Attitudes of Japanese Adults toward Persons with Intellectual Disability: Relationship between Attitudes and Demographic Variables

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Abstract: Parents of pupils who were attending elementary schools in a typical medium-size city of Japan were surveyed. Respondents who had a close friend who has a person with intellectual disability (ID) as a family member or who had experience of voluntary work or job-related contact showed clear favorable attitudes. However, they differed greatly from respondents who have a person with ID in the family in their ideas of independent life of people with ID. Respondents who have a relative with ID did not show as favorable attitudes as expected, and showed only a small degree of concern for ID problems. Question-items were examined individually to determine external validity for an attitude test, using the criterion of the family variable results.

What is the difference in attitudes toward intellectual disability between people who have a person with intellectual disability in the family and people who don’t have? This should give important information about how to improve less favorable attitudes toward intellectual disability (ID) seen among ordinary people. To examine this variable, a relatively large number of respondents who have a person with ID in their family is needed. Although there are a few studies that examined this variable, they suffered from too small a sample size of participants who have a family member with ID (Meyers, Sitkei, & Watts, 1966; Nursey, Rohde, & Farmer, 1990; Vurdelja-Maglajlic & Jordan, 1974). In the present study 73 respondents have a person with ID in their family. Though a larger number of respondents would have been preferred, it was deemed enough for the current analysis. Examination of this variable and other demographic variables such as gender, volunteer work experience, having friend who has a family member with ID on an adequate sample is the first purpose in the present paper.

It is important to examine whether question items used in a study have validity for the targeted issue. There are three kinds of validity in psychological test theory: content validity, external-criterion validity, and construct validity (Carmines & Zeller, 1976). When there is an external criterion, external-criterion validity can be examined for every item. We had a strong external criterion, which had not been employed in previous studies: having or not having a family member with ID. This variable gives important and unique external-criterion validity information. Examination of this validity is the second purpose in the present study.

Method

Participants

Participants were parents (or guardians) of children attending 11 elementary schools in the city of Kasugai (population 290,000), Aichi Prefecture, Japan. The schools were selected randomly out of all the schools (n = 37) in Kasugai. Questionnaires were distributed to all families (n = 2758) whose children attended selected schools by teachers and collected in December 2000. We did not conduct random sampling from the population of Ka-
sugai because, in Japan, selection by random sampling is associated with bad feelings. Instead, schools were selected randomly and we tried to get all targeted participants from selected schools. This procedure made it possible to collect responses without identification of participants.

**Questionnaire**

Likert’s type items were presented (items 1-16). Respondents were required to rate their attitudes on individual items from “strongly agree” to “strongly disagree.” Items used were mainly from Zentokuren (1962); see Tachibana and Watanabe (2002). Zentokuren is one of the most influential studies conducted in Japan. Many later Japanese studies employed the same questions used in this study. For detailed information on the questionnaire in the present study, see Tachibana and Watanabe (in press), which focused on the comparison with results from about 40 years ago. A few items were also added to the present questions for an international comparison (Antonak, Fielder, & Mullick, 1993; Antonak & Harth, 1994; Henry, Keys, Jopp, & Alcazar, 1996). See Tachibana and Watanabe (in press) for the results of the international comparison.

In items 17-20 questions regarding respondents’ schemata of ID were asked. The schemata results are presented in Tachibana and Watanabe (2004). In items 21-28, background variables were examined, namely gender, age, occupation, job-related contact with persons with ID, and volunteer work with persons with a disability (see Appendix for details). Abbreviations for terms used are given in Table 1.

**Scoring**

Responses to items 1-16 were converted to scores. We call them ‘item scores.’ As responses ranged on an 11-point scale from “strongly agree” to “strongly disagree,” they were assigned scores from 5 to -5. “Uncertain” replies were assigned a value of 0. To facilitate interpretation, scores of negatively framed items were multiplied by -1. Thus, the higher the plus score the more favorable the attitude (the higher the minus value the less favorable the attitude).

Scoring for demographic variables (items 21-28) was as follows: Attendance at an elementary and a junior high school with a special classroom was school = 2. Attendance at an elementary or a junior high school with a special classroom was school = 1. No attendance at schools with a special classroom was school = 0. Having an immediate family member with ID was family = 2. Having a person with ID as a relative was family = 1, not having was family = 0. Having a close friend with ID or having a close friend who has a family member with ID was friend = 2. Having an acquaintance/neighbor who has a family member with ID was friend = 1. Having no such person was friend = 0. Working or having worked at a full-time job for persons with a disability was job-contact = 1, and otherwise job-contact = 0. Having the experience of volunteer work for persons with disability was volunteer = 1, and not having was volunteer = 0. Female gender was assigned a score of 1 and male 2. As to age, the actual chronological age was scored as such.

As to whether respondents have a greater concern for the problems concerning people with ID (item 30B) than the average person, the responses of ‘yes’ and ‘no,’ were assigned 2 and 1, respectively. For details of scoring items other than described here, see Tachibana and Watanabe (in press).

**Re-grouping**

Family effect can be compared directly among groups in the family variable; family = 2, family = 1, and family = 0. Direct comparison across dimensions is impossible. For example, comparison between the group of having people with ID in the family and the group of having a friend who has a person with ID is impossible. Therefore, we made a new variable in which we re-grouped these variables in order to compare directly across different dimensions. We constructed it by defining the type of relationship with a person with ID. This grouped respondents as follows:

- Relation-type = 3: This group corresponds with family = 2.
- Relation-type = 2: Among respondents of family = 0 or 1, those who scored friend =
### TABLE 1

Abbreviations and Short Descriptions for Questionnaire Items

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>commu-liv (1)</td>
<td>community living (having normal life in a community)</td>
</tr>
<tr>
<td>hered-threat (2)</td>
<td>hereditary threat (a hereditary threat to society)</td>
</tr>
<tr>
<td>close-rela (3)</td>
<td>close relationship (having close personal relationships)</td>
</tr>
<tr>
<td>marriage (4)</td>
<td>marriage problem (marriage with a person who has a family member with ID)</td>
</tr>
<tr>
<td>tell-life (5)</td>
<td>tell real life (real life of people with ID should be told more widely to the public)</td>
</tr>
<tr>
<td>neigh-facil (6)</td>
<td>neighborhood facility (a neighborhood facility for people with ID)</td>
</tr>
<tr>
<td>spe-aid (7)</td>
<td>special aid (need for any special aid or shelter for people with ID)</td>
</tr>
<tr>
<td>next-door (8)</td>
<td>living next door (living next door to people with ID)</td>
</tr>
<tr>
<td>fam-care (9)</td>
<td>care by the family (responsibility for taking care of people with ID is with the family)</td>
</tr>
<tr>
<td>work-togeth (10)</td>
<td>working together (working with people with ID)</td>
</tr>
<tr>
<td>priority (11)</td>
<td>priority (help for people with ID should be given after help for people in general)</td>
</tr>
<tr>
<td>next-seat (12)</td>
<td>next seat in school (making respondent’s child sit next to a child with ID in school)</td>
</tr>
<tr>
<td>get-togeth (13)</td>
<td>getting together more frequently (getting together more frequently with people with ID in school)</td>
</tr>
<tr>
<td>involve (14)</td>
<td>involvement (becoming involved with persons with ID)</td>
</tr>
<tr>
<td>inde-mar (15)</td>
<td>independent marriage (persons with ID are capable of maintaining an independent marriage)</td>
</tr>
<tr>
<td>cred-card (16)</td>
<td>having a credit card (persons with ID can use a credit card without complications)</td>
</tr>
<tr>
<td>gender (21)</td>
<td>gender (gender of respondents)</td>
</tr>
<tr>
<td>age (22)</td>
<td>age (age of respondents)</td>
</tr>
<tr>
<td>occupa-type (23)</td>
<td>occupation types (occupation types of respondents)</td>
</tr>
<tr>
<td>school (24)</td>
<td>school types attended (types of schools attended in respondents’ youth)</td>
</tr>
<tr>
<td>family (25)</td>
<td>person with ID in family (having people with ID in family (including relatives) of respondents)</td>
</tr>
<tr>
<td>friend (26)</td>
<td>friend of person with ID (having a friend who has a person with ID in the family or having a friend with ID)</td>
</tr>
<tr>
<td>job-contact (27)</td>
<td>job-related contact (having job-related experience with people with ID in the past or the present time)</td>
</tr>
<tr>
<td>volunteer (28)</td>
<td>volunteer work (experiences of volunteer work with the disability)</td>
</tr>
<tr>
<td>concern (30B)</td>
<td>concern for people with ID (having a greater concern than the average person about problems which people with ID have)</td>
</tr>
<tr>
<td>anti-n</td>
<td>anti-social norm questions (mean of block B of the cluster analysis result (Figure 1))</td>
</tr>
<tr>
<td>pro-n</td>
<td>pro-social norm questions (mean of block C)</td>
</tr>
<tr>
<td>so-ser</td>
<td>social service for people with ID (mean of block A)</td>
</tr>
<tr>
<td>inde-life</td>
<td>independent life of people with ID (mean of block D)</td>
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<tr>
<td>relation-type</td>
<td>types of relation with people with ID (re-grouped variables in terms of types of relation with persons with ID)</td>
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Item number within () is attached to each item abbreviation for readers’ convenience. See appendix for details. Brackets [ ] indicates the shortest terms used in figures and tables.

1 Condensed score obtained by mean z-score within groups.

2 New variables obtained by re-grouping across original variables.
2, volunteer = 1, or job-contact = 1 were assigned to this group.

Relation-type = 1: Among respondents of family = 1, those who scored friend = 0 or 1, and volunteer = 0, job-contact = 0 were assigned to this group.

Relation-type = 0: Among respondents of family = 0, those who scored friend = 0 or 1, or volunteer = 0, job-contact = 0 were assigned to this group.

In relation-type = 3 respondents, contact with a person with ID is forced irrespective of their will. On the other hand, in the other groups, contact with a person with ID or having a friend who has a person with ID in the family is performed voluntarily. The relationship can be stopped if they wish. There are a few weaknesses in this grouping. First, volunteer work can be stopped if they wish. There are a few weaknesses in this grouping. First, volunteer = 1 or friend = 1 respondents were not deleted in relation-type = 3. To the contrary, volunteer = 1 or friend = 2 respondents were deleted from relation-type = 1 and 0. Second, in the group of relation-type = 2, variables of volunteer, friend, and job-experience were pooled and cannot be differentiated among them. This problem is unavoidable. Despite weaknesses, this re-grouping has merit by allowing comparison among variables that would belong to different dimensions.

Targeted part for calculation. Having people with ID in ones family (family = 2) should have a huge effect on attitudes. It does not seem appropriate to mix such an extremely strong affective factor in examination of variable effects other than the family variable, especially in the case of the unbalanced proportion of family = 2 respondents among groups. For example, percentage of family = 2 respondents in friend = 2 group was larger (8%) than that in friend = 0 group (1%). So, family = 2 respondents were excluded from groups in the examination of the variables of friend, age, gender, volunteer work, and job-contact. The procedure did not make a great reduction in number of respondent because family = 2 respondents are not very numerous (n = 73, 3%).

Statistical Analysis

Since our data were not obtained by random sampling from a targeted population, we will focus on calculation of the magnitude of each variable mean.

Results

Main Demographic Information of Respondents

Total number of respondents analyzed was 2381. Main demographic data were as follows (for details, see Tachibana and Watanabe, in press): Mean (SD) of respondents’ age was 38.2 (5.0) with a range of 23-65 years; females (n = 2151), males (n = 230); having a person with ID in their family (n = 73), having a person with ID as a relative (n = 274), not having such person (n = 2032); having a close friend with ID, or having a close friend who has a person with ID as a family member (n = 398), having an acquaintance/neighbor who has a person with ID as a family member (n = 737), none (n = 1244); having a job-related contact with persons with ID service (n = 138), no such experience (n = 2197); having an experience of at least one time of volunteer work with the disability (n = 207), no such experience (n = 2173).

Relationships among demographic information. Several relationships among demographic information are presented in terms of number of respondents (percentage) in Table 2. There was no difference in volunteer work among family groups. The friend variable was especially large in family = 2 respondents. Volunteer work was different slightly among the friend variable. Volunteer work differed between groups of the job-contact variable. Volunteer work did not differ among groups of occupation types. All males had full time jobs and many females were full-time house keepers (occupation type = 0). Age was different in the gender variable. The gender variable was different for respondents older than 40 years. Age also changed with the school variable.

Structure of the item scores. Results of cluster analysis using a centroid linkage method are presented in Figure 1. The analysis produced four groups, ‘social service for people with ID,’ ‘anti-social norm,’ ‘pro-social norm,’ and ‘independent life,’ labeled A, B, C, and D, respectively.

Since we found that item scores grouped by the cluster analysis were similar to each other,
we could pool them into a score for each of the four groups. There was, however, a great difference in magnitude among items in the same group, for example, ‘marriage problem’ and ‘next seat in school’ the means were 0.57 and 3.20 (Tachibana & Watanabe, in press). If we simply averaged them within the individual group, we would give greater weight to ‘next seat in school.’ In the pooling procedure, items having different mean magnitude were treated equally. Therefore, scores were converted into z-scores within the corresponding item and then z-scores were averaged within the same group. In this way, the 16 item scores for individual respondents were condensed into a score for each of the four groups identified in the cluster analysis. Obtained condensed scores were constituted as follows:

‘Social service for people with ID’ = ‘care by the family’ (9) + ‘priority’ (11) + ‘special aid’ (7);


‘Pro-social norm’ = ‘close relationship’ (3) + ‘community living’ (1) + ‘getting together more frequently’ (13) + ‘tell real life’ (5);


**Relationships between condensed scores and demographic variables.** Results of relationships between demographic variables and composed scores are shown in Figures 2a and 2b. Among demographic variables, family, volunteer work, job-contact, friend, gender, and age had a clear association with condensed scores. An important finding is that independent life...
...was smallest in family = 2 respondents (Figure 2a, panel 4).

Relationship between item scores and demographic variables. Results of relationships among 16 item scores (and ‘concern’ for person with ID (30B) and demographic variables are presented in Figures 3a and 3b.

In the family variable, there was a clear difference of family = 2 from the others of groups, family = 0 and family = 1. On the other hand, the difference between family = 0 and family = 1 respondents was not so clear. There were differences even between friend = 0 and friend = 1 respondents. Volunteer work was different in ‘concern for ID’ (30B) and ‘tell real life’ (5). ‘Job-related contact person with ID’ (27), were different in ‘concern,’ and ‘getting together more frequently’ (13). Age was divided into four groups for presentation in Figure 3b. The four blocks are on the basis of percentile: 1 = below 34; 2 = from 35 to 37; 3 = from 37 to 40; 4 = above 41 years old. Elder respondents showed more favorable attitudes in ‘community living’ (1) and ‘care by the family’ (9). Females showed more favorable attitudes in ‘special aid’ (7) and ‘next seat in school’ (12), but less favorable attitudes in ‘marriage problem’ (4) than males. There was no association of item scores with the school variable.

Re-grouping of variables. In order to make a comparison among all demographic variables, variables were re-grouped on basis of the nature of relation to person with ID. Figures 4 and 5 illustrate relationships between condensed scores (item scores) and re-grouped variables (named “relation-type”).

For most items, the order of favorable group was consistent: relation-type = 3, relation-type = 2, relation-type = 1, and relation-

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**Figure 1.** Tree diagram for 16 items by centroid linkage method. Alphabet corresponds to the four grouped blocks. See Table 1 for abbreviations for the items.
type = 0 with some exceptions. In the condensed scores of ‘independent life’, relation-type = 3 respondents showed the smallest score among the group of variables. ‘Independent marriage’ (15) was also the same result of the condensed score.

Validity of external criterion. We employed the family variable as the criterion. We can examine it by seeing the magnitude of item score difference between family = 0 and family = 2 (Figures 2a and 3a). In addition, as the counterpart of family = 2, we can see respondents who do not have a friend/acquaintance who has a family member with ID and furthermore have no experience of volunteer work or job-related contact with people with disability, which is the more discriminating group of people than family = 0. This group corresponds to relation-type = 0 respondents. So also see the magnitude of item score difference between relation-type = 0 and relation-type = 3 (Figures 4 and 5). We can see that ‘community living’ (1), ‘marriage problem’ (4), ‘neighborhood facility’ (6), ‘special aid’...
‘getting together more frequently’ (13), and ‘concern’ (30B) are items with good validity. In contrast, ‘care by the family’ (9) or ‘having a credit card’ (16) are not discriminating items.

Discussion

Relationship between Demographic Variables and Attitudes

Interpretation of cause-effect. For the interpretation of how demographic variables influence attitudes, it is useful to take the dispositional attitude of a respondent towards people with disability into the interpretation. There are people who have a dispositional favorable attitude toward persons with disability (Eisenberg & Miller, 1987). We call them people who have a dispositional favorable attitude (DFA). The variables of ‘friend,’ ‘job-contact’ and ‘volunteer’ seem to have a direct relationship with DFA people. DFA people are expected to be found in greater portion in the group of friend = 2, job-contact = 1, and volunteer = 1 than the counterparts of these groups. On the other hand, for the variables of family, age, and ‘school,’ DFA people are...
expected to be distributed randomly among groups. As to gender, the relationship is not clear. Variables that have a possible relation to DFA people are difficult to interpret. We can state that there is a relationship between the attitude and the ‘volunteer work’ variable, but we cannot state that ‘volunteer work’ has an effect on the attitude, considering the greater proportion of DFA people in the ‘volunteer work’ group. On the other hand, for the variables of family and age, the problem does not arise. Thus, we can say that the attitude was affected by the variables of family and age.

Having a family member. Having a family member with ID should have a serious impact on people’s concepts of ID. Our results show the details of attitudes by an adequate number of such respondents, indicating that favorable attitudes for most of the items were greatest for this group (Figures 2a and 3a). These were expected results, though it has not been shown fully in previous studies because of small sample size (Antonak, Mulick, Kobe, & Fielder, 1995; Begab, 1970; Handler, Bhrdwaj, & Jackson, 1994). Since most items show favorable scores by family = 2 respondents, it
might be rather interesting to see what items did not show favorable attitudes by family = 2 respondents. On this point, an important finding is that the magnitude of the condensed score of 'independent life' (which consists of 'independent marriage' and 'having a credit card') shown by family = 2 respondents was smallest among the groups of the family variable (Figure 2a, panel 4). Further, as seen in Figure 4, panel 4, relation-type = 2 respondents showed clearly more favorable attitudes than relation-type = 3 (that is, family = 2) respondents. Relation-type = 2 respondents consist of 'friend' = 2, 'volunteer' = 1, and 'job-contact' = 1 respondents. Many of respondents in relation-type = 2 are expected to be DFA people. In fact, relation-type = 2 respondents responded favorably for most of the items (Figures 4 and 5). This small score by 'family' = 2 respondents for 'independent life' should not be taken as less favorable attitudes toward people with ID. Although relation-type = 2 respondents show a very favorable attitude, it might be sometimes a favorable attitude without a real responsibility for persons with ID, considering they do not have such a person in the family. We will emphasize the difference between favorable attitudes shown by family = 2 respondents.
and relation-type = 2 respondents who do not have a real responsibility for persons with ID in the family.

An item that did not induce a difference in magnitude of scores between family = 2 and other groups was ‘care by the family’ (9) (Figure 5, panel 9). Considering that the small score for the item was also seen by relation-type = 2 respondents associated with DFA people, the small score might be due to Japanese specific thinking on the idea of accountability of care for persons with ID, as discussed in Tachibana and Watanabe (in press).

Figures 4 and 5 indicate that the magnitude of favorable attitude shown by relation-type = 3 (that is, family = 2) respondents is not as great as anticipated in the comparison with those by relation-type = 2 respondents. This may be due to the proportion of DFA people being greater in relation-type = 2 respondents than relation-type = 3. Needless to say, even if the magnitude of favorable attitude by relation-type = 3 respondents is not as great as anticipated, they showed the most favorable attitudes among all groups across the variables. The greater mean score by family = 2 respondents is due to their experience of having a family member with ID despite the smaller proportion of DFA people than relation-type = 2 respondents. The idea of ID in family = 2 respondents should have been greatly changed by their experience of having such a family member, even if they were not DFA people before they had such a family member.

Having a relative with ID. Of interest is an examination of respondents who have a relative with ID (family = 1). Previous studies that included these respondents had small sample sizes (e.g., Williams, 1986) giving unclear information. Our results indicated that although there were some differences in scores
for most items between family = 0 and family = 1 respondents, these differences were relatively small in comparison with the difference between family = 2 and family = 1 respondents (Figure 2a). In addition, family = 1 respondents show a small concern for people with ID in comparison with other group respondents, except for family = 0 respondents (Figure 4, Panel 5). In the proportion of volunteer = 1 respondents across the family

Figure 5. Relationship between item scores and types of relation with person with intellectual disability. See Table 1 for abbreviations of items. Relation-type: 3 = respondents of family = 2; 2 = among respondents of family = 0 or 1, respondents of friend = 2, volunteer = 1, or job-contact = 1; 1 = among respondents of family = 1, respondents of friend = 0 or 1, and of volunteer = 0, job-contact = 0; 0 = among respondents of family = 0, respondents of friend = 0 or 1, or of volunteer = 0, job-contact = 0.
groups (Table 2), family = 1 respondents did not differ from family = 0 respondents. Magnitude of scores for many items by family = 1 are smaller than those by friend = 2, volunteer = 1, and job-contact = 1 respondents if we go across panels for the purpose of the comparison. For direct comparison, see the difference of groups in the relation-type variable. Relation-type = 1 respondents (that is, family = 1 respondents not including friend = 2, volunteer = 1, and job-contact = 1 respondents from all respondents who are family = 1) were less favorable in most of the items than relation-type = 2 respondents (Figures 4 and 5). These results of less favorable attitudes and a small degree of concern for persons with ID by family = 1 respondents were unexpected. This may be explained by, (1) DFA people were randomized among the family variable, and (2) pressure on the changing concepts of people with ID arising from having such a person as a relative is far smaller than that from having such a person within the family.

**Friend.** Friend = 2 respondents more often selected volunteer work than friend = 1 or friend = 0 respondents. Favorable attitudes seen in friend = 2 respondents were greater in most items (Figures 2a and 3a). Another interesting finding is that friend = 1 respondents were more favorable than friend = 0 respondents (Figure 2a, Panel 5-7). This might indicate that only having an acquaintance/neighbor who has a family member with ID (friend = 1) is useful for improving less favorable attitudes. However, since the “friend” variable should have a possibly greater proportion of DFA people, we cannot make an interpretation of the difference in terms of cause and effect. In the study by Antonak et al. (1993), having an acquaintance that has a family member with ID did not show a difference in attitudes. This is in contrast with our results. It is not easy to interpret the discrepancy because different questions were employed in the studies. There is a variable called “contact” with persons with mental disability similar to the “friend” variable in previous studies. Some studies used this variable, and showed the relationship of a favorable attitude with greater magnitude of contact with some contradictory results (Beh-Pajooh, 1991; Krajewski & Flaherty, 2000; Sandler & Robinson, 1981). The favorable attitude in the “friend” variable is similar to the “contact” variable. As to contradictory results among the “contact” variable studies, we should note that some included unwilling or forced contact.

**Volunteer work and job-related experience of contact.** Previous studies showed difference in attitude between different occupations (Antonak et al., 1995; Sandler & Robinson, 1981; Zentokuren, 1962). In the present study, respondents who had an experience of volunteer work with persons with a disability showed a more favorable attitude for most items (Figures 2a and 3a) and more often experienced volunteer work (Table 2) than counter group respondents. Thus, these results were consistent with what was expected and also found by Rosenbaum, Armstrong, and King (1988) in a review of studies that used children. Although our results showed clearly favorable attitudes in the group of ‘volunteer work’ and ‘job-related experience of contact,’ we cannot make an interpretation of the attitude in terms of cause and effect due to the greater proportion of DFA people.

**Gender difference.** It is well known that girls express more favorable attitudes than boys (Hastings & Graham, 1995; Krajewski & Flaherty, 2000; Rosenbaum et al., 1988). As to adult respondents, favorable attitudes of women have not been reported as frequently as girls. Some studies did not mention gender differences (Lubin, Schwartz, Zigman, & Janicki, 1982; Sigelman, 1976). In Japan, many studies did not find gender differences among adults or children (Tachibana & Watanabe, 2002). Zentokuren (1962) found that male parents expressed more favorable attitudes, although extent of the difference was not large. Present results on gender difference show an interesting and complex association with attitudes. Females showed favorable attitudes in the condensed scores of ‘pro-social norm’ and ‘social service for person with ID.’ In contrast, there is no difference between male and female in ‘anti-social norm’ (Figure 2b, Panel 7-9). Items in which females showed more favorable attitudes were items grouped into questions, which do not induce a ‘hesitation’ in candid responding. On the other hand, other items that did not show gender difference were items grouped into questions,
which induced a ‘hesitation’ in candid responding. This result is substantially the same result obtained in the previous study (Tachibana & Watanabe, 2003), giving more confidence to our present conclusion. In Japanese studies, results regarding gender difference have been somewhat confusing (Tachibana & Watanabe, 2002). Our studies made clear that favorable attitudes of females were limited to ‘non-hesitation’ questions. Therefore, confusing results may be interpreted as follows: If one employs mainly ‘non-hesitation’ questions, gender difference should become clear. On the other hand, if ‘hesitation’ questions are employed, gender difference should become less clear. Further examination of whether or not this gender difference is specific to Japan should be interesting.

Age difference. As the review of Rosenbaum et al. (1988) showed, the age variable has a complex effect on attitudes. Hollinger and Jones (1970) showed younger people have more favorable attitudes. In Japan, Zentokuren (1962) showed that attitudes became less favorable with advancing age from the twenties to the fifties. Contrary to those results, our results showed that respondents of older ages were more favorable in several items, except for ‘marriage problem’ (4) (Figure 2a, Panel 8-10, Figure 3b, Panel 4-7). Why were younger respondents (23-34 years old) less favorable in our study? Might younger respondents have reported their view more candidly? It might be suspected that older respondents (40 years old or more) might have responded on the basis of an expected social norm, resulting in more favorable attitudes. However, this was not the case because of the finding that the response for the item of ‘marriage problem’ (4) was less favorable in older respondents (Figure 3b, Panel 5). Since ‘marriage problem’ (4) is the question that induced the greatest hesitation to respond candidly (Tachibana & Watanabe, 2003), older respondents may have responded candidly and not responded on the basis of an expected social norm. Will younger respondents become more like older respondents when they become older? We have no conclusive explanation of why younger respondents showed less favorable attitudes.

Validity of External Criterion

It is important to see whether items used herein have validity for an attitude test. There are several studies which examine the validity of items by examining whether or not the anticipated direction in group mean difference is obtained (Antonak et al., 1993; Hastings, Sjostrom, & Stevenage, 1998; Rosenbaum, Armstrong, & King, 1986). The validity examined by this type of study is external-criterion-validity. As the criterion of group difference, gender (Hastings et al.), familiarity to a person with ID, volunteer work (Rosenbaum et al.), and knowledge of ID (Antonak et al.) were selected in previous studies. Possibly, the best item for the criterion of attitudes may be the family variable, because the criterion does not have an optimistically favorable attitude due to not having a family member who is a person with ID. Validity can be seen in the magnitude of difference between family = 2 and family = 0 (Figures 2a and 3a), or difference between relation-type = 0 and relation-type = 3 (Figures 4 and 5). Items of ‘community living’ (1), ‘marriage problem’ (4), ‘neighborhood facility’ (6), ‘special aid’ (7), ‘living next door’ (8), ‘getting together more frequently’ (13), and ‘concern on person with ID’ (30B) have external criterion validity. We could use the variables of ‘friend’, ‘volunteer work’, or ‘job-related contact’, although we consider them second best, as the criterion. Items to be added to the above list according to the new criteria are ‘tell real life’ (5), ‘getting together more frequently’ (13), and ‘involvement’ (14) (Figures 3a and 3b). We pay special attention to items by which we can discriminate favorable attitudes seen in family = 2 (that is, relation-type = 3) respondents and a group of people including many DFA people (relation-type = 2). They should be independent of an optimistically favorable attitude due to not having a family member who is a person with an ID, and which has not been highlighted by previous studies. They are ‘community living’ (1), ‘neighborhood facility’ (6), and ‘special aid’ (7) and ‘independent marriage’ (15) (Figure 5). It is especially interesting that family = 2 respondents did not show such an optimistically favorable idea on ‘independent marriage’ (15) as DFA people did.
References


Appendix

Question Items

1. A person says, “The best care for people with intellectual disability is to be part of normal life in a community.” What do you think of the opinion?

2. A person says, “People who are mentally retarded pose a threat to society because they can pass on their genes for low intelligence.” What do you think of the opinion?

3. A person says, “People with intellectual disability can have close personal relationships just like every one else.” What do you think of the opinion?

4. A person says, “Since the partner of an ‘endan’ has a family member with intellectual disability, she/he rejects all meetings thereafter expected.” What do you think of the opinion?

5. A person says, “The reality of lives of people with intellectual disability should be told more widely to the public.” What do you think of the opinion?

6. A person says, “I would not want a facility for people with intellectual disability put up in the neighborhood.” What do you think of the opinion?

7. A person says, “Even people with intellectual disability can manage to live by themselves in their adult ages. Thus, any special aid or sheltering is not necessary for them.” What do you think of the opinion?

8. A person says, “I would not want to live next door to people with intellectual disability in the same apartment building.” What do you think of the opinion?

9. A person says, “Accountability for taking care of people with intellectual disability for the lifetime is in their family, not in the state or the society.” What do you think of the opinion?

10. A person says, “I would rather not work with people with intellectual disability.” What do you think of the opinion?

11. A person says, “Although I agree to the need of social service for people with intellectual disability, it should be supplied after family finances of general people get into a good condition.” What do you think of the opinion?

12. A person says, “I would rather not want my child to sit next to a child with intellectual disability in a school room or to play with such a child.” What do you think of the opinion?

13. A person says, “People without intellectual disability should get together more frequently with people with intellectual disability.” What do you think of the opinion?

14. A person says, “I have a desire to avoid getting involved with persons with intellectual disability, although you have my sympathy for the people and the family.” What do you think of the opinion?

15. A person says, “People with intellectual disability are capable of maintaining an independent marriage.” What do you think of the opinion? (Please answer it, considering the degree of retardation on person whom you perceived at first when you are questioned, “A person with intellectual disability is. . .”).

16. A person says, “There are no worries in that people with intellectual disability have a credit card”. What do you think of the opinion? (Please answer it, considering the degree of retardation on person whom you perceived at first when you are questioned, “A person with intellectual disability is. . .”).

17. What would you guess is the number of people with intellectual disability out of 1000 people in Japan?

18. Then, we will ask a question to yourself, “What would you guess is the number of people with intellectual disability out of 1000 people in your future family?”

19. What would you guess is the percentage of

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1 “Endan” means a Japanese style of marriage proposal or suggestion of a meeting arranged by another person for the two participants to have a chance to meet one another, with a prospect of marriage.

2 This question was analyzed in terms of two measures: Magnitude of difference in the guessed values between general family and own family; whether respondents guessed zero in their future family or not.
people with intellectual disability due mainly to hereditary cause among people with intellectual disability?

20. What person do you perceive when you are questioned, “A person with intellectual disability is...?”

20A. What age person do you perceive when you are questioned, “A person with intellectual disability is...?” Please select from the following: preschool child; elementary school pupil; adolescent (junior high school or older); adult.

20B. What dimensions of disabilities do you perceive when you are questioned, “A person with intellectual disability is...?” Please select from the following: If you have perceived more than one, mark the item with the number of order perceived, such as 1, 2.
   a. Eating, putting on and taking off clothes, paying attention to one’s personal grooming, using a bathroom, etc. (fundamental daily tasks).
   b. Mutual communication of one’s idea and feelings, etc. (communication of one’s ideas and feelings, etc.).
   c. Shopping, using transport services and public facilities, etc. (ability to use community resources).
   d. Reading and writing, calculation, etc. (understanding of reading and writing, calculation, etc.).
   e. Getting a full-time job, difficulty in a work place with high competitiveness, etc. (getting a full-time job, difficulty in a work place).
   f. Behavior that makes others uncomfortable (challenging behavior).
   g. Others.

20C. What degree of disabilities do you perceive when you are questioned, “A person with intellectual disability is...?” Please select from the following: If you have perceived more than one, marked the item with the number of order perceived, such as 1, 2.
   a. Although they can work for a company, it is difficult to require them to do quality and competitive work. They can use simple kanji characters and can do simple arithmetic.
   b. They can work of a simple task such as a parts assembly at a workshop for people with intellectual disability. They can talk with others by relatively simple wordings.
   c. Although they do not have physical disability, they are in need sometimes of help with behavior at a table or to put their clothes on and off. It is considerably difficult for them to communicate their ideas to others in a conversation.
   d. They are in need of help with all aspects of everyday life. They can identify family members or particularly close persons. It takes a time for them to understand even simple instructions.

Demographic Questions
21. Gender.
22. Age.
23. Occupation types (full-time employee, part-time employee, full-time housewife).
24. Attendance at which types of schools of elementary and junior high school (school with special class rooms for intellectual disability or school without such classes).
25. Having or not having a person with intellectual disability in family or relatives (having in the family, having in the relative, none).
26. Having or not having a friend who has a person with intellectual disability in the family or having a friend with intellectual disability (having a friend with intellectual disability, having a close friend who has a person with intellectual disability in the family, having an acquaintance/neighbor who has a person with intellectual disability in the family, none).
27. Having or not having a job in an organization designed to help people with dis-
ability in the past or the present time (having, none).

28. Having or not having had volunteer work with people with a disability (having, none). What kind of volunteer work, if you have done any?

29. Please describe open-ended what kind of experience has put forward in making the image of a person with intellectual disability?

30. A. Do you think that you have a greater concern for problems that people with intellectual disability have than the average person has (yes, no)?
   B. Please describe open-ended the reason why you have (or not) a greater concern for these problems than the average person has.

31. A. Do you think that you have a more harsh (or tender) opinion toward people with intellectual disability than the average person has (more harsh, more tender)?
   B. Please describe open-ended the reason why you have a more harsh (more tender) opinion than the average person has.

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