THE DEVELOPMENT
OF BEHAVIORALLY ANCHORED RATING SCALES
FOR DIETITIANS

A THESIS

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This thesis is gratefully dedicated to all those dietitians who so thoroughly devoted themselves to the development of the dietitians' behaviors scales herein described.

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INTRODUCTION

We all tend to evaluate the performance of others, consciously or unconsciously, formally or informally. Supervisors and teachers, and others in the position of assigning some sort of quantitative or qualitative value to performance, are faced with the very real task of identifying more or less justifiable reasons for those valuations. To the degree that these valuations <u>are</u> justifiable, they are said to be objective and hence are free from personal bias, are realistic, and would be consistent.

The making of such value judgments, generally referred to as performance appraisal, is no idle exercise. Decisions based on job performance affect both organizations and individuals. The following examples should serve to illustrate this point.

Performance appraisal data serves as criteria in validating selection and placement decisions. Such data are often more pertinent to a given situation than are measures of productivity, labor turnover, and the like.

For the individual, performance appraisal can and often does provide essential feedback as to strengths and weaknesses in performance. This is true whether the task at hand is learning of subject matter or applying it on the job. Goal setting, with its accompanying commitment, is useless unless some sort of periodic appraisal system is utilized for update and revision, as well as feedback. This feedback can be illuminating to the person who is directing the learning, for revision

or development of future training programs. Further, performance appraisal can serve as a needs analysis technique for purposes of professional development or continuing education considerations.

A promotion is customarily based on demonstrated capacity to perform, as evidenced by current and past performance appraisals. A raise in salary, and possibly the amount of the raise, is related to job performance as evaluated by a supervisor, if the organization has an operating "merit system." (The reverse of this, or termination of employment, may require documentation of failure to perform in order to be legal.)

Performance appraisal theory, application and techniques have been discussed at length (Campbell, Dunnette, Lawler, and Weick, 1970; Cummings and Schwab, 1973).

Performance appraisal is a necessity in present day dietetics education. There is a marked trend toward observable evaluation methods. This trend bears a strong resemblance to the so-called Competency Based Education (CBE) or Performance Based Education (PBE) which has been much discussed and generally accepted by educators and by measurement and evaluation proponents.

The American Dietetics Association (ADA) has encouraged the use of such competencies, behavioral objectives, and observable evaluation techniques. In undergraduate coursework, these procedures are perhaps more refined than those used during an internship or traineeship,[1] where evaluation of performance is more

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[1] An internship or traineeship is a post-baccalaureate period of on-the-job structured experiences which constitutes approximately 12 months, and is the predominant route to membership in the ADA.

customarily accomplished through the use of some standard performance form, administered periodically as the student progresses through the program. These ratings are used as a basis for deciding whether the student has successfully acquired each unit of expertise as suggested for the entry-level dietitian (American Dietetic Association, 1974).

It is questionable whether or not these forms are able to supply reliable and valid information for such important and far-reaching decisions. Most performance appraisal formats tend to utilize other than competency based or directly observable characteristics. Behaviorally anchored rating scales, first developed by Smith and Kendall (1963) have generally been regarded as a major step toward more psychometrically sound rating scales, and they are constructed from observed behaviors. Further, Smith and Kendall (1963) listed several reasons why they felt that behaviorally anchored scales offered distinct advantages to the user, such as 1) the scales utilized the terminology and "expressions" of the people who would use them; 2) the dimension definitions and behavioral anchors both served to define the kinds of behavior the scale was to measure; and 3) experienced observers reported actual job behaviors to be used instead of global traits which require a rater to "guess" what is meant.

In view of the apparent advantages which might be obtained with behaviorally anchored rating scales, and in order to provide a much needed instrument for the evaluation of dietetic trainees

in the Minnesota Modular Dietetic Traineeships,[2] it was decided to develop behaviorally anchored scales for dietitians using the inputs of the dietitians involved in the Minnesota Modular Dietetic Traineeship program.

This paper is the report and analysis of the results.

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[2]The Minnesota Modular Dietetic Traineeship is a cooperative effort by the University of Minnesota Department of Food Science and Nutrition and participating Minnesota hospitals to provide the necessary training and experience required by the ADA. Approximately 30 dietitians and 15 trainees from 8 hospitals participated in the pilot year.

SURVEY OF THE LITERATURE

Behaviorally anchored rating scales were developed by Smith and Kendall (1963) based on the collection of critical incidents as first suggested by Flanagan (1949). The Smith and Kendall procedures were iterative in nature, the various groups modifying and adding to the work already done by previous groups. Basically, their procedures were as follows:

1. Several groups of subjects familiar with the job in question (in this case, nurses) were asked to list qualities or characteristics to be evaluated.
2. The subjects next submitted examples of behavior (critical incidents) in each quality or dimension. The behavioral examples were then edited from an observed critical incident into a "could be expected to" format. The edited examples become inferences or predictions from observations of behaviors.
3. Subjects were presented with the total list of expectancy behaviors, and each subject independently assigned the behaviors into the quality or dimension where it best seemed to fit. Examples were eliminated if there was not clear modal agreement between the subjects as to the dimension which each example described. This was called the "retranslation" step.
4. Subjects were next asked to rank those surviving behaviors on a continuum of 0.0 (low effectiveness) to 2.0 (highly effective behavior). Examples were eliminated if the

dispersions of the judgments were large, or if the distribution was multimodal.

Several of the original dimensions and many behaviors were eliminated by the retranslation and ranking procedures. Smith and Kendall (1963) reported very high intercorrelations between judgments made by the different groups, ranging from .972 to .995. In other words, the subjects showed excellent agreement in assigning behaviors to dimensions and in ranking the relative effectiveness of the behaviors in each dimension.

The scales had not been operationally tested, nor had they been used and compared to existing formats for performance appraisal. However, the method and reasoning put forth by Smith and Kendall (1963) was well received.

Zedeck and Baker (1972) used the scales developed by Smith and Kendall (1963) in a study wherein two levels of nursing supervisors evaluated staff registered nurses and the data were subjected to a multitrait-multirater analysis. Zedeck and Baker (1972) found moderate convergent validity, but little or no discriminate validity. In other words, the correlations among raters on a given dimension were moderately high, but the correlations between the dimensions themselves were generally higher, indicating a lack of independence between the dimensions. The authors interpreted these results as casting doubt on the construct validity of the performance dimensions, and suggested that perhaps the raters in their present study attached importance to dimensions other than those listed by the nurses in the original Smith and Kendall study. Zedeck and Baker (1972) further speculated that

behaviorally anchored scales may not be appropriate for more than one group of raters, or may be significantly affected by such things as tenure of the rater or opportunity to observe the ratee (which is undoubtedly affected by supervisory level).

In order to help overcome these problems, Zedeck and Baker (1972) suggested that additional critical incidents be collected by the rater which are specific to the present ratee. The incidents could be ranked using the already present behavioral anchors as a guide, and a summary ranking be assigned the ratee on the basis of these additional incidents. The authors admit that this summary rating might serve to dictate the type of documentations, and hence in effect limit the completeness of the description of a given ratee's behavior.

The problems uncovered by Zedeck and Baker (1972) have continued to plague researchers. Borman and Vallon (1974) also used Smith and Kendall's (1963) scales in a similarly constructed study, but which attempted to control for observational opportunity. These authors compared the Smith and Kendall (1963) scales to a "numerically anchored" format using the dimension names and definitions of the Smith and Kendall (1963) scales but without the behavioral anchors. They used an analysis of variance procedure to examine interrater reliability of ratings, mean level of ratings, standard deviation of ratings, dimension intercorrelation or "halo," and a confidence level which was an estimate from one (low) to nine (high) made by the rater according to how sure each felt about each evaluation made.

Borman and Vallon (1974) found that although mean interrater

reliability was higher for the behaviorally anchored scales the difference was not significant. The dimension intercorrelations were virtually equivalent for the two formats. In terms of means and standard deviation, the simpler scale tended to show less leniency error. Raters indicated a slightly higher level of confidence when using the behaviorally anchored scales.

The remainder of the studies which are reviewed developed their own scales using modifications of Smith and Kendall's (1963) procedure.

Folgi, Hulin and Blood (1971) developed behaviorally anchored scales for grocery store check-out personnel. Their critical incidents were collected by interview rather than group discussion, and retranslation and ranking was done via mail in an effort to reduce the time requirements of the subjects. They report high (above .97) interrater reliabilities for scale items, but the scales were not otherwise analyzed.

Landy and Guion (1970) developed scales to measure work motivation (rather than job performance) of engineers. The authors did modify the ranking procedure of Smith and Kendall (1963) by providing one high and one low anchor for each dimension, and subjects were asked to rank all other behaviors relative to those anchors. The authors felt that this modification served to alleviate the problems of "mid-range gap" which often seems to occur because behavioral incidents tend to report either very effective or very ineffective behavior. Landy and Guion (1970) factor analyzed their retranslated incidents and found that the seven

dimensions could be accounted for by four factors, but it appears they did not change the dimensions accordingly. Although this appears to be an interesting finding, other studies have not reported similar analysis. Interrater reliabilities for the scales were described by the authors as "adequate rather than gratifying."

The early studies reporting on the development of behaviorally anchored scales (Smith and Kendall, 1963; Folgi, et al, 1971; Landy and Guion, 1970) did not test them "in the real world" nor compare them to scales using a different format. Reports of scale reliabilities, then, were merely intercorrelations of subjects' judgments on the ranking procedure. Zedeck and Baker (1972) and Borman and Vallon (1974) both question the utility of such reliabilities, since the procedure itself serves to eliminate the causes of low reliability, e.g., large standard deviations or a limited range in the anchor means.

Harari and Zedeck (1973) developed behaviorally anchored scales for the evaluation of the teaching of university psychology professors. They used completely independent groups of students to 1) identify and define the dimensions and generate critical incidents,2) retranslate the incidents, and 3) rank each incident in the dimensions after retranslation. They felt that such a sequence with new subjects at each step would lead to more generalizable scales.

Harari and Zedeck (1973) discuss in some detail the problem of collecting and maintaining incidents for the mid-range of behaviorally anchored scales. They suggest that instructions to subjects should perhaps downplay the midpoint and simply be for

behaviors ranging from good to bad. They caution:

> "Emphasis on critical incidents may preclude the opportunity for noncritical, mediocre examples."
> Harari and Zedeck, 1973, p. 263

These same authors saw in their finished scales an intrinsic component (knowledge, delivery, inspiration, etc.) and an extrinsic component (testing, work load assigned, etc.). They further indicate that perhaps not all kinds of faculty should possess the same characteristics. In other words, psychology teachers may need to behave differently than art teachers.

A variant in the Smith and Kendall (1963) methodology was used by Campbell, Dunnette, Arvey, and Hellervik (1973) to develop scales for department store managers. Instead of identifying the performance dimensions first, Campbell, et al (1973) collected critical incidents after a brief discussion with their groups concerning performance appraisal and the critical incidents technique. The incidents were "cluster analyzed" by the authors, who then wrote brief tentative descriptions for each of what appeared to be homogenous clusters of behaviors. This information was given back to the subjects, who revised and further defined them, eliminating some categories or dimensions and adding others. The retranslation and ranking procedures were then carried out.

For purposes of comparison with the behaviorally anchored scales, Campbell, et al (1973) developed what they called "summated scales" by using the dimensions of the behaviorally anchored scales and the highly effective behavioral statements from each dimension in a 4-point Likert-type scale. The ratee was judged to exhibit these behaviors from very rarely (1) to almost always (4).

Campbell, et al (1973) concluded that the behaviorally anchored scales reduced leniency and halo error and showed greater convergent and discriminate validity than the summated scales.

Whether dimensions should be identified first, a la Smith and Kendall (1963), or after the writing of critical incidents, as reasoned by Campbell, et al (1973), or whether this makes any difference, still awaits further empirical results.

Two relatively similar studies compared behaviorally anchored scales with other formats (Burnaska and Hollmann, 1974; Groner, 1974) and used an analysis of variance technique to examine variance due to: Raters, Ratees, Raters x Ratees, Categories, Raters x Categories, Ratees x Categories, and Raters x Ratees x Categories. After a discussion of what constituted the different kinds of variance using this type of analysis, both Burnaska and Hollman (1974) and Groner (1974) concluded that the desirable sources of variance when analyzing performance appraisal scales were Ratee main effect and the Ratee x Category interaction, because:

> "They provide information as to how the ratees differ, both quantitatively and qualitatively, and this is the purpose of all rating scale procedures. Any other sources of variance contribute response style errors of one type or another."
> Burnaska and Hollmann (1974) p.308

Groner (1974) developed behaviorally anchored scales for the evaluation of college job recruiters. The procedure was similar to Campbell, et al (1972). For comparison, Groner (1974) developed a Checklist, utilizing the dimensions of the behaviorally anchored scales and including short behavioral statements selected from the dimensions,which were assigned a "strongly agree" (7) to

"strongly disagree" (1) rating. The third comparison format which Groner (1974) developed was an Adjectivally anchored scale which also utilized the same dimensions originally identified, but which called for a judgment of "poorest possible," "poor," "slightly below average," "fair or average," "slightly above average," "good" or "excellent" within each dimension.

Groner (1974) concluded that behaviorally anchored scales contained considerably more variance due to Ratee main effect and Ratee x Category interaction than the other formats used.

Burnaska and Hollman (1974) developed behaviorally anchored scales for the evaluation of classroom teaching of college professors. The procedure was similar to Campbell, et al (1973). These scales were called Format 1. Format 2 used the same dimensions and scales of Format 1, but without the behavioral anchors. Format 3 utilized categories selected by the authors from research work on teaching effectiveness.

These authors found that all formats contained some response bias, e. g. leniency and halo. They felt, however, that the behaviorally anchored scales reduced leniency somewhat and increased ratee variance to a degree. They could not say that any of the formats showed superiority over the others.

Burnaska and Hollmann (1974) suggest an intriguing thought: that independent scales for several dimensions of job performance may be unrealistic. Work motivation itself may cause a correlation between behaviors on a variety of performance dimensions. If this is true, then an overall good performance probably could not be distinguished from response bias on any rating scale.

Summary

The original Smith and Kendall (1963) methodology has been variously modified to develop behaviorally anchored scales. Some studies identified the dimensions first and then collected the critical incidents, whereas others reversed these steps. Optimal sequencing has not been definitively established.

Generally, most studies utilized different groups for the succeeding steps of development, although this was not always the case, and appeared to be determined as much by availability of willing subjects as by design. The possible exception to this is Harari and Zedeck (1973) who felt that independent groups would lead to more generalizable scales.

Although interrater judgments generally are highly correlated, this has been suggested to be an artifact of the procedure and hence to say little in support of the superiority of behaviorally anchored scales.

The following chart shows the percentage agreement on retranslation and the standard deviations of rankings that were utilized by the authors reviewed who did scale development.

Author	% Agreement of Subjects (at least)	S.D. (not more than)
Smith and Kendall (1963)	modal	1.5
Landy and Guion (1970)	69%	.4*
Folgi, et al (1971)	50-60%	1.5
Campbell, et al (1973)	78%	1.75
Harari and Zedeck (1973)	60%	1.5
Burnaska and Hollmann (1974)	65%	not reported
Groner (1974)	66%	2.0

*In subsequent trials, this decreased to .26 with the use of high and low anchors as guidelines. This study appeared to have limited numbers of incidents per dimension to be ranked, i.e., ten or less.

Multiple correlation techniques have suggested convergent validity, but not always discriminate validity for behaviorally anchored scale formats. This has led to the suggestion that performance dimensions may not be truly independent, but might all contain some generalized factor of motivation.

Analysis of variance techniques appear to be a promising procedure for identifying type and source of differences in rating. The desirable variance, e.g., Ratee main effect and Ratee x Category interaction, appears to increase somewhat with the behaviorally anchored format, although the scales still seem to contain some rater response bias. Results have tended to be inconclusive.

Only Smith and Kendall (1963) have spoken about the learning which accrues to those who develop behaviorally anchored scales. Perhaps this factor is being buried in the psychometric dust, but for the present study, now to be reported, it appeared to be a significant, although subjective, result.

DEVELOPMENT OF THE SCALES

The Minnesota Modular Dietetic Traineeships were located primarily in the Twin Cities and St. Cloud areas during the pilot year. About 15 dietitians from each area agreed to participate in the development of the appraisal instrument. All specialties within dietetics were represented, including administration, patient services, education, and community nutrition. Subjects included dietitians with varying degrees of tenure, ranging from one year to over 20 years as a practicing dietitian. Several subjects had practiced in more than one specialty area during their careers.

The methodology employed was that of Campbell, et al (1972) with minor variations included near the end of the development. The work progressed as follows:

STEP I

During a planning meeting for the development of the Minnesota Modular Dietetic Traineeship in the St. Cloud area, the author presented a brief discussion of performance appraisal and described the critical incident technique. The dietitians were requested to write at least 3 effective and 3 ineffective critical incidents of dietetic performance.

This procedure was repeated at a planning meeting of the Minnesota Modular Dietetic Traineeships in the Twin Cities area. Approximately 125 critical incidents were initially generated by the two groups.

STEP II

The author qualitatively clustered the incidents into what appeared to be homogeneous categories and wrote tentative descriptions of each.

At this point it was noted that some of the dimension clusters contained predominately effective behaviors, while others contained predominately very ineffective behaviors. There also appeared to be a marked tendency for the majority of the critical incidents in a given dimension to refer to either administrative dietetics behavior or patient services behavior.

In an attempt to investigate whether either of these phenomena might be of significance for scale development, the author enlisted the aid of two university colleagues for some additional types of clustering of the incidents.

Working independently, the author and the colleagues first attempted to stratify the incidents into positive and negative groups, with qualitative sub-clusters of each. Analysis of these efforts showed that within each stratification of positive and negative, there appeared to be much duplication of the qualitative sub-clusters. In other words, the same kinds of behaviors seemed to appear both places, whether it had been reported in terms of effective or ineffective behaviors. Because of this apparent overlap, the positive-negative stratification was abandoned.

Another attempt was made to stratify the incidents into administrative and patient services groups, with qualitative subclusters of each. This effort also proved to be futile, since about one-third of the pool of incidents could be assigned to

either or both of the administrative or patient services groupings. Again, because of apparent overlap, the administrative-patient services stratification was abandoned.

It was therefore decided to proceed using only the qualitative clusters without any stratification. Some possible ramifications of this decision are discussed in some detail in the Procedural Summary.

STEP III

The resulting 9 tentative categories with their definitions were discussed with the St. Cloud area dietitians. The discussion covered: 1) whether the tentative categories were important for the evaluation of a dietitian's performance, 2) whether all the aspects of a dietitian's job were represented, 3) whether the categories were truly independent or perhaps should be combined in some fashion, and 4) whether the evaluation of student progress in a traineeship could or should be attempted by comparison with behaviors of practicing dietitians as reflected in the critical incidents. Extensive changes were made in the definitions of the tentative categories, but all were retained and none were combined or added.

A great deal of the discussion dealt with the philosophical considerations of 4)- evaluating trainees using behaviors of dietitians. It was the consensus of the group that with university course work completed, a trainee appropriately could be evaluated in terms of the behaviors of practicing dietitians. The responsibilities would perhaps be less and the supervision closer, but the goals of the trainee would be to approach as closely as

possible the effective performance of dietitians, and the trainee's progress through the traineeship could be measured on performance scales which reflected this attainment, or lack of it.

Utilizing the revised categories of the St. Cloud group, the discussion step was repeated with the Twin Cities area dietitians. This group dropped one category, combined two categories, and added two new categories, making a total of 10 dimensions. The definitions were expanded somewhat. This group also discussed the evaluation of trainees using critical incidents of practicing dietitians, and their conclusions were identical to those of the St. Cloud area dietitians.

STEP IV

The behavioral incidents were edited by the author to shorten and to put into the expectancy format. The ten dimensions were edited to smooth, but the language and content were retained.

STEP V

The retranslation procedure was then carried out by both groups. Each dietitian, working independently, was asked to assign each incident to one of the ten dimensions, whichever it seemed to best represent. At the same time, the incident was to be ranked according to its effectiveness or ineffectiveness on a 9-point continuum. The incidents were presented randomly. In addition, the page order of the incidents was randomized to attempt to control for fatigue and/or experience factors. The continuum and the retranslation and ranking sheets are given in Appendix A.

Prior to the retranslation and ranking steps, but at the same meeting, each dietitian received a copy of the 10 dimensions and their definitions and were asked to write as many critical incidents under each dimension as they could, especially incidents which were not extremely effective or extremely ineffective. This was done for two reasons:

1) to familiarize the dietitian with the revised dimensions and "set the stage" for retranslation using the dimensions, and
2) to collect additional critical incidnets, especially for the middle range of behaviors.

The critical incidents which were generated at this point were not ranked until a subsequent meeting. A copy of the dimensions and their definitions is also provided in Appendix A.

The dietitians tended to find this step in the development procedure the most onerous and fatiguing, and freely expressed such opinions. They did seem, however, to value the continuity as they saw the scales materialize.

STEP VI

After the completion of the retranslation and ranking steps, the results were summarized and analyzed. Incidents were retained only if 75% (20 out of 27) of the subjects agreed on the dimension to which it was assigned, and if the standard deviations of the scale values assigned were less than 1.75. Approximately 40% of the incidents were eliminated by the former standard, and approximately 5% more were eliminated by the latter standard.

Subjective analysis indicated that several of the dimensions

might be overlapping because of a visible pattern. Certain incidents were divided between two and only two of the dimensions. By combining these two dimensions, these incidents attained 75% agreement. As a result, only 25% of the incidents were rejected.

This combination was subsequently done for 6 of the dimensions, and the definitions of the resulting dimensions were integrated. Dimensions A (Ability to Translate) and I (Concern for Nutritional Care) became "Concern for Nutritional Care"; Dimensions B (Loyalty and Cooperation) and C (Interpersonal Effectiveness) became "Interpersonal Effectiveness"; and Dimensions E (Independent Judgment) and F (Appropriate Aggressiveness) became "Appropriate Aggressiveness."

It was noted that confusion also appeared to exist between Dimensions G (Acceptance of Responsibility and Follow Through) and H (Consistency of Standards). Upon re-reading the definitions of the two Dimensions, it was discovered that virtually the same phrase (regarding the enforcement or administration of rules, policies, and procedures) appeared at the beginning of the definition of both dimensions. This problem was resolved by the group during Step VII.

Dimension D (Social and Professional Concern) was clearly retranslated, but there was major disagreement among the subjects as to whether these behaviors were effective or ineffective performance, even though the incidents themselves just as obviously referred only to that dimension. The incidents in question referred to the behavior of "volunteering" professional inputs to community agencies, such as low-income clinics, mental health units

churches, etc. Some subjects felt this demonstrated effective performance; some felt this ineffective. Rather than drop the Dimension, further group inputs were sought.

STEP VII

Twin Cities area dietitians were requested to meet and discuss Dimension G (Acceptance of Responsibility and Follow Through) and Dimension H (Consistency of Standards) and the problems of Dimension D (Social and Professional Concern). The definitions of Dimensions G and H were re-written (but not combined) and the duplicate phrase was removed. In Dimension D, several incidents were reworded to better reflect the point of view that "social concern," while admirable, was not job related and that a dietitian should not be evaluated by a supervisor on this kind of behavior. Community work was redefined to be job related if and only if it was recognized by the employing agency as desirable and worthy of compensatory time, or to be done during the regularly scheduled work day. The Dimension, as it now stands, is almost purely oriented toward easily identified professional activities and continuing education. The ambiguity of "volunteering" can thus be relegated to the realm of personal conscience.

The seven revised dimensions were now:

"Concern for Nutritional Care" (a combination of "Ability to Translate" and "Concern for Nutritional Care")

"Interpersonal Effectiveness" (a combination of "Loyalty and Cooperation" and "Interpersonal Effectiveness")

"Appropriate Aggressiveness" (a combination of "Independent Judgment" and "Appropriate Aggressiveness")

"Acceptance of Responsibility" (revised definition)

"Consistency of Standards" (revised definition)

"Professional Identification" (an extensively revised Dimension)

"Delegation of Responsibility" (an unchanged Dimension)

STEP VIII

As a result of the work done in Step VII, it appeared desirable to re-rank several incidents. Group inputs indicated that retranslation was not necessary.

All appropriately retranslated incidents, plus those incidents written for a specific dimension in Step V, plus incidents previously rejected by virtue of large standard deviations were arranged randomly within their respective Dimensions with the revised definitions. "Delegation of Responsibility," an unchanged Dimension, was not included. Thus, 6 Dimensions were presented to the next group for re-ranking.

St. Cloud area dietitians were asked to independently rank each incident, one dimension at a time, according to the same 9-point continuum previously used, with one exception. If they felt that an incident did not pertain to the dimension being ranked or that the incident was irrelevant, it was to be given a zero. If two of the subjects gave an incident a zero, it was eliminated from the dimension.

STEP IX

The means and standard deviations for the new rankings were calculated. These were compared with the prior rankings, where possible, and the two were found to be largely in agreement.

There appeared to be some slight tendency for the second set of rankings to have smaller standard deviations.

Selection of incidents for use as scale anchors was done at this point and was governed by the following considerations, and in this order:

1. A complete range, both in kinds of behaviors and in magnitude of effectiveness or ineffectiveness, was used.
2. Correct rank order was maintained.
3. Where more than one incident was appropriate, the one with the smallest standard deviation was selected.

Means and standard deviations of the selected scale anchors are presented in Appendix B. The completed scales are displayed in their entirety in Appendix B, along with the instructions which accompany each set of scales.

STEP X

The scales were then presented to the Twin City area dietitians, who were asked to rank someone they felt they had observed thoroughly. This could be either a trainee or a staff dietitian. They were also asked to discuss their reactions to the scales as they attempted to use them.

The overall reactions to the rating scales were favorable. The dietitians all indicated they intended to use the rating scales in evaluating the new trainees who would soon be starting in the program. The university faculty dietitians expressed the intention of using the scales in teaching undergraduate dietetics majors, not for the purpose of assigning course grades, but as illustrative material.

The dietitians expressed no difficulty in deciding where to rank the individual they were evaluating. They were able to think of specific behaviors for their ratee, and especially liked the idea of placing those behaviors right on the rating scales rather than on the bottom of each sheet. Space may not permit much of this, however, but they did feel additional specific behaviors would benefit them in presenting the rating and also the ratee in understanding the reasons for a given rating.

Perhaps the biggest factor in the discussions was the generalized feeling of how much the dietitians felt they had learned about evaluating performance. Smith and Kendall (1963) did, of course, put this learning experience high on their list of advantages of behaviorally anchored scales.

It was gratifying to this author to hear subjects exclaim, "Oh, if only we had known as much nine months ago as we know now!"

Smith and Kendall's (1963) methodology , as well as the present study, employs a scaling procedure classified as a subjective estimate method (Torgerson, 1958). Torgerson states:

> "The subjective-estimate methods are unique among the different scaling approaches in that they are the only ones in which both a fixed (though perhaps arbitrary) origin and unit are necessarily implied in the judgment."
>
> Torgerson, 1958, p.64

To the extent that the subjects can fulfill these requirements, we obtain interval scales.

The present sample, although small, represents all aspects of dietetic practice. To the extent that the sample is representative, the scales should be appropriate for use by the larger population of dietitians.

The procedures followed for the development of the behaviorally anchored scales were basically effective, but certain problems were encountered. These problems included:

1. The lack of behavioral anchors in the scale mid-range.
2. The time and tedium involved in doing the retranslation and the ranking.
3. The lack of independence of some of the dimensions which the groups identified as important in a dietitian's performance.
4. The failure of the clustering team to separate critical incidents into "administrative" or "patient services" and yet two of the finished scales obviously pertained to only one.
5. The tendency of some dimensions to contain primarily effective or primarily ineffective behaviors.

Each of these problems will be briefly reviewed in light of the findings of other researchers, where applicable, and some suggestions for further research will be made.

The Lack of Behavioral Anchors in the Scale Mid-Range

Although there were more critical incidents located at the scale extremes, nonetheless there were incidents with mid-range means. These almost always had standard deviations greater than 1.75, however, indicating a lack of subject agreement and causing the incidents to be rejected from inclusion in the scale.

In this author's judgment, the problem is partially an artifact of the procedure of accepting or rejecting an incident based on a computed standard deviation. Obviously, rankings of incidents at the extreme ends of the continuum can move in only one direction--toward the middle of the scale. This will result in a smaller computed standard deviation than if rankings were equally possible on both sides of the mean scale point. Mid-range incidents, however, can be ranked toward either extreme and typically will have a larger computed standard deviation than incidents with a truncated range.

In addition, uncertainty on the part of the subjects as to just how effective or ineffective an incident was can cause a large standard deviation. Since mid-range behaviors tend to be more ambiguous by definition (as pointed out by Harari and Zedeck (1973) subjects are asked specifically for behaviors which are not really effective or ineffective, merely "average" or mediocre"), it is logical to assume that mid-range behaviors so collected will have large standard deviations. Possibly this ambiguity would not especially affect the stability of the finished scales provided the remaining anchors have small standard deviations and a good range of kinds of behaviors are present on

each scale.

It was noted that during the final ranking (Step IX) there was some tendency for the standard deviations to decrease when the subjects scaled all the behaviors in a given dimension at one time. Torgerson (1958) recognizes such a procedure as one highly effective technique for developing interval scales.

Although Landy and Guion (1970) might have "forced" their distribution somewhat by the addition of high and low anchors for each dimension, judges who know a field well seem to realize that examples of the very most effective or the very least effective behavior are not on the list at all. In the present study, for example, none of the anchors ever had a mean of 9, and only one or two anchors had a mean of 1.

The Time and Tedium Involved in Doing the Retranslation and the Ranking

Several authors (Harari and Zedeck, 1972; Borman and Vallon, 1974) suggest that the ranking step be done separately from the retranslation step, and that the groups contain different subjects. These authors seem to feel that this leads to greater scale stability and generalizability.

For these reasons, and for the purpose of breaking up the workload, this separation of steps is perhaps more desirable.

The dietitians were relatively enthusiastic about ranking incidents one dimension at a time. Perhaps there was some experience factor operating here, but they generally described the procedure as "much easier." When asked if they had looked at all of the incidents before ranking any of them, however, their

answer was negative. Some did go back over the page and change rankings, although not everyone did this. It is questionable, therefore, whether the entire range of behaviors represented was a determining factor in their rankings.

The Lack of Independence of Some of the Dimensions Which the Groups Identified as Important in a Dietitian's Performance

Although Campbell, et al (1973)modified Smith and Kendall's (1963) procedure and collected critical incidents first, in order to at least partially alleviate the problem of "global personality traits" being classified as dimensions, the present study evidently encountered some of this. The critical incidents collected tended to be complex and difficult to cluster because more than one dimension seemed to be involved. Writing the incidents for specific dimensions (Smith and Kendall, 1963) might tend to produce less complex incidents. If less complex incidents were produced, there might be more critical incidents generated. This kind of procedural modification should perhaps be subjected to further study.

The methodology itself does deal rather effectively with overlap, at the retranslation step, as was the case in the present study. Factor analysis as carried out by Landy and Guion (1970) could also be employed. Landy and Guion (1970) did not decrease their scales from 7 dimensions to the 4 suggested by factor analysis, however.

The Failure of the Clustering Team to Separate Critical Incidents Into "Administrative" or "Patient Services" and yet Two of the Finished Scales Obviously Pertained to Only One

The dietitian-subjects of this study, by and large, expressed the opinion that the job performance of a dietitian, be it in administrative or patient services, should not be judged by different standards. The finished scales, however, appear to cast some doubts on this assumption.

During Step X (the use of the scales) the dietitians felt that the scale for "Delegation of Responsibility" contained behaviors which were almost wholly performed by administrative dietitians and seldom, if ever, by patient services dietitians. They could think of no incidents to change this fact.

Similarly, the dietitians using the scales were disturbed that the scale "Concern for Nutritional Care" appeared to refer almost entirely to patient services dietitians' behaviors. After careful consideration of the entire list of behaviors which had originally been retranslated into that dimension, however, changes were suggested to incorporate administrative behaviors. The group expressed the strong belief that administrative dietitians properly should be concerned with nutritional care even though patient services dietitians were perhaps more often observed being concerned. The group felt that all dietitians should be evaluated on this particular scale.

The remaining 5 scales seemed to contain both administrative and patient services behaviors. On closer examination, the administrative behaviors might be primarily positive and the patient services behaviors primarily negative (or vice versa) for a

given scale. In these cases, some of the incidents were simply reworded to reflect the other end of the continuum. This proved to be adequate for providing the necessary range and kinds of behavioral anchors. The total pool of critical incidents was about 150. A larger number of subjects and more critical incidents might alleviate this problem.

Only one study (Harari and Zedeck, 1973) mentions that performance may be different for different areas within a profession. These authors developed behaviorally anchored scales for psychology professors at a major university. They state:

> ". . . it is unlikely that all, or even most disciplines require identical patterns of teacher behavior . . specific items . . . that are appropriate for the teaching of psychology may be quite inappropriate for the teaching of art, philosophy, physics, etc."
>
> Harari and Zedeck, 1973, p. 261

The same may be true for the different specialties within dietetics, although the subjects in the present study did represent all of the disciplines within the field. Further research is needed.

The Tendency of Some Dimensions to Contain Primarily Effective or Primarily Ineffective Behaviors

Although approximately half of the revised dimensions were skewed toward predominately positive or predominately negative behaviors, only one (Consistency of Standards) contained entirely negative behaviors. This presented no problems for the judges; they simply reworded the incidents to reflect the other end of the continuum. No one expressed the slightest indication that the reversed behaviors would not occur. Since the judges seemed

to feel that the complete range of behaviors does occur, the fact that only negative ones were collected could be a function of the size of the pool of critical incidents collected (approximately 150).

Whether all positive or all negative behaviors indicate some prejudiced, idealized mental state on the part of the subjects is highly speculative, since subjects are specifically instructed to write only observed behaviors. What a subject remembers may be a reflection of personal bias, however.

All positive or all negative incidents within a given dimension also could be related to the nature of that dimension. Perhaps some behaviors are more ambiguous and/or complex and, because of this, fewer are remembered by the judges. Using the present study for an example, inconsistency of standards can only be identified by knowing the standards being violated. Such standards are often poorly defined. A dietitian may have a vague feeling that a behavior is undesirable, but lacking a well defined standard, this dietitian may simply forget the whole thing. Collection of critical incidents, in all likelihood, would serve to pick up this vague disapproval rather than the standard itself.

At any rate, none of the literature published to date deals with the positive-negative nature of the critical incidents collected. Such considerations apparently cause no lasting conflict.

SUMMARY

Behaviorally anchored rating scales were developed for dietitians using the methodology of Campbell, Dunnette, Arvey and Helervik (1973). This methodology is a variant of the original technique first suggested by Smith and Kendall (1963).

Dietitians participating in the Minnesota Modular Dietetic Traineeships from the Twin Cities and St. Cloud areas served as subjects. The dietetic specialties of administration, patient services, education, and community nutrition were represented in each group.

Developmental problems included:

1. The lack of behavioral anchors in the scale mid-range.
2. The time and tedium involved in doing the retranslation and the ranking.
3. The lack of independence of some of the dimensions which the groups identified as important in a dietitian's performance.
4. The failure of the clustering team to separate critical incidents into "administrative" or "patient services" and yet two of the finished scales obviously pertained to only one.
5. The tendency of some dimensions to contain primarily effective or primarily ineffective behaviors.

Modifications of the methodology were discussed which, in the opinion of other authors, possibly would alleviate some of the problems, but further work needs to be done.

One dimension (Professional Identification) had to be extensively revised due to lack of agreement between the subjects as to what this dimension was and what it was not. All finally agreed that this dimension should be evaluated in terms of continuing education or updating activities and work in professional

organizations rather than social concern or humanitarian activities.

Seven dimensions constitute the final scales. These are: Concern for Nutritional Care, Interpersonal Effectiveness, Consistency of Standards, Acceptance of Responsibility, Appropriate Aggressiveness, Professional Identification, and Delegation of Responsibility.

Of those studies reported which did actual scale development, the number of dimensions identified varied from five to nine.

A brief examination of the reported dimensions is rather interesting. Dimensions of knowledge-based or job-oriented types of skills occur with much greater frequency than do so-called "personality trait" types of dimensions. Only one or two of the latter occur in each set of scales.

For example, the majority of dimensions in each study are concerned with actual knowledge and the ability to use it, or some aspect of assessment, planning and judgmental types of activities which appear strongly rooted in a knowledge base. These dimensions tend to be defined in the jargon of the groups being served, of course, but the job-oriented nature of these dimensions is unmistakeable.

The "personality-trait" dimensions unanimously include one scale on interpersonal relationships; it is often simply called that. The other "personality trait" dimension usually refers to some motivational characteristic or a professional or organizational identification of the ratee.

The scales developed in the present study demonstrated these same patterns. Interrater reliabilities were not analyzed, since others (Zedeck and Baker, 1972; Burnaska and Vallon, 1970) feel that this type of analysis does not support the utility of the scales. The only testing of the scales from this study was subjective data collected from the Twin Cities area dietitians as they attempted to use the scales. This data indicated acceptance, ease of ranking, and appropriateness for rating dietitians and dietetic trainees. These same dietitians felt that the learning experience of the procedure was especially valuable.

To outward appearances, then, one goal of this research was accomplished: the development of an instrument to aid in appraising the performance of dietetic trainees in the Minnesota Modular Dietetic Traineeships. A second benefit, that of furnishing some information concerning performance appraisal to dietitians who intend to use the instrument, also appears to have been realized.

It is important to determine psychometric properties of the scales which have been developed. If they work for the people who need and use them, then, to a degree, they justify their existence. Further research by this author to determine some aspects of scale reliability and validity is in the planning stages. A comparison of The American Dietetics Association registration exam scores with performance appraisal scores using both the behaviorally anchored scales and another scale format is being proposed. Numerous dietetics educators are concerned as to which of the currently acceptable routes to membership in the ADA is the more cost/effective. Information generated by

a reliable and valid performance appraisal instrument could supply valuable inputs in this area.

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APPENDIX A

A. ABILITY TO TRANSLATE: has good knowledge base and applies this expertise; can communicate knowledge to others; adapts patient education to patients' needs; effectively interprets principles to employees, patients, and other members of health care team; makes explanations as to why.

B. LOYALTY AND COOPERATION: perceives self as member of entire dietary team; cares about reputation and standing of all dietitians, especially co-workers; avoids subversive talk and actions; attempts to facilitate climate of cooperation and mutual assistance; is careful that critical remarks are made at the right time and in the right place.

C. INTERPERSONAL EFFECTIVENESS: has respect for the ideas, the feelings, and the time of others; displays empathy; has concern for the individual; has ability to recognize the correct time and place for actions; permits others to maintain self-esteem; listens; uses patience and tact.

D. SOCIAL AND PROFESSIONAL CONCERN: keeps up with changing professional role; volunteers personal efforts for the good of the community or the profession; makes extra effort to hire and train "exceptional" employees.

E. INDEPENDENT JUDGMENT: demonstrates knowledge, experience, and maturity in assessing a situation; if convinced of course of action, holds out for own opinion even in face of opposition; interprets policy and acts accordingly; arrives at effective decision independently when necessary; is willing to make decisions in cooperation with others.

F. APPROPRIATE AGGRESSIVENESS: displays initiative; plans ahead; sees need for change; innovative; offers suggestions where expertise is needed without waiting to be asked.

G. ACCEPTANCE OF RESPONSIBILITY AND FOLLOW THROUGH: enforces rules, policies, and procedures as circumstances require; does not dismiss problem until it is satisfactorily resolved; allocates time so that job responsibilities are fulfilled; promptly investigates and handles requests and complaints from employees, patients, and other members of health care team; is concerned for continuing care of patient; refers problems to proper person or agency if cannot handle completely.

H. CONSISTENCY OF STANDARDS: personally observes policies and procedures; uniformly and fairly administers policies and procedures as they relate to job classification; communicates standards to others; practices good personal nutrition; maintains appropriate personal appearance; displays honesty and integrity in dealing with others. Same as generally accepted standards

I. CONCERN FOR NUTRITIONAL CARE: implements and maintains procedures which will provide optimal nutrition; monitors dietary intakes and takes appropriate action; seeks and uses opportunities for providing nutrition education; encourages the development of proper food habits.

J. DELEGATION OF RESPONSIBILITY: matches responsibility delegated to capability of staff member; gives authority commensurate with responsibility; reviews performance of those given authority; goes through channels; does not need to do everything to be certain job is done right; supports and strengthens all individuals to whom delegated.

A. Ability to Translate
B. Loyalty and Cooperation
C. Interpersonal Effectiveness
D. Social and Professional Concern
E. Independent Judgment
F. Appropriate Aggressiveness
G. Acceptance of Responsibility and Follow Through
H. Consistency of Standards
I. Concern for Nutritional Care
J. Delegation of Responsibility

Category	Rank		
_____	_____	1.	Could be expected to respond quickly to plea from head nurse for help with a patient's feeding problem.
_____	_____	2.	Could be expected to carry a Weight Watchers lunch through the cafeteria line.
_____	_____	3.	Could be expected to emphasize important role of kitchen employees in patient care when giving employee classes.
_____	_____	4.	Could be expected to wear unpolished shoes and the same uniform for three days in a row.
_____	_____	5.	When approached for a recipe by the cook, could be expected to refer the cook to the production supervisor.
_____	_____	6.	Could be expected to offer to speak on nutrition for the Mental Health Unit if they need it.
_____	_____	7.	Could be expected to personally demonstrate to salad personnel the correct way to use the pastry tube.
_____	_____	8.	Could be expected to give one evening a week counseling at a low-income health clinic.
_____	_____	9.	Could be expected to apply different standards concerning excused and unexcused absences from the job, when dealing with the cook and the salad girl.
_____	_____	10.	Could be expected to give the list of leftovers to the production supervisor to decide on how those leftovers are to be used.
_____	_____	11.	When doing staff relief, could be expected to change operating policies of another dietitian without discussion or communication with that dietitian.
_____	_____	12.	Could be expected to read the ADA Journal, attend dietetic meetings, and serve on professional committees.
_____	_____	13.	Could be expected to hire an employee with severe acne without investigating possible ramifications, and if questioned by the medical staff about such a person working with food, could be expected to simply terminate employee.
_____	_____	14.	Following patient's complaint about cold food, could be expected to offer appropriate responses to patient and then attempt to correct situation.
_____	_____	15.	After criticizing production personnel for mistakes on patient trays, could be expected to come to the kitchen in anger to demonstrate proper methods and then not be able to identify the correct measuring cup.
_____	_____	16.	Could be expected to go against hospital policy and schedule food service employee physicals <u>after</u> the person was hired, thus gambling with possible food contamination from such an employee.
_____	_____	17.	Could be expected to disappear for lengthy periods without giving anyone the purpose.
_____	_____	18.	When patient selects own menu, could be expected to ignore inadequate choices and make no attempt to educate patient.
_____	_____	19.	Could be expected to discuss personnel problems with friends outside the department within hearing of personnel in question.

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Category	Rank		
_____	_____	20.	Could be expected to go directly to cook to discuss amount of food to be produced for a special party.
_____	_____	21.	When unhappy about a decision made by the chief dietitian, could be expected to get together with departmental peers to complain about it.
_____	_____	22.	Could be expected to appear routinely in dining areas to chat briefly with patrons.
_____	_____	23.	Could be expected to be ready to begin work at the appointed time.
_____	_____	24.	Could be expected to demonstrate to an employee the reason for a stated policy regarding removal of toothpicks from food before sending to patient.
_____	_____	25.	After the patient has been discharged from the hospital could be expected to take the time to answer questions of family members regarding the patient's diet.
_____	_____	26.	Could be expected to ignore a disoriented patient in the cafeteria, and offer no assistance toward helping him obtain food.
_____	_____	27.	Could be expected to complain to a patient about a physician's failure to make an appointment for this diet instruction.
_____	_____	28.	Could be expected to discuss with physician any diet order which appeared too restrictive for a patient's age or activity.
_____	_____	29.	If personally opposed to a coming procedural change, could be expected to privately undermine the procedure with supportive personnel, presenting enormous moral problems.
_____	_____	30.	Could be expected to take much more time off to handle family problems than would be extended to an employee in same situation.
_____	_____	31.	Could be expected to talk to patient whom nurse reported had food-related complaints.
_____	_____	32.	Could be expected to substitute menu items because of own personal likes and dislikes thus creating impossible workload for special diet cook.
_____	_____	33.	Even though a diet change seemed inconsistent with the previous order, could be expected to implement without checking.
_____	_____	34.	Could be expected to demonstrate need for small portions on patients' plates by letting the employees play the role of patient and eat in bed.
_____	_____	35.	Could be expected to ignore a potentially hazardous work condition until an employee became injured.
_____	_____	36.	Could be expected to offer information to a physician without waiting to be asked.
_____	_____	37.	Could be expected to be friendly, but not encourage conversation with a lonely patient who needs a friend.
_____	_____	38.	Could be expected to be consistently late for work.
_____	_____	39.	Could be expected to stay on the job until a problem is satisfactorily resolved.
_____	_____	40.	Could be expected to complement salad personnel on the appearance of the salads.

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Category	Rank		
_____	____	41.	Could be expected to ignore unserved patient trays sitting in the hospital corridor.
_____	____	42.	Could be expected to do nothing when a patient states that he is not interested in learning about the diabetic diet that the physician has ordered.
_____	____	43.	Could be expected to become defensive and not offer an explanation when a patient complains about the choices on a select menu.
_____	____	44.	Could be expected to say nothing to a tray girl eating a piece of cake in a floor kitchen.
_____	____	45.	Could be expected to explain good nutrition principles to a patient when the diet history discloses inadequacies.
_____	____	46	Could be expected to work with a teen-age diabetic to help him realize it was not wise physically or emotionally to hide the condition from friends.
_____	____	47.	Could be expected to hire and spend special time and effort with a person with a record of alcoholism, such that he does indeed function well on the job.
_____	____	48.	Could be expected to hire and train slow-learning employees.
_____	____	49	Could be expected to offer sympathy and assistance to an employee with a family emergency.
_____	____	50.	Could be expected to be cautious in using canned food with darkened inside of can even though decision was unpopular.
_____	____	51.	Could be expected to promise a patient to change a menu item and then fail to do it.
_____	____	52.	Could be expected to routinely make mistakes in food purchasing which require menu changes.
_____	____	53.	Could be expected to enforce dietary policies rigidly and without explanation.
_____	____	54.	Could be expected to teach classes to both employees and patients to further their knowledge of nutrition, safety, sanitation, etc.
_____	____	55.	Could be expected to talk to physician about extended use of a nutritionally inadequate diet.
_____	____	56.	Could be expected to show favoritism in allowing time off.
_____	____	57.	Could be expected to do too many routine jobs such as picking up menus, tallying, etc. that could be turned over to other personnel.
_____	____	58.	Could be expected to ignore the nutritional inadequacy of some restricted diets.
_____	____	59.	Could be expected to write menus appropriate for the client group, but still nutritionally adequate.
_____	____	60.	Could be expected to leave work early because of having done enough of the work over the years.
_____	____	61.	Could be expected to become involved when a community agency for the blind needs nutrition education.
_____	____	62.	Could be expected to spend time helping a former patient with a diet if the patient calls and asks.

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Category	Rank		
_____	_____	63.	Could be expected to refer patients to an appropriate community agency if their circumstances suggest it.
_____	_____	64.	Could be expected to plan modified diets to suit the lifestyle of the patient.
_____	_____	65.	Could be expected to join kitchen personnel on a coffee break and not talk business.
_____	_____	66.	Could be expected to refer a patient with an income inadequate to purchase foods for a restricted diet to the hospital social worker.
_____	_____	67.	Could be expected to give diet instructions such that the patient does not have to refer to separate sheets for different restrictions.
_____	_____	68.	Could be expected to explain to employees reasons for certain food preparation procedures to ensure accurate preparation for modified foods.
_____	_____	69.	Could be expected to tell the present baker about the outstanding work of the previous baker.
_____	_____	70.	Could be expected to keep an on-time salesman waiting for 45 minutes.
_____	_____	71.	Could be expected to refuse to give a patient nutritional information without a physician's order.
_____	_____	72.	Could be expected to hesitate to discuss a diet order with the physician even when the order is ambiguous.
_____	_____	73.	When giving a diet instruction, could be expected to read from pre-printed instructions and allow no questions or interruptions from the patient.
_____	_____	74.	If a patient indicates that he cannot follow a diabetic diet instruction, could be expected to tell the patient he will have to follow that diet because the doctor ordered it, and then leave the room.
_____	_____	75.	When meeting with the student food committee, could be expected to restate reasons why serving hours cannot be changed and consider the matter closed.
_____	_____	76.	Could be expected to refer a patient with cirrhosis to the Alcohol and Drug Dependency Unit when the patient says that alcohol could not possibly hurt him.
_____	_____	77.	Following an orientation training program for employees, could be expected to ignore whether or not employees are doing what they were taught.
_____	_____	78.	Could be expected to take the initiative in entering a discussion of patient nutrition or food with other allied health team members.
_____	_____	79.	Could be expected to ignore melting ice cream that will be refrozen and served in that condition to patients.
_____	_____	80.	Could be expected to volunteer to supply dietetic input for a hearing on pending legislation which could affect the profession.
_____	_____	81.	Could be expected to ignore a cook who is smoking in a food preparation area and say nothing and never pick up issue.

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Category	Rank		
_____	_____	82.	Could be expected to put on hairnet in the office even though employees are asked to put on hairnets in the restroom.
_____	_____	83.	Although in a hurry, could be expected to stop and talk with a distraught employee and help to solve the problem.
_____	_____	84.	For an evening staff meeting of "important people," could be expected to come in personally to supervise the serving of coffee and cookies.
_____	_____	85.	Could be expected to do nothing about a serious personal weight problem.
_____	_____	86.	When asked off the job to suggest ways to improve family nutrition, could be expected to mention the basic four food groups and say nothing more.
_____	_____	87.	Could be expected to instruct a patient on a reduction diet without taking into account the patient's unusual work schedule.
_____	_____	88.	When hiring a new chef, could be expected to choose a loyal cook who is not so well liked over a disloyal cook who is popular with his co-workers, and take the chance that employees may not cooperate.
_____	_____	89.	When asked for information about which the dietitian is uncertain, could be expected to find out and promptly report to the person who asked.
_____	_____	90.	If census figures for cafeteria service seemed unusual, could be expected to review the situation and lengthen serving hours if necessary.
_____	_____	91.	In writing menus for a children's summer camp, could be expected to insert new foods along with familiar ones.
_____	_____	92.	Could be expected to make an employee put in unpaid overtime as punishment for making an error in serving a patient tray.
_____	_____	93.	If presented with evidence that, after going off maintenance, employees are eating in the food production areas, could be expected to do nothing.
_____	_____	94.	After receiving an extra large portion in the cafeteria line, could be expected to say nothing to the server.
_____	_____	95.	Could be expected to turn head the other way when meeting an employee in the hall.
_____	_____	96.	Could be expected to make up and spread stories about the private lives of other members of the department.
_____	_____	97.	When a physician inquired about the food intake of a patient, could be expected to give a favorable report without knowing what the situation was.
_____	_____	98.	Could be expected to make an effort to give diet instructions both to patient and also to the person who does the meal preparation, if this is not the same person.
_____	_____	99.	After promoting an employee to supervisory position, could be expected to overlook the fact that this employee needs support in new position, especially with former co-workers.
_____	_____	100.	After receiving complaint, could be expected to inform everyone concerned, investigate the matter, and report back to person making complaint, with explanation and/or apologies.

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Category	Rank	
_____	_____	101. Could be expected to serve a meal to an obviously confused patient who comes in after serving hours.
_____	_____	102. After overhearing a patient complaint about food, could be expected to walk on by and not attempt to find out what is wrong.
_____	_____	103. Could be expected to ignore a jammed tray return unit.
_____	_____	104. Could be expected to ignore a nurse who takes food from a patient tray.
_____	_____	105. While demanding that employees arrive and depart on time, could be expected to arrive late at least twice a week.
_____	_____	106. Could be expected to ignore the spoken greeting of an employee.
_____	_____	107. Could be expected to say nothing upon being insulted by an employee, but would talk to the employee later on in the office and obtain an apology.
_____	_____	108. Could be expected to forget about skirt length when bending over.
_____	_____	109. Could be expected to impose a new diet without obtaining adequate dietary history.
_____	_____	110. In team conferences, could be expected to offer suggestions and information without needing to be asked.
_____	_____	111. After being criticized for the charge on a special event, could be expected to become angry and argue.
_____	_____	112. After hearing that Occupational Therapy will be building a teaching kitchen, could be expected to contact OT and offer assistance if needed.
_____	_____	113. Could be expected to fail to check serving areas until after serving starts thereby failing to make certain everything is complete and according to the menu.
_____	_____	114. In a children's food service, could be expected to offer only those foods which children are thought to like.
_____	_____	115. Could be expected to ignore the situation when the cook spits into a trash can near a food preparation area.
_____	_____	116. If cook does not follow recipe directions, could be expected to say nothing as long as food is acceptable.
_____	_____	117. Could be expected to let a supervisor schedule personal days off without asking permission from dietitian.
_____	_____	118. Could be expected to sincerely inquire about an employee, and spend a few minutes talking.
_____	_____	119. Could be expected to tactfully guide a physician regarding changing diet orders.
_____	_____	120. Could be expected to allow employees to try out their suggestions.
_____	_____	121. Could be expected to occasionally bring a flower or thought for the day.
_____	_____	122. Could be expected to give a diet instruction by emphasizing what the patient cannot have rather than what he can have.
_____	_____	123. After a diabetic patient requests a visitor to bring him food, could be expected to attempt to educate both patient & visitor.
_____	_____	124. Could be expected to complete assignments on schedule after agreeing to do a certain job.

APPENDIX B

THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

This performance appraisal instrument was developed for use with dietitians and dietetic trainees. It represents the efforts of approximately 30 dietitians practicing in the Twin Cities and St. Cloud areas. The work was done in cooperation with faculty from the University of Minnesota participating in the Minnesota Modular Traineeships.

This revision of the Scales is undergoing further testing. For permission to duplicate and/or use the Scales, please contact Marjorie Fruin, R.D., Department of Food Science and Nutrition, University of Minnesota, St. Paul, Minnesota 55108.

Support was provided in part by the Area Health Education Center, University of Minnesota.

THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

We would gratefully accept your comments on both the instructions and the scales. Please fill out this sheet each time you give a rating using the scales.

1. Who did you rate on these scales?

   _____ a staff dietitian

   _____ a dietetic student

   _____ other (please specify)

   _____

2. Which scale did you find the most difficult to use?

3. Which scale did you find that was not applicable to the person you were rating?

4. Are there any scales missing? That is, is there some area of performance which you feel should be rated, but which you could not rate on the seven scales provided?

5. If the instructions did not give you enough help, please specify exactly what sentence(s) were not clear.

   How would you personally correct this?

THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

HOW TO USE THESE RATING SCALES:

As with any rating form, the person who is to do the performance appraisal should be very familiar with the form itself. In using these scales, it is especially important that the rater read carefully the definitions which are found at the top of each page. Spend some time with these definitions, and know what each scale includes and does not include. There are seven scales; be certain to identify and use the appropriate scale for each category. It is possible that not all dietitians, especially dietetic trainees, will need to be rated on every one of the seven scales. After reading the definitions, if a scale seems inappropriate, don't use it.

After becoming familiar with the definitions of the scales, but before attempting to rate a specific dietitian or dietetic trainee, observe his/her performance on the job on as many occasions and under as many circumstances as possible, and record immediately any critical incidents which can be used to explain to the ratee why you rated him/her the way you did. This should be done inconspicuously, of course, and any note-taking should be done away from the scene, but don't wait too long (human memory being what it is). Use the "OTHER OBSERVED INCIDENTS" space at the bottom of each scale, or, space permitting, enter the incident right on the scale itself. Attempt to give each of the incidents some kind of a tentative ranking on the same one-to-nine continuum which constitutes the rating scale itself. This will be especially helpful in demonstrating to the ratee how you perceive his/her behavior in relation to the other behaviors along that scale.

When ranking a person on the rating scale, whether or not you can supply other incidents for each scale, select a spot on the continuum which in your best judgment is representative of his/her performance in that category. Use the behavioral anchors to help you make up your mind whether or not you are in the general ranking area where you feel the ratee belongs on the continuum. You will probably never have observed these actual behaviors on the part of the ratee -- they are there only to help to define the degree of effectiveness or ineffectiveness. Numbers 1, 2, 3, and 4 are

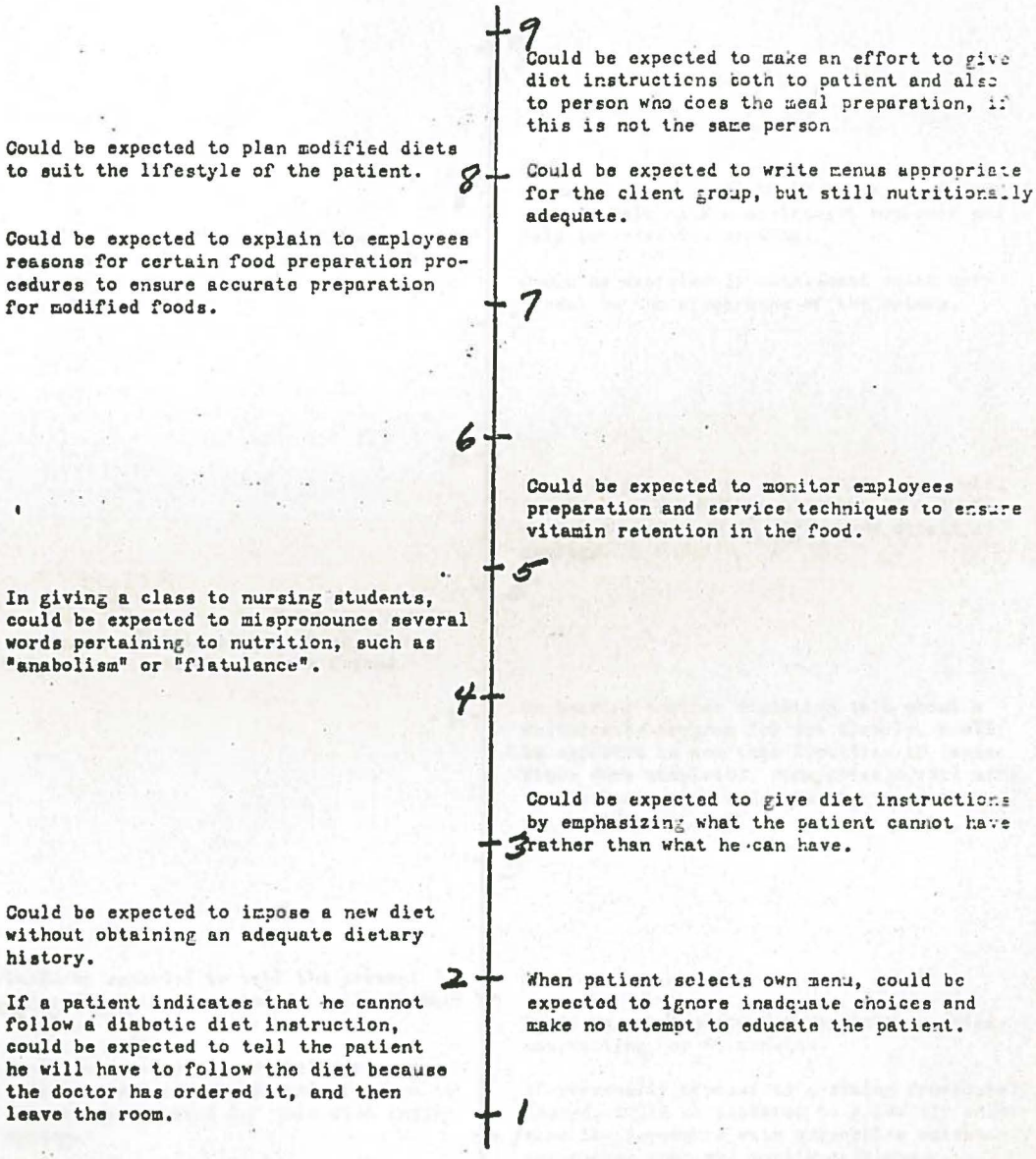
are relatively ineffective behaviors; numbers 6, 7, 8, and 9 are relatively effective behaviors; and number 5 indicates behavior which is not especially effective, nor is it especially ineffective, but it does serve to separate behaviors which are only slightly effective or slightly ineffective.

Make some sort of a mark or otherwise identify the point on the continuum where you feel the ratee belongs. Since this is a continuum, the mark may be made anywhere along the line, and definitely is not restricted to where the whole number falls. A ratee conceivably could be marked above the 9, if you felt his/her performance to be markedly outstanding. Likewise he/she could be rated below 1, if you felt the performance to be markedly unacceptable.

After marking each of the seven scales which are appropriate, the performance appraisal is complete, except for comments and constructive suggestions which you wish to put into writing for the ratee. Most ratees find such comments helpful, especially in areas where improvement or growth might be needed. Include things which were good which you observed, of course, although the behavioral anchors will serve that purpose if you need them. Just say, "I would expect you to do this kind of thing."

THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

CONCERN FOR NUTRITIONAL CARE: has good knowledge base; implements and maintains procedures which will provide optimal nutrition; can communicate knowledge to others; monitors dietary intakes and takes appropriate action; adapts patient education to patient needs; seeks and uses opportunities for providing nutrition education; encourages the development of proper food habits.



OTHER OBSERVED INCIDENTS_____

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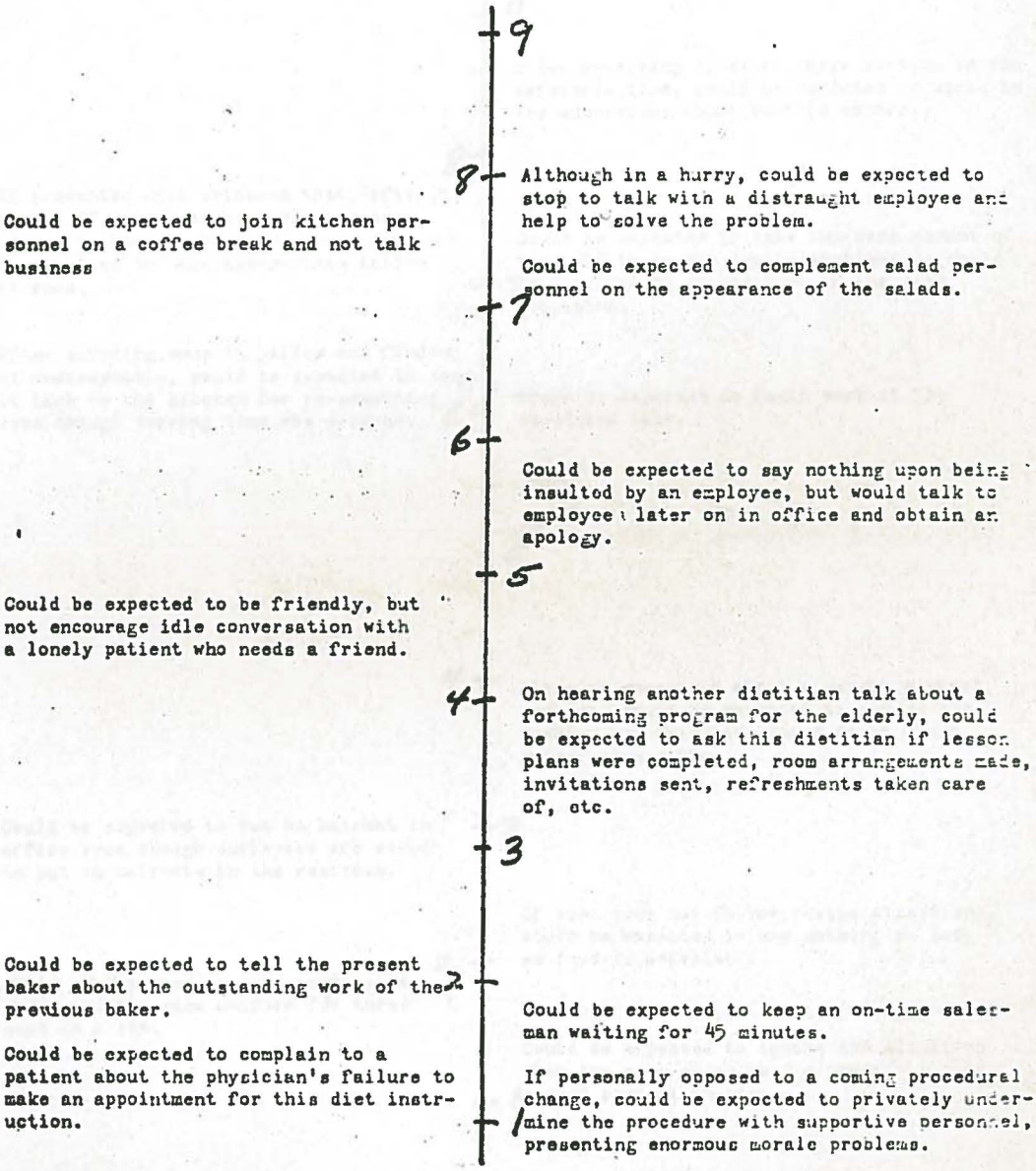
THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

INTERPERSONAL EFFECTIVENESS: perceives self as member of entire health care team; has respect for the ideas, the feelings, and the time of others; has concern for the individual; attempts to facilitate climate of cooperation and mutual assistance; is careful that critical remarks are made at the right time and in the right place; permits others to maintain self-esteem; listens; uses patience and tact.



OTHER OBSERVED INCIDENTS_____

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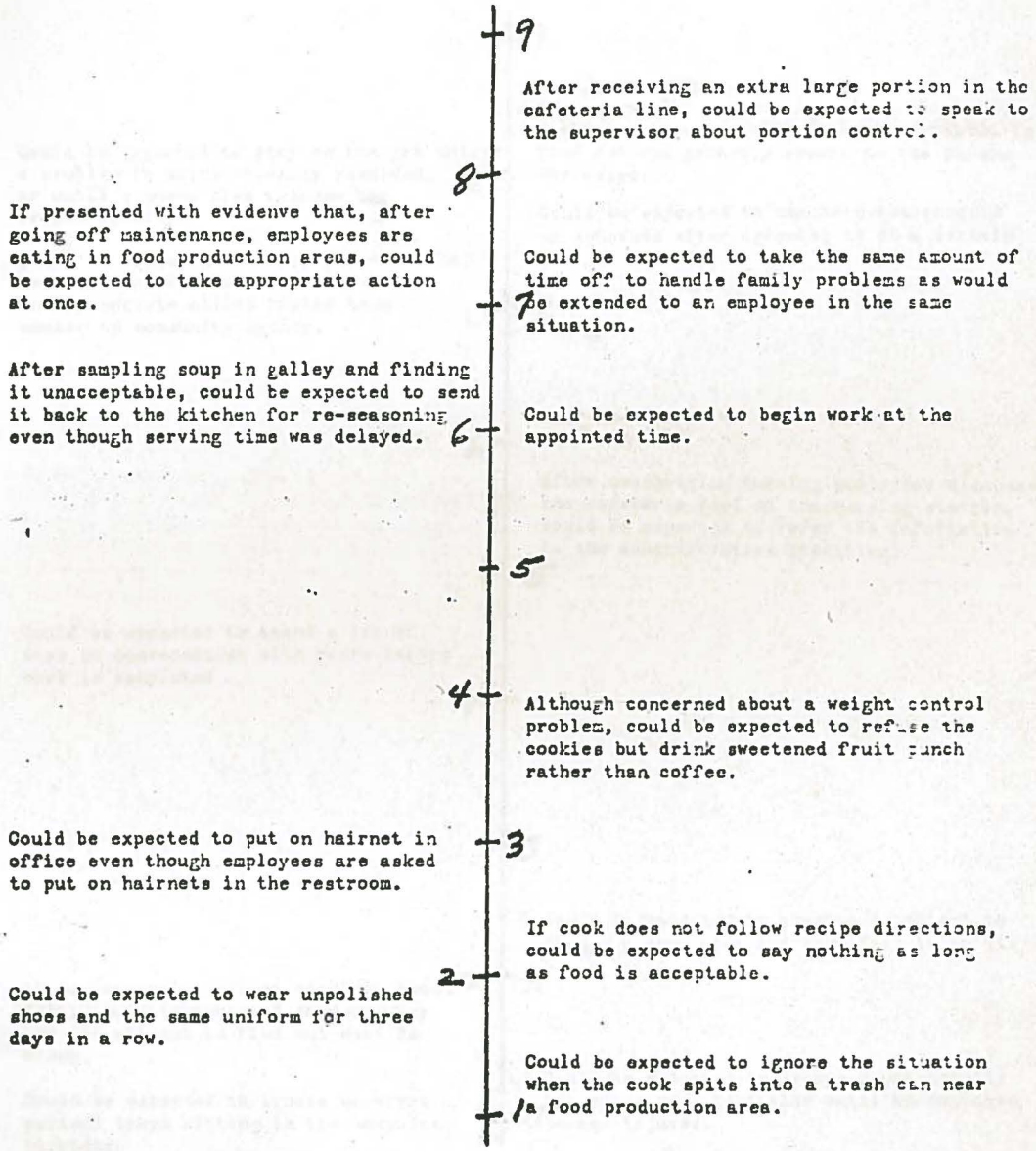
THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

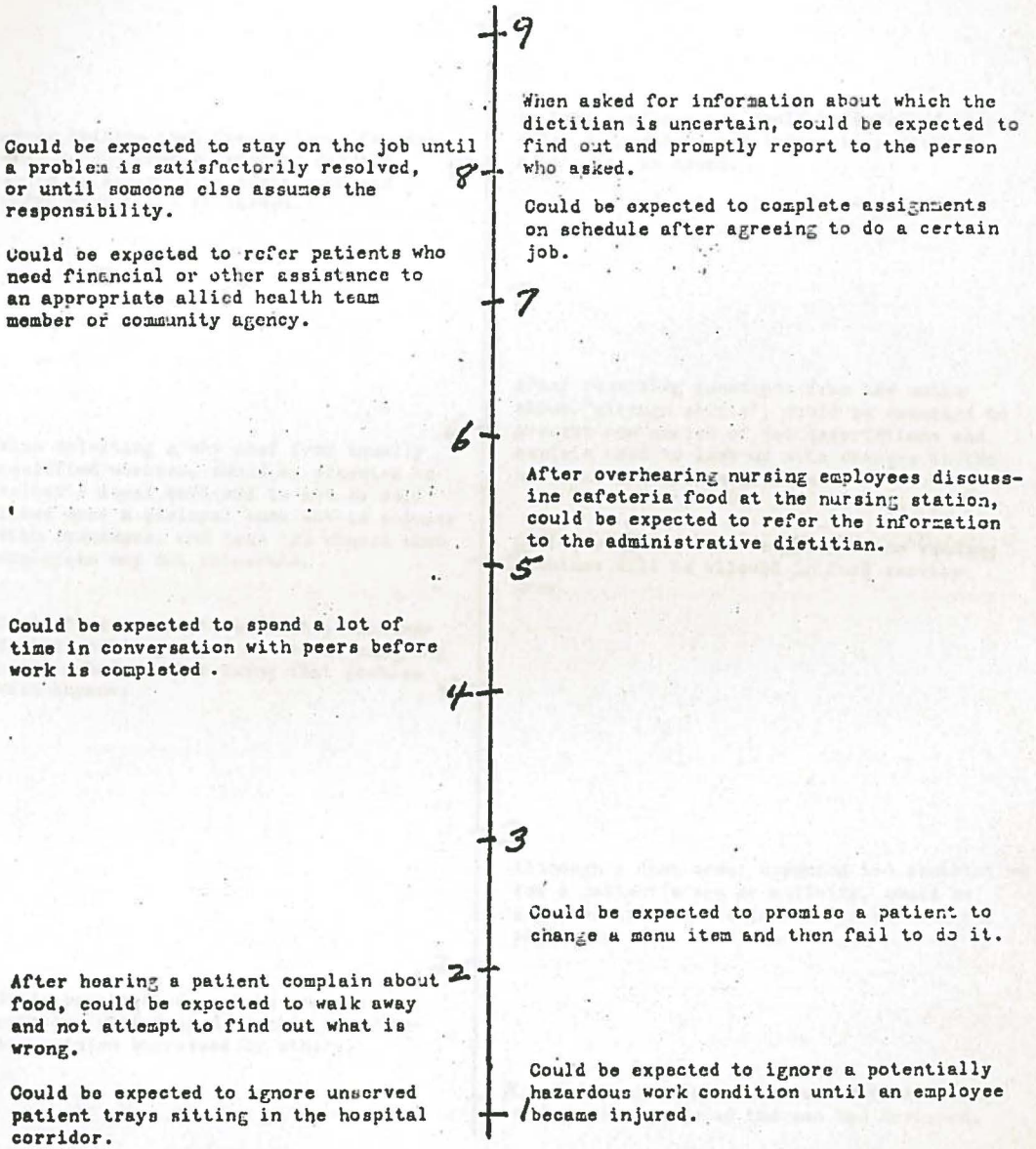
CONSISTENCY OF STANDARDS: uses generally established standards; personally observes these same standards; communicates these standards to others; uniformly and fairly administers policies and procedures as appropriate to employee job classification; displays honesty and integrity in dealings with others; provides a role model of good nutrition and appropriate appearance.



OTHER OBSERVED INCIDENTS_____

THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

ACCEPTANCE OF RESPONSIBILITY: recognizes job responsibilities and allocates time so that these responsibilities are fulfilled; does not dismiss problem until it it satisfactorily resolved; promptly investigates and handles requests and complaints from employees, patients, and other members of health care team; is concerned for continuing care of the patient; refers problems to proper person or agency if cannot handle completely.



OTHER OBSERVED INCIDENTS_____

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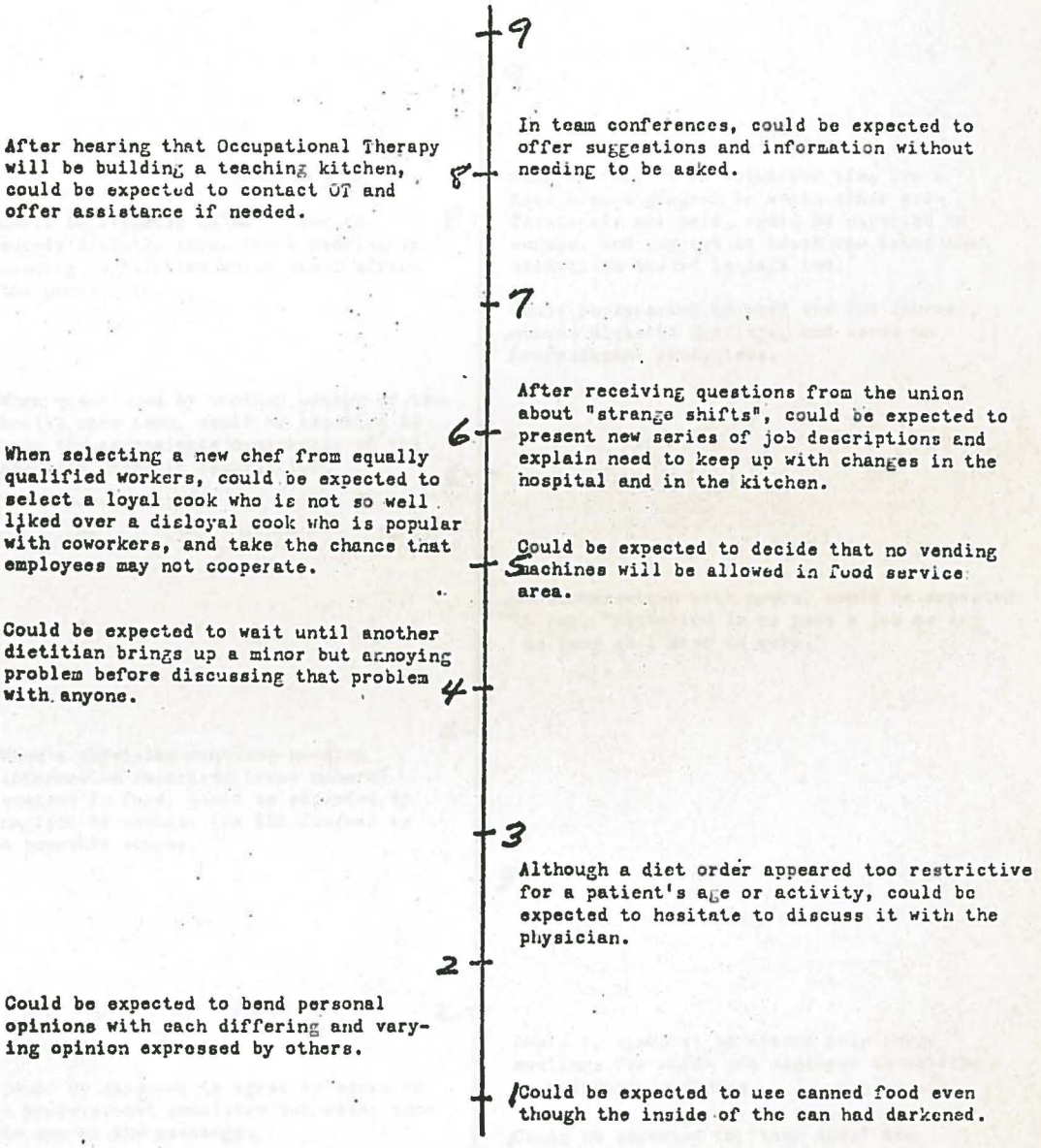
THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

APPROPRIATE AGGRESSIVENESS: demonstrates judgment, knowledge and maturity in assessing a situation and acts accordingly; displays initiative and offers suggestions where expertise is needed without waiting to be asked; plans ahead; sees need for change; is innovative; consults with other members of the health care team.



OTHER OBSERVED INCIDENTS_____

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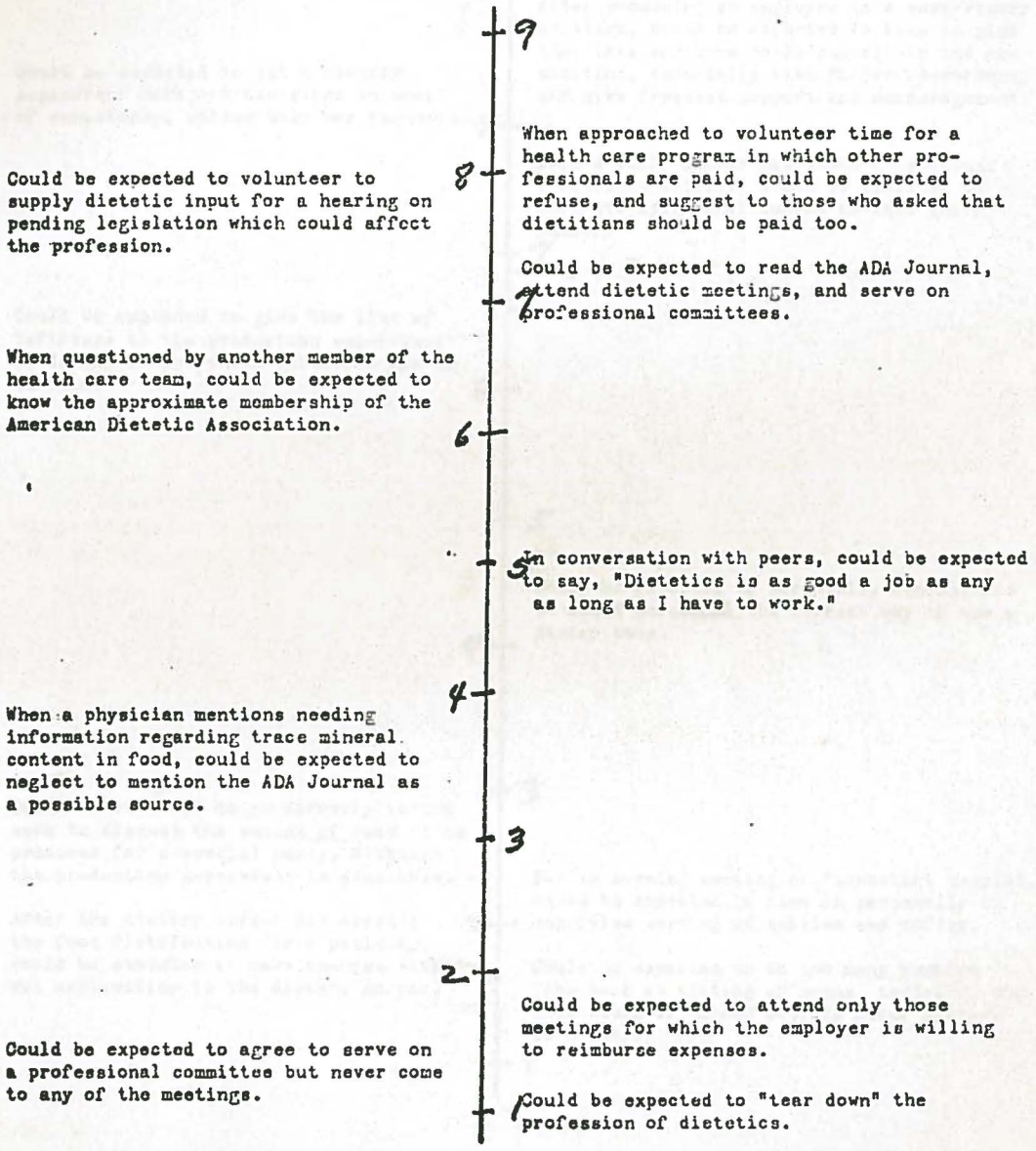
THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

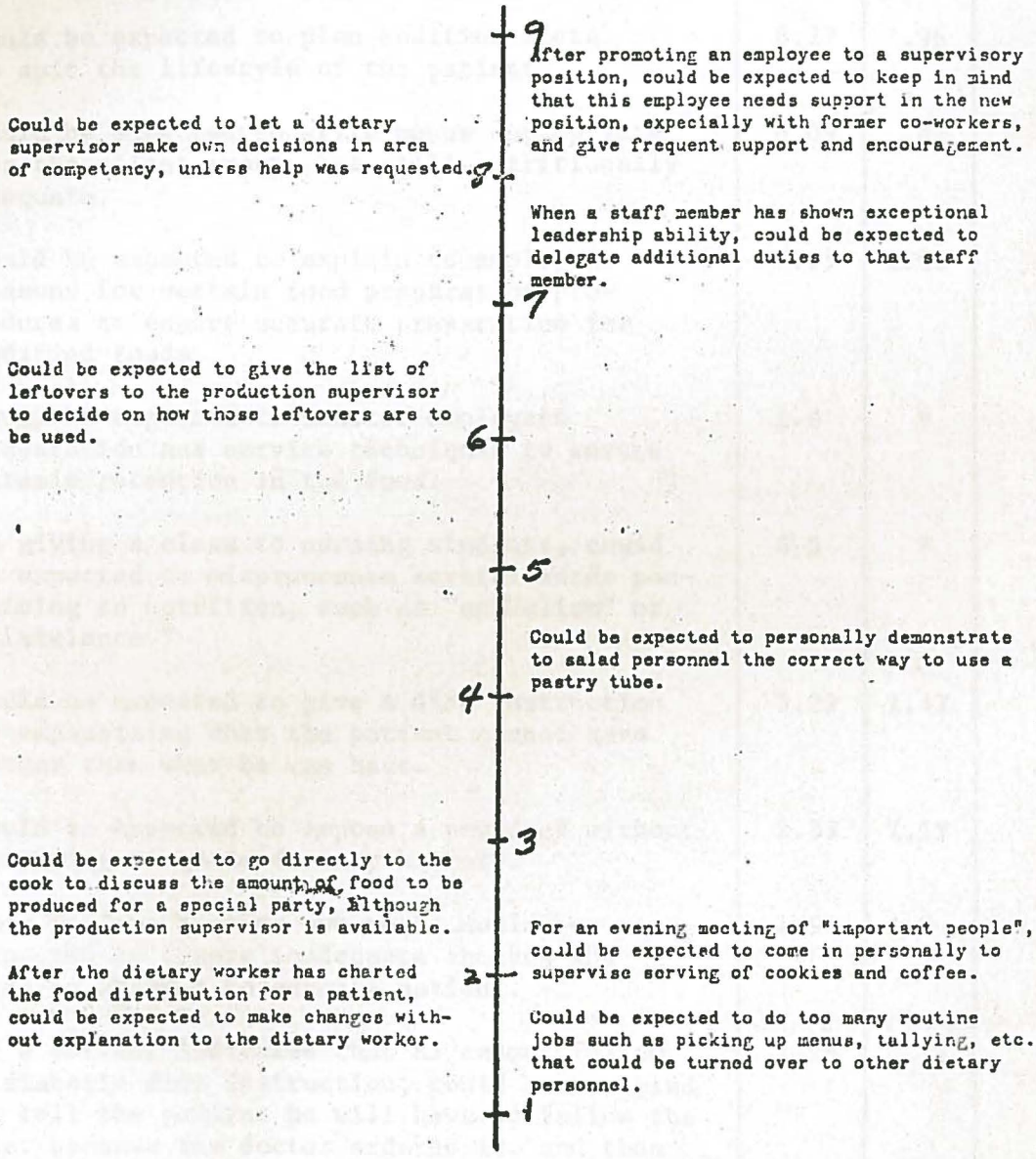
PROFESSIONAL IDENTIFICATION: keeps up with changing professional role; reads journals and related professional publications; attends workshops, professional meetings, etc.; accepts requests for talks in the community if recognized by the employing institution as job related; participates in professional causes and activities.



OTHER OBSERVED INCIDENTS_____

THE DIETITIANS' BEHAVIORATING SCALES
June, 1975

DELEGATION OF RESPONSIBILITY: matches responsibility delegated to the capability of staff member; gives authority commensurate with responsibility; reviews performance of those given authority; goes through channels; does not need to do everything to be certain job is done right; supports and strengthens all individuals to whom delegated.



OTHER OBSERVED INCIDENTS_____

CONCERN FOR NUTRITIONAL CARE

	$\bar{X}$	S
Could be expected to make an effort to give diet instructions both to patient and also to the person who does the meal preparation, if this is not the same person.	8.61	.78
Could be expected to plan modified diets to suit the lifestyle of the patient.	8.27	.96
Could be expected to write menus appropriate for the client group, but still nutritionally adequate.	8.09	.81
Could be expected to explain to employees reasons for certain food preparation procedures to ensure accurate preparation for modified foods.	7.75	1.03
Could be expected to monitor employees preparation and service techniques to ensure vitamin retention in the food.	5-6	*
In giving a class to nursing students, could be expected to mispronounce several words pertaining to nutrition, such as "anabolism" or "flatulence."	4-5	*
Could be expected to give a diet instruction by emphasizing what the patient cannot have rather than what he can have.	3.22	1.47
Could be expected to impose a new diet without obtaining adequate dietary history.	2.33	1.15
When patient selects own menu, could be expected to ignore inadequate choices and make no attempt to educate patient.	1.90	1.0
If a patient indicates that he cannot follow a diabetic diet instruction, could be expected to tell the patient he will have to follow the diet because the doctor ordered it, and then leave the room.	1.28	.72

* Written expressly for this point on this scale by the group.

INTERPERSONAL EFFECTIVENESS

	$\bar{X}$	S
Although in a hurry, could be expected to stop and talk with a distraught employee and help to solve the problem.	7.96	1.11
Could be expected to join kitchen personnel on a coffee break and not talk business.	7.44	1.53
Could be expected to compliment salad personnel on the appearance of the salads.	7.29	1.4
Could be expected to say nothing upon being insulted by an employee, but would talk to the employee later on in the office and obtain an apology.	5.45	2.16
Could be expected to be friendly, but not encourage conversation with a lonely patient who needs a friend.	4.75	1.71
On hearing another dietitian talk about a forthcoming program for the elderly, could be expected to ask this dietitian if lesson plans were completed, room arrangements made, invitations sent, refreshments taken care of, etc.	3-4	*
Could be expected to tell the present baker about the outstanding work of the previous baker.	1.9	1.02
Could be expected to keep an on-time salesman waiting for 45 minutes.	1.84	.83
Could be expected to complain to a patient about a physician's failure to make an appointment for this diet instruction.	1.58	.64
If personally opposed to a coming procedural change, could be expected to privately undermine the procedure with supportive personnel, presenting enormous morale problems.	1.2	1.0

* Written expressly for this point on this scale by the group.

CONSISTENCY OF STANDARDS

	$\bar{X}$	S
After receiving an extra large portion in the cafeteria line, could be expected to speak to the supervisor about portion control.	8.1	1.2
If presented with evidence that, after going off maintenance, employees are eating in food production areas, could be expected to take appropriate action at once.	7.86	1.35
Could be expected to take the same amount of time off to handle family problems as would be extended to an employee in same situation.	7.2	1.64
After sampling soup in galley and finding it unacceptable, could be expected to send it back to the kitchen for re-seasoning even though serving time was delayed.	6.4	1.51
Could be expected to be ready to begin work at the appointed time.	6.1	1.68
Although concerned about a weight control problem, could be expected to refuse the cookies but drink sweetened fruit punch rather than coffee.	3.8	1.83
Could be expected to put on hairnet in the office even though employees are asked to put on hairnets in the restroom.	3.0	1.67
If cook does not follow recipe directions, could be expected to say nothing as long as food is acceptable.	2.1	1.07
Could be expected to wear unpolished shoes and the same uniform for three days in a row.	1.92	1.26
Could be expected to ignore the situation when the cook spits into a trash can near a food production area.	1.1	.98

* Written expressly for this point on this scale by the group.

ACCEPTANCE OF RESPONSIBILITY

	$\bar{X}$	S
When asked for information about which the dietitian is uncertain, could be expected to find out and promptly report to the person who asked.	8.3	.86
Could be expected to stay on the job until a problem is satisfactorily resolved, or until someone else assumes the responsibility.	8.04	1.7
Could be expected to complete assignments on schedule after agreeing to do a certain job.	7.96	1.27
Could be expected to refer patients who need financial or other assistance to an appropriate allied health team.	7.7	.95
After overhearing nursing employees discussing cafeteria food at the nursing station, could be expected to refer the information to the administrative dietitian.	5.8	1.40
Could be expected to spend a lot of time in conversation with peers before work is completed.	4-5	*
Could be expected to promise a patient to change a menu item and then fail to do it.	2.17	.97
After overhearing a patient complaint about food, could be expected to walk on by and not attempt to find out what is wrong.	1.84	.77
Could be expected to ignore unserved patient trays sitting in the hospital corridor.	1.28	.49
Could be expected to ignore a potentially hazardous work condition until an employee became injured.	1.15	.37

* Written expressly for this point on this scale by the group.

APPROPRIATE AGGRESSIVENESS

	$\bar{X}$	S
In team conferences, could be expected to offer suggestions and information without needing to be asked.	8.12	.9
After hearing that Occupational Therapy will be building a teaching kitchen, could be expected to contact OT and offer assistance if needed.	8.05	.87
After receiving questions from the union about "strange shifts," could be expected to present new series of job descriptions and explain need to keep up with changes in the hospital and in the kitchen.	7.3	1.63
When hiring a new chef, from equally qualified workers, could be expected to choose a loyal cook who is not so well liked over a disloyal cook who is popular with his co-workers, and take the chance that employees may not cooperate.	5.95	1.71
Could be expected to decide that no vending machines will be allowed in food services area.	5.1	.42
Could be expected to wait until another dietitian brings up a minor but annoying problem before discussing that problem with anyone.	4-5	*
Although a diet order appeared too restrictive for a patient's age or activity, could be expected to hesitate to discuss it with the physician.	2.7	1.11
Could be expected to bend personal opinions with each differing and varying opinion expressed by others.	1.7	1.39
Could be expected to use canned food even though the inside of the can had darkened.	1.0	0.0

* Written expressly for this point on this scale by the group.

PROFESSIONAL IDENTIFICATION

	$\bar{X}$	S
When approached to volunteer time for a health care program in which other professionals are paid, could be expected to refuse, and suggest to those who asked that dietitians should be paid too.	8.8	.41
Could be expected to volunteer to supply dietetic input for a hearing on pending legislation which could affect the profession.	8.0	1.2
Could be expected to read the ADA Journal, attend dietetic meetings, and serve on professional committees.	7.92	1.16
When questioned by another member of the health care team, could be expected to know the approximate membership of the American Dietetic Association.	6.7	1.70
In conversation with peers, could be expected to say, "Dietetics is as good a job as any as long as I have to work."	5-6	*
When a physician mentions needing information regarding trace mineral content in food, could be expected to neglect to mention the ADA Journal as a possible source.	3-4	*
Could be expected to attend only those meetings for which the employer is willing to reimburse expenses.	1.7	1.39
Could be expected to agree to serve on a professional committee but never come to any of the meetings.	1.1	.38
Could be expected to "tear down" the profession of dietetics.	1.0	0.0

* Written expressly for this point on this scale by the group.

DELEGATION OF RESPONSIBILITY

	$\bar{X}$	S
After promoting an employee to a supervisory position, could be expected to keep in mind that this employee needs support in the new position, especially with former co-workers, and give frequent support and encouragement.	8.8	.32
Could be expected to let a dietary supervisor make own decisions in area of competency, unless help was requested.	8.2	1.38
When a staff member has shown exceptional leadership ability, could be expected to delegate additional duties to that staff member.	7.6	1.40
Could be expected to give the list of left-overs to the production supervisor to decide on how those leftovers are to be used.	6.16	1.91
Could be expected to personally demonstrate to salad personnel the correct way to use a pastry tube.	4.5	.79
Could be expected to go directly to the cook to discuss amount of food to be produced for a special party.	2.68	1.38
For an evening staff meeting of "important people", could be expected to come in personally to supervise the serving of coffee and cookies.	2.19	1.54
After the dietary worker has charted the food distribution for a patient, could be expected to make changes without explanation to the dietary worker.	2.0	1.22
Could be expected to do too many routine jobs such as picking up menus, tallying, etc. that could be turned over to other personnel.	1.8	.87