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ABSTRACT
        Mentally retarded adults' ability to express facial
emotions of happiness, sadness, anger, and fear was investigated.
Photographs of facial emotional expressions posed by 52 retarded
adults were judged by familiar and unfamiliar nonretarded adults.
Happiness and sadness were accurately posed most often. The ability
of retarded adults to encode facial emotional expressions was found
to be significantly correlated with assessments of interpersonal
competence provided by work supervisors in a sheltered workshop
setting. Implications for nonverbal social/emotional assessment,
nonverbal interpersonal skills training, and future research are
discussed. Includes 28 references. (JDD)

FACIAL EMOTIONAL EXPRESSIONS OF

MENTALLY RETARDED ADULTS:

CORRELATES OF INTERPERSONAL COMPETENCE

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Running Head: FACIAL EMOTIONAL EXPRESSIONS

Abstract

Mentally retarded adults' ability to express facial emotions of happiness, sadness, anger, and fear was investigated. Photographs of facial emotional expressions posed by retarded adults were judged by familiar and unfamiliar nonretarded adults. Happiness and sadness were accurately posed most often. The ability of retarded adults to encode facial emotional expressions was correlated with assessments of interpersonal competence provided by work supervisors. Implications of the findings of this study for nonverbal social/emotional assessment, nonverbal interpersonal skills training, and future research are discussed.

FACIAL EMOTIONAL EXPRESSIONS OF

MENTALLY RETARDED ADULTS:

CORRELATES OF INTERPERSONAL COMPETENCE

Until recently, cognitive ability was viewed as the
principal factor influencing the life adjustment of
retarded persons (Zigler & Balla, 1982). Now concerns
have been raised about the social functioning of mentally
retarded individuals, especially at adulthood. This
concern for social functioning is evident in the current
definition of mental retardation (Grossman, 1983), which
includes: 1. significantly subaverage cognitive ability,
and 2. deficits in adaptive behavior, defined as ". . .
the effectiveness or degree with which individuals meet
the standards of personal independence and social
responsibility expected for age and cultural group"
(p.1).

Studies of the social functioning of retarded
individuals usually define social competence in terms of
self-help skills while interpersonal competence has been
overlooked (Simeonsson, 1978; Simeonsson, Monson, &
Blacher, 1984). Yet there is some research indicating
that the success of mentally retarded adults in the
community is dependent upon interpersonal competence. For
instance, Greenspan and Shoultz (1981) reported that
interpersonal competence plays an important role in

explaining the job successes and job failures of mentally
retarded adults. Because interpersonal competence is
critical for mentally retarded adults to be successful in
the community, it is important to begin to identify those
specific interpersonal skills which are critical to
overall interpersonal competence. The focus of the
present study was to examine the nonverbal affective
communication skills, specifically the ability to express
facial emotional expressions, of a group of mentally
retarded adults.

Nonverbal affective communication skills consist of
both decoding and encoding abilities. Decoding refers to
the capacity to interpret the emotions conveyed through
others' nonverbal behavior. Encoding is the ability t'
express emotions through nonverbal cues, such as facial
expressions. The importance of nonverbal affective
communication skills to a nonretarded individual's overall
interpersonal competence has been demonstrated.
Christensen, Farina, and Boudreau (1980) found that
socially unskilled college students were less responsive
to the nonverbal signs of distress in other persons than
were subjects who had been judged socially adept by their
peers. Among preschool-aged children, the findings of
Zuckerman and Przewuzman (1979) suggested the possibility
that proficiency in decoding and encoding facial emotional

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expressions might serve as an index of overall social adjustment.

In social development, nonverbal affective responsiveness influences the responses of others. Since nonverbal behavior serves social or communicative functions (Watson, 1972; Watzlawick, Bavelas, & Jackson, 1967), nonverbal communication skill deficits may negatively influence the quality of an individual's interpersonal functioning. The inability to accurately express facial emotions might contribute to personal adjustment problems. For example, Feldman, White, & Lobato (1982) reported a relationship between decreased abilities in nonverbal encoding of facial affect and emotional disturbance among adolescent males. Depressed patients were significantly impaired in the production of facial emotional expressions, particularly for positive ones, in a study reported by Jaeger, Borod, and Peselow (1986).

Recent research examining the nonverbal affective communication skills of mentally retarded individuals has pointed to clear differences in their skills compared to the skills of nonretarded individuals. Several studies have shown that retarded children (Lambert & Defays, 1978; Sogon & Izard, 1985) and retarded adults (Gray, Farther, & Louder, 1983; Maurer & Newbrough, 1987a) are less capable than nonretarded individuals in identifying photographs of

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facial emotional expressions. As well, retarded infants
and children have been found to be less able than
nonretarded children in expressing facial emotions
(Cicchetti & Sroufe, 1976; Emde, Katz, & Thorpe, 1978;
Maurer & Newbrough, 1987a; 1987b). Little is known about
the ability of retarded adults to express facial emotions
or about the association of those nonverbal affective
communication skills with general interpersonal
competence. Difficulties in nonverbal affective
communication skills might contribute to interpersonal
problems which result in social and vocational
maladjustment among retarded adults.

The purpose of this study was to examine the
nonverbal affective communication skills of mentally
retarded individuals. Are mentally retarded adults able
to express facial emotions? If mentally retarded adults
have difficulty encoding facial emotions, are some
emotional expressions more difficult than others? Are the
abilities of mentally retarded adults to express facial
emotions related to their interpersonal competence in the
workplace?

<div align="center">Method</div>

Subjects

Subjects were 12 White adults (19 males and 33
females), classified as mild to moderately mentally
retarded, recruited from a population of 100 employees at

<div align="center">4</div>

a sheltered workshop in the Northeastern United States. The age range was from 22 to 56 years (Mean CA: 34.9 years). Intelligence test scores were obtained from the Wechsler or Stanford-Binet Scales administered within 3 years prior to this study (Mean IQ score: 56.1; SD: 13.6). None of the subjects had significant sensory or motor impairments. Reimbursement for time away from regular jobs as well as a small monetary bonus was offered as an incentive to participate in the study.

Procedures

Encoding: Subjects were seen individually and asked to pose facial expressions of 5 primary emotions: disgust, happiness, sadness, anger, and fear, which Ekman and Friesen (1975) reported to be among the cross-culturally recognizable facial expressions of emotion. The appropriateness of measuring posed rather than spontaneous encoding ability might be questioned. However, there is reason to believe that posed and spontaneous emotion reflect the same underlying set of codes; large positive and statistically significant correlations have been found between posed encoding and spontaneous facial expressiveness (Zuckerman, DeFrank, Hall, & Rosenthal, 1976).

The first emotion to be expressed (disgust) was a practice item, presented as an imitation task using 2 pictures from the Ekman and Friesen (1976) series to

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explain the task of posing, to allay anxiety about the
procedures, and to provide a distractor stimulus for
subsequent decoding tests. Multiple labels, an
appropriate tone of voice, and a brief illustrative story
were presented via audio tape to describe each emotion for
the posing task. Directions were to "make a face" which
corresponded to the emotion named in the story. Similar
stories have been used in other studies of emotion
recognition with nonretarded children and retarded adults
(e.g., Camras, Grow, & Ribordy, 1983; Gray et al, 1983).
A transcript of the audio tape follows:

1. Happiness (happy, joy):   "It's your birthday and
                               you are happy."

2. Sadness (sad, unhappy):   "Your dog is sick and is
                               going to die. You are sad."

3. Anger (angry, mad):   "Someone stole your lunch.
                               You are mad."

4. Fear (scared, afraid):   "You are being chased by a
                               lion, and you're afraid
                               that you won't get away."

Posed facial expressions were photographed with a
Polaroid camera set on a tripod; the experimenter's face
was hidden behind a black cloth to prevent inadvertent
cues. To assess the subjects' ability to pose emotional
expressions (i.e., encoding skills), scores were assigned
according to the number of correct identifications of

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those emotional expressions by nonretarded, White adults.
The nonretarded adults were 8 human service workers, half
of whom had direct experience with the subjects in the
sheltered workshop, and half of whom had no experience
with mentally retarded persons. Nonretarded adults were
asked to judge each subject's facial expressions according
to how well they represented happiness, sadness, anger,
and fear. Beyond the directions to assess the expressive
content of each picture carefully, the raters were not
trained so that their evaluation reflected the subject's
ability to communicate emotion generally. Agreement among
6 of 8 raters was used as the criterion for classifying
poses as accurately representing the specific emotions.

Social Skills Assessment: To evaluate interpersonal
competence, work supervisors were asked to complete the
Socialization section of the AAMD Adaptive Behavior Scales
(1981)based on observations of the subject's social
behavior in the workshop over the previous 3 months (i.e.,
cooperation, consideration for others, awareness of
others, interaction with others, participation in group
activities, selfishness, and social maturity). The
Socialization section was selected because it purports to
measure ". . . the level of social interaction and
consideration for others, and is particularly useful in
understanding a person's relationships to his or her
peers" (p. 16). A high score out of a possible 26 points

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on the Socialization scale suggested that the individual was able to relate with others in a positive way, whereas a low score indicated social difficulties. Scores for this sample ranged from 3 to 26 (Mean: 19.1; SD: 3.96).

Results

Preliminary analysis did not reveal gender differences ($t=-.26$; $p>.05$) for this sample in the ability to encode facial emotional expressions. Overall ratings of the subjects' facial expressions by familiar and unfamiliar nonretarded judges were not significantly different ($t=1.77$; $p>.05$) so the ratings of the 2 groups of nonretarded judges were combined.

Encoding: The relative difficulty of posing the facial emotional expressions of happiness, sadness, anger, and fear, was determined by examining the combinations of expressions which appeared among the subjects' accurate expressions. Subjects were first grouped by the number of accurate poses, i.e., poses correctly identified by 6 out of the 8 nonretarded judges. Then, the proportion of subjects who produced the correct pose or combination of poses was contrasted with the proportion who produced all other possible combinations using chi square tests. According to the 75% agreement criteria, none of the subjects accurately posed all 4 emotional expressions. Two subjects exhibited a 3 pose repertoire of happiness/sadness/anger and happiness/sadness/fear. For

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subjects with 2 accurate poses (23% of the total sample), the happiness/sadness combination was significantly more likely (X =5.9; p<.05) than the happiness/anger or fear, the sadness/anger or fear, and the anger/fear combinations. Of those subjects who could pose only 1 expression accurately (42%), the expression was significantly more likely to be happiness (X =17.22; p<.05) than sadness. anger, and fear.

Insert Table 1 about here

Correlates of Interpersonal Competence: There was no significant relationship between IQ scores and scores on the AAMD Socialization Scale (r=.03; p>.05) or between IQ scores and encoding scores (r=.20; p>.05). Encoding scores were, however, positively and significantly correlated with the social skills ratings assigned by work supervisors on the AAMD (r=.41; p<.01).

Stepwise multiple regression analysis was employed as an exploratory technique to identify variables that would be useful in predicting interpersonal competence beyond that afforded by single correlations. The dependent variable (AAMD Socialization Scale scores) was regressed on the variables under consideration: encoding scores, IQ scores, and age. Encoding scores were found to be the best predictors of Socialization scores, contributing most to the multiple correlation coefficient, whereas IQ and age did not add to the prediction; the ratio of explained

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and unexplained variance (R) equaled .17, p<.01.

Observations: In this sample, the performance of two subjects with a dual diagnosis of mental retardation and a history of nonpsychotic, psychiatric disorders was noteworthy because of the difficulty they experienced posing facial emotional expressions. The two subjects did not change their impassive expressions when asked to pose various emotions. Both individuals commented on the difficulty of the task: the male subject who had a psychiatric diagnosis of antisocial personality disorder, indicated that he could not produce facial expressions because he did not "feel" the emotions while the female subject with a diagnosis of depression, reported that she simply could not "do it." Both subjects received encoding scores which were significantly below the mean (-1 standard deviation). Supervis confirmed that both subjects generally displayed a very limited range of affect in their interactions in the work setti . An inability to produce facial emotional expression may contribute social/emotional maladjustment.

Discussion

The mentally retarded adults in this sample experienced problems posing, i.e., intentionally expressing, facial emotions. From Schlosberg's (1954) perspective, low intensity emotions, such as happiness and sadness, were generally easier for the subjects to pose

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than high intensity emotions (anger, fear); strong,
negative feelings were especially difficult for the
retarded adults to express. An inability to communicate
emotions nonverbally might lead others to underestimate
the feelings of retarded persons and thus, interfere with
interpersonal interactions.

Cognitive ability, as defined by IQ scores, was not
significantly associated with work supervisors' ratings of
interpersonal competence so interpersonal competence was
not necessarily contravened by low measured intelligence.
Those findings show the limitations of relying on IQ
scores alone to draw conclusions about the interpersonal
functioning of retarded persons. Subjects with better
encoding abilities, were judged to be more interpersonally
competent by their work supervisors. Nonverbal affective
communication, the ability to encode facial emotional
expressions, is a component of interpersonal competence.
Undoubtedly, a mentally retarded person's cognitive
abilities, including such processes as attention, memory,
and abstract reasoning, measured by IQ tests, play a role
in overall interpersonal functioning; the important
questions for future research are: how great is the
influence of cognitive ability and nonverbal affective
communication abilities in contributing to interpersonal
competence? A path analysis might be used to trace the
implications of the relationships found in this study;

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nonverbal affective communication skills might he a mediating variable in a causal model of the connections between cognitive ability and interpersonal skills. Future studies might assess spontaneous facial emotional expressions among persons with mental retardation and nonverbal decoding skills among peers.

Several issues need to be considered when interpreting the results of this study: 1. Accuracy of posing reflected the subject's ability to follow directions as well as to encode the correct facial cues so subjects were given several terms for each emotion and a short descriptive story. All subjects were able to respond to the task. 2. When posing an emotion, one need not experience the feeling of happiness, sadness, anger, or fear which have complicated meanings. Nonverbal affective communication skills, rather than the subjective aspects of emotion, were addressed in this study.

If a person is unable to express facial emotions, it is difficult to establish meaningful relationships with others which compromises interpersonal functioning. In the present study, nonverbal affective communication abilities, i.e., the ability to encode facial emotions, were shown to be related to interpersonal competence for mentally retarded adults. Given the importance of interpersonal competence for the personal and vocational adjustment of retarded individuals (Hanley-Maxwell, Rusch,

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Chadsey-Rusch, & Renzaglia, 1986; Goldstein, 1972;
Greenspan & Shoultz, 1981; Wheeler, Bates, Marshall, &
Miller, 1988), programs arc needed to assist mentally
retarded people in improving nonveibal affective
communication skills and concomitantly, interpersonal
effectiveness. Nonverbal affective communication training
would increase the possibility of sharing meanings and
feelings thereby facilitating interpersonal interactions.
Developing nonverbal affective communication abilities
would enhance the general communication skills of retarded
persons who may have difficulty with spoken language to
allow for greater understanding and flexibility of
expression.

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Table 1

<u>Number and Percent of Subjects with Each Possible Pose or</u>

<u>Pose Combination Correct</u>

# Correct Poses	Possible Pose Combinations	# Subjects	% Pose Combinations Correct
0 (n=16)	---	16	---
1 (n=22)	Happiness	17	77%*
	Sadness	4	18%
	Anger	0	0
	Fear	1	5%
2 (n=12)	Happiness/Sadness	8	67%*
	Happiness/Anger	2	17%
	Happiness/Fear	0	0
	Sadness/Anger	2	17%
	Sadness/Fear	0	0
	Anger/Fear	0	0
3 (n=2)	Happiness/Sadness/Anger	1	50%
	Happiness/Anger/Fear	0	0
	Happiness/Sadness/Fear	1	50%
	Sadness/Anger/Fear	0	0
4 (n=0)	Happiness/Sadness/Anger/Fear	0	0

*p<.05

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