Current Issues in Staff Training

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Staff competence in the application of behavioral techniques is critical to improve quality of life for persons with a developmental disability. Development of efficient staff training programs is therefore of great importance. This paper describes some of the procedures most frequently used in staff training research. Research in this area is reviewed in relation to client outcomes as a function of staff training, maintenance of staff skills, and transfer of staff skills across settings, clients, and programs. Current concerns and further improvements in behavioral techniques, acquisitional strategies, and assessment are discussed. © 1998 Elsevier Science Ltd.

The daily care and organization of services for persons with a developmental disability have gone through considerable changes during the last two decades. This situation is evident in more individually based residential care, more civil rights, and increased access to public service systems. The expanding activity of research on developmental disabilities in general, and treatment in particular, have additionally contributed to increased knowledge in the design of adequate learning environments, the characteristics of the teaching objectives, and procedures that apply. Comprehensive treatment programs and effective procedures have been presented on several occasions in the literature (e.g., Koegel & Koegel, 1995; Koegel & Schreibman, 1982; Lovaas, et al., 1981), and the most considerable achievements have been obtained mainly within the behavior...
analytic field of research and application (e.g., Newsom & Rincover, 1989). The core elements of this approach include assessments of the clients behavioral repertoire, identification of adequate training objectives, selection of procedures with proven effectiveness, and evaluation of the procedures applied in relation to acquisition, generalisation, and maintenance.

In spite of this considerable increase in knowledge concerning how to provide effective treatment, shortcomings are revealed when this knowledge is implemented by staff who work with clients on a regular basis (Hersen, Bellack, & Harris, 1993; Parsons, Reid, & Green, 1993; Reid & Green, 1990; Smith, 1993). Lack of congruence between knowledge obtained in research and the competence displayed by paraprofessionals in the applied field might have several unfortunate outcomes, such as reduced rate of interaction between client and staff (Hile & Walbran, 1991; Reid, Parsons, Green, & Schepis, 1991; Repp, Felce, & de Kock, 1987), low level of client improvement and increased passivity and prompt dependency in the client (e.g., Mørch & Eikeseth, 1992). Several researchers have suggested that increased emphasis should be placed on developing more effective staff training and staff management programs (e.g., Kazdin & Bootzin, 1972; Lovaas & Smith, 1989; McBrien & Edmonds, 1985). Fortunately, this has led to an increasing number of empirical studies devoted to this area of research (e.g., Ducharme & Feldman, 1992; Ivancic, Reid, Iwata, Faw, & Page, 1981; Parsons & Reid, 1995).

A review of procedures most frequently applied in staff training programs follows: The extent to which these programs have resulted in (a) improved client outcomes, (b) maintenance of staff performance, (c) transfer of skills across settings and clients, and (d) transfer of skills across client programs is included. Finally, some current concerns in staff training will be discussed along with suggestions for further improvements, focusing on staff performance and staff management.

**PROCEDURES APPLIED IN STAFF TRAINING**

The literature on staff training has a variability in procedures used to increase the effectiveness of the interaction between the staff and clients. The following components often are involved, either alone or in combination.

**Instructional Procedures**

These procedures usually include lectures, discussions, and written and/or verbal information. Such methods, when used as the sole component, are seldom effective to teach staff proper applications of treatment (c.f., Cullen, 1988; Harchik, Sherman, Hopkins, Strouse, & Sheldon, 1989; McClannahan & Krantz, 1993). A study by Richman, Riordan, Reiss, Pyles, and Bailey (1988) revealed that only limited implementation of programs and planned activities were observed after training the staff utilizing didactic methods only. A didactic
approach typically contributes to increased verbal proficiency concerning treatment procedures and methods, without observable therapeutic competence in the same areas. However, instructional procedures are often applied as one component in more comprehensive educational packages. Whether these procedures increase effectiveness when they accompany other procedures has not been adequately studied. If they do, this must in part rest upon their accuracy in describing performance and the conditions under which these performances should occur (see Catania, Shimoff, & Matthews, 1989; DeGrandpre & Buskist, 1991 concerning rule-following and instructional control). Mørch (1990) found low correspondence between verbal competence about therapeutic techniques and practical application of these techniques. It then was suggested that verbal competence acquired following this program did not function as effective rules for correct application of behavioral techniques with the clients.

**Role-Play**

In role-playing, a supervisor models the procedures, usually with a staff member posing as the client. The staff is then given the opportunity to rehearse and play the part of both the trainer and the client. This method may be effective in teaching application of the procedures in analogue situations (Gardner, 1972). However, few studies have made explicit comparisons between skills acquired during role-play and *in-vivo* client interactions. The greatest advantage of the role-play procedure is to get rapid repetitions under almost identical conditions. Its limitations lie in the staff’s capability of simulating characteristics of the clients. Nevertheless, recent studies reveal some promising effects following such simulation training (Ducharme & Feldman, 1992; McGimsey, Green, & Lutzker, 1995). and will be discussed later in this paper.

**Modelling**

In this procedure, a supervisor demonstrates the correct application of therapeutic procedures, followed by an opportunity for the staff to apply the same procedures with a particular client. This procedure is considered to be effective in direct work with mentally handicapped people (e.g., McClannahan & Krantz, 1993). Promising results have been reported in staff training programs where modelling is included as one component (Koegel, Glahn, & Nieminen, 1978; Koegel, Russo, & Rincove, 1977; Neef, 1995; Selinske, Greer, & Lodhi, 1991). However, modelling usually occurs in combination with other procedures, such as feedback, role-play, and praise, and the unique contribution of modelling remains unknown.

**Feedback**

The procedure most frequently used in staff training and management programs is the mediation of feedback on staff behavior. The feedback is usually
presented as a form of evaluation, and the aim is to improve staff performance. Generally, feedback is presented either in oral or written format (Green, Reid, Perkins, & Gardner, 1991; Gross, Maguire, Shepard, & Piersel, 1994; Harchik, Sherman, Sheldon, & Strouse, 1992; Parsons, Schepis, Reid, McCarn, & Green, 1987; Schinke & Wong, 1977), but can also appear as graphs of data on staff behavior (Selinske et al., 1991), or of simultaneous data on staff and client behavior (Ingham & Greer, 1992). Schedules of feedback delivery have varied and may be immediate or occur weeks after training (e.g., Alavosius & Sulzer-Azaroff, 1990; Koegel et al., 1977; Parsons et al., 1987). Feedback can be an effective procedure for changing staff behavior. However, variations in format, timing, and lack of unambiguous definitions of feedback make this procedure difficult to evaluate. Feedback is usually also combined with other procedures, like instructions, which influence the effect of the evaluation.

Self-Management

Some staff training programs include self-management techniques in order to improve staff performance. In a study by Burgio, Whitman, and Reid (1983), direct-care staff were trained to set daily goals, monitor their own behavior, graph data, and to administer self-praise. These and similar techniques are often used to assist staff to implement work schedules (e.g., Richman et al., 1988) and have been found to be effective when combined with other procedures. Diminishing the role of the supervisor in the administration of feedback and instructions however, reduces the effect of these techniques (e.g., Richman et al., 1988) which, in turn, severely limits the procedures efficacy.

Combinations

Most studies on staff training involve different combinations of the procedures just described. Some combinations that have been utilized are: modelling, feedback, and a written manual (Koegel et al., 1977), self-management and feedback (Richman et al., 1988) and instructional procedures, modelling, and feedback (Green et al., 1991; Neef, 1995). To combine the procedures in packages is said to be more effective than applying them separately (Kazdin, 1988; Koegel et al., 1978).

A research area that demonstrates such highly variable practice both in methodology and objective is difficult to evaluate properly. Only a few studies have been reported to compare different strategies (e.g., Alavosius & Sulzer-Azaroff, 1990; Ducharme & Feldman, 1992).

At least one major problem seems evident within the field of staff training, and this has also been pinpointed in earlier reviews (Cullen, 1988; Reid & Green, 1990). The programs applied often involve several different components, which in turn affect the clear and reliable identification of effective and superfluous variables. In spite of repeated recommendations for conducting
component analyses (e.g., Koegel et al., 1977; Green et al., 1991; Parsons et al., 1987; Reid & Green, 1990) this is seldom carried out. This situation may deter the aim of setting up useful guidelines for efficient programming of staff improvement. Furthermore, it complicates a clear-cut evaluation of the results obtained.

**THE OVERALL EFFECTIVENESS OF STAFF TRAINING PROGRAMS**

There are several ways of measuring success in staff training research, and some parameters are probably more essential than others. Four issues that should be considered when evaluating staff training will be reviewed. First, the procedures involved in educating staff personnel must contribute to significant changes in client behaviors. Second, the improvement in staff performance should be evident under conditions other than those in which they were established. This means transfer of staff performance both across settings, and across clients not directly involved in the staff training program. Third, a staff training program should prepare staff to apply their acquired skills in behavioral techniques toward novel training objectives. Finally, the effects of the procedures involved should endure for a long time period after these procedures have been withdrawn. In the following section I will discuss relevant research on staff training with regards to the issues mentioned above.

**Client Improvement**

The importance of doing assessments on both trainer and client behavior to demonstrate functional relationships have been emphasised by several researchers (e.g., Ingham & Greer, 1992; Koegel et al., 1977). Others have suggested that it is premature to regard the client as the target for change and that attention must be paid to staff behavior (McBrien & Edmonds, 1985). In most studies where staff training procedures are evaluated, client outcome seldom occurs as a dependent variable (c.f., Reid & Green, 1990). Nevertheless, valuable exceptions exists, and they seem to appear increasingly more often in the literature (e.g., Dyer, Schwartz, & Luce, 1984; Lovaas, 1987; March & Eikeseth, 1992; Neef, 1995; Parsons et al. 1993). Some studies offer highly detailed procedures for intervention and assessment, others have a more general approach. For instance, in Parsons et al. (1987), significant increases in the clients “on-task” behaviour were reported (working independently, interacting with staff members and receiving instructions) following staff training consisting of meetings, prompts from supervisor and feedback. The clients also showed maintenance of these skills after 2 years. Others have reported increases in functional and age-appropriate activities in clients following brief “in-service” training consisting of instructions to supervisors and staff feedback (Dyer et al., 1984). In studies where detailed assessments on prompt-fading and systematic approxi-
Information procedures related to client outcome (i.e., independent use of tacts, mands and conversational speech) have been emphasised, client improvement have been more moderate (e.g., Mørch & Eikeseth, 1992).

Although different opinions exist concerning the subject matter in staff training research, there are tendencies to attach more importance to the integration of both teacher and client data in the analysis of staff training procedures. One method, recently described in the literature is the Teacher Performance Rate and Accuracy (TPRA) (Ingham & Greer, 1992; Selinske et al., 1991). This procedure was developed in order to collect data on both trainer and client responding simultaneously. The analysis concentrates on the rate and accuracy of teacher performance relative to rate of correct and incorrect responding by the client. In Ingham and Greer (1992), such data were obtained, and the teachers were provided with verbal and written feedback based on these data. It was found that:

Specific feedback to teachers regarding their rate of presentation of instructional trials and the rate at which they supplied accurate consequences to student behavior functioned to increase teacher rate of presentation, to increase teacher accuracy, to decrease teacher inaccuracy, and in turn increase students correct responses. (p. 161)

This method holds some promise for isolating critical elements in the teacher–client interaction. It also may promote more efficient and accurate interaction between supervisor and teacher.

Transfer Across Settings and Clients

Transfer of teaching skills across settings is seldom assessed in staff-training research. However, there is no guarantee that skills acquired in a workshop setting will be applied correctly, or at all, in the daily work setting. For instance, several studies report improvements in staff performance after staff training conducted in schools and hospitals (Koegel et al., 1977; Milne, 1984; Selinske et al., 1991). However, without corresponding assessments in the ordinary work setting, the significance of such training remains uncertain. In a study by Smith, Parker, Taubman, and Lovaas (1992), the effects on transfer of staff performance from workshop to group home setting was addressed specifically. A 1-week training workshop on behavioral treatment and techniques was conducted. The training took place in a clinic at a university with clients other than those in the group home setting. Along with the assessments taken at the workshop, behavior observations of the group home clients were conducted, both before and after the workshop. The results showed that, although significant improvements in treatment skills were obtained at the workshop site, no corresponding improvements in the level of functioning of the group home clients were evident in the period following this workshop.
Transfer Across Client Programs

This form of transfer involves the appropriate application of behavioral techniques toward novel tasks, in the absence of direct teaching. An example is to use correct procedures for prompt-fading in the establishment of the verbal imitation “d,” “e” and “f,” after guidance from a supervisor on the establishment of “a,” “b,” and “c.” Only a few studies have made explicit attempts to investigate this type of transfer (e.g., Koegel et al., 1977; Page, Iwata, & Reid, 1982). In Koegel et al. (1977), the teachers demonstrated a considerable increase in correct use of behavioral techniques following training. Transfer of skills across programs were also reported to occur. Transfer of treatment techniques to novel tasks were also obtained in a recent study by Ducharme and Feldman (1992). However, no data were reported on client improvement. Thus, it is not clear that the transfer of staff skills resulted in improved client outcomes.

The more rigorous the assessment of transfer and client outcomes the less evidence for transfer and client improvement may be found. In a comprehensive field study by Mørch and Eikeseth (1992), the staff learned to provide correct reinforcement, use appropriate prompt, and organize training sessions into discrete trials when confronted with novel tasks. The staff never managed to apply proper fading procedures, however, and during the assessment period (which stretched over 6 months) a gradual decrease in the clients’ level of correct responding was evident.

Maintenance

Systematic evaluation of the durability of staff training effects (including client improvement) is only occasionally reported in the literature (e.g., Lovaas, 1987; McEachin, Smith, & Lovaas, 1993). In studies that include assessments of maintenance, the focus is usually on staff management procedures and to a lesser degree on acquisitional aspects of staff performance. Furthermore, these measures relate primarily to staff skills and seldom to client improvement (e.g., Green et al., 1991; McBrien & Edmonds, 1985; Richman et al., 1988; see also Bernstein, 1982). The way maintenance has been achieved in these studies is often through the use of different types of feedback and reward systems. This feedback can, for instance, be written (Dyer et al., 1984), oral feedback and praise (Harchik et al., 1992; Richman et al., 1988) provided by a supervisor, but also feedback through role-playing techniques (Parsons & Reid, 1995). Staff programs based upon such factors have been shown to be effective in maintaining staff performance. However, effects have tended to decrease as soon as the feedback or reward were removed (Ingham & Greer, 1992; Richman et al., 1988), hence, a rather strong dependency relation is built up between the procedures applied and the results observed. One way of managing such problems has been to integrate these procedures as a stable part of the daily teaching environment. In Christian (1983), an organizational approach to staff
management was offered. Here, staff training, maintenance, self-management, and feedback from supervisors were parts of the regular organization of the services provided. The teaching-family group homes were developed based upon similar principles (McClannahan, Krantz, McGee, & MacDuff, 1984), in which the maintenance of appropriate staff performance is facilitated through frequent observations and feedback provided by a supervisor. Both staff and clients tend to show maintenance of skills when the services are organized this way. It has been suggested that maintenance requires an ongoing implementation of the consulting process and that staff management ought to become a permanent part of the organization (e.g., Christian, 1987; Favell, Favell, Riddle, & Risley, 1984; Harchik et al., 1992).

Important as these results are, such complexity in organizational routines and the diversity of methods that are simultaneously in effect make it difficult to select variables that are effective and to reject those that are not. More problems are added when procedures in staff training and staff management are blended together in ways that obscure the possibility to evaluate their contributions separately. The relationship between acquisition and maintenance of staff performance is obvious. However, maintenance may be difficult to accomplish unless the criteria for acquisition are fulfilled (e.g., improvement in client functioning and transfer of staff performances across settings, clients, and programs). It seems reasonable to assume that procedures that prove to be effective in establishing appropriate staff performance also must be taken into consideration when procedures for long-term management of those performances are selected. Thus, in the attempt to ensure the continuum between acquisition and maintenance, more effort should be placed on how to improve staff performance in the acquisitional stage.

**CURRENT CONCERNS AND FURTHER IMPROVEMENTS**

Although improvements have been attained within the field of staff training, several areas are still in urgent need of further exploration. Few studies have documented long-term effects of staff training. When such effects have been reported, the effects have usually depended on continuous availability of feedback and different rewarding systems. Furthermore, the skills acquired in staff training programs are seldom transferred beyond the training conditions, that is, across programs, clients and settings not focused on during training. However, some progress has recently been made and the following discussion will focus on elements that might be important for further improvements.

**Behavioural Techniques**

The provision of staff proficiency includes several elements, all differing in degree of complexity. These differences become evident when separated measures of effect are obtained. For instance, several studies have reported in-
creased staff competence in the administration of discriminative and reinforcing stimuli, in the use of effective prompts, and in the organisation of training sessions into discrete trials (e.g., Ducharme & Feldman, 1992; Koegel et al., 1977). It is reasonable to suggest then that such skills are more easily specified through instructions and manuals and thereby can be established as rule-governed behavior in staff. On the other hand, it has proven far more difficult to teach staff to fade prompts and to reinforce successive approximations to a target response (Mørch & Eikeseth, 1992). The fading of prompts is probably one of the more crucial elements in the therapeutic process and lack of proficiency in such techniques may have very unfortunate effects on the client. It is possible, for instance, that much of the increased passivity and prompt dependency seen in many developmentally disabled clients is a result of such treatment inadequacy. Furthermore, it may be difficult to establish new and more complex responses in the client when the previously trained responses are to a great extent kept on prompt control. Attempts have been made to supply staff with tools for appropriate fading. For instance, in Mørch (1990) a highly detailed system for graduation of prompts was described, but this strategy proved to be insufficient to accomplish proper fading proficiency. A formalization of the fading technique as such, regardless of its level of specificity, might not share any of the properties actually related to the fading process.

It is likely that the proper application of prompt-fading techniques, largely, rests upon sensitivity to contingencies in the interaction (e.g., changes in the client’s responding) and to a lesser degree to contingencies arranged by, for instance, a supervisor (e.g., feedback and praise). Competence in prompt-fading could then be considered as contingency-shaped behavior where properties of the clients’ behaviour constitute the controlling variables for the ongoing performance of the trainer. Thus, by looking at the clients behavior as the prevailing schedules of reinforcement for the staff’s behavior, any changes in the clients behavior in accordance with expected outcomes could be considered as potentially reinforcing. In order to progress toward that expected outcome the staff’s behavior must then be sensitive and thereby controlled by the relevant changes in the client’s behavior. Flexibility and the tendency to vary may be recognized as an important feature in the competent staff and the supervising techniques chosen should be able to promote this. Hands-on instruction is the typical consultation technique in behavior analytic work. However, the validity and effectiveness of this technique may not be judged properly without observation of staff–client interactions in the absence of supervision. It is likely that exaggerated and prolonged emphasis on variables external to the trainer/client contingency (e.g., continuous use of instructions, feedback, or verbal praise) might postpone or even prevent sensitivity to their client’s behavior and hence leave them with no alternative behavior or problem-solving skills when confronted with novel variations of their client’s behavior. The outcome could then be stereotyped teaching and/or reduced rate of interaction between teacher and client.
To summarize, further research on staff training would profit from a more fine-grained analysis applied to the fading process. Although expertise in relation to this technique readily could be described as contingency-shaped behavior, it might initially have been accompanied by verbal behavior or rules. Hands-on instruction may be considered as externally provided rules, intended to regulate staff behavior in interaction with their clients. As argued here, unexperienced staff may not benefit from this mode of supervision, which could cause insensitivity, stereotyped responding and inflexibility, especially if given on a continuous basis. Hence, if rules are important in the initial acquisition of prompt-fading skills they should be self-generated instead of externally provided. Thus, methods that teach staff to verbally isolate the critical relational aspects of the therapeutic contingency, either through observation of models (in vivo or from video), or through self-recordings during the actual treatment, could be an interesting path to pursue in future studies.

Acquisitional Strategies

In this paper, client improvement and the maintenance and transfer of skills in behavioral techniques on the part of the staff are suggested as critical outcomes in a successful staff training program. Unfortunately, there are presently no unique answers to how this can be accomplished most effectively. There are, however, indications that more effort should be placed on how staff performance initially is acquired rather than where (e.g., workshop vs. workplace) and in the presence of whom (simulation vs. in vivo), it is acquired. The literature covers only a few studies that attempt to compare the effectiveness of different strategies for the acquisition of behavioral techniques in staff (e.g., Alavosius & Sulzer-Azaroff, 1990; Ducharme & Feldman, 1992). In Ducharme and Feldman’s study, a “single case” condition was compared with a “general case” condition. The general case strategy was treated earlier in the literature (e.g., Day & Horner 1986; O’Neill, 1990) and it differs from the single case strategy in that multiple training exemplars are chosen in order to sample the span of stimulus and response variations involved in skills to be trained. In Ducharme and Feldman (1992), this span covered exemplars of the necessary range of client program domains, and results with regard to transfer of teaching skills across client programs went clearly in favour of this strategy. Additionally, transfer across settings and clients was obtained, although training was conducted in a simulation format with the staff acting as clients. The staff also showed maintenance of skills after 6 months.

The effectiveness of using a general case approach to program for transfer to novel responses in the presence of novel stimulus conditions also is supported in studies from other areas of therapeutic research (Jahr, Eldevik, & Eikeseth, 1997; Neef, Lensbower, Hockersmith, DePalma, & Gray, 1990). Data from the studies above indicate that the strategies employed in training (i.e., the training of multiple response exemplars), and the criterion chosen for acquisition (i.e.,
transfer to untrained exemplars) might be equally critical variables for transfer across persons and settings as where, and in the presence of whom the skills initially are acquired. However, more data from, and further refinements in this strategy are needed. With respect to staff training research, a more explicit analysis of the selection of teaching exemplars is suggested, especially in relation to the technique of prompt-fading. Further assessments on client outcomes following this procedure also need to be explored to draw conclusions on the validity of this strategy.

Assessment

Few studies on staff training incorporate client data in the evaluation of the procedures. For a research tradition normally devoted to the identification of functional relationships, this seems to constitute a rather formalistic approach to the field of staff improvement. Hence, it seems pertinent to suggest that assessment should be concentrated on the client–teacher interaction rather than solely on the individual contributions to it. In Ingham and Greer (1992), data were obtained on the teacher rate and accuracy in the administration of instructions and consequences. This data was, in turn, measured against the client’s level of correct responding. Rate and accuracy are important variables in effective teaching, but without additional assessments of other contributing factors related to effective teaching (e.g., prompt-fading) we may only sampling the surface of the interaction. A more differentiated and sensitive assessment strategy is therefore necessary to develop. For instance, if the administration of prompts is the important variable, it must be assessed in relation to its effectiveness in evoking a topographically correct response from the client. If fading is in effect, then assessments of the gradual removal of prompts, in relation to a sustained target response from the client, must be obtained. Assessments like these obviously increase the opportunity to make thorough evaluations of a particular staff training program. Such assessments also could be provided as feedback to staff on a continuous basis, either as data recordings or verbally, and hence promote the formulation of more accurate rules and more efficient practical performance.

CONCLUSION

The clients rights to effective treatment, provided by competent treatment staff might be considered a matter of course. However, these rights are not necessarily fulfilled (Van Houten, et al., 1988) and there still seems to be a considerable discrepancy between the knowledge obtained in research, and common practice in the applied field. The proper judgement of a particular staff training program should relate to its effectiveness in promoting transfer and maintenance of treatment skills. Moreover, these effects should be evident in more beneficial outcomes for the clients. This paper provides some suggestions
as to how the effectiveness of staff training may be increased. These mainly concern acquisition aspects of staff performance. First, the provision of competence in prompt-fading techniques seems vital in staff working with developmentally disabled clients. Hence, a more detailed analysis of this important therapeutic process is recommended. Second, the strategies used to establish the different teaching techniques in staff must be further explored. Transfer of treatment skills across client programs seems to be an especially important learning criterion, and strategies should be selected on the basis of its effectiveness in promoting this. Finally, more effort in developing sensitive assessment strategies that are able to detect functional relationships in the staff/client interaction seems crucial in increasing the effectiveness of this interaction. To make improvement in these areas, future research should be conducted on a smaller scale, with increased experimental control and more precise definitions of the variables involved. Only then will we be able to obtain conclusive data and ensure further progression within this field of research.

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