

Grand Valley State University

**ScholarWorks@GVSU**

---

Papers from the International Association for  
Cross-Cultural Psychology Conferences

IACCP

---

2014

## Emotional Display Rules of Visually and Hearing Impaired Students

Anjali Ghosh

*Indian Statistical Institute*, [gh.anjali@gmail.com](mailto:gh.anjali@gmail.com)

Follow this and additional works at: [https://scholarworks.gvsu.edu/iaccp\\_papers](https://scholarworks.gvsu.edu/iaccp_papers)



Part of the [Psychology Commons](#)

---

### ScholarWorks Citation

Ghosh, A. (2014). Emotional display rules of visually and hearing impaired students. In L. T. B. Jackson, D. Meiring, F. J. R. Van de Vijver, E. S. Idemoudia, & W. K. Gabrenya Jr. (Eds.), *Toward sustainable development through nurturing diversity: Proceedings from the 21st International Congress of the International Association for Cross-Cultural Psychology*. <https://doi.org/10.4087/HKGD8277>

This Article is brought to you for free and open access by the IACCP at ScholarWorks@GVSU. It has been accepted for inclusion in Papers from the International Association for Cross-Cultural Psychology Conferences by an authorized administrator of ScholarWorks@GVSU. For more information, please contact [scholarworks@gvsu.edu](mailto:scholarworks@gvsu.edu).

# Emotional Display Rules of Visually and Hearing Impaired Students

**Anjali Ghosh**

(gh.anjali@gmail.com)

Indian Statistical Institute, India

## Abstract

The objective of the study is to understand the pattern of emotional display rules of visually and hearing impaired students towards different members of the society under two different situations i.e., private and public. This is to be studied for three emotions namely, happiness, sadness and anger. The Display Rule Assessment Inventory of Matsumoto Yoo, Hirayama, and Petrova (2005) was administered on all the participants. The overall expression of emotions varied from target person to target person and also from situation to situation. "Happiness" was observed to be expressed more by visually impaired than hearing impaired students towards parents, friends and teachers in private context. However, overall expression of anger was found to be more for hearing – impaired students. ANOVA results indicate significant main effect of context or situation on overall expression of both positive and negative emotions. The study indicates that impaired individuals like the normal individuals regulate both positive and negative emotions depending upon the target person and social situation.

## Introduction

Emotion is the most common aspect of human experience. It is a mental state that arises spontaneously rather than through conscious effort and is often accompanied by physiological changes. Emotion is associated with mood, temperament, personality, disposition, and motivation. So, both mental and physiological state of emotion is associated with a wide variety of feelings, thoughts and behavior, and emotions are subjective experiences. Our emotions have a great impact on others when we express them in ways that can be perceived by others. The universal bases of seven emotions namely, anger, contempt, disgust, fear, happiness, sadness and surprise are well recognizable through facial expressions (Ekman, 1999; Ekman & Rosenberg, 1998). But even though all of us may identify happiness in people's expressions clearly, and we may all experience happiness for similar underlying reasons, it does not mean that we all show our happiness in the same way. This brings up the concept of emotional display rules. Display rules are a group's informal norms about when, where and how one should express emotions. In this paper our research question is to know about emotional display rules of two differently-abled groups of individuals (i.e., visually and hearing impaired individuals). We want to know how these individuals display their emotions (i.e., anger, happiness and sadness) towards parents, friends and teachers under two different situations (i.e., private and public).

India is a land of unity in diversity where people of many religion, ethnicity, language, caste and creed live together. The way of life of Indian people (i.e., customs, food habits, religious practices) differ from region to region yet they have more or less similar value patterns. This affects one's behavior, socialization and upbringing which are manifested through one's moral and social development, emotional expression etc.

The concept of 'cultural display rules' of emotions was originally coined by Ekman & Friesen (1969, 1975), who said that cultural display rules are the rules learned early in childhood that help individuals to manage and modify their emotional expressions depending on social situations. Ekman & Friesen (1975) have suggested that unwritten codes or display rules govern the manner in which emotions may be expressed, and different rules may be internalized as a function of an individual's culture, gender or family background. Saarni (1979) has identified two types of emotional display rules: (a) prosocial, and (b) self-protective. Prosocial display rules involve altering emotional displays in order to protect another individual's feelings. On the other hand, self-protective display rules involve masking emotion in order to save face or to protect oneself from negative consequences.

Developmental research according to Matsumoto (1990) revealed that display rules become differentiated with age, and the presence of another individual has shown to inhibit both posed and spontaneous expressions. Matsumoto (1990) refers to display rules as values concerning the appropriateness of emotional displays that are communicated from one generation to the next. In one study, it was found that children understand verbal display rules better than facial display rules, and they understand prosocial display rules better than self-protective ones. Matsumoto, Yoo, Fontaine, Anguas-Wong, Arriola, Ataca, Bond et al. (2008) investigated universal effects of display rules across 32 countries and found greater expression toward in-groups versus out-groups and an overall regulation effect.

Human beings may be normal or suffer from several kinds of impairment such as visual, hearing, mental etc. These individuals with any form of impairment experience challenges not only in their physical capacities, but also challenges in their psychological capacities to adjust to their disabilities. It has already been mentioned that in this study, our focus will be on visual and hearing impaired individuals. Visual impairment means impairment in vision that even with correction adversely affects a person's educational performance and day to day activities. Hearing impairment, on the other hand, is a broad term that refers to hearing losses of varying degrees from hard-of hearing to total deafness. The major challenge facing students with hearing impairments is communication. One particular area of challenge for the hearing impaired children is the ability to socialize as because they cannot communicate. And for visually impaired children the difficulty is because they cannot draw on visual cues. It is difficult for a visually impaired child to grasp how important facial expressions are for socialization. Hearing impaired children have difficulties in acknowledging that different people can hold different mental states regarding the same situation (Peterson & Siegal, 2000). The consequences of these difficulties can be inferred from their problems in relationships with peers. An important aspect of regulating relationships with others is the use of emotions. It has been observed that in course of development, children learn to display their emotions depending upon the social circumstances and in accordance with the cultural norms (Malatesta & Haviland, 1982). The display rules can be aimed at various goals, such as self-protective or pro-social. The social interaction patterns of normal children at about age ten are strongly regulated by a number of largely implicit display rules (Saarni, 1979). In contrast, hearing impaired children have been found to mask their emotions particularly anger and happiness, less frequently than normal hearing children (Hosie et al., 2000). Moreover, Hosie and colleagues (2000) found that hearing impaired children's reasons for masking their true feelings were comparatively less protective whereas hearing children gave more reasons that were pro-social or concerned with norm maintenance.

Research studies have indicated that hearing impaired children have impaired emotional competence because of their impaired emotion socialization secondary to their limited communication skills (Rieffe & Meerum Terwogt, 2006), though emotional competence involves a broad complexity of elements (Saarni, 1999), including awareness of one's own and others' emotions and the regulation of emotions. There are several studies which have examined the expressive behavior of blind individuals. Some studies examined voluntarily produced expressions and indicated that blind individuals have difficulties in expressing their emotions (Galati, Scherer & Ricci-Bitti, 1997; Ortega, Igleseas, Fernandez & Corraliza, 1983; Rinn, 1991; Webb, 1977). But some other studies reported that blind individuals spontaneously produced the same types of emotional expressions as sighted individuals (Cole, Jenkins & Shott, 1989; Ortega et al. 1983; Galati, Sini, Schmidt & Tinti, 2003; Galati, Miceli & Sini, 2001; Pelag et al. 2006), using different kinds of procedures. Galati et al. (2003) observed that emotional facial expressions of congenitally blind and sighted children were similar. However, the frequency of certain facial movements was higher in the blind than the sighted children and social influences were evident only in the expressions of the sighted children who often masked their negative emotions. Matsumoto & Willingham (2009) examined the similarities in expression between congenitally blind, non-congenitally blind and sighted individuals of 2004 Paralympics and 2004 Olympic game athletes to implicate the source of the expression. No differences between the groups were observed either on the level of individual facial actions or in facial emotional configurations. The findings provide strong evidence about the production of spontaneous facial expression of emotion which is not dependent on observational learning but simultaneously suggest a strong learned component of the social management of expression, even among blind individuals.

The present investigation aims:

- To study the pattern of emotional display rules for happiness, sadness and anger in visually and hearing

impaired individuals towards three target persons [i.e., parents and friends (in-group members) and teacher (out-group member)].

Ghosh - 174

- To study the pattern of these display rules under two different hypothetical contexts: private and public settings.

## Method

### Participants

Participants of this study were two groups of students: (i) visually impaired and (ii) hearing impaired. They were studying in classes IX and X in different visually and hearing impaired schools selected from four different regions of India – East, West, North and South. These four regions differ from each other with respect to language, customs, habits etc. though being members of a collectivist society all of them possess more or less similar value pattern. Two visually and two hearing impaired schools from each of the four regions were selected and then permission from the concerned authorities were taken to interview the students. There were 240 visually (Male = 130, Female = 110) and 204 hearing impaired (Male = 139, Female = 65) individuals in this study. The mean age of the visually impaired students was 16.64 years ( $SD = 1.78$ ) and for the hearing impaired students it was 16.33 years ( $SD = 2.30$ ). Majority of the visually impaired students were residing in boarding schools whereas the hearing impaired students were day scholars and residing with their parents. The socioeconomic condition of the students varied from lower middle to upper middle status.

### Measures Used

*Display Rule Assessment Inventory:* Display Rule Assessment Inventory of Matsumoto et al. (2005) was used in this study. The inventory measures display rules across a wide range of target persons like family members, friends, acquaintances and teachers/ professors. Seven universally expressed emotions namely anger, contempt, disgust, fear, happiness, sadness and surprise are used in the inventory. But in the present investigation only three emotions namely, happiness (positive emotion), sadness and anger (negative emotions) were used. Participants were asked to mention their expressive behavior towards three target persons namely, parents and close friend (i.e. in-group members) and teacher (i.e., out-group member). They were asked to express “what they should do if they felt” these three emotions toward these target persons under two different settings/contexts (a) in private context (i.e., “at home or in the classroom with the target person alone”) and (b) in public context (i.e., “at restaurant or in the classroom with the target person within earshot of others”). The response alternatives correspond to the theoretical modes of expression management originally described by Ekman & Freisen (1969, 1975), which are: (a) show more than you feel it (amplify), (b) express it as you feel it (express), (c) show less than you feel it (deamplify), (e) show the emotion while smiling at the same time (qualify), (f) hide your feelings by smiling (masking), and (g) show nothing (neutralize).

*Background Information Schedule:* Background information schedule included items like participants' age, gender, disability status, family structure, educational level, socio-economic condition of the family etc.

### Procedure

Informed consents were taken from the visually and hearing impaired participants of the selected schools. Visually impaired participants were interviewed individually and hearing impaired participants were either interviewed individually or tested in group situation in the classroom with the help of their teachers. The language of instruction and administration for the test were either English or Hindi or Bengali depending upon the languages known by the participant. All of them were asked to imagine how they would express these three emotions in a hypothetical situation through their behavior in terms of six verbal responses (described above) toward in-group members (i.e., parents and friends) and also toward one out-group member (i.e., teachers) under private and public settings.

## Results

The data were scored by following the scoring method suggested by Matsumoto et al. (2008). The original nominal raw data were converted into continuous scales so as to maximize the use of inferential statistics. Homogeneity Analysis via Alternating Least Squares (HOMALS) analysis was used by Matsumoto et al. (2008) to arrive at one dimensional solution and which was found to be equivalent across cultures. The nominal

expressive mode responses were recoded into the following scalar values for analysis- amplify: .57; express: .38; qualify: .12; deamplify: -.15; masking: -.38; and neutralize: -.53. Matsumoto et al (2008) referred this dimension as a measure of overall expressivity. To ease in the interpretation of these scores .5338 was added to each category, resulting in a score ranging from “0” (hide your feelings by smiling) to “1.0989” (show more than you feel it), qualification and masking categories are given more negative values based on this HOMALS analysis.

Descriptive and inferential statistical analyses were done to treat the data. To understand the nature of overall expressivity pattern of emotions mean and standard deviation distributions of all the three emotions towards different target persons under private and public contexts were calculated. Repeated measure Analysis of variance (ANOVA) analyses were also computed to see the effect of target person (parent, friend and teacher) and context (private and public) on overall expression of emotions of visually and hearing impaired students. Means and standard deviations (*SD*) results for the three emotions are presented in Table 1.

**Table 1**

*Mean and SD Values for Three Emotions under Two Settings for Visually Impaired (VI) & Hearing Impaired (HI) Students*

		Private		Public		Private		Public	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Happiness	Parent	1.02	.15	.92	.24	.69	.34	.64	.38
	Friend	1.01	.19	.90	.25	.67	.36	.66	.39
	Teacher	.94	.23	.90	.23	.68	.35	.67	.37
Anger	Parent	.64	.33	.51	.30	.82	.34	.65	.37
	Friend	.72	.34	.50	.27	.72	.31	.61	.34
	Teacher	.51	.30	.46	.23	.69	.37	.73	.35
Sadness	Parent	.68	.31	.55	.31	.61	.38	.57	.36
	Friend	.76	.29	.53	.28	.62	.39	.48	.38
	Teacher	.65	.31	.54	.26	.54	.36	.51	.35

The values reported in Table 1 indicate that overall expressivity scores varied for different emotions in terms of magnitude, but the styles of expression were more or less in the same direction. The overall expressivity scores indicate that the positive emotion ‘happiness’ was expressed more towards parents by the visually impaired group and that too in the private situation. But for the hearing impaired group this overall expressivity was more for ‘anger’ towards the parents. The values reported above indicate that both positive and negative emotions, particularly anger and sadness are expressed less or suppressed in public situation, particularly towards the out group member (i.e., towards ‘teachers’). This was found more in the visually impaired group, which indicate that they suppress their negative emotions publicly.

The differences in mean scores between the two settings/contexts (private and public) were calculated and the values are presented in Table 2. This difference between the contexts was found to be less in case of hearing impaired group, except for the emotion ‘anger’ which they displayed more towards out-group member (i.e., teachers publicly). It may have happened as they are more familiar with their teachers because of their sign language communication. It was also observed that regardless of the status of the group (visually impaired or hearing impaired) expression of emotions were more toward in-group members in comparison to out-group members and that too in private setting. The values reported above indicate that the mean difference between the settings is higher for negative emotions, namely sadness and anger for both the groups and that is mainly for in-group members. This shows that the individuals expressed negative emotions more in private situation (i.e., when they were alone with the target person), indicating that suppression of negative emotions is much in public situation than private.



**Table 2***Mean Differences Between the Two Settings for VI and HI Students*

Emotions	Target Person	VI	HI
Anger	Parent	.13	.17
	Friend	.22	.11
	Teacher	.05	-.04
Happiness	Parent	.10	.05
	Friend	.11	.01
	Teacher	.04	.01
Sadness	Parent	.13	.04
	Friend	.23	.14
	Teacher	.11	.03

### Target and Context Effect by Disability Status and Gender of the Group

It was observed that overall expression for emotions differed from target person to target person and also from context to context for both visually impaired and hearing impaired individuals. As the data were collected for different emotions under two situations, we computed repeated measure ANOVA to see whether there is any significant effect of target persons (parents, friend and teacher) and context (private vs. public) on overall expression of happiness, sadness and anger. This was done separately for three emotions by taking disability status of the group (visually impaired and hearing impaired) and gender (male vs. female) as between subject factors. For the emotion happiness, significant main effect of context  $F(1, 440) = 23.54, p < .001, \eta_p^2 = .05$  was observed which indicate that overall expression of happiness varied from private to public context. The disability status of the group (visually impaired vs. hearing impaired) interacted significantly with the context  $F(1, 440) = 9.99, p < .01, \eta_p^2 = .02$ , and also with the target persons  $F(2, 439) = 3.51, p < .05, \eta_p^2 = .02$  which show that the two groups of respondents expressed happiness differently for different target persons and also under private and public situations.

Significant main effect of context:  $F(1, 440) = 108.00, p < .001, \eta_p^2 = .20$  was also observed for the emotion sadness, which reveals that sadness is expressed differently under private and public contexts. The significant interaction effect of context x disability status:  $F(1, 440) = 16.24, p < .001, \eta_p^2 = .04$  indicate varied pattern of overall expression of sadness by visually impaired and hearing impaired students.

The main effects of target person:  $F(2, 439) = 12.07, p < .001, \eta_p^2 = .05$  and context:  $F(1, 440) = 74.80, p < .001, \eta_p^2 = .14$  were found to be significant for overall expression of anger which reveal that anger expression varied from target person to target person and also from private to public context. These main effects were qualified by a significant interaction effect of target x disability status:  $F(2, 439) = 16.88, p < .001, \eta_p^2 = .07$ , and target x gender:  $F(2, 439) = 12.47, p < .001, \eta_p^2 = .05$ . This shows that both disability status (i.e., visually and hearing impaired groups) and gender (i.e., males and females) display anger differently towards parents, friends and teachers under private and public settings.

The interaction effects of target x context were found significant for happiness ( $F(2, 439) = 5.37, p < .005, \eta_p^2 = .02$ ), sadness ( $F(2, 439) = 10.09, p < .001, \eta_p^2 = .04$ ) and anger ( $F(2, 439) = 28.40, p < .001, \eta_p^2 = .12$ ). This reveals that both visually and hearing impaired groups displayed happiness, sadness and anger differently for parents, friends and teacher under public and private settings.

### Discussion

Emotional display rules of visually and hearing impaired students towards three target persons was studied under private and public contexts. Display rules for three emotions namely, happiness, sadness and anger expressed through six verbal responses indicate the overall expressivity score for each emotion. It was observed that overall expression varied from target person to target person and also from situation to situation. The study reflects more endorsement for positive emotion (i.e., happiness) than negative emotions (i.e., sadness and anger). Negative emotions were expressed less in public situation, particularly towards the out group member (i.e. towards 'teachers'), which suggests that we Indians want to maintain social relationships with all members

of the society especially to out-group members, as we are collectivist in nature, and thus behave accordingly depending upon the situation. This is in line with the results of Matsumoto et al. (2008), who observed that all individuals in all societies make social differentiation by their overall expressivity more toward in-group than out-group members.

Display of happiness by visually impaired group was found to be more pronounced or amplified for in-group members (i.e., parents and friends) and that too in private situation. Hearing impaired students, on the other hand, expressed more anger publicly towards teachers. The reason may be that they are more at ease with their teachers because of their communication with them and do not hesitate to express it more publicly. Thus they do not mask or suppress their negative emotion 'anger' toward them in public situation. This is in accordance with the findings of Hosie et al. (2000), who observed that hearing impaired children mask their anger and happiness less frequently than normal children, and the reasons for masking their true feelings are less protective.

The magnitude of difference between the two settings for overall expression was found to be more for negative emotions than positive emotion and this is mainly for in-group members. The probable explanation may be that in our culture to show negative emotion in front of outsiders (i.e., publicly) is not a good sign of behavior. The restriction is even more in case of students, so they prefer to mask or suppress it publicly.

Gender was not found to be of much importance in this study, only it interacted significantly with the target persons while expressing anger. This shows male and female students of both visually and hearing impaired groups expressed anger differently toward parents, friends and teachers, but not the other emotions.

The present study examined the display of positive and negative emotions of two differently-abled groups of students. Self - report of the emotions toward different target persons is definitely a limitation of the study as it did not actually measured the expression of emotions. But still this gives an indication of the display rules followed by these groups. The study implies that overall expression and regulation of emotions is an important thing for maintaining social relationships for the impaired groups like the normal individuals. Future studies may be done with other indicators which will improve our findings.

## References

- Cole, P., Jenkins, P., & Shott, P. (1989). Spontaneous expressive control in blind and sighted children. *Child Development*, 60, 683-688.
- Ekman, P. (1999). Basic emotions. In T. D. A. T. Power (Ed.), *The handbook of cognition and emotion* (pp. 45-60). Chichester, United Kingdom: John Wiley and Sons Ltd.
- Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavior: Categories, origins, usage, and coding. *Semiotica*, 1, 49-98.
- Ekman, P., & Friesen, W. V. (1975). *Unmasking the face: A guide to recognizing emotions from facial clues*. Englewood Cliffs, NJ: Prentice Hall.
- Ekman, P., & Rosenberg, E. L. (Eds.) (1998). *What the face reveals: Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. New York, NY: Oxford University Press.
- Galati, D., Miceli, R., & Sini, B. (2001). Judging and coding facial expressions of emotions in congenitally blind children. *International Journal of Behavioral Development*, 25, 268-278.
- Galati, D., Scherer, K. R., & Ricci-Bitti, P. E. (1997). Voluntary facial expressions of emotion: Comparing congenitally blind with normally sighted encoders. *Journal of Personality & Social Psychology*, 73, 1363-1379.
- Galati, D., Sini, B., Schmidit, S., & Tinti, C. (2003). Spontaneous facial expressions in congenitally blind and sighted children aged 8-11. *Journal of Visual Impairment & Blindness*, 97, 418-428.
- Hosie, J. A., Russell, P. A., Gray, C. D., Scott, C., Hunter, N., Banks, J. S., et al. (2000). Knowledge of display rules in prelingually deaf and hearing children. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 41, 389-398.
- Malatesta, C. Z., & Haviland, J. M. (1982). Learning display rules: The socialization of emotion expression in infancy. *Child Development*, 33, 991-1003.

- Matsumoto, D. (1990). Cultural similarities and differences in display rules. *Motivation & Emotion*, 14, 195-214.
- Matsumoto, D., Yoo, S. H., Hirayama, S., & Petrova, G. (2005). Development and initial validation of a measure of display rules: The Display Rule Assessment Inventory (DRAI). *Emotion*, 5, 23-40.
- Matsumoto, D., Yoo, S. H., Fontaine, J. R. J., Angus-Wong, A. M., Arriola, H., Ataca, B., et al. (2008). Mapping expressive differences around the world: The relationship between emotional display rules and individualism versus collectivism. *Journal of Cross-Cultural Psychology*, 39, 55-74.
- Matsumoto, D., & Willingham, B. (2009). Spontaneous facial expressions of emotion of blind individuals. *Journal of Personality and Social Psychology*, 96, 1-10.
- Ortega, J. E., Igleseas, J., Fernandez, J. M., & Corraliza, J. A. (1983). La expression facial en los ciegos congenitos [Facial expression in the congenitally blind]. *Infancia y Aprendizaje*, 21, 83-96.
- Pelag, G., Katzir, G., Pelag, O., Kamara, M., Brodsky, L., Hel-Or, H., et al. (2006). Hereditary family signature of facial expressions. *Proceedings from the National Academy of Sciences*, 103, 15921-15926.
- Peterson, C. C., & Siegal, M. (2000). Insights into theory of mind from deafness & autism. *Mind & Language*, 15, 123-145.
- Rieffe, C., & Terwogt, M. (2006). Anger communication in deaf children. *Cognition & Emotion*, 20, 1261-1273.
- Rinn, W. E. (1991). Neuropsychology of facial expression. In R. Feldman & B. Rime (Eds.) *Fundamentals of non-verbal behavior* (pp. 3-70), Cambridge, United Kingdom: Cambridge University Press.
- Saarni, C. (199). Children's understanding of display rules for expressive behavior. *Developmental Psychology*, 15, 424-429.
- Webb, C. (1977). The use of myoelectric feedback in teaching facial expression to the blind. *Biofeedback and Self-Regulation*, 2, 147-160.