have been statistically supported by the work of Atteneave (1957), where a greater number of individuals found items with greater randomness and more transitions to be more complex. This provides a more precise definition of stimulus complexity (intensity). Greenberg et al. (1991) suggested that stimulus complexity rules be applied to the concept of A/W theory.

Spiny mice (*Acomys cahirinus*) offer a unique subject for studying A/W theory. Young spiny mice are born precocial. Some research suggests that spiny mice are born mobile, with functional eyes and ears within hours after birth. (Brunjes, 1983; D'udine & Gozzo, 1983). This allows for experimentation with spiny mice to occur when very little visual experience has taken place.

Greenberg et al. (1991) conducted a study using spine mice (*Acomys cahirinus*) that used definitions of stimulus complexity and supported the A/W theory. He presented 'young' (6 weeks old) and 'old' spiny mice (>1 year) with a less complex stimulus of 12 mm² black and white checkerboard squares and a more complex stimulus of 6 mm² black and white checkerboard squares (Greenberg et al., 1991). The 'young' spiny mice spent significantly more time orienting toward the less complex stimulus (Greenberg et al., 1991). The 'old' spiny mice spent approximately the same amount of time orienting toward each stimulus (Greenberg et al., 1991).

In this study a replication of results was attempted using spiny mice subjects of a younger age. In two

different experiments young and old spiny mice were presented with two stimuli differing in complexity and the amount of time orienting toward each stimulus was timed. Our hypothesis states that young spiny mice will spend more time on the side of the box with the less complex visual stimulus while old spiny mice will spend the same amount of time on each side of the box. If this hypothesis is supported, the A/W theory would also be supported. A young animal would be approaching a less complex (weak) stimulus and withdrawing from a more complex (strong) stimulus while the older subject would be responding to qualitative aspects of the stimuli rather than quantitative aspects.

Method

Participants

Subjects in all experiments consisted of naive spiny mice (*Acomys cahirinus*) bred in our animal colony. Animals were housed in transparent "shoe box" cages (29.20 x 18.45 x 15.24 cm) containing a sand substrate. The subjects were under a 12/12 reversed light/dark cycle and fed ad libitum Purina rat chow, carrots, and water. Subjects were housed with their respective mating pair and littermates until they were weaned at 28 to 32 days old. Then they were separated into same sex groups in which 2 to 3 animals were housed together.

Experiment One

Method

Participants

Two groups of subjects were tested. The experimental group consisted of eight young spiny mice 1 to 5 days old. The control group consisted of eight adult spiny mice (older than 90 days).

Materials

Subjects were tested in a rectangular box 30 cm long, 11 cm wide, and 12.5 cm tall. The box was divided into 15 cm halves. One side was covered with alternating 2.6 cm² black and white checkerboard squares. The other side was covered with alternating 1.3 cm² black and white checkerboard squares. The patterns were transposed from negatives onto photographic paper with a matte finish. The box was covered with contact paper for ease in cleaning. The top of the box was covered with a transparent Plexiglas lid to prevent subjects escape. During testing, the only light in the room came from a lamp with a 60-watt bulb, placed 45 cm above the box.

Procedure

Subjects were placed in the center of the box by scoop capture for a single two-minute trial, and the time spent in each side of the box was recorded. Scoop capture was performed the subject into a cup or scoop and covering the top with a flat piece of plastic. The subject was considered to be in the side of the box in which both of its front paws were. The time spent between sides (when one front paw was in one side of the box and the other paw was in the other side) was also timed. The box was turned 90 degrees on each trial to control for external room cues. Before and after each trial, the box was cleaned with 70% ethanol solution.

Results

The results of this experiment did not support the experimental hypothesis. Young and old spiny mice spent approximately the same amount of time on both sides of the box. The mean time spent by pups on the side of the box with small squares was 61 seconds and 58 seconds on the side with large squares. The mean time spent by adults on the side of the box with large squares was 59 seconds and 61 seconds on the side

with small squares. A two-way anova was performed on the data. Stimulus complexity did not have an effect on orientation [$F(1,36) = 0.049, p < .05$]. Age did not have an effect on orientation [$F(1,36) = .0001, p < 0.05$]. There was also no interaction between the two variables [$F(7,36) = .007, p < 0.05$].

Experiment Two

Method

Participants

The experimental group consisted of ten spiny mice between the ages of 1 and 5 days of age. The control consisted of ten adult spiny mice (older than 90 days).

Materials

The apparatus was identical to the apparatus used in experiment one, except that alternating black and white lines covered the sides of the box instead of checkerboard squares. The widths of the lines on half of the box were 14 mm^2 and 4 mm^2 on the other half.

Procedure

The procedure in experiment two was identical to the procedure in experiment one.

Results

Again, this experiment did not support the experimental hypothesis. Young and old spiny mice spent approximately the same amount of time on each side of the box. The mean time spent by pups on the side of the box with thin lines was 55 seconds and 65 seconds on the side of the box with thick lines. The mean time spent by adults on the side of the box with thin lines was 56 seconds and 62 seconds on the side of the box with thick lines. Stimulus complexity again did not have an effect on orientation [$F(1,36) = 0.012, p < 0.05$]. There was also no difference in the reactions in the young versus the old spiny mice [$F(1,36) = 1.67, p < 0.05$]. There was no interaction between the two variables [$F(7,36) = 0.02, p < 0.05$].

Discussion

One possible explanation for our results is that the visual system of the spiny mouse is not developed enough to tell the difference between the two stimuli. One problem we encountered involved whether or not the spiny mice's eyes were open. Most literature states that spiny mice are born with their eyes open and functional (Brunjes, 1983; D'udine & Gozzo, 1983). Our lab, as well as others, have found that this is not always the case. Often the eyes are only partially open or not open at all, especially in larger litters of four or five.

Research on the functioning of the retina does not support the theory that a weak stimulus will excite fewer neurons. In fact, the number of firings per neuron or number of neurons firing does not correlate with the intensity or complexity of the stimulus. However, research has shown that young organisms approach visual stimuli that are defined as weak or less complex. The other possible explanation to explain this phenomenon is that weak or less complex stimuli excite a different neuronal pathway. This idea has merit, and more research is needed in this area. Whether or not the functioning of the nervous system fits with the approach visual stimuli that are weak in intensity. The research of Greenberg et al. (1991) on the reactions of spiny mice to visual stimuli did support the A/W Theory. The fact that young animals tend to approach weak stimuli and withdraw from strong stimuli has been supported. To disregard this theory because of the functioning of the retina would be a mistake. Research as to how this phenomenon occurs makes more sense.

This research does not support the approach/withdrawal theory. However, it does not disregard it either.

A previous study more or less identical to this one, except for the age of the spiny mice, did support the approach/withdrawal theory. There are enough explanations as to why this research did not support A/W Theory, and as a result, this area needs to be explored. Our lab plans to find out whether or not spiny mice between the ages of 1 and 5 days old can tell the difference between the two stimuli presented. We also plan on repeating the study with young spine mice between the ages of 10 and 15 days old. These spiny mice would still be young enough that they would not have gained much visual experience, and there should be no question as to whether or not their eyes are functional. By gaining answers to these questions, we could confidently conclude that this research does or does not support approach/withdrawal theory.

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