

Supervisor Support as a Predictor of Burnout and Therapeutic Self-Efficacy in Therapists Working in ABA Schools

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Abstract Very little is known about factors potentially affecting the performance of therapists delivering applied behavior analysis (ABA) interventions for young children with autism. Eighty-one therapists working in ABA schools participated in a questionnaire study focused on their reports of burnout and perceived therapeutic self-efficacy in their work role. Perceived supervisor support played a central role in the prediction of reduced therapist burnout and increased therapeutic self-efficacy. In addition, perceived supervisor support moderated the impact of work demands on personal accomplishment burnout. Those therapists reporting high work demands and lower levels of supervisor support had lower personal accomplishment scores on the Maslach burnout inventory. Clinical implications include the importance of supervisor support for therapists and also supervisor style.

Keywords Intensive behavioral intervention · Autism · Schools · Therapists · Work stress · Perceived therapeutic efficacy

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Introduction

The use of applied behavior analysis (ABA) methods as a comprehensive intervention for young children with autism in the form of (early) intensive behavioral intervention (Lovaas 1987) has developed a strong evidence base. Recently, Rogers and Vismara (2008) concluded that IBI has generated sufficient supporting data for it to be identified as a “well-established” empirically supported intervention whereas other interventions do not reach this standard currently. Furthermore, meta-analysis of the outcomes of IBI also supports its effectiveness with a mean weighted pre–post effect size for IQ outcomes of .69 (Reichow and Wolery 2009). When compared against eclectic autism-specific interventions of similar intensity and/or similar cost, IBI has still been shown to lead to more positive effects on the cognitive performance, adaptive behaviors, language, and autism symptoms of young children with autism (Eikeseth et al. 2002; Magiati et al. 2007; Zachor et al. 2007). In addition, although IBI has been delivered primarily in the context of children’s own homes data suggest effectiveness in school and other education settings (e.g., Eikeseth et al. 2002) and large scale implementation of IBI is occurring in a variety of contexts (Perry et al. 2009).

Although intensity of intervention and supervision intensity for therapists have been found to be positively related to outcome for children with autism (e.g., Eikeseth et al. 2009; Lovaas 1987; Osborne et al. 2008), it is also likely that intervention quality or fidelity is a necessary ingredient for program success (Allen and Warzak 2000). Quality of intervention is a variable reliant on the behavior of those employed to deliver IBI—ABA therapists. However, there has been very little research focused on ABA therapists and on variables that may affect their work

performance. Through an interest in therapist training and supervision in IBI programs (e.g., Mudford et al. 2001), there is a recognition that therapist performance is a crucial factor and some research has addressed methods of training therapist skills (e.g., the delivery of discrete trials—Randell et al. 2007).

The focus of the present study was on the work perceptions of ABA therapists and their work-related well-being. We could find only three previous research studies addressing similar issues. Hastings and Symes (2002) studied 85 mothers of young children with autism who were acting as part-time therapists for their child's ABA home program (mean = 7 h per week input). Mothers' self-reported efficacy in the therapist role was lower when they had a child with more severe autism symptoms and were themselves under increased stress. Support from the rest of the child's ABA program team was associated with increased therapeutic efficacy. Symes et al. (2006) interviewed 19 ABA therapists, asking them to identify factors that facilitate or impede their capacity to deliver discrete trial instruction in the context of home programs for young children with autism. These therapists identified the quality of their training, their own patience, and child variables (ability, motivation, compliance, likeability) as the most significant facilitating factors. The presence of a child's challenging behavior and problems identifying suitable reinforcers were reported as the most significant barriers to the fidelity of discrete trial instruction. Finally, Elfert and Miranda (2006) recruited 65 ABA therapists working on home programs in western Canada. These therapists rated excessive job demands and role conflict as the most stressful aspect of their work, and reported more stress when the child with autism in the most challenging/difficult family on their caseload had more severe symptoms of autism.

Research studies to date have been largely descriptive, opportunistic and lack tailored measurement and theoretical rigor. In the present study, we explored two variables that may have relevance in understanding ABA therapists' work quality: perceived therapeutic efficacy, and work-related well-being. For the former, we used a measure that has been developed specifically for the context of ABA programs for children with autism and based on data from interviews with therapists (Symes et al. 2006). For therapist well-being, we focused on the application of the demands-support-control model of work stress. This model hypothesizes that jobs high in demands where there is least support will be the most stressful for workers (Karasek and Theorell 1990). Within developmental disabilities research, several studies have shown that demands and support predict worker stress but very few have explored the interaction between the two (Devereux et al. 2009). A review of developmental disabilities research showed, that

while some of the associations proposed by work stress theories have been explored, very few studies capable of fully examining the applicability of these models to developmental disability services have been conducted (Devereux et al. 2009).

Given the lack of research conducted with ABA therapists the predictors of perceived therapeutic efficacy and work-related well-being chosen for this study have been drawn from research on special educators and direct care staff working in services for people with intellectual disabilities. Thus, we explored whether commitment to the philosophy of ABA and supervisor support might predict self-efficacy and we expected work demands and supervisor support to positively predict burnout.

Jennett et al. (2003) found that commitment to the philosophy underlying a teaching orientation was related to higher professional self-efficacy and lower experienced burnout. Thus, individuals who identify with the theoretical basis for their work are more likely to experience feelings of competence and self-efficacy.

Excessive workload has been shown to be significantly associated with reported emotional exhaustion and cynicism in teachers (Hakanen et al. 2006). And teachers who work in schools for children with severe learning difficulties report having large workloads and long working hours (Male and May 1997). Therefore, we expect the work demands ABA therapists experience to influence work-related well-being.

Finally, a lack of support and receiving poor quality feedback, have been reported by special educators as sources of occupational stress (Wisniewski and Gargiulo 1997). This is important as tutors delivering ABA programs in children's homes reported that they did not receive adequate support from senior staff and because perceived supervisor support can help teachers to cope with challenging interactions with students (Bakker et al. 2007; Elfert and Miranda 2006).

We hypothesized that supervisor support would not mediate the impact of work demands on therapist burnout but would moderate this relationship such that therapists reporting high demands and low levels of supervisor support would have the highest negative burnout scores.

Method

Participants

Eighty-one therapists (76 female, 5 male), working in 11 separate schools that use ABA methodology to teach children with autism, participated in the research. All of the schools provided one-to-one teaching for children with autism and there were between 12 and 28 therapists

working in each. The schools were located across eight different counties in Ireland, with four located in Dublin. The therapists were mostly responsible for one-to-one teaching as the core aspect of their role ($n = 64$). Other participants were senior therapists ($n = 11$) with some supervision/training and administrative responsibilities, and the remainder were supervisors responsible for regular supervision of therapist teams ($n = 6$). The practice in the schools was that a therapist would either work with a particular child for between 5 and 7 weeks (46% of therapists), or work with a different child each day (44% of therapists). Ten percent of therapists worked with more than one child each day. On average, therapists had been working in the schools for 15.9 months ($SD = 14.6$ months) although the range was from 1 month to 6 years.

The therapists ranged in age from 20 to 44 years, with a mean age of 25.5 years ($SD = 4.1$ years). The most common qualification held by staff was a psychology bachelors degree (50%). The supervisors who participated had between 15 months and 5 and half years experience working in ABA schools; three of them held psychology degrees, one had Board Certified Associate Behavior Analyst accreditation and two were Board Certified Behavior Analysts. Therapists reported that they worked approximately 36 h in a typical week ($SD = 6.5$ h).

Measures

Five measures were used, in addition to a demographic questionnaire designed for the present study to assess characteristics reported in the participants section. The Maslach burnout inventory (MBI) was used to assess severity of burnout (Maslach and Jackson 1986). The MBI contains 22 items, which measure three dimensions of burnout (emotional exhaustion, depersonalization, and reduced personal accomplishment). Items were scored on a 7-point scale ranging from 'never' to 'every day'. The measure has good internal consistency, test–retest reliability, and convergent validity (Maslach and Jackson 1986). The MBI has also been shown to be suitable for use with staff in developmental disability services as both construct validity and reliability are fair to good with this population (Hastings et al. 2004). In the current study Cronbach's alpha coefficients were .85 for emotional exhaustion, .80 for reduced personal accomplishment, and .65 for depersonalization.

Ten items were used from the Perceived Therapeutic Self-Efficacy Scale (PTSE) (Symes 2005) focused on perceived efficacy when a child is difficult to engage. Therapists are asked to focus on the child they find most difficult to work with and to rate a number of situations in terms of how confident they currently are that they can

teach the child in each situation. These situations were derived from interviews with 19 ABA therapists (Symes et al. 2006) and included: "When the child is aggressive toward you", "When reinforcers lose effectiveness", and "When the child's attention wanders during the teaching activity". For each situation, therapists are asked to rate their confidence on a scale from 0 to 100. Cronbach's alpha coefficient for this 10 item scale was .89 for the present sample.

The four items of the Work Demands sub-scale of the School Organisational Health Questionnaire (Hart et al. 2000) were used to assess perceived work demands. Respondents rate their agreement with each item on a five point scale ranging from 'strongly disagree' to 'strongly agree'. Items include: "Teachers are overloaded with work in this school", and "There is no time for teachers to relax in this school". The full measure has good internal consistency and good construct validity, with Cronbach's alpha coefficients ranging from .71 to .90 (Hart et al. 2000). In the current study, Cronbach's alpha for the work demand scale was .92.

The 8-item Perceived Supervisor Support scale (Eisenberger et al. 2002) was used to measure supervisor support for ABA therapists. Four positively worded items (e.g., "My supervisor values my contribution") and four negatively worded items (e.g., "Even if I did the best job possible, my supervisor would fail to notice") are rated on a seven point scale from 'strongly disagree' to 'strongly agree'. The scale has high internal consistency and Cronbach's alpha coefficient of .81 has been reported in previous research (Eisenberger et al. 2002). Cronbach's alpha coefficient was .90 in the present study.

The Autism Treatment Philosophy Questionnaire (Jennett et al. 2003) was used to assess strength of commitment to the philosophy of ABA. The original questionnaire was designed to assess commitment to both ABA and TEACCh approaches to education of children with autism. For the current study the TEACCh items were removed. The revised version contains 16 items that reflect the underlying theory and values of ABA. Responses are made on a six-point scale from 'strongly disagree' to 'strongly agree' on items including: "I structure the environment to stimulate my student's use of spontaneous communication", "Making available powerful reinforcers is one of the best ways to engage a child in an activity", and "Children make the most educational progress when there is a close link between home and school". Cronbach's alpha coefficient in the present study was .92.

Procedure

After receipt of ethics review board approval, 13 schools in Ireland using ABA methods for children with autism were

identified and invited by letter to participate in the study. Two schools declined. The questionnaires, information letters, and letters of consent were mailed to each school. It was possible for the researchers to visit seven of the schools and personally distribute the materials to the staff and answer queries regarding the study. However, the questionnaires were distributed by the directors of the remaining four. Information posters that included contact details for the researchers were posted in the staff rooms of each school. All respondents were provided with stamped addressed envelopes to return the questionnaires. In addition, sealed boxes were provided in the schools visited by the researchers and these were collected after 2–3 weeks. For each school, reminders were sent 2 weeks after the questionnaires were distributed. The average response rate across schools was 45%, although this ranged from 15 to 83% across the individual schools. The lower response rates were from the schools located further from Dublin that, due to time constraints, the researchers were unable to visit personally.

Results

Scores on the MBI were first examined using the cut-off scores for high burnout. In general, the present sample reported low levels of high burnout. Only two therapists (2.5%) reported high depersonalization burnout and 18.5% reported low levels of personal accomplishment (and thus high burnout on this dimension). More of the therapists reported high levels of burnout on the emotional exhaustion domain (27%). In terms of the development of burnout, emotional exhaustion is thought to precede depersonalization and lack of personal accomplishment (Maslach 1999). Therefore, although these data suggest that the present sample of ABA therapists were relatively well-adjusted at work it is important to continue to review the development of burnout over time.

Therapists had generally low scores on the MBI Depersonalization scale including 40% of the sample who scored zero. Therefore, this variable was dichotomized such that those scoring zero could be compared with those having any other score. Univariate analyses were then conducted to explore the associations between all available demographic variables and the main dependent variables (the three MBI sub-scales and perceived therapeutic efficacy). Only one analysis revealed a significant association: therapists who had worked for longer in their ABA school reported higher levels of perceived therapeutic self-efficacy ($r(81) = .31, p = .005$). Graphical analyses of residuals showed the assumption of normality and equal variance were met in the regression analyses reported below.

Table 1 Means and standard deviations of study variables

Variable	<i>M</i>	SD
Emotional exhaustion	21.54	9.09
Depersonalisation	1.98	3.47
Personal accomplishment	37.51	6.46
PTSE difficult to engage	654.11	165.99
Excessive work demands	13.48	2.95
Perceived supervisor support	42.85	9.62
Commitment to ABA	88.10	5.76

Preliminary Analyses

The length of time tutors worked with a child varied between the schools with 46% therapists working with a particular child for between 5 and 7 weeks, 44% of therapists working with a different child each day, and 10% of therapists working with more than one child each day. One-way ANOVAs were conducted to determine if there were any associations between length of time spent with each child and dependent variables. These revealed that there were no significant differences between the groups on the measure of self-efficacy ($F_{(2,78)} = 1.17, p = .316$) or on the emotional exhaustion ($F_{(2,78)} = .92, p = .40$) depersonalisation ($F_{(2,78)} = .70, p = .50$) or personal accomplishment ($F_{(2,78)} = .88, p = .42$) components of burnout.

The means, standard deviations, coefficient alphas, and correlations between the study measures are shown in Tables 1 and 2.

Multiple Regression Analyses

Analysis of perceived therapeutic self-efficacy was carried out using a standard regression model with length of experience in their ABA school, commitment to ABA philosophy, and supervisor support as the predictors. The results of this analysis are summarized in Table 3. Overall, the regression model was statistically significant ($R = .48, R^2 = .23, F_{(3,79)} = 7.61, p < .001$). Both length of time working in the ABA school and supervisor support were positive predictors of perceived therapeutic efficacy.

Emotional exhaustion and personal accomplishment were analyzed using hierarchical regression procedures. In the first step of the analysis, work demands were entered as a predictor. Perceived supervisor support was added at the second step and finally a product term representing the interaction between perceived work demands and supervisor support was added at the third step. This enabled the exploration of whether supervisor support might act to mediate the impact of work demands on burnout. Evidence for mediation may be present if work demands were initially a significant predictor of burnout but at the second

Table 2 Correlations between study variables and coefficient alphas

Variable	1	2	3	4	5	6	7
Emotional exhaustion	(.85)						
Depersonalisation	.326**	(.65)					
Personal accomplishment	-.321**	-.351**	(.80)				
PTSE difficult to engage	-.110	-.214	.533**	(.89)			
Excessive work demands	.426**	.028	-.095	.004	(.74)		
Perceived supervisor support	-.497**	-.177	.473**	.383**	-.115	(.90)	
Commitment to ABA	-.074	-.196	.261*	.266*	-.013	.064	(.92)

* Correlation is significant at the .05 level (2-tailed)

** Correlation is significant at the .01 level (2-tailed)

Table 3 Regression analysis of perceived therapeutic self-efficacy

Predictor	β	p
Months working in ABA school	.209	.048
Commitment to ABA philosophy	.189	.071
Supervisor support	.319	.003

step in the analysis demands were no longer a significant predictor and instead supervisor support was a significant predictor of burnout (Baron and Kenny 1986). The interaction term was generated using the product of the standardized scores on work demands and supervisor support. If this interaction term was a significant predictor in the model, it would indicate the presence of a moderated effect (as predicted) (Baron and Kenny 1986). The results of these analyses are summarized in Tables 4 and 5.

There was no evidence that supervisor support mediated the impact of work demands on emotional exhaustion or personal accomplishment. However, supervisor support was a significant main effect predictor: negatively predicting emotional exhaustion and positively predicting personal accomplishment. There was also evidence that supervisor support moderated the effect of work demands on personal accomplishment. To explore this interaction,

Table 4 Regression analysis of emotional exhaustion burnout

Predictor	β	p	ΔR^2
Step 1			.16*
Perceived work demands	.394	<.001	
Step 2			.20*
Perceived work demands	.349	<.001	
Supervisor support	-.451	<.001	
Step 3			.01
Perceived work demands	.360	<.001	
Supervisor support	-.433	<.001	
Demands \times support	-.078	.412	

* F of change $p < .001$

Table 5 Regression analysis of personal accomplishment

Predictor	β	p	ΔR^2
Step 1			.01
Perceived work demands	-.112	.324	
Step 2			.21**
Perceived work demands	-.065	.522	
Supervisor support	.465	<.001	
Step 3			.04*
Perceived work demands	-.094	.348	
Supervisor support	.419	<.001	
Demands \times support	.203	.050	

* F of change $p < .05$; ** F of change $p < .001$

we followed procedures outlined by Aiken and West (1991) and plotted predicted personal accomplishment scores for high (1 SD above the mean) and low (1 SD below the mean) work demands crossed by three levels of supervisor support (high, low, and at medium—at the mean). The results of this analysis are displayed in Fig. 1. As expected, those therapists who perceived high levels of work demands and low levels of supervisor support were those who reported the lowest personal accomplishment scores. In fact, their predicted scores for personal accomplishment were in the high burnout range (Maslach and Jackson 1986). When supervisor support was high, there was no effect of work demands on therapists' reported personal accomplishment.

The final analysis of depersonalization burnout replicated the three step model but using a logistic regression procedure. The results of this analysis are summarized in Table 6. Work demands did not significantly predict depersonalization category membership and there was no evidence of a potential moderation effect, but there was a significant main effect again of supervisor support. Those with higher levels of perceived supervisor support were more likely to be in the group of therapists scoring zero for depersonalization.

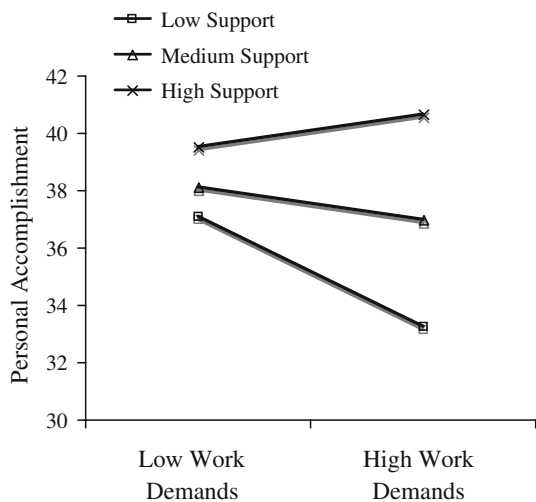


Fig. 1 Interpretation of the moderating effect of perceived supervisor support on the relationship between perceived work demands and personal accomplishment

Table 6 Logistic regression analysis of depersonalization burnout

Predictor	Wald	<i>p</i>	Total Nagelkerke <i>R</i> ²
Step 1			.01
Perceived work demands	.420	.517	
Step 2			.15
Perceived work demands	.923	.337	
Supervisor support	7.41	.006	
Step 3			.15
Perceived work demands	1.12	.290	
Supervisor support	7.38	.007	
Demands × support	.29	.589	

Discussion

The most consistent results from this research reflected the central role of perceived supervisor support in understanding burnout and perceived therapeutic self-efficacy in therapists working in ABA schools. High levels of perceived supervisor support were associated with reduced emotional exhaustion, reduced depersonalization, increased personal accomplishment, and increased perceived therapeutic self-efficacy. In addition, supervisor support acted to protect therapists from reduced personal accomplishment when faced with high levels of perceived work demands. This is consistent with theoretical predictions that high work demands and low support lead to the highest levels of work-related stress (Devereux et al. 2009; Karasek and Theorell 1990).

These results are salient not least because research on ABA therapists is very rare and we could find no previous research on the work-related well-being of therapists working in ABA schools. However, it is important to bear in mind several limitations of the research. First, although a

total national population of therapists working in ABA schools was targeted for recruitment there was not 100% agreement from schools to participate in the research and the response rate was moderate. Thus, the sample here is unlikely to have been representative of the population of ABA therapists working in Ireland. Overall, burnout scores were low in the participating sample raising the possibility that those experiencing higher levels of burnout at work declined to participate. A second limitation is that the measures focused on therapists’ perceptions only. Perception of support has been found in other research domains to be more strongly associated with psychological well-being than more objective measures of available support (e.g., White and Hastings 2004). However, we have no data on therapist performance within the work setting and thus the potential significance of the present results for intervention quality is assumed at this stage.

A third limitation, and a priority for future research, is the lack of longitudinal data. We have found important cross-sectional relationships between supervisor support and ABA therapists’ perceived therapeutic self-efficacy and burnout. It is possible that these relationships run in the other direction: therapists experiencing burnout may rate their supervisors as less supportive and those doubting their therapeutic self-efficacy equally may perceive less support from their supervisors. Although this is an important methodological and theoretical concern, it may be less important practically. If we accept the hypothesis that burnout, low perceived therapeutic self-efficacy, and low perceived support are all likely to impede rather than facilitate therapists’ quality of work then interventions to influence any of these will be worthwhile.

Assuming at this stage that supervisor support helps to drive up perceived therapeutic self-efficacy and reduce burnout, the practical implications of the present research are very clear. Regular and high quality supervision is likely to have a positive effect on ABA therapists and thus on the success of ABA interventions (Eikeseth et al. 2009). However, perhaps equally important are the qualitative dimensions of supervisor support. The perceived supervisor support measure used in this research focuses on how therapists feel and think about their supervisor. Thus, supervisors who have an encouraging style (e.g., who use reinforcement principles in support of their supervisees) and who demonstrate empathy with therapists’ experiences in their direct intervention role may get the best results. This latter point might suggest that supervisors should have experience of direct intervention work as a therapist and also should listen carefully to therapists’ perspectives on their current work (e.g., particular children being difficult to work with) and work with them to problem solve. At present, these practical recommendations are not supported by direct data and so a priority for future research would be to test different

supervision models and to record the impact on therapist performance and also on their psychological well-being.

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