

Promoting Appropriate Behavior in Daily Life Contexts Using Functional Analytic Psychotherapy in Early-Adolescent Children

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Abstract

The topics of social skills development in adolescents and ways to promote this process have been amply investigated in both the clinical and educational literature. Yet, although this line of research has led to the development of many different approaches for this population, most have shown little effectiveness in promoting further social skills acquisition beyond the intervention context. The present study tested the efficacy of clinical strategies based on Functional Analytic Psychotherapy (FAP) to promote social skills in 5 participants aged 11 to 15 years

Keywords

Functional Analytic Psychotherapy, anxiety, social skills, adolescents

The fields of Behavioral Contextual Psychology have produced important educational and behavioral applications, which are rarely used, in a comprehensive, integrated form. Yet these newer methods that include derived relational responding and innovative third wave approaches could produce enhanced effects if combined and applied within the behavioral analytic theoretical framework

Empirical Research in this field has accelerated over the last two decades, paving the way for many seminal clinical and educational applications, including some of the most currently well-known psychological intervention approaches such as Acceptance and Commitment Therapy and Functional Analytic Psychotherapy – FAP (Callaghan et al. 2004; Kohlenberg & Tsai, 1991; Tsai et al. 2009)

Mounting evidence of adolescents' emotional problems, especially anxiety, led TICE center researchers (Tecnologie Individualizzate per le competenze dell'età evolutiva – Individualized Technology for Developmental Skills), to examine new ways of helping adolescents with these ever more frequently reported issues in the learning center context. The researchers at TICE have begun to integrate recently developed FAP principles with more traditional behavioral analysis strategies to create more targeted interventions for assisting preadolescents and adolescents.

■ FUNCTIONAL ANALYTIC PSYCHOTHERAPY

FAP is a radical behavioral psychotherapy approach based on validated principles of behavior change, though. FAP itself is still being studied with respect to its clinical efficacy. The putative mechanism of change is contingent responding of the therapist to clinical problems and improvements, and some research on the topic has been conducted (e.g., Tsai, Kohlenberg, Kanter, and Waltz, 2009). FAP examines the therapist's direct effect on individual behavior, which must then extend into the individual's daily life through a process of promoting new derived relational responding (DRR). The approach is therefore not based

on conventional generalization processes requiring a long-term instructional phase to cover a significant portion of many potential daily life situations (Hayes, Strosahl & Wilson, 1999).

In principle, FAP may be readily integrated into other therapeutic approaches, such as ACT, which also shares the same pragmatic perspective and overlaps with many of its theoretical foundations.

FAP uses the therapeutic relationship as a context for the advanced implementation of rigorously operationalized reinforcement strategies but also possesses concurrent and ecological validity. Although based on experimental evidence, FAP is a highly individualized, idiographic approach. One of its more innovative as well as pragmatic aspect is Tsai et al.'s (Tsai, Kohlenberg, Kanter, Kohlenberg, et al., 2009) classification distinguishing between behaviors that are directly modifiable during intervention sessions--“clinically relevant behaviors” (CRBs)--and their functional equivalents enacted in the natural environment—i.e., “outside sessions” (OS) behaviors.

Intervention based on FAP principles with preadolescence and adolescence allows therapists to apply rigorous scientific principles and work within the well-defined area of behavior analysis. Intervention is therefore aimed at socially significant and observable behavioral change, by giving due consideration, however, to the fundamental relationships of preadolescents with peers. Operationalizing a therapeutic relationship that is technically based on the spontaneous and deliberate use of reinforcement strategies, makes it possible for therapists to influence these individuals' behaviors, thereby helping them broaden their social repertoires. The process leads to more flexible behavior through application of multiple source of social reinforcement, multiple topographies and different situations.

This type of analysis, based on the application of functional analysis (Follette & Bonow, 2009) has demonstrated marked clinical efficacy, although the account for the positive effects is not simple. In fact, any attempt to do so must also take higher

levels of complexity into account, in addition to traditional behavioral principles, such as generalization. Although it is always possible to identify CRB-OS parallelisms, these behaviors do not always perfectly, nor even functionally, coincide. For example, a CRB2 can be reinforced in session, but this will represent just a small first step for subsequently generating more extensive change in the frequency of the OS “equivalent”.

PROMOTING SOCIAL CONTEXT-APPROPRIATE BEHAVIOR

Acquisition of the most common prosocial behaviors is part of normal human development (Alexander & Entwisle, 1988), and young people with disparities in these repertoires are at greater risk of developing markedly dysfunctional conduct, such as social isolation, aggressiveness, and dropping out of school. They are also at higher risk of encountering problems in their adults lives, such as difficulty in remaining employed and developing stable and satisfying relationships with others; they also risk more frequent legal system contact (Parker & Asher, 1987). Moreover, problems in social skills acquisition and prosocial behavioral repertoires can particularly impact young people with Learning Disabilities. These deficits are frequently associated with poor school achievement (Bender, 1998; Kauffman, 2001).

Thus, the issue of which strategies might best promote context-appropriate vs. inappropriate behavior is a debated and much investigated field, both from exclusively educational- and, even more so, clinical perspectives (Kavale et al., 1997; Mathur, Kavale, Quinn, Forness, & Rutherford, 1998, Kavale & Forness, 1995; Kavale, Mathur, Forness, Rutherford, & Quinn, 1997; Ladd, 1984; Vaughn, McIntosh, & Hogan, 1990).

Yet, although most of these studies produced convincing results within their specific contexts, their outcomes generalize poorly to others, more ecological (Hughes & Sullivan, 1988; Kavale & Forness, 1995; Kavale et al., 1997; Landrum & Lloyd, 1992). Specifically, progress observed rarely extends beyond the context in which it is acquired, probably for high variability of the daily life contexts in terms of functional antecedents and consequences.

The main aim is to produce significant changes in the participants’ daily life, and not simply in the intervention context. More specifically, we adopted FAP-oriented methodologies based on direct in-session intervention (CRB – clinically relevant behavior) to promote changes in the daily life contexts of these individuals (OS).

The present study, conducted at the center, was therefore based on structured modeling strategies to reinforce successive approximations of the target behavior enacted directly in session, and the simultaneous use of parent reports to monitor progress in the participants’ daily lives.

FAP RULES

Functional Analytic Psychotherapy proposes five rules to interact with clients in order to establish useful behavioral repertoires. These rules are related to behavioral principles, but also provide the practical and applicable substrate that currently best ensures an authentic and “warm” quality for the personal interactions experienced therein (Kohlenberg & Tsai, 1991).

The intervention integrates an educational approach with FAP rules to promote social skills in pre-adolescents and adolescents. The researchers first identified target behaviors, both in the intervention context and in the daily lives of these participants (RULE 1). They then agreed on the aims with the participants’ families and the participants themselves and promoted them through social reinforcement strategies based on authentic interpersonal relationships (RULES 2 and 3). Behavioral responses in session were then monitored (RULE 4), and the discussion of in/out- of session parallelisms were used as generalization strategies (RULE 5) for the daily life context.

INTERVENTION PLAN

This FAP-based form of intervention therefore began with an analysis of inadequate, dysfunctional, and inappropriate behavior enacted in the participants’ daily life contexts. These behaviors were then classified as outside sessions requiring intervention (“OS1”) by diminishing their frequency and/or intensity. Moreover, FAP defines as OS2 (appropriate and to-be-promoted outside-session behaviors) the useful behavior to develop in the participant’s daily life contexts (Kanter, Tsai, & Kohlenberg, 2011). The OSs (OS1 and OS2) were first agreed upon with the participants and their parents in meetings, and the therapists worked at creating a set of appropriate situations and actions to be promoted directly in session (CRB2), without having to assign “behavioral homeworks”. Upon conclusion of the behavioral assessment meetings, a behavioral checklist, in the form of a weekly frequency chart to collect frequency of behaviors, was drawn up for use by the participants’ parents to verify OS. The in-session measurements were obtained through direct observation by the researchers and therapists. Parents completed the OS weekly frequency sheet at home; it was thus considered essentially a parent report, in which they checked the frequency of behavior in real time, through behaviors that are easily to observe and often leave permanent products.

Generally, the possibility of directly intervening on behavior in the participants’ daily life contexts is quite low, usually due to the relatively low frequency of these problem behaviors (OS1) and other problems typically linked to investigations in natural settings. According to the study hypotheses, and in agreement with many conceptual (Weeks, Kanter et al, 2011) and applicative studies (Tsai, Kohlenberg, Kanter & Waltz, 2009) FAP aims to intervene directly on in-session behavior, not only by weakening inappropriate behavior (CRB1), but mostly by directly promoting appropriate behavior (CRB2), and intervening indirectly, but effectively, on daily life behavior (OS1 and OS2). During sessions, however, task analysis can be applied to desired behaviors, and these can be directly promoted as CRB2s, even through small steps.

Our own intervention also required that the participants develop value-based repertoires, developing flexibility with the aim of helping them construct more socially appropriate repertoires and to have social success in their own environment. More generally, the participants’ directly behavior-contingent responses can be compared to the construction of a “therapeutic relationship”. In the context of the learning center, teacher/therapist build a warm, authentic relationship with pre-adolescents providing them with social, positive (not contrived) reinforce-

ment through natural strategies. Similarly, an educational perspective can focus on promoting increasingly appropriate behavioral repertoires, an approach that is perfectly adapted to the learning center context and to its (mostly preadolescent) clients.

■ METHOD

PARTICIPANTS

Five male participants, aged 11-15 years, were enrolled in the intervention program: one was 12 years old upon initiation treatment. He presented poor school achievement and subsequent school refusal, with a very high number of absences that risked compromising his entire school year. The second participant was 11 years old and showed similar problems. He was already receiving assistance at our center for a learning disability. He also presented many physical problems presumably psychosomatic (after medical examinations turned up negative) which induced him to avoid situations he feared, school in particular. The third participant, 12 years old, presented more difficulty in the social sphere, although mostly in the school context--i.e., with schoolmates. This participant also showed a high degree of avoidance behavior with respect to social situations, with marked social isolation. The fourth participant was 13 years old and presented problems similar to the other three, but also showed more socially inappropriate, (although not destructive) alternative behaviors. Our functional analysis revealed that these problems consisted mostly in his inappropriately seeking adult attention and avoiding discussing unpleasant emotional content. The fifth participant, age 15, showed occasional verbal fluency problems in specific contexts and a notably narrow range of social repertoires with his peers. All participants presented social repertoire problems, both in their daily life contexts and in the session context, as confirmed by multiple observations conducted by 4 different center researchers.

INTERVENTION PROTOCOL

The aims of our intervention were to increase OS2 frequency while decreasing OS1 frequency, by promoting CRB2 and reducing CRB1, through the therapist's differential reinforcement of the participants' behavior. Our frequency data sheet for reporting problematic behavior and corresponding desired-behavior for preadolescents and adolescents is based on currently available instruments like CBCL 4/18 (Achenbach & Edelbrock, 1983) and on previous work conducted with the learning center's clients.

The procedure used with the participants of the present study was that generally implemented at the center: direct observation of the clients' most frequent problem behavior and meetings held with parents to make the preliminary CRB1 selection. It is important to note that our aim was not to develop a standardized instrument, but to draw up a list of problem and desired behaviors that are frequently critical issues for individuals suffering from anxiety and socialization problems. The list then guided behavioral assessment conducted with families and made it possible to pinpoint most problematic areas requiring intervention.

This assessment phase yielded an individualized list for each client of approximately 40 appropriate daily life behaviors. Cor-

responding problem behaviors frequently "blocking" the appropriate behavioral responses were also identified and listed.

These specific parent-report charts were then used to measure these behaviors outside of sessions. Direct in vivo observations were also conducted by therapists, who remained aware, however, of the potential for substantially altering the context with their presence.

Once the frequency of appropriate and problem behaviors was observed and classified into OS2 (appropriate) and OS1 (problem) behaviors, a program aimed at promoting context-suitable behavior was drawn up for each participant. CRBs requiring direct in-session intervention were identified and were functionally presumed to be daily life OSs equivalents.

REPORT INSTRUMENTS

The weekly frequency chart used in this study to collect data from parents was not standardized, but maintained its idiographic aspects and marked flexibility, which allowed for rapid individualization to each participant. For example, prosocial behavior identified for many, but not all, participants might be that of inviting schoolmates home, or proposing engaging in an age-appropriate activity with them. Once the participants' target behaviors were identified in the daily context, these were "translated" into CRB, upon which the therapist-researchers directly operated in session.

Data collection on CRB frequency was conducted during sessions; this procedure also allowed for data-based decisions and simultaneous monitoring of the program underway. When CRB2 frequency did not increase subsequently to therapists' strategies, which mostly consisted of setting up appropriate consequences to behavioral responses, the strategies were then modified. When, conversely, CRB2 was observed to increase but with no parallel improvement the participants' in daily life contexts, the OS-CRB analysis underwent revision. For example, if the therapist would improve participant's social repertoires with peers teaching him to invite some friends, he could provide opportunities to invite kids to do something with him. Anyway, this part of the intervention could be not effective if the functional analysis is not complete. The situation briefly describe combined a functional and a topographical analysis but, obviously, is not guaranteed that provided exemplars of the same situation include the same contextual cues and the same stimulus function that influence social skills repertoire. A better understanding of some subtle variables could make the difference from an ineffective treatment to an useful intervention. Using MET strategies reduce the risks to fail to acknowledge stimulus function introducing more controlled variability, but the functional analysis of OSs remain a core procedure to plan effective treatment with this population.

INTERVENTION AND PROCEDURE

Five participants already attending the learning center due to poor school achievement were included in this study, which was a Delayed Multiple Probe Design across subjects (Pereira Delgado & Speakman 2008).

A list of 40 behaviors observable in the daily life contexts of each participant, which the parents and/or the participants themselves considered relevant was drawn up. Only behaviors

with an estimated weekly frequency of at least once per week in the participants' daily life contexts were included. The OS2 were also identified, and parents were asked to mark down the occurrence of these on the specifically developed weekly registration sheet. Parents' and participants' free reports were also collected and were generally consistent with more empirical data. However these free-reports were not used for any kind of analysis, the therapists not implemented strategy to direct assess this kind of "verbal behavior" data. Individualized programs were then developed based on the pinpointed OS2, to be used to promote the CRB2 equivalents. A similar procedure was used for the OS1, with the obvious aim of reducing their frequency.

Pre-probe for the first participant was conducted to evaluate the frequency of his appropriate and inappropriate behavior (OS2 and OS1, respectively) in his daily life context. Then he began the intervention focused to promote the behavior desired. Intervention was conducted in either individual or groups sessions, the latter mostly involving mindfulness training.

Upon conclusion of the treatment, post probes were conducted with the same procedures used for the initial evaluations. Thus, behavioral frequency was analyzed by parent through weekly sheets and, when possible, directly by the researchers.

At least one week after each participant had undergone pre-probe data collection and had begun CRB intervention, the next participant began the direct observation phase, to allow for the gathering of both preliminary daily-life context pre-probe data and directly in-session baseline data. The same procedure was repeated consecutively for all participants. Thus two parallel, but independent measures were conducted: OS measures, through parent reports confirmed by direct researcher observations of random samples, and CRB measures, taken directly during the sessions conducted by psychologists and behavioral analysts.

We used Inter Observer Agreement procedures to assess the validity of CRB data, for a total of 55% of the total sessions, with agreement ranging from 85 to 100%. OS measures were collected from both parents when possible (3/5 cases), with a percentage agreement of >95%. Approximately 10% of the parent report - OSs Observations were collected also in the presence of two researchers who registered the same IOA results, i.e., with agreement percentages ranging from 85% to 100%.

Daily-life context behaviors data were measured as accurately as possible, although via parental report. The observed and reported behaviors, however, had been carefully operationalized in the weekly frequency sheet. About 10% of the OS observations were conducted in-vivo with the co-presence of two therapists, to verify the agreement between parental and professional observations. In these instances, as reported above, researcher-parent agreement was satisfactory. Nonetheless, our choice to use two data collection procedures, one for directly observed behavior frequencies and the other for referred presence/absence of a given behavior represents one of the study's main limits.

The behavioral programs, developed from a FAP perspective, mostly consisted of providing opportunities for the participants to emit appropriate or inappropriate behavior, and by using verbal cues and prompts to direct them in some specific interactions. For examples, therapists could shape directly appropriate behavior in some contexts. Contingent responses of the thera-

pist, combined with prearranged social situations suitable for evoking CRBs, were the main mechanisms of change employed. In technical terms, the programs consisted in the setting up of directly present and verbally mediated reinforcements suitable for each participant, by analyzing and planning discriminative stimuli to be used during sessions to evoke CRB, promoting CRB2 and weakening CRB1 responses. Parallels were repeatedly made between in-session context and daily life (and vice-versa) as a relevant part of the intervention to extend the improvements from the center to the participants' ecological setting.

In addition to these specific procedures, participants also underwent both individual and group mindfulness training weekly. We implement multiple example strategies (MET - Multiple Exemplar Training) to obtain better stimulus control and a careful variation of contextual aspects, so as to allow for true autonomy. This meant previously inserting significant topographical differences in both discriminative stimuli and in general context aspects. These procedures helped foster participant learning and promote behaviors that were already partially or completely acquired, but more effectively so (Rehfeldt & Barnes, 2009).

For example, the request for a participant to "open up more" emotionally and cope with emotional content he tends to avoid in a topographically various (but mostly inappropriate) way is repeated in different moments, in different contexts, and in different ways. For instance, the therapist's contingent response to CRB2 for example, could consist in social reinforcement previously identified as being effective for that person. Moreover, FAP emphasizes the importance of using the most "natural" consequences possible to ensure more effective generalization and to exclude or limit the use of artificially provided reinforcers. The latter can sound "empty" for more verbally sophisticated participants and can therefore be ineffective (not actually serving as a reinforcer).

Both the more recent and traditional literature suggest that broad-based and flexible repertoires are a fundamental pre-requisite for improving people's quality of life and well-being. This occurred in our own study because part of the consequences of the participants' behavior were social reinforcement (therapist approval); another part were directly provided in the environment (non-social); and lastly, one part of the consequences was social but not pre-arranged by researchers. For example, in asking a boy to ask the time of a passerby, part of the consequences of this action will be praise by the researcher present; one part will be dialogue with the passerby, who remains unaware of the program; and another still will be direct consequences of the action itself (in this instance, minimal). If we conversely ask a boy to go for a walk wearing a funny hat, the social consequences, therapists' praise and encouragement, would not vary. Other social consequences would be provided by other passersby glancing at the boy and unaware he is implementing these behavioral strategies. Lastly, other consequences would be linked to the action itself.

Providing an interactional history aimed to promote derived relational responses presents several advantages, as the creation of more ample and flexible repertoires than more traditional expositions. In most of the common trainings including variability is not a conscious therapist choice, but simply the result of a

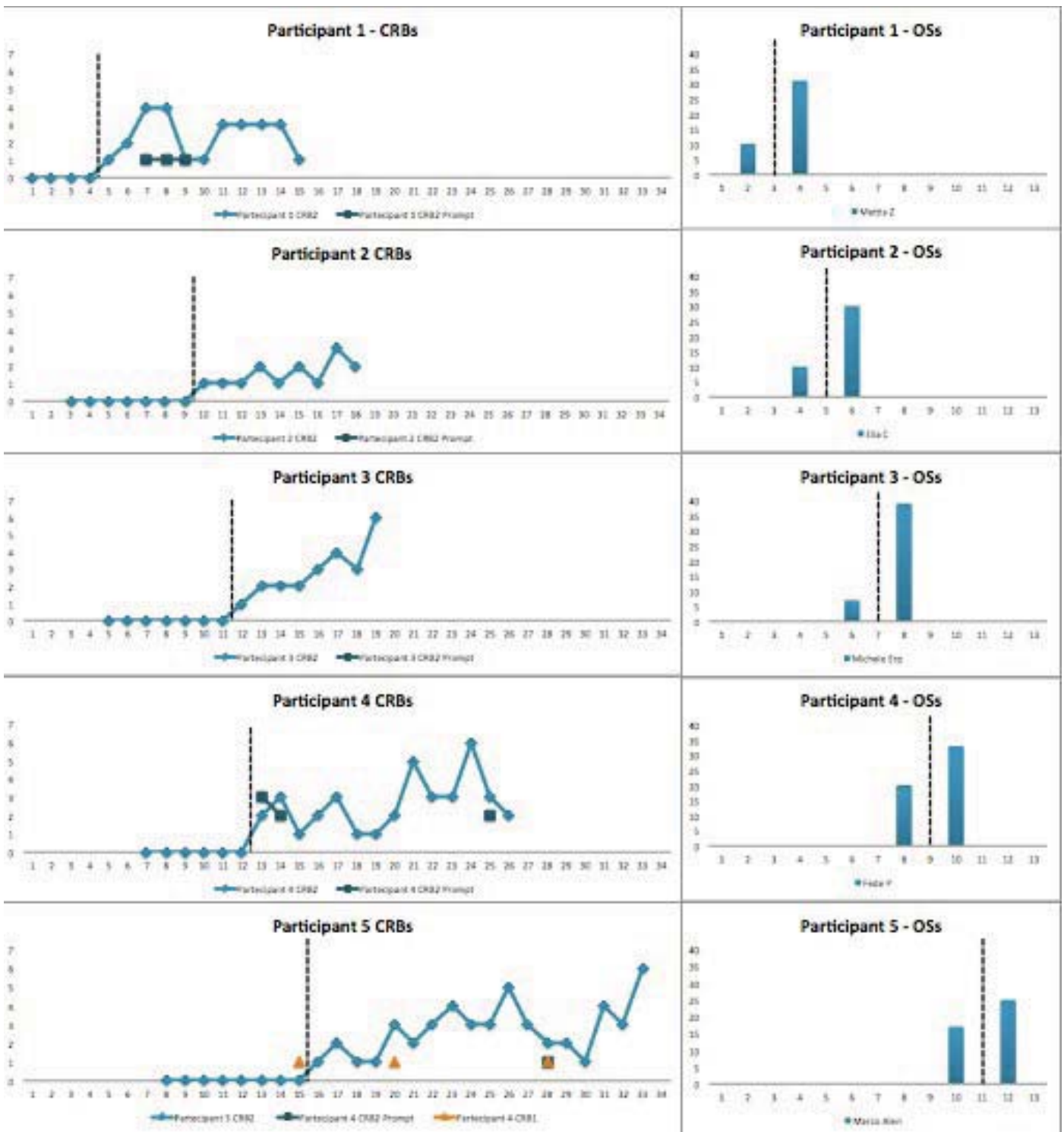


Figure 1. Experimental design

lack of operationalization of the variables, and, as consequence, leads to ineffective procedures. For example, directly planning MET training allows for the more rapid development of flexible verbal and direct contingency shaped repertoires which are therefore more quickly adaptable to new situations. Promoting appropriate responses with multiple exemplars of antecedents and by varying response topographies, inducing new but “similar” responses, as an effect of the emergence of DRR. These responses are selected by consequences, just as any other behav-

ior, with the exclusive but important advantage of leading to the emergence of more new responses.

Special attention was dedicated to experiential-avoidance repertoires and to conversely promoting willingness strategies; the aim was to promote the emergence of more functional tactics and, more generally, more adaptive verbal descriptions, in relation to participants’ own internal experiences, easily measurable via self-report.

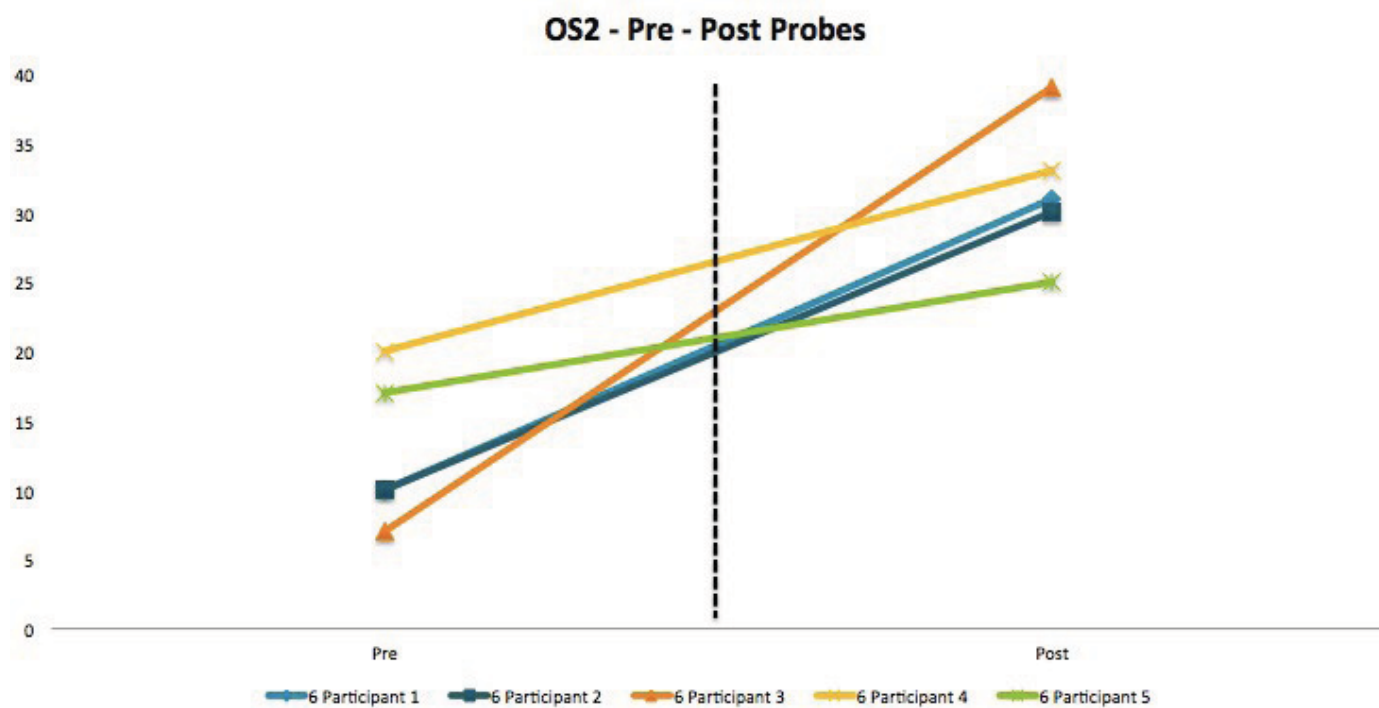


Figure 2. Pre - Post probes

Experimental design. Figure 1 suggests that the improvements in CRB2s can effect the behaviors of the participants in daily life contexts. On the left are reported data on CRB2s, with a multiple baseline across subjects. The introduction of the independent variable seems to induce an emersion of CRB2s for all the participants. On the right we can see the Pre-Post Probes of the OS2s. For all participants, Pre-Probes were conducted in the baseline phase, and Post Probes after the end of the intervention.

Pre - Post probes. Figure 2 shows the results of the Pre-Post probes - frequency of OS2s behaviors collected by parents of all the 5 participants (OS2s = appropriate social relevant behaviors in daily life contexts).

RESULTS

The results showed a significant increase in identified prosocial behaviors implemented in the natural context (OS2). The anecdotal reports of parents, teachers, and participants themselves were consistent. In the baseline-phase session, none of the behaviors identified was emitted with a relevant frequency, but they were emitted with greater frequency during the intervention phase, indeed, with the emergence of in-session multiple behaviors.

Obviously one of the reasons for the CRB2 increase observed during the entire treatment period could be due to a greater number of opportunities for emitting these behaviors, as outcomes of the process itself. The OS2 increase, not directly related to a specific in session training as CRBs, although less marked, was in any event relevant.

In particular, participants 1, 2, and 3 demonstrated a significant increase in OS2, and the effect was smaller, though always present, for participants 4 and 5. They are older than other cli-

ents, and could be more difficult assess and provide relevant reinforcers for them and this can affect the efficacy of the whole treatment for these subjects. Further study are needed to focus on strategy to identify reinforcers for this population, according with developmental age studies.

With respect to CRB, all participants showed an increase in socially relevant in-session behaviors (CRB2s), and demonstrated inappropriate behaviors such as emotional or experiential avoidance, aggressiveness, challenging behaviors, or escape (CRB1s) only rarely. The CRB2s frequency did not reach higher levels, as it was difficult to prearrange conditions for more than 3 to 5 meaningful activities in an hour of intervention.

DISCUSSION

The graphic analysis seems to support how direct action on CRB2s can produce indirect modifications on OS2s, consistently with the FAP approach and knowledge gained from research in the field of derived relational responses - DRR (Tsai, Kohlemberg, Kanter et al, 2009; Rehfeldt & Barnes, 2009; Hayes, Strosahl & Wilson). A detailed explanation of the mechanisms implicated in these modifications goes beyond the scope of the present work.

Although the study conducted with these procedures made it possible to control a certain amount of variability, we underscore that the study participants were already participating in some form of intervention, although mostly focused on school achievement problems. Indeed, the experimental design adopted allowed us to exclude that an intervention based on academic skills can be itself effective in diminishing dysfunctional behavior and promoting appropriate behavior in the participants selected. This type of design, and the characteristics of the Research Center in which the study was carried out, however,

does not allow us to exclude the possibility that an intervention based on promotions of academic skills represents an important prerequisite for achieving the results reported herein. In fact, the teacher-student relationship at the center is based on a high frequency of praise for desired behavior implemented during sessions (in general, mostly teaching sessions, and therefore not pertaining to the present experiment as mentioned previously). Although this type of interaction model cannot be defined in any way as a “therapeutic relationship”, it can represent a mechanism of change even though it appears incidental when compared to a FAP based approach, in which the therapist consciously, spontaneously and simultaneously provides a series of differential consequences for the various participants’ CRBs. Although numerous studies highlight the efficacy of positive reinforcement-based relational strategies in promoting various appropriate behavioral repertoires in teens and preteens (e.g., Levine, 2006), the role of this training may be influencing the efficacy of a subsequent experimental intervention phase conducted with FAP procedures.

The emission of a behavior that is appropriate but already in the repertoires of each specific participant also poses various questions that cannot properly be dealt with herein. On one hand, participants must be helped to face, acknowledge and modify their problematic behavior and to acquire more adaptive responses. On the other, appropriate behavior already in repertoire, although not subject to data collection, could have influenced the emission of new responses, as suggested by research on behavioral momentum (Nevin & Grace, 2000). Nonetheless, the experimental design used herein and the lack of data on the topic does not make further analyses possible, but the adequate social behaviors promoted by intervention were probably not completely new responses, and the effect of behavioral momentum probably could be negligible.

Moreover, the emission of appropriate responses during intervention, although not to be underestimated, cannot alone be considered a significant result, but only in relation to variations in participants’ meaningful daily life repertoires. Yet, the OS2s data collected via parent report does not satisfy the same scientific ABA criteria. The use of normative tests could in part obviate these problems, but selecting tests that are sufficiently sensitive to change and which can be re-administered even after brief time periods is a complex challenge. We therefore opted to rely on behavioral (although parent report) frequency measures to gather the OS data. Further research could be conducted supplementing direct in-session CRB measures with daily life (OS) observed behavior measures of similar reliability. These results have to be interpreted with caution, but we think that could be interesting to continue in this direction, improving methods and data collection to better explain mechanism of change and to build more efficient treatment for preadolescents, a population usually less studied.

For example, the therapists use mindfulness as an important part of the intervention with all the participants, to help them to reframe unpleasant events referring to values, with a verbal mediated exposure through interpersonal relationship. The researchers use mindfulness in a FAP-oriented way, but the impact of these procedure is not so easy to assess in whole package of this intervention.

Moreover, de-constructing the intervention “package” into its various components could represent a further step towards better understanding the process of significant behavioral change, and an important advancement toward the development of even more effective applicative forms of intervention to promote pro-social behavior in adolescents.

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