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ABSTRACT

The structure and salience of disability perceptions among rehabilitation counseling students were investigated with a longitudinal design. A questionnaire was developed in which students (N=14) were asked to judge the similarity of all pairs of 12 disabilities and to rate each of the disabilities on 14 attribute scales. Students were assessed at four time-points: prior to admission, at the end of the first and second years of study, and one year following completion of a 2-year master's degree program. Three-way multidimensional scaling of disability proximity data indicated that the structure of disability perceptions remained relatively stable during graduate training, but changed dramatically in the year following graduation, during which time counselors were employed in the rehabilitation field. Two dimensions labeled severity and responsibility were found to be similar to dimensions from cross-sectional research. A normality dimension previously identified in cross-sectional research was not found in the present study. Results imply that while disability perceptions are highly resistant to change, there is reason to believe that the salience of the dimensions organizing perceptions of disabilities can be altered by graduate training. Future research might examine disability perception of counselors engaged in ongoing training in comparison with disability perceptions of counselors not pursuing further training. (The appendix includes attribute scales and data tables.) (Author/ABL)

The Effect of Graduate Training on Counseling Students' Perceptions of Disabilities: A Longitudinal Study

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Abstract

The structure and salience of disability perceptions among rehabilitation counseling students were investigated with a longitudinal design. A questionnaire was developed in which students were asked to judge the similarity of all pairs of twelve disabilities and to rate each of the disabilities on fourteen attribute scales. Students were assessed at four time-points: prior to admission, at the end of the first and second years of study, and one year following completion of a two-year master's degree program. Three-way multidimensional scaling of disability proximity data indicated that the structure of disability perceptions remained relatively stable during graduate training, but changed dramatically in the year following graduation, during which counselors were employed in the rehabilitation field. Two dimensions labeled severity and responsibility were found to be similar to dimensions from cross-sectional research. A normality dimension previously identified in cross-sectional research was not found in the present study. The relationship of disability perceptions as they are related to counselor training is discussed.

The Effect of Graduate Training on Counseling Students' Perceptions of Disabilities: A Longitudinal Study

With approximately one of every five individuals having some type of disability, an estimated 35 million Americans are disabled and constitute the largest, fastest growing minority in the United States (Wright, 1980). Whatever their specialization, therefore, counselors are likely to encounter clients with disabilities. Because the impact of counselor perception of disabilities can be crucial, it is important to understand how these perceptions are constructed and whether or not they can be modified. The purpose of the present study is to examine disability perceptions from a longitudinal perspective.

A fundamental principle of the counseling process is its interactional and reciprocal nature (Highlen & Hill, 1984). Numerous studies have suggested that counselor attitudes are important determinants in the formation of a therapeutic alliance (Porché & Banikiotes, 1982), in influencing client change (Alcorn & Torney, 1982), and in client perceptions of counselor effectiveness (Fish & Smith, 1983). In addition, the "self as instrument" theory implies that counselor attitudes are the foundation for acquisition of vital counseling skills (Mahon & Altmann, 1977). In a similar vein, qualities identified as valued counselor characteristics such as empathy and cognitive complexity are contingent on underlying cognitive structures.

Stereotype literature and studies on counseling special populations (women, ethnic groups, the aged) have demonstrated that counselor attitudes can affect treatment of clients negatively. Altman (1981) observes that individuals with disabilities can also be viewed as a minority group, subject to stereotyping, with consequences very similar to those of ethnic and gender stereotypes. In any investigation of stereotypes, growing awareness and sensitivity to these issues necessitate a research methodology which minimizes social desirability responding (Buczek, 1981). One method which avoids the problem of subject reactivity is the use of a paired comparison or Q-sort approach in which respondents are asked to determine the similarity of the stimuli using whatever criteria they wish in making those similarity judgements.

Typically, researchers have examined either attitudes toward disabilities or disability stereotypes. The disability stereotype literature has focused on a priori perceptual dimensions which underlie these perceptions. Most of the research concerned with the discovery of dimensions or categories underlying the perceptions of disability has relied on factor analysis of unidimensional ratings on scales simply specified by investigators. These methods have resulted in dimensions contaminated by investigators' preconceptions and oversights and have relied on aggregation of data across subjects, making individual differences in perception difficult

to address. Multidimensional scaling (MDS) applied to direct measures of similarity avoids most of these problems.

Only two studies have directly examined perceptions of disabilities. In examining education students' and teachers' perceptions of a set of disabilities common in educational settings, Schmelkin (1982) found functional category dimensions which grew more complex as respondents' experience with disabled students increased. Rounds and Neubauer (1986) studied 66 counseling students' perceptions of twelve disabilities commonly encountered in rehabilitation and found dimensions of normality, severity, and attributions of responsibility. They found decreasing importance placed on the normality dimension as students' educational and practical experience in rehabilitation increased. These results were cautiously interpreted as lending limited support to the notion that specialized rehabilitation training may affect counseling students' disability perceptions. It was recognized, however, that alternate interpretations were possible since the data was based on cross-sectional samples. Therefore, shortly after collecting the cross-sectional data, we began a longitudinal study of how disability perceptions change during graduate study.

The purpose of this paper is to use a longitudinal design to identify the dimensions counseling students use to organize their perceptions of disability, and to study how the structure of disability perceptions and the salience of dimensions underlying these perceptions change across a two-year master's

degree program and in the first year of practice in the rehabilitation field, and to compare the present findings based on a longitudinal method with those derived from cross-sectional research.

We selected fourteen graduate students who applied to a master's program in counseling that provided specialized rehabilitation training. This program differs from other counseling programs (school, college personnel, counseling psychology) only in practicum and internship sites and in two courses aimed at changing students' perceptions of disability: Social Psychology of Deviance and Medical Aspects of Disabilities. A multidimensional scaling task was used to allow students to establish their own perceptual schemata, thus eschewing any a priori notions of the investigators.

Method

Disabilities

The MDS approach requires careful selection of disabilities to be compared and attributes to be rated. Important criteria for selection are: comparability with prior research, the number of disabilities and attributes that can be adequately judged, representativeness of the disability sample, and subjects' familiarity with the disabilities and attributes investigated. Comparability with prior research refers to a concern that the selection of disabilities are consistent with prior studies. Cumulative study of a common set of disabilities encourages programmatic, as opposed to fragmented, research

efforts. The number of disabilities used in any investigation varies with the type of experimental task. In a complete paired comparison design (used in the present study), the number of pairs, I(I-1)/2, increases rapidly as the number of disabilities increases. This places limits on the number of disabilities that respondents can be expected to judge within the paired comparison format. It is important to recall that the set of disabilities in a particular study is a sample from a large domain. The representativeness of the set of disabilities used in a study then becomes a sampling issue. The most frequently encountered sampling strategy involves the investigator selecting disabilities that are judged to be representative of the domain in question. Very little is known about the effects of respondents' familiarity with the selected disabilities on scaling solutions. At the minimum, therefore, it is suggested that researchers incorporate familiarity checks into MDS designs and regress the familiarity ratings over the coordinates of the configuration. This procedure would indicate the manner in which familiarity affects the scaling solution.

Selection of the disabilities for the present study was guided by disability prevalence estimates, expectancy that the disabilities would be encountered by students during practicum and internship, and types of disabilities represented in prior research. A sample size of twelve disabilities allowed adequate coverage of these criteria without making the similarity judgement task unmanageable. The disabilities selected were:

arthritis, emphysema, alcoholism, cerebral palsy, stroke, visual impairment, epilepsy, cancer, hearing impairment, schizophrenia, diabetes, and mental retardation.

Attribute Ratings

Using prior research and theory about the nature of disability, and the second investigator's teaching experience, the following attributes were initially hypothesized to account for students' perceptions of disabilities: severity, familiarity, counseling preference, normality (respondents were asked to rate "how normal the general public perceives individuals with the disability"), attractiveness, and responsibility for conditions which led to the disability.

After inspection of the MDS solution, the following attributes were hypothesized: psychological-physical symptoms, prognosis, amenability to rehabilitation methods, spread, identification, and visibility. At the fourth time-point, two scales were added to reflect students' work experience: counseling experience, and work with disability. A brief description of each attribute can be found in the Appendix. The twelve disabilities were rated on seven-point attribute scales. Eleven attribute scales were completed by the fourteen respondents immediately following the similarity judgement task. Six attribute scales (psychological-physical symptoms, prognosis, amenability to rehabilitation, identification, responsibility, and visibility) were also completed by an independent sample of 28 rehabilitation students who did not

complete the similarity judgement task. The characteristics of those students were as follows: 12 males, 16 females; ages 19 to 50 years old, with a mean age of 32.22 years (SD = 15.78).

Respondents

The respondents were fourteen (12 female, 2 male) graduate students in a two-year rehabilitation counseling masters degree program. Ages ranged from 22 to 49 years old (mean = 28.8 years).

Procedure

A questionnaire was constructed in which respondents were asked to rate all possible pairs (n = 66) of the twelve disabilities on a nine-point scale (1 = very similar; 5 = as similar as different; 9 = very different) and to rate the disabilities on the fourteen attribute scales. Students completed the questionnaire at four time-points: (1) while they were attending an orientation session to the rehabilitation counseling program; (2) and (3) during regularly scheduled class periods; and (4) one year following graduation, during which period all students had been employed in the rehabilitation field.

Analysis

The direct similarity judgements were scaled, separately for the four time-points and for the total sample, using ALSCAL4 (Young & Lewyckyj, 1979) and INDSCAL (SPSSX; McGee, 1968; and Carroll & Chang, 1970) three-way analysis at an ordinal level of measurement and a continuous process of measurement. Mean

attribute ratings for each scale were regressed onto the MDS stimulus (disability) coordinates, separately for the four time-points and for the total sample to test attribute hypotheses and assist in the interpretation of the dimensions. The MDS disability coordinate estimates for all pairs of dimensions at the four time-points were submitted to correlation analysis to determine the similarities among the MDS solutions and to assess the reproducibility of the total sample solution. In addition, stimulus coordinates from seven MDS solutions were correlated to determine the comparability of the separate time-points with the three-time point, four-time point, and previous cross-sectional solutions.

Results

Four-time Point Solution

INDSCAL solutions were obtained across the total four-time point sample in two through five dimensions with resultant Kruskal STRESS values of .271, .212, .162, and .127, respectively. Stress, a badness-of-fit index, is 0.0 if the distances computed from the stimulus coordinate estimates can perfectly account for the rank order of proximity data (similarity judgements); stress increases toward 1.00 as the data are less well accounted for. Dimensions 2 through 5 accounted for .57, .58, .65, and .67 proportion of the variance, respectively. The improvement in fit obtained by adding the fourth and fifth dimensions was smaller in size than the improvement obtained by adding the second and third dimensions,

indicating that a three-dimensional solution should be retained. An inspection of the three- and four-dimensional solutions indicated that the three-dimensional solution was most interpretable.

Stimulus Coordinates. As shown on Table 1 and displayed in Figures 1 and 2, Dimension 1 has psychological disabilities (mental retardation, schizophrenia) at the negative end, and physical disabilities (emphysema, cancer) at the positive end. Dimension 2 is marked by chronic disabilities (schizophrenia, cancer, stroke) at the negative end, and sensory impairments (visual impairment, hearing impairment) at the positive end. Dimension 3 has visible disabilities (cerebral palsy, stroke, epilepsy) at the positive end, and hidden disabilities (alcoholism, schizophrenia, diabetes) at the negative end.

Results of the correlation analysis are shown in Table 2. For Dimension 1 of the four-time point solution, the physical disabilities at the positive end are preceived to be "more normal" than the mental disabilities at the negative end. Normality ratings accounted for 83 percent of the variance on Dimension 1. Furthermore, respondents had more counseling experience with clients having mental disabilities. The chronic disabilities at the negative end of Dimension 2 were perceived as more severe, as having a poorer prognosis, as being less attractive, and as having greater spread than the sensory impairments at the positive end of the dimension. Finally, the disabilities at the positive end of Dimension 3 were perceived

as more visible than the disabilities at the negative end of the dimension.

Validity Generalization. External validity of the longitudinal four-time point solution was assessed by examining its relationship with previous results from a cross-sectional study of 66 rehabilitation students' (51 female, 15 male) perceptions of an identical set of disabilities. Students' ages ranged from 21 to 52 years, with a mean age of 30.41 years (SD = 7.82). ALSCAL4 solutions in two through five dimensions were obtained for the total cross-sectional sample with resultant Kruskal STRESS values of .282, .20', .164, and .128, respectively. Dimensions 2 through 5 accounted for .46, .52, .54, and .55 proportion of the variance, respectively. The improvement in fit obtained by adding the fourth and the fifth dimensions was approximately equal in size and smaller than the improvements obtained by adding the second and third dimensions, indicating that a three-dimensional solution should be retained. An inspection of the three- and four-dimensional cross-sectional solutions indicated that the three-dimensional solution was the most interpretable.

Table 1 shows the stimulus coordinate estimates for the three-dimensional cross-sectional solution. The stimulus coordinates for Dimension 1 plotted against Dimension 2 and Dimension 1 plotted against Dimension 3 are displayed in Figures 3 and 4, respectively. As shown in Table 1 and displayed in Figure 3, Dimension 1 has psychological-developmental

disabilities (schizophrenia, mental retardation, alcoholism) at the negative end and physical disabilities (arthritis, stroke, emphysema) at the positive end. Dimension 2 is marked by terminal illnesses (emphysema, cancer, epilepsy) at the negative end and sensory/motor impairments (hearing impairment, visual impairment, arthritis) at the positive end. Inspection of Dimension 3 showed disabilities with preventable risk factors (diabetes, alcoholism, emphysema, cancer) at the negative end and disabilities with less preventable risk factors (cerebral palsy, stroke, mental retardation, epilepsy) at the positive end.

Table 2 shows the correlations of the attribute ratings with the three-dimensional disability coordinate estimates for the cross-sectional solution. The physical disabilities at the positive end of Dimension 1 are perceived to be more "normal" (r = .73; p < .01) than the mental disabilities at the negative end of the dimension. Furthermore, the respondents preferred counseling clients with mental disabilities rather than those with physical disabilities (r = -.60; p < .05).

As shown in Table 2, the terminal illnesses at the negative end of Dimension 2 are perceived as more severe (r = .52; p < .05), as having a poorer prognosis (r = .53; p < .05), and as less amenable to rehabilitation methods (r = .59; p < .05, than the sensory/motor impairments at the positive end of the dimension. Finally, the disabilities with more preventable risk factors at the negative end of Dimension 3 were perceived as

more attributable to responsibility (r = .64; p < .01), less subject to identification (r = -.61; p < .05), less visible (r = -.69; p < .01), and more attractive (r = .60; p < .05) than disabilities with less preventable risk factors at the positive end of the dimension.

As suggested by the above inspection of the three-dimensional solutions for the four-time point longitudinal sample and the cross-sectional sample, correlation analysis indicates significant relationships between all three dimensions of the two solutions: Dimension 1 with Dimension 1 (r = .80; p < .001); Dimension 2 with Dimension 2 (r = .89; p < .001); and Dimension 3 with Dimension 3 (r = .88; p < .001).

Individual Differences. Separate MDS solutions were obtained for each of the four time-points in two through five dimensions. Based on criteria of goodness-of-fit, interpretability, and reproducibility, three-dimensional solutions were retained for each of the first three time-points, and a four-dimensional solution was retained for the fourth time-point. Correlation analysis of the three- and four-dimensional solutions for the separate four time-points with the total longitudinal solution across all four time-points indicated that solutions for the first three time-points were clearly similar to each other and to the total four-time point solution. In comparison with the fourth time-point, however, no such similarity was found. Visual inspection of these solutions also suggested that the structure of disability perceptions was

very similar across the first three time-points, but differed substantially at the fourth time-point. A decision was made, therefore, to obtain an MDS solution across the first three time-points to be compared to the separate fourth time-point solution.

Three-Time Point Solution

The direct similarity judgements were scaled for the first three time-points using three-way MDS. Based on criteria of goodness-of-fit and interpretability, a three-dimensional solution across the three-time points was retained (see Table 1, Three-Time Points). As shown in Figures 5 and 6, Dimension 1 has disabilities with more preventable risk factors (emphysema, cancer, alcoholism, diabetes) at the positive end, and disabilities with less preventable risk factors (mental retardation, cerebral palsy) at the negative end. Dimension 2 is marked by physical disabilities (epilepsy, arthritis, stroke, cerebral palsy) at the positive end, and psychological/sensory disabilities (schizophrenia, alcoholism, hearing impairment, visual impairment) at the negative end. Dimension 3 has disabilities severely affecting overall functioning (schizophrenia, stroke, alcoholism) at the positive end, and disabilities with more limited spread (visual impairment, hearing impairment, diabetes) at the negative end.

These interpretations are supported by results of regression analysis (see Table 2, Three-Time Points). Disabilities at the positive end of Dimension 1 were perceived

as more subject to responsibility, but less subject to identification. Disabilities on Dimension 2 are correlated with ratings of psychological/physical symptoms ($r = .67$; $p < .01$). Disabilities at the positive end of Dimension 3 were perceived as more severe, as having a poorer prognosis, and more subject to spread. Consequently, these three dimensions were labeled Responsibility, Symptomatology, and Severity, respectively.

Fourth Time-Point

INDSCAL solutions of the Fourth Time-Point were obtained in two through five dimensions with resultant STRESS values of .263, .190, .139, and .108, accounting for .48, .49, .54, and .55 proportion of the variance, respectively. Based on criteria of goodness-of-fit and interpretability, a four-dimensional solution was retained.

As shown in Table 1 (Fourth Time-Point) and Figures 7 and 8, Dimension 1 has disabilities with a poorer prognosis (schizophrenia, mental retardation, cancer) at the positive end, and disabilities more amenable to treatment (diabetes, arthritis, visual impairment, epilepsy) at the negative end. Dimension 2 is marked by disabilities rehabilitation counselors often work with (hearing impairment, visual impairment) at the negative end, and disabilities they have less experience with (cancer, arthritis) at the positive end. Dimension 3 has disabilities with more preventable risk factors (emphysema, cancer) at the negative end, and disabilities with less preventable risk factors (mental retardation, cerebral palsy,

epilepsy) at the positive end. Dimension 4 has visible disabilities (stroke, visual impairment, hearing impairment) at the negative end, and hidden disabilities (alcoholism, diabetes, epilepsy) at the positive end.

These interpretations are supported by correlations shown in Table 2 (Fourth Time-Point). Disabilities at the positive end of Dimension 1 were perceived as more severe, as having a poorer prognosis, and as more subject to spread. Disabilities at the negative end of Dimension 2 are correlated with more counseling experience. Disabilities at the negative end of Dimension 3 were perceived as more subject to responsibility. Disabilities at the negative end of Dimension 4 were perceived as more visible. Accordingly, the four dimensions were labeled Severity, Counseling Experience, Responsibility, and Visibility, respectively.

Discussion

While these findings are based on a small sample (often the case with longitudinal studies and the few prior applications of multidimensional scaling to longitudinal data, e.g., Jones & Young, 1972), the present dimensions of Severity and Responsibility are very similar to those found using a cross-sectional methodology. Interestingly, the Normality dimension which emerged most strongly in the cross-sectional study diminishes in importance during graduate training and is not present at the fourth time-point, having been subsumed under the Severity and Visibility dimensions.

The strongest, most consistent dimension in the present study is the Severity Dimension. This dimension has the highest correlations across the four time-points: Time 1 (r = -.85; $p < .001$); Time 2 (r = -.78; $p < .001$); Time 3 (r = -.82; $p < .001$); Time 4 (r = -.89; $p < .001$). It clearly occurs in all the solutions, marked by schizophrenia and/or mental retardation at the most severe end of the continuum in the longitudinal solutions.

The Responsibility/Visibility Dimension also remains relatively stable over the first three time-points, but clearly splits into two separate dimensions at the fourth time-point. While alcoholism and diabetes were perceived most subject to responsibility in the cross-sectional study, cancer and emphysema emerge as markers at the high end of the Responsibility Dimension in the longitudinal results. Finally, at the fourth time-point a dimension of Counseling Experience appears in which visual and hearing impairment are the disabilities with which counselors have the most experience.

Overall, the structure of disability perceptions did not change across a two-year master's program, supporting Goodyear's (1983) conclusion that preconceived stereotypes persist despite efforts to modify them during graduate training. Nevertheless, the present study showed a shift in the type of dimensions used by counseling students to organize their perceptions. The Normality Dimension became less important as training progressed. This shift coincides with specialized training

aimed at affecting students' disability perceptions, as well as with students' increased counseling experience. Unfortunately, the lack of a control group (counseling students with no specialized training) militates against drawing more definitive conclusions about the effects of rehabilitation training on disability perceptions.

The results do imply that while disability perceptions are highly resistant to change, there is reason to believe that the salience of the dimensions organizing perceptions of disabilities can be altered by graduate training. Research on disability perceptions raises important questions about counselor training programs and their role in actively fostering appropriate and useful perception categories in counseling program graduates.

A dramatic change in disability perceptions occurs during graduates' first year of employment in the rehabilitation field. The structure of disability perceptions becomes more complex. At the fourth time-point, the three-dimensional solution is uninterpretable. A four-dimensional solution clearly emerges. The Normality Dimension disappears, and is subsumed in the Severity and Responsiblity dimensions; and a separate Visibility Dimension and a new Counseling Experience Dimension appear. Also during the fourth time-point counselors' perceptions of disabilities become more clearly defined. Mean subject weights are highest at the fourth time-point (see Table 3) and mean RSQ is highest, accounting for 54 percent of the variance at the

fourth time-point, as opposed to 50 percent at the first time-point, 47 percent at the second time-point, and 45 percent at the third time-point.

These results raise interesting questions about changes in counselors' perceptions of disabilities with increased counseling experience and substantiate the need for continued professional training throughout counseling practice. Future research might address this issue by examining disability perceptions of counselors engaged in ongoing training in comparison with disability perceptions of counselors not pursuing further training. In addition, future research might employ models of stereotype change (such as those posed by Weber & Crocker, 1983) to investigate cognitive processes underlying changes in perceptual dimensions.

From a broader perspective, a methodology similar to that used in the present study can be applied to many areas of counseling research. Whenever dimensions of perception or changes in cognitive structure are of interest, a multidimensional scaling technique should be considered. Researchers have used MDS in studying dimensions of vocational interest (Rounds, Davison & Dawis, 1979), perceived structure of occupations (Reeb, 1979; Shubsachs & Davison, 1979), social structure and change in a therapy group (Lewis, Lissitz & Jones, 1975), the structure of personality impressions (Rosenberg, Nelson & Vivekananthan, 1968), and perceived structure of ethnic groups (Funk, Horowitz, Lipshitz & Young, 1976). The use of

multidimensional scaling also allows the researcher to uncover latent or unconscious, automatic processes occurring in social judgements and interactions. These processes are of particular interest in counseling research.

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Appendix

Attribute Scales

Attribute	Abbreviated Scale Statement
Normality	How normal the general public perceives an individual with this disability (1 = not at all normal, 7 = normal)
Severity	Your perception of the severity of the disability (1 = very severe, 7 = not at all severe)
Attractiveness	How attractive you perceive a person with this disability (1 = most attractive, 7 = least attractive)
Responsibility	In general, how responsible an individual is for the conditions which lead to the disability (1 = completely responsible, 7 = not at all responsible)
Visibility	Describe the visibility of the disability itself (visibility of the actual impairment) (1 = visible, 7 = invisible)

(Appendix continues)

Attribute	Abbreviated Scale Statement
Counseling Preference	Your preference for counseling a client with this disability (1 = not at all interested, 4 = moderately interested, 7 = extremely interested)
Familiarity	How familiar you are with this disability (1 = not at all familiar, 4 = moderately familiar, 7 = very familiar)
Psychological-Physical Symptoms	Describe the symptoms of this disability (1 = mostly psychological symptoms, 7 = mostly physical symptoms)
Prognosis	Describe the prognosis for an individual with this disability to live a normal life (1 = very poor, 7 = very good)
Amenability to Rehabilitation	How amenable this disability is to rehabilitation methods (1 = not at all, 4 = moderately, 7 = extremely)

(Appendix continues)

Attribute	Abbreviated Scale Statement
Spread	Describe the degree to which an individual's life would be "taken over" by this disability (1 = not at all, 7 = completely)
Identification	Describe the degree to which outside observers would identify an individual with the disability itself (1 = completely, 7 = not at all)
Counseling Experience	How many counseling hours since graduation you have had with clients having the disability (1 = none; 2 = 5 or less; 3 = 6-10; 4 = 11-20; 5 = 21-30; 6 = 31-40; 7 = 41 hours or more)
Work with Disability	Frequency count of number of respondents who indicated any work with clients having each disability.

Table 1

Stimulus Coordinates for the Cross-Sectional and Longitudinal MDS Solutions

	Four-Time Points			Cross-Sectional			Three-Time Points			Fourth Time-Point			
	Dimensions			Dimensions			Dimensions			Dimensions			
	1	2	3	1	2	3	1	2	3	1	2	3	4
Arthritis	.14	1.10	.60	1.59	.61	.10	.07	1.16	-1.29	-1.22	1.28	- .33	- .16
Emphysema	1.37	- .39	- .78	.84	-1.51	-1.12	1.65	.10	.09	.07	.80	-1.72	- .19
Alcoholism	- .12	- .69	-1.66	-1.07	- .29	-1.28	.97	-1.11	.93	.23	- .77	- .83	1.64
Cerebral Palsy	- .27	.18	1.70	.40	- .22	1.61	-1.34	.91	.47	- .43	.47	1.51	- .93
Stroke	.19	- .83	1.26	.88	- .28	1.11	- .49	1.09	1.07	.39	1.02	.05	-1.56
Visual Impairment	- .80	1.65	- .20	- .01	1.78	- .16	- .58	- .94	-1.47	- .85	-1.60	- .20	-1.12
Epilepsy	.26	- .63	1.25	- .03	-1.04	.98	- .46	1.50	.34	- .83	.23	1.34	1.01
Cancer	1.30	-1.16	- .56	.82	-1.44	- .98	1.56	.31	.67	.67	1.36	-1.11	.65
Hearing Impairment	- .96	1.47	- .28	- .24	1.81	.17	- .74	-1.00	-1.36	- .22	-1.71	- .31	-1.10
Schizophrenia	-1.24	-1.24	- .98	-1.90	- .60	- .02	- .18	-1.54	1.11	2.00	- .62	.28	.86
Diabetes	.88	1.02	- .80	.23	.56	-1.47	.92	.34	-1.31	-1.35	- .18	- .29	1.11
Mental Retardation	-1.75	- .47	.44	-1.51	.16	1.06	-1.39	- .84	.75	1.55	- .28	1.61	- .22

Note 1. Cross-Sectional Sample, n = 66.

Note 2. Longitudinal Sample, n = 14.

Table 2

Correlations of Attribute Scale Ratings with Dimensional Coordinates of Cross-Sectional and Longitudinal MDS Solutions

Attribute	Four-Time Points Dimensions			Cross-Sectional Dimensions			Three-Time Points Dimensions			Fourth Time-Point Dimensions			
	1	2	3	1	2	3	1	2	3	1	2	3	4
Severity	.18	-.70**	.07	.11	.52*	-.27	.01	.23	-.75**	-.85**	-.27	.15	.04
Normality	-.83**	.34	-.23	.73**	.13	-.58*	.68**	.51	-.39	-.69**	.36	-.61*	.16
Attractiveness	-.26	-.61*	.27	-.31	-.38	.60*	-.31	-.09	.65*	.59*	.45	.23	-.25
Familiarity	-.33	.04	-.35	-.45	-.05	-.37	-.02	-.42	-.01	.21	-.25	.02	.31
Responsibility	-.43	.33	-.58*	.07	.34	.64**	-.70**	.33	-.36	-.01	-.23	.78**	-.13
Prognosis	-.17	.61*	.16	.39	.53*	-.19	.04	.27	-.76**	-.50*	-.38	.27	.11
Visibility	.34	-.13	-.58*	-.07	-.05	-.69**	.60*	-.16	-.29	-.11	-.06	-.34	.80**
Counseling Preference	-.18	.09	.08	-.60*	-.22	-.16	.07	.05	-.16	-.20	-.17	.09	-.05
Spread	-.30	-.72**	-.18				.14	-.32	.83**	.81**	.15	.09	.17
Identification	.25	-.07	-.20	.41	-.21	-.61*	.70**	.34	-.34	-.03	.19	-.07	.45
Psychological-Physical Symptoms	.33	.44	.47	.92**	.17	-.06	.20	.67**	-.54*	-.50*	.36	.05	-.48
Counselor Experience	-.65*	-.08	-.35							.32	-.58*	.34	.42
Amenability to Rehabilitation	-.27	.54*	.06	-.07	.59*	.04	-.27	-.15	-.48	-.36	-.2-	.48	-.33
Work with Disability	-.50*	.35	-.02							-.10	-.53*	.29	-.10

Note 1. Cross-Sectional Sample, n=66.

Note 2. Longitudinal Sample, n=14.

*p < .05. **p < .01.

Table 3

Means and Standard Deviations of Subject Weights by Time and Dimension

	Dimension 1		Dimension 2		Dimension 3	
	M	SD	M	SD	M	SD
Time 1	.457	.102	.377	.061	.362	.085
Time 2	.414	.097	.388	.091	.351	.075
Time 3	.408	.088	.372	.077	.359	.082
Time 4	.479	.128	.390	.069	.362	.078

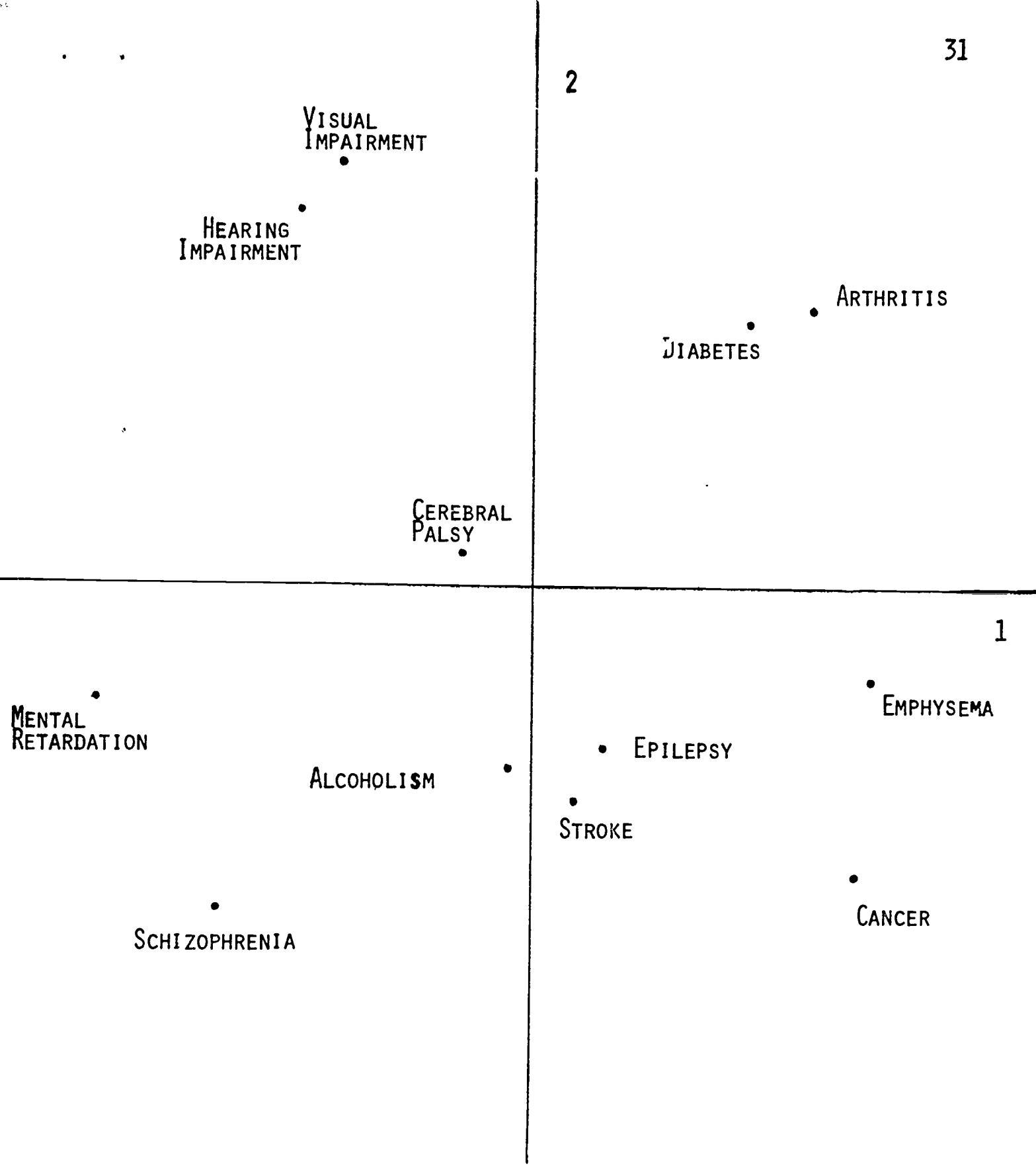

FIGURE 1. DIMENSION 1, THE NORMALITY DIMENSION, PLOTTED AGAINST DIMENSION 2, THE SEVERITY DIMENSION, FOR THE FOUR-TIME POINT SOLUTION

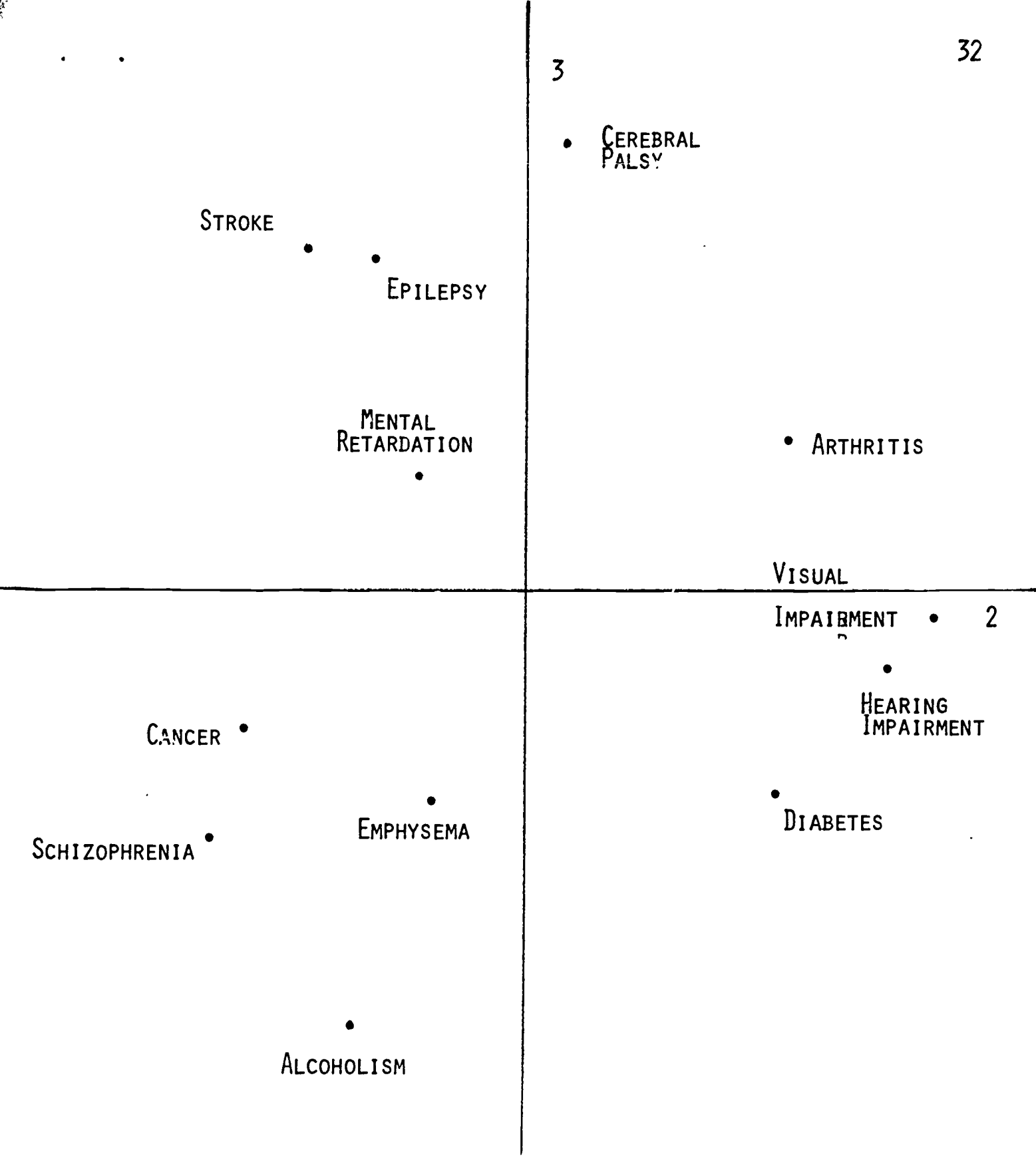

FIGURE 2. DIMENSION 2, THE SEVERITY DIMENSION, PLOTTED AGAINST DIMENSION 3, THE VISIBILITY DIMENSION, FOR THE FOUR-TIME POINT SOLUTION

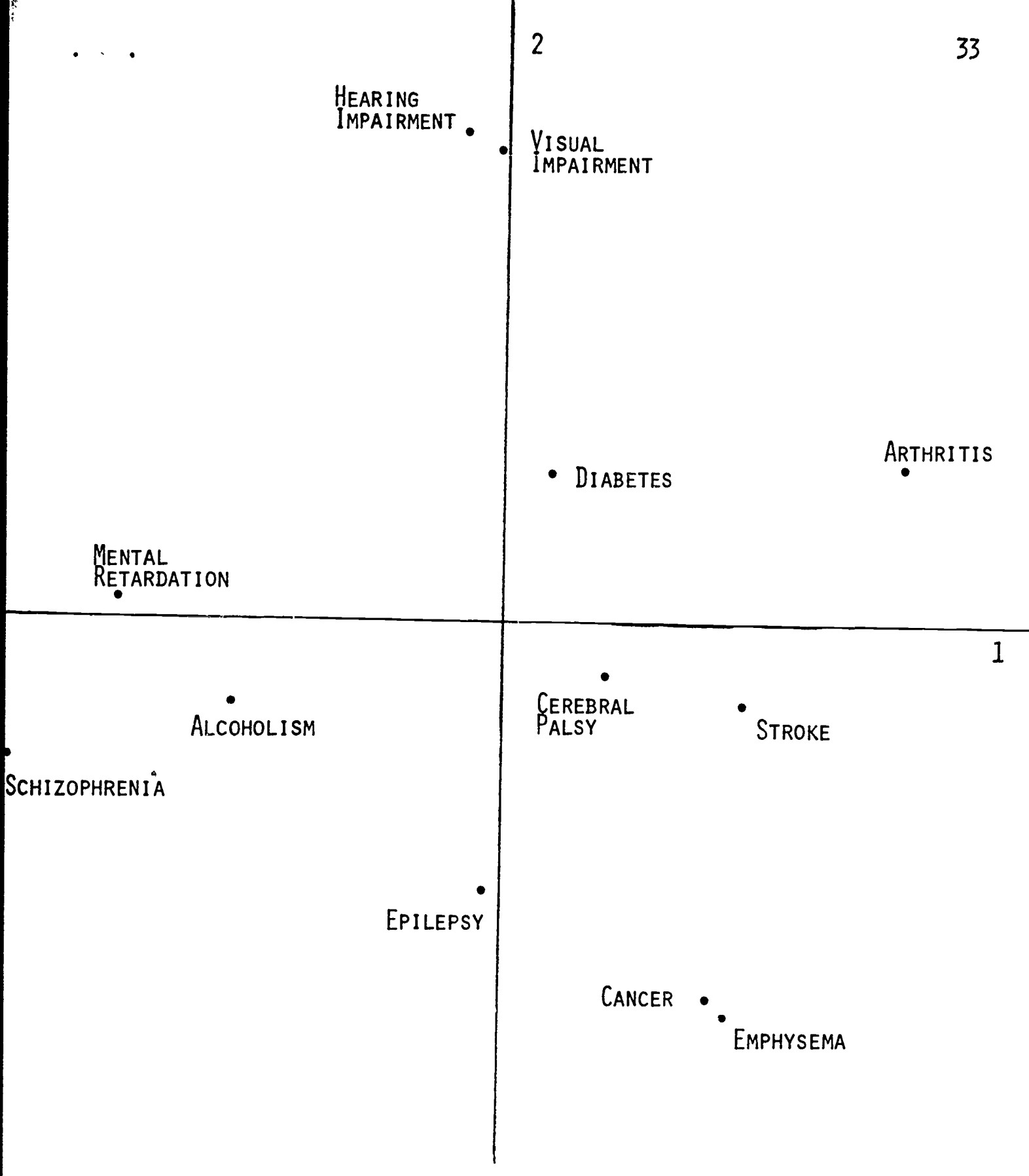

FIGURE 3. DIMENSION 1, THE NORMALITY DIMENSION, PLOTTED AGAINST DIMENSION 2, THE SEVERITY DIMENSION, FOR THE CROSS-SECTIONAL SOLUTION

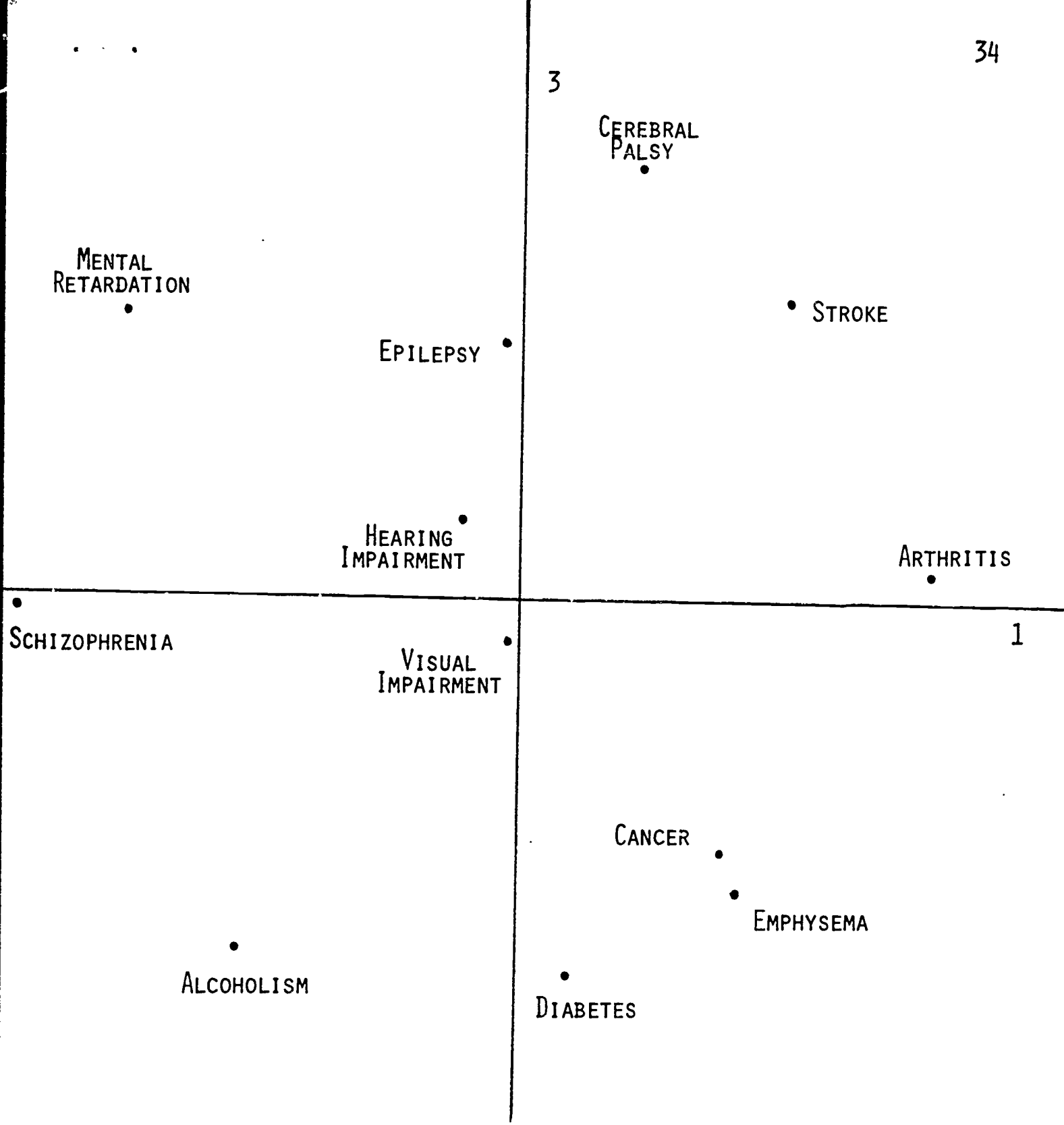

FIGURE 4. DIMENSION 1, THE NORMALITY DIMENSION, PLOTTED AGAINST DIMENSION 3, THE RESPONSIBILITY DIMENSION, FOR THE CROSS-SECTIONAL SOLUTION

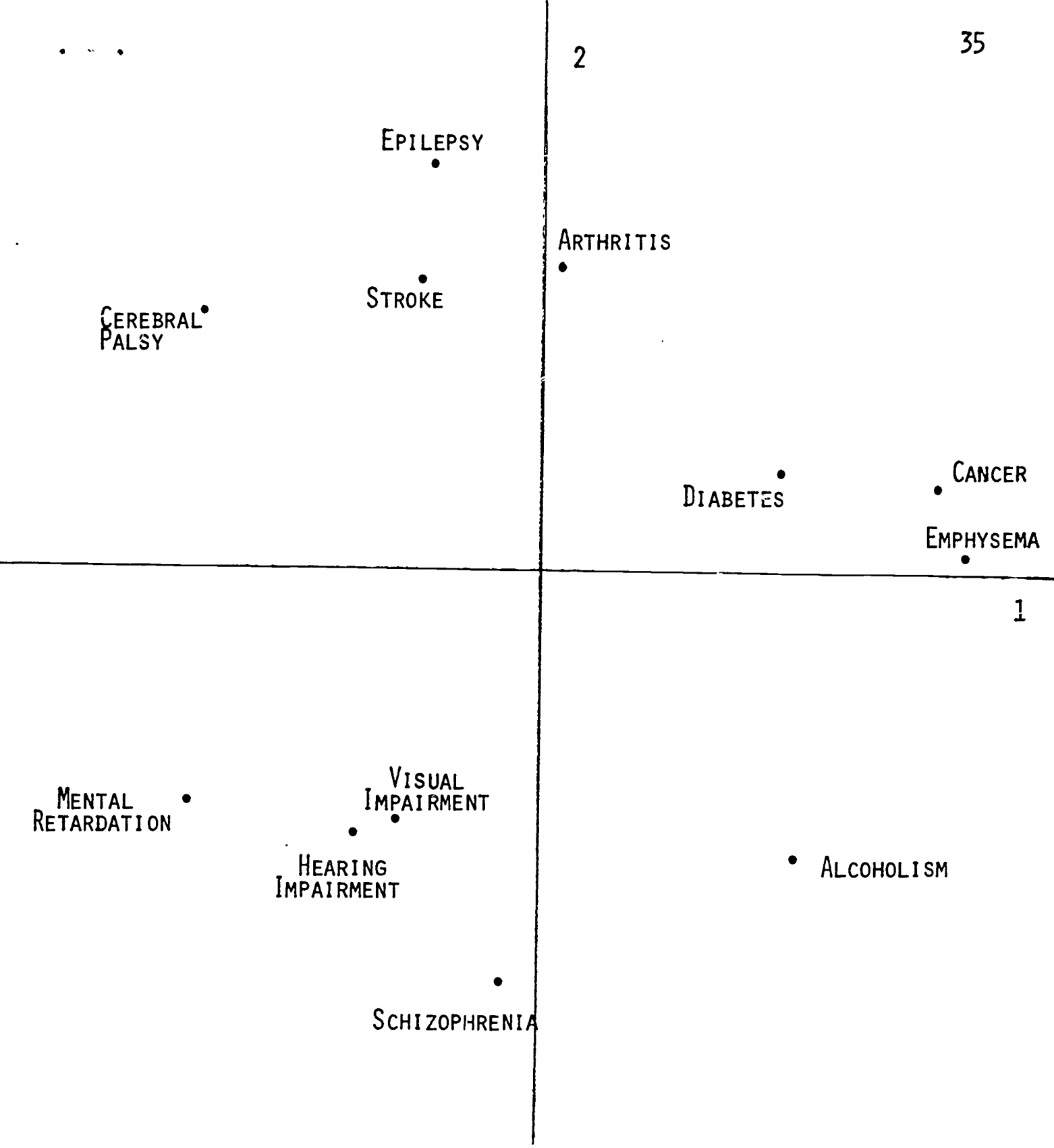

FIGURE 5. DIMENSION 1, THE RESPONSIBILITY DIMENSION, PLOTTED AGAINST DIMENSION 2, THE SYMPTOMATOLOGY DIMENSION, FOR THE THREE-TIME POINT SOLUTION

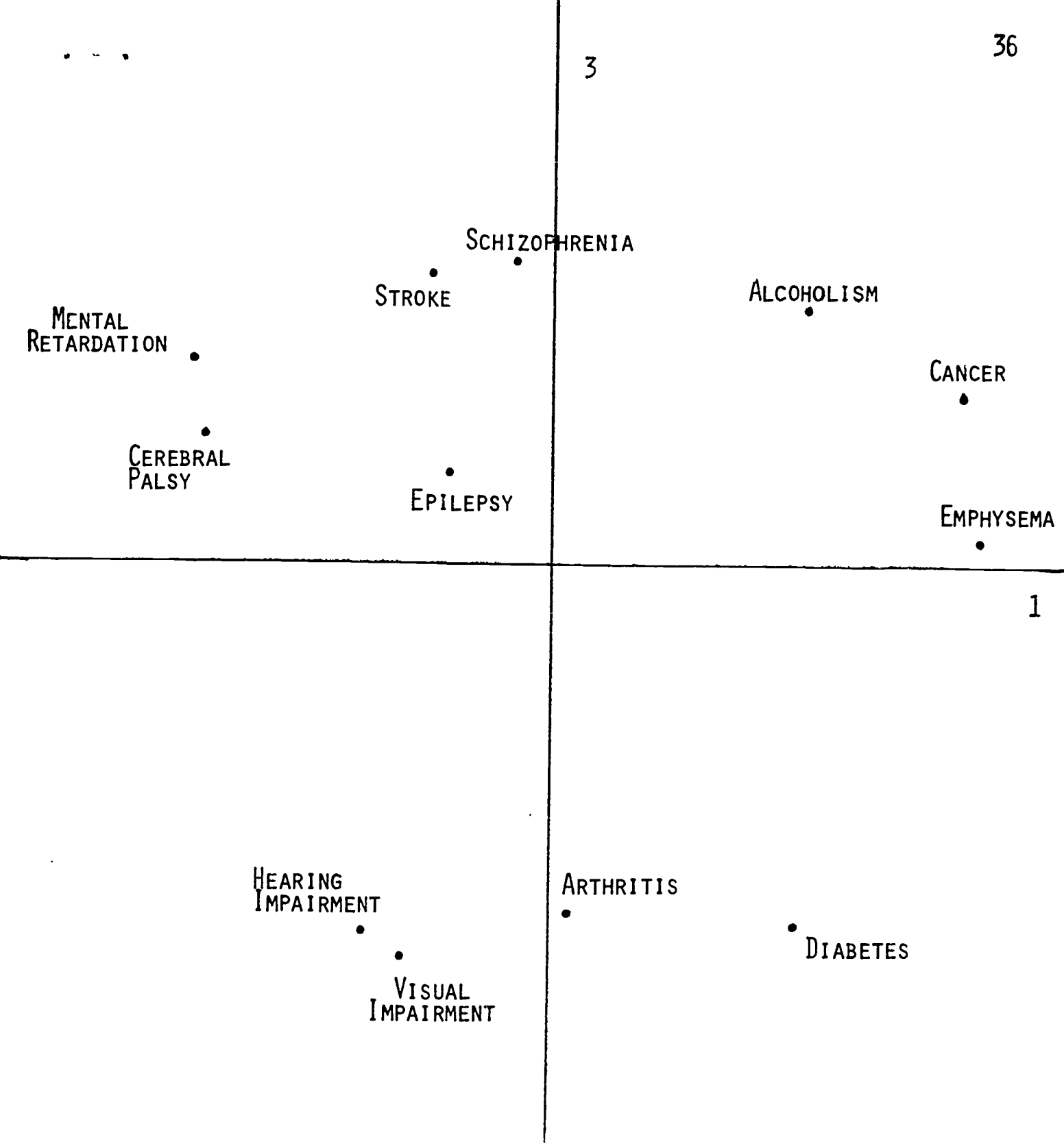

FIGURE 6. DIMENSION 1, THE RESPONSIBILITY DIMENSION, PLOTTED AGAINST DIMENSION 3, THE SEVERITY DIMENSION, FOR THE THREE-TIME POINT SOLUTION

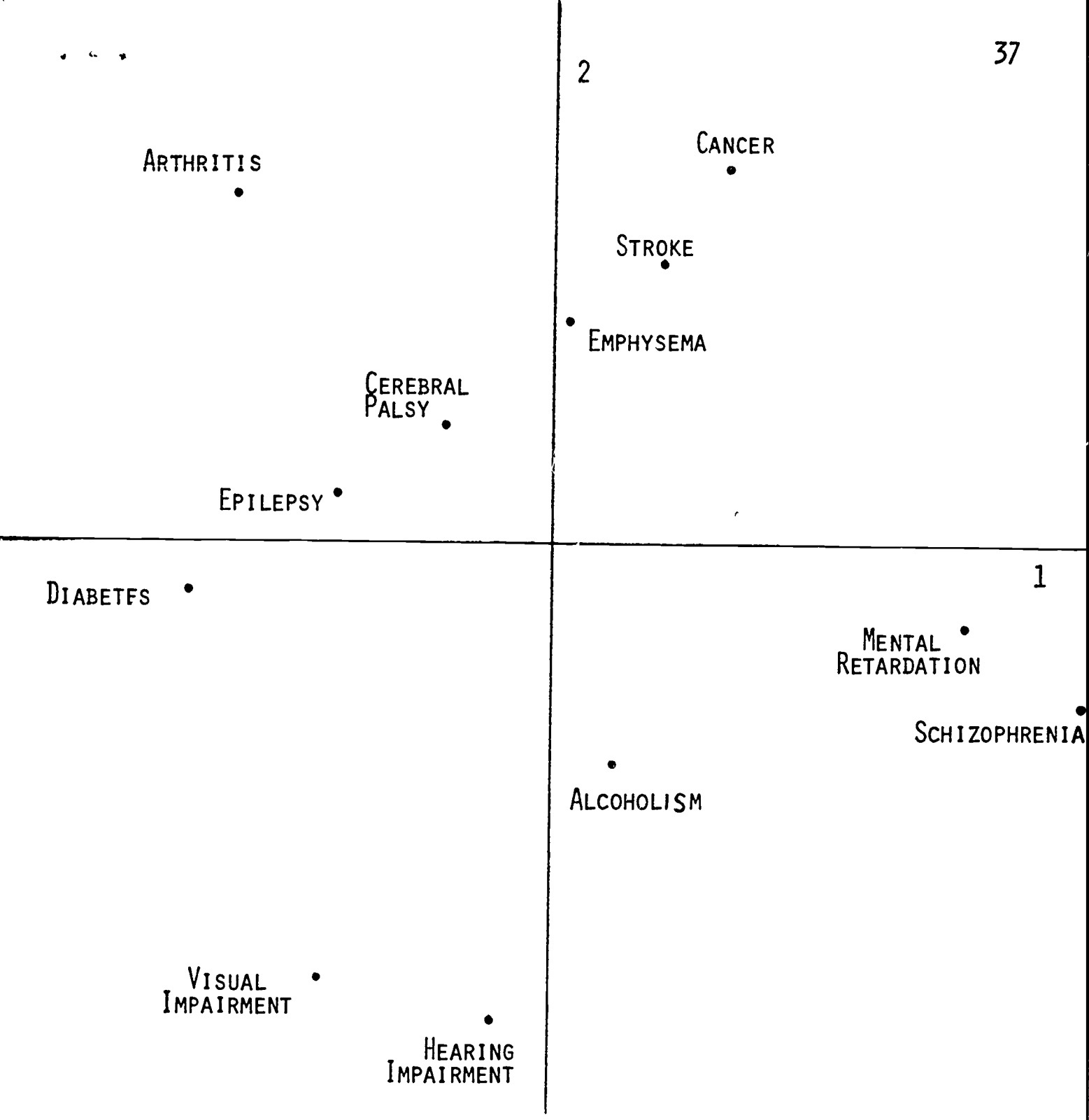

FIGURE 7. DIMENSION 1, THE SEVERITY DIMENSION, PLOTTED AGAINST DIMENSION 2, THE COUNSELOR EXPERIENCE DIMENSION, AT THE FOURTH TIME-POINT

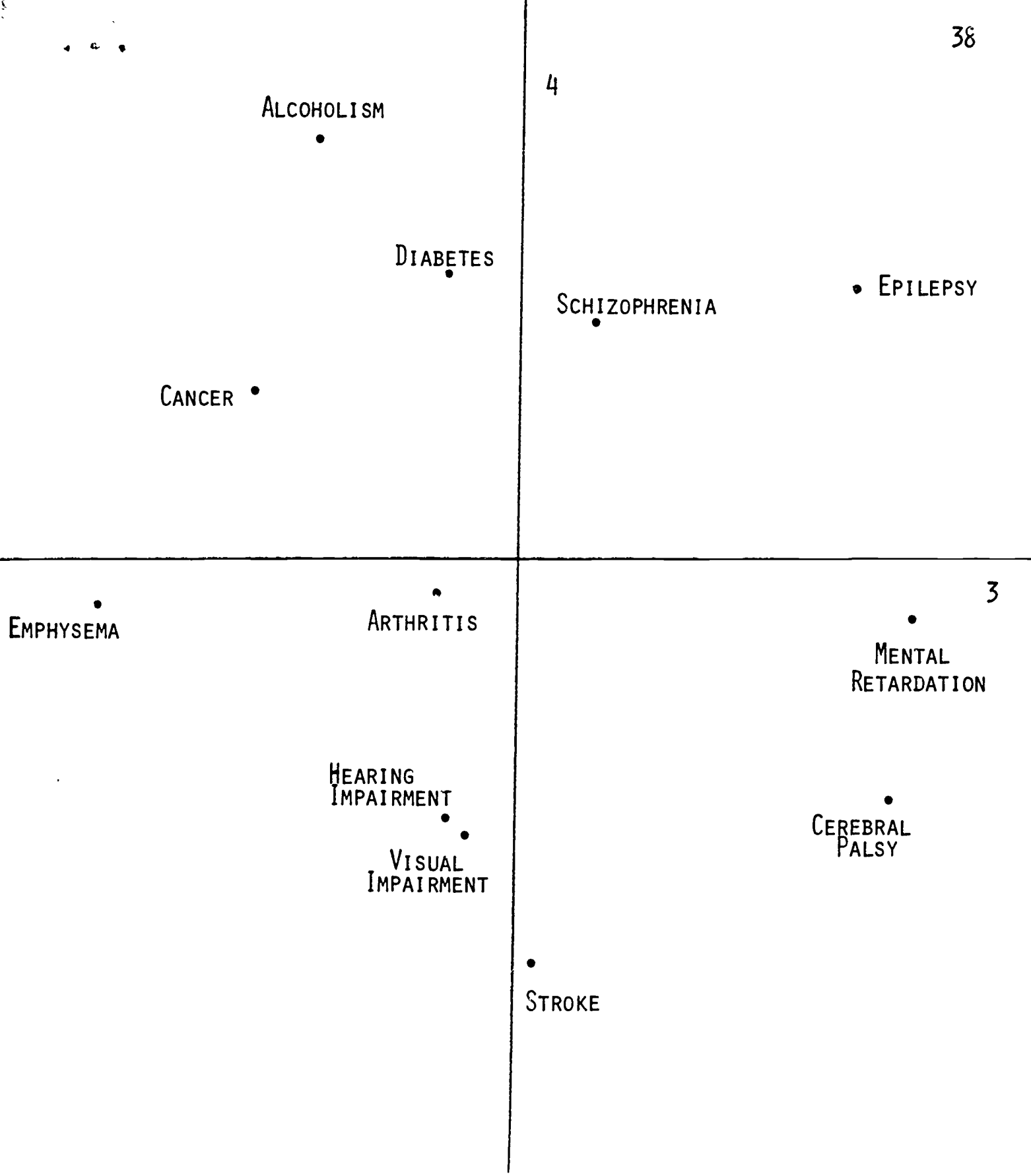

FIGURE 8. DIMENSION 3, THE RESPONSIBILITY DIMENSION, PLOTTED AGAINST DIMENSION 4, THE VISIBILITY DIMENSION, AT THE FOURTH TIME-POINT

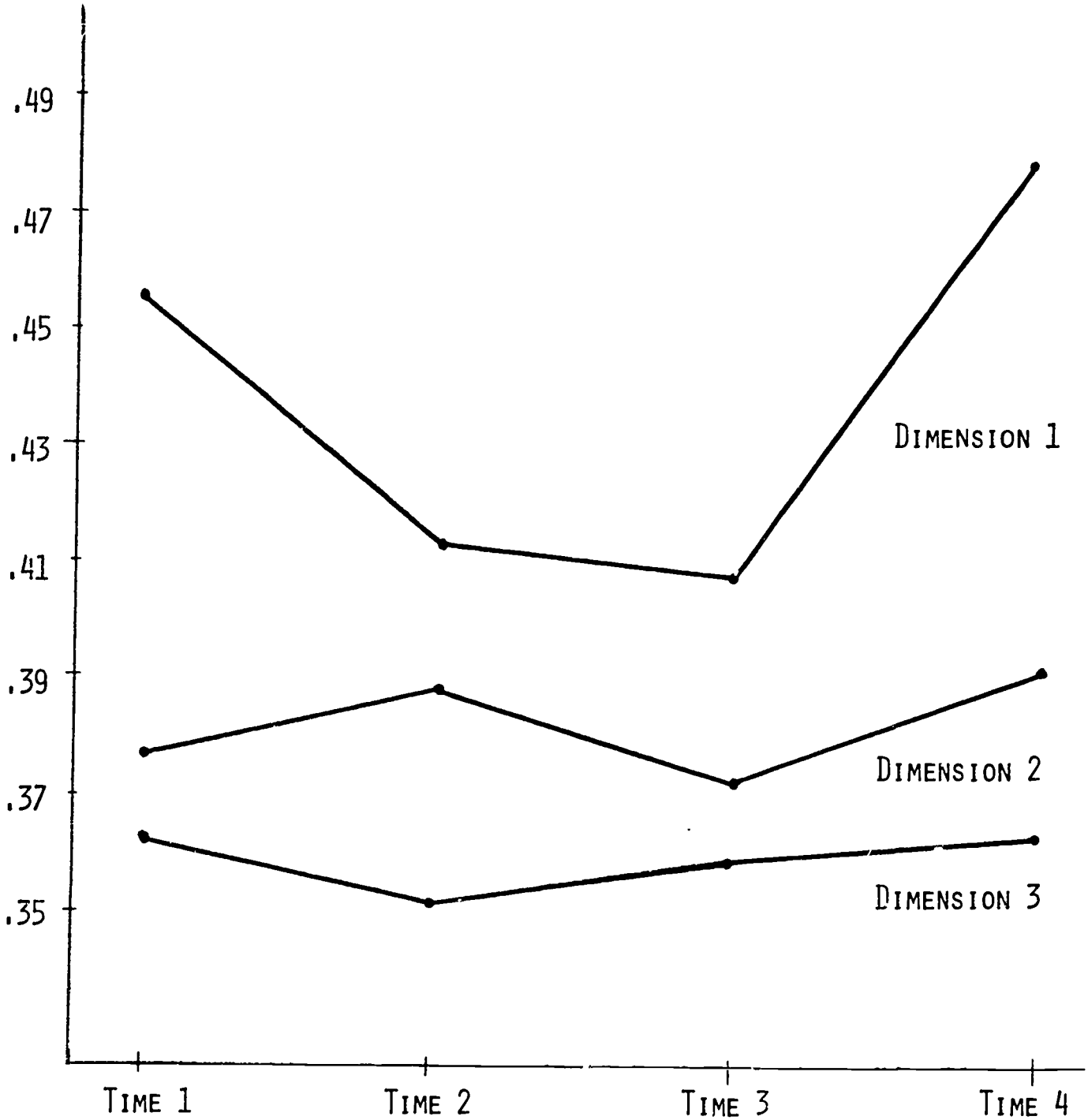

FIGURE 9. MEAN SUBJECT WEIGHTS AT FOUR TIME-POINTS ON 3 DIMENSIONS