

SELF-CONCEPT AND HEARING
IMPAIRMENT AMONG THE ELDERLY

Wilbur G. Gardner (Deceased)

Louis Levy
Southeastern Louisiana University

INTRODUCTION United States research on national health indicates considerable auditory impairment in various categories of people. The 1971 National Health Survey found 14 million persons with some level of hearing impairment, and an estimated 330,000 were totally deaf (Metropolitan Life 1976). These figures showed about 7 percent of the United States population as hearing impaired, and there were dramatic differences by age and other variables. Hearing impairment occurred most frequently among the elderly, and to a lower degree among males, white persons, the poor, those with little education, and the non-metropolitan residents. There was evidence of auditory impairment in all categories of people regardless of age, sex, race, income, education, and place of residence. But the proportion of the 1971 population with hearing impairment increased most consistently through the age categories, from 1.3 percent for those under 17 years to 40 percent for those over 75 years. Hearing impairment is a significant problem which will increase with the growing proportion of older people.

Recent population estimates indicate that the demographics of age are changing in the United States. The Bureau of Census projects that by the year 2025, there will be more than 50 million Americans, comprising about 17 percent of the national population who are 65 or older. The sex ratio for that group will drop to approximately 65 men per 100 women by the year 2000 (Graney 1978). Thus, problems associated with the aging process will become more prevalent unless corrective policies are implemented.

This is especially true in areas such as auditory impairment, where partial solutions, such as hearing aids and aural rehabilitation, are technologically possible, but not available to many who need them.

THEORY Life satisfaction and morale have been found to be positively related to social activity (Tobin & Neugarten 1961; Reichard et al 1962). Informal activities seem to be most influential vis-a-vis life satisfaction (Lemon et al 1972). While there is a positive relation between activity and social variables, such as class standing among the elderly, social activity also seems dependent on one's hearing ability (Kernodle & Kernodle 1978). If a person has difficulty hearing, conversation may be difficult. Depending on the severity of the auditory loss, the person may lose portions of the conversation.

Psychological problems may develop due to hearing impairment. These problems may be understood in relation to three levels of hearing function: the warning, the primitive, and the symbolic level (Ramsdell 1970). The signal or warning level refers to the function of hearing in alerting the individual to danger. The primitive function relates the individual to changes in the surroundings. The symbolic level refers to the perception of oral communication.

While the hearing impaired person could experience trouble in any of these levels, we are mainly concerned with the symbolic level. We assume that the symbolic level is the most significant for self concept and morale. The hearing impaired person might not want his hearing loss to be known, and may try to bluff and fake through a conversation. For example, the nurse walks into a resident's room and remarks that it is raining. The resident, thinking that the nurse said "Good morning," replies "Good morning."

How is everything?" If this communication problem continues, withdrawal may be initiated by the staff, the other residents, or the hearing-impaired person. This is very likely if the impairment is labeled "senility" by the staff or the other residents (Gulbrium 1975). The "senile" person will not receive supporting communication, which is crucial to the development of a favorable self concept. More important, the faking and bluffing are indications that the hearing impaired person has negative feelings about the hearing loss, and may feel ashamed of the impairment. The person's feelings, and the actions of others may constitute an interaction process which Goffman calls the "stigmatization" of the impaired (1963).

There are several social psychological reactions to a hearing impairment. If bluffing is not successful, the impaired person may feel even more negative toward the condition. And others, such as relatives may hesitate to interact with the impaired person lest the faking be revealed by a faux pas.

Second, stress may be induced by a high level of arousal necessary to interpret words near the hearing threshold. Feelings of rejection or lack of worth may occur if others tend to curtail or avoid oral communication especially if the person has little awareness of the problem (Fuchs 1976).

If the impairment affects the symbolic level of hearing, the individual may withdraw from social interaction for two reasons: 1) frustration and embarrassment arising from misinterpretation of symbols; and 2) an increased tendency to become paranoid in thinking that one is being rejected. Frustration, embarrassment, humiliation, and paranoid thinking can affect self concept and morale (Horney 1937 178).

At the warning level of hearing function, sounds that alert one to danger may be missed. These

missed signals may result in a feeling of insecurity. An individual who experiences loss at the primitive level may miss ambient sounds and noises which provide orientation to changes in the physical surroundings. This can result in sensory deprivation, depression, and hallucinations, which may also affect self concept and morale (Noyes & Kolb 1958 115-116; Scheff 1966 41-44).

HYPOTHESES Theory yields four hypotheses relative to the research problem. The auditory variables are independent and the social psychological variables are dependent:

- 1) Auditory acuity is positively related to self concept.
- 2) Auditory acuity is positively related to morale.
- 3) Disagreement between the subjective and the objective measures of auditory acuity is negatively related to self concept.
- 4) Disagreement between the subjective and the objective measures of auditory acuity is negatively related to morale.

Auditory acuity can be divided into an objective component as measured by an audiometer, and a subjective component, as estimated by the individual. The subjective and objective measures of acuity can be in conflict with each other. A person may believe that he has excellent hearing when he does not.

INSTRUMENTS A modified form of the Osgood (1957) semantic differential technique was used to measure self concept, self perception of hearing ability, and morale. Other scales, such as the Tennessee Self Concept Scale were available, but the semantic differential seemed a better way to measure these terms. This provided an "objective measure of the connotative meaning of concepts" (Osgood & Luria 1954). Three dimensions are conventionally used in semantic differential methodology: the evaluative, potency, and activity dimension.

The semantic differential items were individually administered to the subjects by student research coordinators, by paper and pencil tests. The reliability and the validity of the instruments were increased by individualizing the data collection process. The items took from 15 to 30 minutes to administer. (See Figure 1)

The audiological instrument included a pure tone average for frequencies of 500, 1000, and 2000 cycles per second for the better ear, and the tests for the speech reception threshold. Both were decibel scales. Discrimination tests and diagnostic work were also completed, so that auditory problems could be better isolated for treatment. The audiological examinations were administered by a trained audiologist in a sound treated room. The audiological tests took 30 to 60 minutes.

METHOD Subjects were obtained from two nursing homes in Louisiana. Although only 4 percent of the elderly in the United States reside in nursing homes, it is critical that research be conducted on this population, since the rest of the elderly may later enter a nursing home (Kastenbaum & Candy 1973). The investigators obtained the cooperation of the administrators and head nurses of the two nursing homes. The head nurse supplied a list of ambulatory residents without serious "senility", as requested. The head nurse and a student research coordinator recruited 50 volunteer subjects. The research coordinators were experienced in interacting with the elderly (Fuchs 1976). The subjects each received an audiological evaluation, and responded to the Osgood semantic differential instrument. An ABBA design was followed to alternate the test sequence, so that about half of the subjects took the paper and pencil instrument first, and the audiological test second; the other half received the same instruments in reverse order. Seventeen sub-

FIGURE 1: SELF-ASSESSMENT SCALES

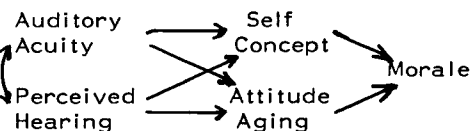
How do you feel about your self?	
Happy	--- Sad
Ugly	--- Beautiful
Clean	--- Dirty
Honest	--- Dishonest
Worthless	--- Valuable
Unfair	--- Fair
Healthy	--- Unhealthy
Passive	--- Active
Sharp	--- Dull
Slow	--- Fast
Relaxed	--- Tense
How is your hearing?	
Strong	--- Weak
Bad	--- Good
Dull	--- Sharp
How has it been getting older?	
Rough	--- Smooth
Active	--- Passive
Bright	--- Dark
Bad	--- Good
Unpleasant	--- Pleasant
How is your life now?	
Beautiful	--- Ugly
Bitter	--- Sweet
Calm	--- Tense
Kind	--- Cruel

TABLE 1 RELATION OF HEARING TO SELF CONCEPT

(Gamma values, decimals omitted)

		1	2	3	4
Auditory Acuity.....1	Self Concept.....2	53			
Morale.....3		28	69		
Aging Attitude.....4		32	87	73	
Subjective Hearing.....5		58	55	17	38

FIGURE 2 CAUSAL MODEL FOR HEARING & SELF ATTITUDES



jects failed to complete all stages of the research. Some lost interest in the project, while some were not physically able to complete some phase of the research. The findings are based on 33 subjects who completed the project.

FINDINGS Ages of the subjects ranged from 60 to 92 years (median = 76). Education ranged from none to college level (median = 6 years). There were 13 men and 20 women. The small sample size limited the field of applicable statistical techniques to those appropriate to small cell frequencies. Since the purpose of this report is exploratory, only measures of association were used to describe and relate the variables. The hypothesized variables were treated as ordinally ranked sets of scores. Each variable was divided into three ordinal categories of high, moderate, and low, with approximately the same number of subjects in each category.

Goodman and Kruskal's gamma seemed the most appropriate statistical measure of association. The gamma coefficients are given in Table 1. There is a significant correlation between auditory acuity, as objectively measured, and self concept, which supports the first hypothesis. The second hypothesis is not supported by the data, because auditory acuity is only mildly related to morale. On the other hand, self concept and morale are strongly related. The subjective measure of perceived hearing ability follows the same pattern as the objective measures of auditory acuity. Perceived hearing ability is related to self concept, and through self concept to morale. The attitude toward the aging variable follows the same pattern as the morale variable. It is strongly associated with self concept, but only mildly connected with auditory acuity and perceived hearing.

The model in Figure 2 indicates the direction of the relation from the hearing measures to self con-

cept and morale. The indirect relation between the auditory measures and the morale measure is apparently mediated by the self concept variable. The sample size is too small to measure the partial correlations adequately. Probably the connection between the hearing measures and self concept will remain when morale is controlled, and the relation between self concept and morale will remain when auditory measures are controlled.

Hypotheses Three and Four concern disagreement between the audiological measures of hearing ability and the perceived level of hearing by the subjects, indicating that disagreement would relate negatively to self concept and morale. These hypotheses were untestable, since only three of the subjects had wide discrepancy between their subjective appraisals of their hearing ability and their measured hearing ability. The elderly in this sample had clear recognition of their hearing ability. They were not deluded about their hearing, but there was some ambivalence about hearing aids, both among the elderly users and non-users of hearing aids (Silverman & Davis 1970 318-322).

CONCLUSIONS The policy implications of this research are manifold. First, if replication supports the findings of this study, there is a strong argument for continued funding of routine audiological examinations. More money and energy should be directed toward getting audiological aid to persons who recognize their hearing impairment. More positive attitudes toward hearing aids should be developed, so that these devices could be used by more of the hearing impaired. Improved hearing should spawn positive self concepts and higher morale.

This exploratory study shows the practicality of further research across a larger sample

and through a longer time frame. Random samples of suitable size need to be developed so that findings can be generalized to whole populations. More appropriate research instruments need to be developed in order to complete valid research in the areas of self concept and morale for the elderly. Before-after tests on self concept and morale should be applied for individuals who decide to obtain a hearing aid.

This study indicates that there is a close association between aging and auditory acuity, and between aging and self concept. It is clear that both age and auditory acuity can have a bearing on self concept. Aging may be the most crucial variable relative to self concept and morale. We cannot determine the extent to which the connection between self concept and auditory acuity is spurious, but age is not the whole answer. Partial correlations do indicate a continued relation between auditory acuity and self concept, even when age is controlled ($\gamma = .45$). While aging does lower self concept, morale, and auditory acuity, aging alone does not explain enough of the variation in these concepts to be treated as an explanatory variable.

The problem of auditory impairment will only become worse in time, and if nothing is done, poor self concept and low morale could result from auditory problems. It would be much easier for the elderly and for society, if morale among the elderly were kept high by sustaining good self concepts through positive experiences in informal interaction. Therapeutic sessions with counselors are expensive in terms of time and mental strain. This research documents the possibility.

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