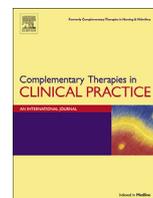




Contents lists available at ScienceDirect

Complementary Therapies in Clinical Practice

journal homepage: www.elsevier.com/locate/ctcp

Of Dodo birds and common factors: A scoping review of direct comparison trials in adventure therapy

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ARTICLE INFO

Article history:

Received 26 October 2017

Received in revised form

16 December 2017

Accepted 18 January 2018

Keywords:

Adventure therapy
Wilderness therapy
Common factors
Scoping review

ABSTRACT

Background: Adventure therapy (AT) is a term that includes therapies such as wilderness therapy and adventure-based counseling. With growing empirical support for AT, the diversity of studies make it difficult to attribute outcomes to specific treatment factors.

Objectives: Researchers explored whether AT, often perceived as an alternative therapy, works because of AT's unique components, or whether factors shared by all therapies were responsible.

Methods: A scoping review was undertaken utilizing a search of major databases, unpublished dissertations, and a hand search for direct comparison trials matching AT with another therapeutic intervention.

Results: 881 publications were identified. 105 quantitative studies were included following a title and abstract review. Only 13 met the full inclusion criteria. Little to no differences were found to isolate specific therapeutic factors.

Conclusions: We discuss the implications of these results considering the movement toward evidence-based practice and recommend future research to eclipse our current understanding of AT.

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1. Introduction

In 1936, friend and classmate of B. F. Skinner, psychologist Saul Rosenzweig, published *Some Implicit Common Factors in Diverse Methods of Psychotherapy*, in which he cited Lewis Carroll's [1] *Alice's Adventures in Wonderland*. In Carroll's story, Alice's tears had drenched the animals and a race was held for the animals to dry themselves. At the end, the Dodo bird was asked who had won, and he declared, "Everybody has won, and all must have prizes" [p. 412, emphasis in original]. In his short paper, Rosenzweig [2] asked, if all the different models of therapy were equally effective for a diverse range of clients, then was each model of psychotherapy a winner as well?

The Dodo's verdict was revisited by psychiatrist Jerome Frank [3] in 1961 and confirmed 30 years later that "despite decades of effort, no one has shown convincingly that one therapeutic model is more effective than any other for the majority of psychological illnesses" and suggested that "the specific effects of particular healing methods may be overshadowed by therapeutically potent

ingredients shared by all" [3, p. 2]. Referred to as the 'common factors,' these include a relationship between a therapist and client, a therapeutic rationale for delivering the service, and placebo or expectancy [4,5]. Empirical support for these factors exists [6–9] as they make up the largest variance found in outcome studies when specific treatment approaches are compared.

Despite the work of Rosenzweig [2] and Frank and colleagues [3,10,11] and meta-analytic evidence supporting the Dodo's verdict [4,12–15], specific techniques dominate mental health literature, informing both policy and reimbursement [16,17]. Over the last half a century, more empirically supported treatments and more mental disorders have been catalogued [5] with no improvement in outcomes since therapy's first meta-analysis [7,12,14]. The Dodo's claim that all models are deserving of prizes points to the robustness of outcomes across all models rather than the specifics of *what works best and for whom* [18].

Within adventure therapy (AT), debate exists about how it works and whether there are some specific ingredient(s) unique to AT's effectiveness [19–21]. Harper, Peeters, and Carpenter [22] suggested AT is an umbrella term encompassing a multitude of related approaches described in the literature, such as wilderness therapy, outdoor behavioral healthcare, bush adventure therapy,

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therapeutic recreation, eco-therapy and adventure-based counseling, to name a few. AT utilizes experiential learning methods, physical movement, challenge and risk-based activity, the generating and use of metaphor, and involvement with natural environments [22,23]. Described as either an adjunct to an existing therapy or a stand-alone treatment, AT literature has substantially increased over the last two decades [20,24] yet struggles to move to an evidence-based modality due to its diverse manifestations and lack of theoretical development as a therapy [25].

1.1. Purpose of this scoping review

Harper cautioned against ignoring the Dodo's ruling of the common factors in AT, declaring that "evidence of change may be demonstrable in outcome studies... yet explaining how that change occurred is highly implausible" [26, p. 43]. For Baldwin, Persing, and Magnuson, it seems contradictory "to suggest that adventure education programs foster growth in the participants (i.e., outcomes) while at the same time asserting there is little understanding of how this change occurs" [27, p. 168]. As practitioners and researchers embedded in the AT community, this review was driven by our interest in locating the specific ingredients, if any, contributing to AT outcomes. This scoping study follows guidelines as described by Arksey and O'Malley [28] to review studies directly comparing AT delivered in clinical settings with other therapeutic services in support of the drive toward evidence-based practice.

1.2. What are the common factors?

Frank and Frank proposed "that the features common to all types of psychotherapy contribute as much, if not more, to the effectiveness of those therapies than do the characteristics that differentiate them" [11, p. 20]. With resounding evidence supporting the effectiveness of therapy across models [4,7,12,14], direct comparison trials have historically found little variance in treatment differences [see 29]. Asay and Lambert [4] reviewed decades of outcome research and estimated the variance attributed to the common factors, ranking extratherapeutic factors at 40%, relationship factors at 30%, hope and placebo at 15%, and the model or technique at 15% as well. While Asay and Lambert depicted these factors in a well-arranged pie chart, Wampold [30] argued for a more fluid understanding of the common factors, best understood by separating treatment effects from the extratherapeutic factors. Instead, 86% of the variance was due to these extratherapeutic factors, described by Thomas as the "components in the life and environment of the client that affect the occurrence of change, such as the client's inner strengths, support system, environments, and chance events" [8, p. 203]. Wampold [30] attributed the remaining 14% to the treatment that included the alliance, model differences, hope and expectancy. Laska, Gurman, and Wampold [31] further listed the effects of different therapeutic variables from 715 studies, with more than 32,700 patients listing significantly larger effects for the therapeutic relationship and agreement on goals than specific treatment differences or model adherence.

In randomized clinical trials, researchers have commonly paired established therapies, with no treatment or nonspecific control groups. No treatment controls lack the common factors, including a therapeutic relationship and a rationale for therapeutic healing that elicits hope and expectancy [9]. Attempting to control for these factors and placebo effects, nonspecific control groups have placed research participants into nontherapeutic controls. An example of this in AT is evident in the often-cited 1968 study of Outward Bound's 21-day program on recidivism rates for adjudicated youth by Kelly and Baer which used a "traditional training school experience" [32, p. 89] as the comparison. Because a training school

lacks the therapeutic intent and common factors associated to therapy, the findings were not included in this review. Interestingly, however, the three Outward Bound schools used in this study with similar sample sizes produced varied results which we find interesting relative to our study aims. While the Colorado School reported a recidivism rate at 0% and Hurricane Island at 11%, the Minnesota School reported a recidivism rate of 42%, worse than the training school it was compared with (37%), leaving readers to wonder, what factors differentiated these programs all operating under the same organization? It is because of this lack of theoretical understanding that AT continues to espouse positive treatment outcomes without being able to articulate why [26].

Common factors research brings into question the current state of evidence surrounding AT, how it works, and how outcomes can be improved. Random assignment to treatment groups has been a challenge for AT, as it raises ethical concerns about placing people in experimental conditions outside their treatment preference [33]. Still, calls are made for more scientific verifiability and fidelity in AT practice [24,34]. For these authors, the question persists if the Dodo's verdict applies to a therapy that is often viewed as alternative due to the many factors that have been assumed to contribute to change [20,35].

2. Methods

2.1. Scoping review methodology

We preferred to conduct this review as a scoping study "to map rapidly the key concepts underpinning a research area and the main sources and types of evidence available" [28, p. 21, emphasis in original] across the AT literature. Though without a universal definition or method, this methodology has been used to review previously under-explored bodies of knowledge [i.e. 36]. With the diversity in AT practice [22] this method provided an opportunity "To clarify a complex concept and refine subsequent research inquiries" [37, p. 1]. For Gough, Thomas, and Oliver [38], it is important to situate the boundaries between systematic and scoping reviews. Where systematic reviews seek evidence to inform decisions, a scoping review intends to provide a new way of understanding. Our search for literature is outlined below using Arksey and O'Malley's [28] five-stage framework. A thorough description of the research methodology is shared for replicability [39].

2.1.1. Stage 1: identifying the research question

This review asked the research question: *Are there specific components to AT contributing to outcomes?* With the purpose of exploring the findings from direct AT comparison studies featuring an experimental treatment group. The literature includes the broad understanding of AT defined by Harper et al. [22] and aimed to map specific therapeutic factors identified as AT.

2.1.2. Stage 2: identifying relevant studies

To increase depth, Arksey and O'Malley [28] recommended searching for studies from a variety of sources including electronic databases, references lists, hand searching relevant journals, and existing networks or conferences. Primo Search was used to scan the major databases, including EBSCOhost, Ovid, SAGE Journals Online, PsychINFO, Google Scholar, ProQuest, ERIC, and Cambridge Journals Online. The advanced search option was utilized on July 31, 2017 with the search terms "adventure therapy" or "wilderness therapy" as part of the title or keywords from peer-reviewed journal articles only. These keywords were chosen for their dominance in the English literature [20,35]. This search located 752 peer-reviewed articles, presented in Fig. 1. A PRISMA flow diagram [40] provides a visual representation of our search process. A

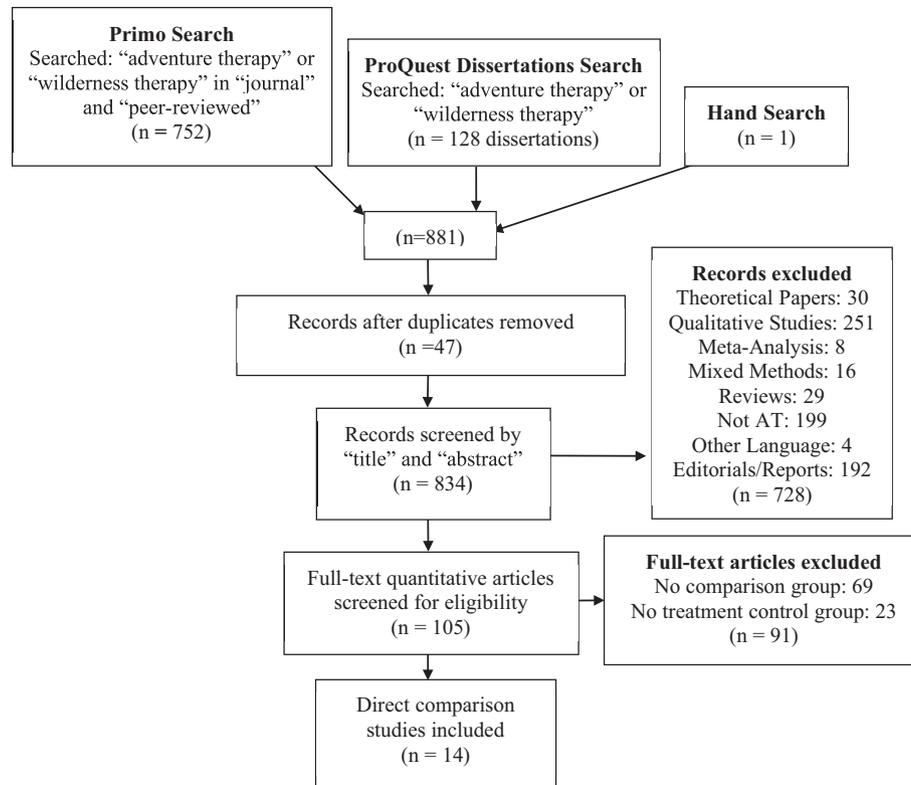


Fig. 1. Flow diagram of search terms, inclusion criteria and findings.

secondary search was conducted through ProQuest Dissertation Publishing to locate possible unpublished AT dissertations. Using the same search terms, 128 dissertations were located. Last, a hand search through reference lists from AT reviews, seminal studies [e.g., 41], and field-related journals not appearing in our database search was conducted. The journals hand searched were the *Journal of Experiential Education*, *Child and Youth Care Forum*, *Australian Journal of Outdoor Education*, and *Residential Treatment for Children and Youth*. One additional publication was located, resulting in a final count of 881.

2.1.3. Stage 3: study selection

These articles and dissertations (n = 881) were first screened by review of title and abstract. Exclusion of publications included the removal of duplicates (n = 47), theoretical papers (n = 30), qualitative studies (n = 251), meta-analyses (n = 8), mixed-methods studies without controls (n = 16), reviews of literature (n = 29), articles not pertaining to AT (e.g., outdoor education and adventure tourism) (n = 199), published in a language other than English (n = 4), and editorials or reports (n = 192). The remaining quantitative studies (n = 105) were then full-text reviewed. At this stage, exclusion of studies included those without control groups (n = 68) and those with no treatment controls or experimental conditions lacking the common factors, such as a therapeutic relationship (n = 23). In distinguishing the difference between experience-based adventure program and those determined to be therapy, Gillis, Gass, and Russell stated that “Researchers must also present what is occurring in the treatment program that is labeled “therapy” and how (or if) wilderness adventure therapy is being delivered” [42, p. 230]. Only studies indicating the presence of qualified practitioners working in clinical settings were included. If a control group was labelled therapeutic [e.g. 42] but the presence of a therapeutic rationale or practitioner was missing, the study was

excluded. This two-stage exclusion process resulted in 13 publications meeting our criteria for review.

2.1.4. Stage 4: charting the data

Stage 4 is more akin to a narrative than systematic review in that we explored the 13 direct comparison trials using a descriptive–analytical method [39], which involved charting process information, such as the therapeutic rationale for AT or authors' claims about specific ingredients. While Arksey and O'Malley [28] do not recommend searching for literature based on research method alone, we felt that direct comparison trials could help explore our research question in that they offered an opportunity to locate studies examining these distinctions [43]. That said, we did not assess the quality of these studies [37,44]. The articles are charted chronologically in Table 1, by author, year of publication, sample size, a brief description of the experimental conditions, and research measure(s) used. We also located text from each study that provided a conclusion or clarifying comment on the study's outcome.

2.1.5. Stage 5: collating, summarizing, and reporting the results

We reviewed the studies individually rather than collating the results [37,39]. We examined each study for a therapeutic rationale clarifying why one experimental condition should provide significant outcomes and a reasoning for why that condition would prove effective. Where available, this rationale is presented.

3. Results

Our search for direct comparison trials located studies that included outpatient AT services [e.g. 45], wilderness therapy (WT) programs [e.g., 45], different components of WT programs [e.g., 47], as an adjunct to treatment residential programs [e.g. 48], and an

Table 1
Direct Comparison Studies in AT.

Author (Year)	N	Therapies	Research Measures	Author Comments on Efficacy
Callahan (1989) [53]	70	– Adapted Outward Bound – Traditional probation treatment	Tennessee Self-Concept Scale Modified Internal-External Scale Generalized Expectancy of Success Scale	“Further study should be undertaken to discriminate between Sierra II components effecting behavior and achievement and those related to individual participant maturation” [p. 8].
Bandoroff (1992) [47]	66	– Wilderness survival program with family therapy experience – Wilderness survival program without family therapy experience	The Family Wheel Evaluation The Family Assessment Measure III The Self-Reported Delinquency Checklist The Revised Behavior Problem Checklist The Self Description Questionnaire III	“Adolescent ratings of delinquency dropped for both Family Wheel adolescents and nonparticipating adolescents. Parent ratings of problem behavior also improved for both groups. Moreover parent and adolescent reports of police and court contacts decreased for both Family Wheel participants (3) and nonparticipants (21). Adolescent ratings of self concept also revealed increases in self concept for adolescents in the Family Wheel and adolescents who took part in the standard wilderness program only” [p. 186].
Hyer et al. (1996) [48]	219	– Five-day Outward Bound – Treatment as usual	Mississippi Scale for Combat Related PTSD Impact of Events Scale Self-Esteem Questionnaire Locus of Control Questionnaire	“Overall results suggest that [the Outward Bound experience] as an adjunct to [Specialized Inpatient PTSD Units] produces no distinct discernible effect on general or PTSD-specific symptoms” [p. 272].
Romi & Kohan (2004) [52]	94	– Wilderness group – Alternative group – Contrast group “without any specific intervention”		“The [wilderness program] group stood apart in its results, showing increased self-esteem in four out of six factors compared to the contrast group, but there was no significant change compared to the Alternative Program group” [p. 115].
Guthrie (2004) [56]	72	– Therapeutic services with AT – Therapeutic service without AT	Ohio Youth Problems, Functioning, and Satisfaction Scales	“No significant difference in post-test scores between the two groups was found, suggesting that neither Adventure Therapy nor ‘treatment as usual’ was more effective than the other.” [p. iii]
Jones, Lowe, & Risler (2004) [57]	35	– WT program – Residential program	Detention Assessment Instrument	“This result is important in indicating that, at least in this case, wilderness programs were not any more or less effective than another residential program offered to juveniles.” [p. 64]
Eikenaes et al. (2006) [49]	53	– Integrated WT – Inpatient program	Statistical Clinical Interview for DSM-IV Symptom Check List 90 The Beck Depression Inventory The Phobic Avoidance Rating Scale The Personality Diagnostic Questionnaire 4+ Self-Efficacy Inventory	“Results were not significantly different in the two treatment conditions” [p. 279].
Larson (2007) [58]	61	– Adventure camp – Behavior modification	Piers-Harris Children’s Self-Concept Scale	“The lack of a significant statistical difference between the two groups of this study would seem to be supported by previous research” [p. 325].
Walsh & Russell (2010) [50]	43	– 21-day WT program – Correctional services	Recidivism reported by probation officers	“No significant differences in recidivism rates, school participation, or employment rates were found” [p. 221].
Magle-Haberek et al. (2012) [46]	118	– Outdoor behavioral healthcare – Residential treatment centers	Outcome Questionnaire Family of Instruments	“This research demonstrated that length of treatment does not predict change in [Outcome Questionnaire] measures” [p. 216]. “This finding may also imply that change is likely determined by clients’ individual treatment needs, rather than that of the program” [p. 212].
Tucker et al. (2013) [45]	1135	– AT – AT + psychological counseling – Psychological counseling – Psychological and group counseling	Ohio Youth Problem Severity Scale	“All clients who participated in any type of counseling presented on average with high levels of problem severity... while clients who were given no counseling services, but a variety of support services, did not make any significant improvements... In addition, clients who participated in AT presented at intake with significantly higher levels of problem severity compared to clients who participated in other types of counseling... This is not surprising since clinicians often referred challenging clients to AT in addition to counseling” [p. 172].
Paquette & Vitaro (2014) [51]	220	– 8–10-day WT program – 17–20-day WT program	A scale was created to measure negative peer influence and substance abuse issues	“The absence of a significant relationship between the duration of the program and the improvements that have been observed in the participants brings us to believe that the intervention has not played a direct causal part” [p. 247].
Rosenberg, Lange, Zebrack, Moulton, & Kosslyn (2014) [59]	199	– First outdoor adventure program – Second outdoor adventure program	Body Image Scale Self-Compassion Scale-Short Form Psychological Screening Inventory-2	“We also compared how the two groups... fared from pretest to posttest, and found no differences on any of the variables of interest. That is, P2 participants did not have a significant additional benefit (nor did they fare worse) compared to P1 participants” [p. 634].

integrated WT in an inpatient program [e.g. 49]. Outcomes were measured by recidivism rates [e.g. 50], length of treatment in relation to outcomes [e.g. 51], and using behavioral or emotional measures [e.g., 52].

3.1. Presentation of included studies

Comparing the effects of the Sierra II program, an adapted version of Outward Bound, to established probation services, Callahan [53] found the program to deliver the intended outcomes for Locus of Control and Self-Esteem. The author talks in length about

the therapeutic model being delivered, stating that Sierra II is “an intense physical and guidance program designed to optimize the change process” [53, p. 70]. The program teaches problem-solving skills and responsibility to improve self-efficacy through mastering certain skills, and participants should become motivated to change and able to overcome adverse situations through having experiences of success and mastery [54]. This study, however, found no statistically significant difference in outcomes between Sierra II and traditional probation services, which were not described in any length but involved counseling and rehabilitation. The author argued for more research attempting to locate the

specific healing components of the Sierra II program as this study could not find one specific ingredient, for example, rock climbing, to be more beneficial than traditional probation services.

Bandoroff and Scherer [55] compared the outcomes of those who had completed a 21-day WT program with those who had completed the same program with a supplementary family therapy workshop. The additional workshop reunited adolescents with their parents for an intensive program of additional trekking, family therapy sessions, and metaphoric experiences to help transition the adolescents home and improve communication. The authors reported positive effects for both conditions, yet there was no difference in outcomes in self-concept and parent reports of problem behavior for families that took part in the additional four-day family therapy workshop. In this case, supplementary intervention did not predict further improvements at the six-week follow-up.

Hyer et al. [48] explored the effects of incorporating a five-day Outward Bound program in two Department of Veterans Affairs Specialized Inpatient PTSD Units (SIPUs). Comparison groups were created of Vietnam veterans who took part in either the Outward Bound ($n = 108$) or treatment as usual ($n = 111$), which included group and individual therapy in a therapeutic residential setting. The study suggested that using Outward Bound experiences “as an adjunct to SIPU treatment produces no distinct discernible effect on general or PTSD-specific symptoms” [48, p. 272]. Interestingly, the two settings in which this study took place outperformed each other.

Romi and Kohan [52] established a six-day wilderness program for disengaged youth in Israel to compare outcomes to an alternative residential program including a variety of activities. Facilitated by a trained therapist, the wilderness program should help adolescents to take control of their immediate experiences, which would lead to improved self-esteem and locus of control, two domains measured by the researchers. This study also included a control group “without any specific intervention program” [52, p. 123]. The wilderness program and alternative camp both outperformed the nonspecific control group, yet no significant difference was found between the wilderness and alternative camp.

Guthrie [56] explored whether incorporating a manualized version of group AT would improve problem severity as reported by parents or agency workers compared with treatment-as-usual services for children diagnosed with mental disorders. The author hypothesized that AT would help participants to change their thoughts, feelings, and behaviors through problem-solving and cooperative activities. The study found both AT and treatment-as-usual to be equally effective.

Jones et al. [57] compared the effects of splitting a sample of 35 young male participants, who were placed in either a WT or residential group home program. The authors found that “wilderness programs were not any more or less effective than another residential program offered to juveniles” [57, p. 64]. The study did not discuss the components of either experimental group, making it difficult to identify factors contributing to the outcomes, but one can reason that while time spent in nature and the camping experience was beneficial, it was no more so than being inside at a group home. Both experimental groups, however, operated in group settings, which could be one factor contributing to the equivocal effects.

Eikenaes et al. [49] integrated WT to compare outcomes using a myriad of questionnaires with those engaged in the hospital's standard inpatient program in an attempt to improve outcomes in an inpatient program for patients diagnosed with avoidant personality disorder. These hospital services were interpersonally focused using groups with a psychodynamic framework. The researchers argued that integrating WT would “intensify the

interpersonal focus through interpersonal tasks” [49, p. 276], which would lead to feelings of success and mastery. The “overall results were not significantly different in the two treatment conditions” [49, p. 279]. No differences in outcomes in depression, phobic avoidance, or self-efficacy continued at a follow-up measure conducted one year post discharge.

Larson [58] studied the self-concept of 31 adolescents who voluntarily engaged in an adventure camp compared to adolescents receiving behavior modification through a social services agency. A five-day adventure camp provided an experience where adolescents shared equal responsibility in completing daily tasks required for camping in a wilderness setting. These tasks, the author explained, are meant to help adolescents to improve their self-concept, social skills, and appreciation for natural environments. The study “would appear to support the notion that adventure camp programs do not produce a significant difference between the two groups studied” [58, p. 327]. Based on the author's literature review, this study “supports the findings from previous studies... that adventure camps illicit no change in a participant's self-concept when compared to other groups who do not participate in adventure camp programs” [58, p. 326].

Walsh and Russell [50] compared a 21-day WT program to a “control group of similar youth referred to some other correctional disposition” [50, p. 399]. The authors proposed that change on WT programs occur, as:

“wilderness and adventure experiences for adolescents enhance self-competency through wilderness and adventure-based travel in remote environments in an intense social milieu, which leads to the development of intra- and interpersonal skills strongly linked to the concept of resiliency, which leads to an enhanced sense of hope for adolescents that they can overcome certain challenges in their lives, which ultimately results in a reduction of recidivism after the completion of the wilderness experience.” [50, pp. 398–399]

Unfortunately, details of the ‘correctional’ services were not discussed, making it difficult to explore the components eliciting change. Recidivism rates between the two groups studied, which were reported to the researchers by probation officers, were approximately 42% for the control group and 44% for WT. No statistically significant differences were found.

Magle-Haberek et al. [46] explored the difference in outcomes and program components between outdoor behavioral healthcare (OBH) programs and residential treatment centers. OBH programs are designed to work by immersing adolescent participants into a wilderness environment, using physical activity and social interaction in group settings. Clinicians in some of the residential treatment centers also reported using some form of AT technique, which were considered, though the researchers could not find any significance to indicate that implementing AT was predictive of change in residential settings. In this study, the 68 participants of residential programs had on average longer lengths of treatment than the 50 OBH participants, though length of treatment was not predictive of change. Residential programs did, however, outperform the OBH programs, though this may be due to unequivocal samples of research participants. Clients admitted into the residential programs reported more distress on outcome measures, which is discussed further in the discussion section.

Paquette and Vitaro [51] randomly assigned young offenders to two WT programs, one lasting 8–10 days ($n = 101$) and another 17–20 days ($n = 119$). The authors illustrated several elements crucial to the WT process, naming “experiential education, the use of outdoor activities to incorporate a certain level of risk and responsibility, the context of the wilderness and the less traditional

role of the counsellor” [51, p. 233]. Additionally, “the longer... the duration of the program, the better the results should be if the results depend on the program, especially if the duration is experimentally manipulated through random assignment of the participants” [51, p. 234]. Using a customized scale to measure negative peer influence and substance abuse, the authors noted that “no matter the length of the expedition phase, the observed decrease in antisociality levels of participants at three months was maintained without great variation at six months” [51, p. 239]. The authors pointed out that the “absence of a significant relationship between the duration of the program and the improvements that have been observed in the participants brings us to believe that the intervention has not played a direct causal part” [51, p. 247].

Rosenberg et al. [59] inquired whether young adult cancer survivors, having already completed a six-day adventure program, would benefit from a second adventure program. The authors hypothesized that participants would be sensitized to the program and benefit more from a second adventure-based experience. Findings suggest that engagement on the first program led to improved self-esteem, body image, self-compassion, and reduced depression. The authors found that though participating in a second program helped in similar ways, participants “were no better off psychologically than participants who take part for the first time” [59, p. 622].

One study found a significant improvement in problem severity and functioning by adding AT services to community-based counseling services [45]. The study reported larger decreases in problem severity among participants engaged in counseling services with an AT component. Though both counseling with or without components of AT produced significant results, these authors advised caution when interpreting the findings due to unbalanced treatment groups, and participants referred to AT services reported greater levels of distress than those in the counseling-only group.

4. Discussion

With many types of reviews available, we preferred a scoping review to map the available evidence on the specific therapeutic factors of AT as opposed to a more systematic approach of compiling all the available literature [38]. Identifying what can be known about AT specifically is just one step toward understanding the potential of this approach. Of the 13 direct comparison studies in this review, it was clear that no analogous version of AT exists. The diversity of practice in the international context shows that AT could be effectively delivered over varying lengths of time, in different settings, and for different populations. No matter the rationale for why some certain version would work better than the next, AT showed it could be as effective as its counterpart in the included studies. In 10 of the 13 studies, *intense social environments* were assumed to contribute to positive outcomes. Three mentioned that *problem-solving activities* would lead to feelings of *success* or *mastery*, terms referred to in six of the studies, which may illustrate the influence of Walsh and Golins' Outward Bound process model [54]. *Physical involvement* was mentioned in five studies as playing a role in relation to outcomes. Seven studies reported that *time in nature* and *pristine wilderness environments* would provide a more effective setting for therapeutic healing to occur and asserted that *time in nature* was an active ingredient contributing to outcomes. When compared to conditions lacking in these factors, however, the specifics of each appeared to hold little influence.

In the two studies [45,46] where differences were found, intake scores showed higher levels of distress for those in the better performing intervention. Higher levels of distress at intake tends to be one of the best predictors of change rather than diagnosis, demographics, or the specifics of the treatment [16]. This may

emphasize that the context in which AT is provided regarding the qualities of the therapists, the extratherapeutic factors of the client's life, and the quality of engagement and relationship may specifically play a larger role in how change occurs.

Though therapy is situated in a domain that privileges evidence gleaned from randomized clinical trials [33], the active ingredients regarded as unique to AT made little difference in outcomes across the 13 studies. With calls for experimental research to produce evidence of efficacy [63], researchers may benefit from investigating our current understanding of how AT actually works rather than comparing AT to other bona fide therapies. Does more pre-/post-outcome research improve our understanding of how AT works, or does it continue to emphasize that those engaged in some sort of therapeutic healing are better off than those receiving no treatment at all? If the latter, it may be revealing for researchers to conduct dismantling studies to determine the essential factors contributing to program outcomes [23,61,64]. Similar to child and youth therapeutic residential programs, many WT and OBH programs have a curriculum of treatment phases to move through, minimum or fixed lengths of stay, and specific skills that must be attained while incorporating components of family, individual, and group therapy [35]. These conditions, as well as the specific factors identified in this review (See Table 2), could be further dismantled by removing one of them from each experimental condition in search of their significance. A limitation to this review, discussed further below, is the lack of definition and inconsistency regarding what treatment was actually provided to the AT participants. Instead of continuing to conduct outcome research under the umbrella of AT or calling for more comparison groups, it may be important to ask what can be done to improve outcomes. Because anecdotal justifications of AT hold little evidence in relation to outcome, a dismantling study could help illustrate what therapeutic forces are actually at work. If the Dodo's verdict holds true, the importance of one ingredient over another would continue to prove small, inviting the question of what factor is truly essential for AT's effectiveness.

These findings support a vision of AT that includes a variety of approaches, settings, and contexts and is in alignment with an international expression of AT [22]. With this review and ongoing consideration about how to define AT or how it works [24,65,66], a more compelling view of AT would acknowledge that the unique components of AT may not have greater influence than the factors shared with all other forms of therapeutic interventions. With this, AT does face a similar challenge to the many models of therapy [7,11]. Stated in the conclusion of psychotherapy's first meta-analysis published in 1977, Smith and Glass noted that “unconditional judgments of superiority of one type or another of psychotherapy, and all that these claims imply about treatment and training policy, are unjustified” [14, p. 780]. Moreover, these assumptions place researchers and practitioners “in the rather embarrassing position of knowing less than have been proven” [14, p. 780]. For example, not once in this review did an intervention utilizing a wilderness environment outperform an indoor setting. If not for the specifics, the common factors may hold clues as to what is affecting change.

We simply cannot rely on circumstantial understandings of AT to do the work for us, nor rest on the growing evidence from outcomes studies. With a history riddled by unethical practice, unqualified staff, unprincipled techniques, and even client deaths on WT programs [67–69], this review does not suggest an ‘anything goes’ philosophy. On the contrary, the common factors theory does not apply to treatments proven to hurt people [5]. Instead, it illustrates that when a client and therapist engage in an emotionally charged therapeutic relationship with an agreed-upon narrative for which therapeutic healing will occur, positive outcomes emerge [7,11].

Table 2
The Specific Ingredients Identified in this Review.

Therapeutic Rational	Specific Ingredients
Treatment setting	<ul style="list-style-type: none"> • Varying lengths of stay • Varying amounts of time spent in nature • Types of wilderness environments • Indoor vs outdoor settings • Individual focus vs family involvement • Matching treatment to diagnostic criteria • Multiple family groups • Nontraditional role of therapist
Therapeutic ingredients	<ul style="list-style-type: none"> • The presence of a qualified therapist • High vs low ropes course elements • Primitive survival skills (i.e., fire making, trap building) • Structuring WT programs based on phases • Family involvement programs • Amount of physical activity • Success and mastery • Rock climbing • Use of metaphor • Letter writing • Experiential education • Journaling • Hiking
Social group setting	<ul style="list-style-type: none"> • Perceived Risk • Group problem-solving activities • Interpersonal tasks • Intense social milieu • Social responsibility (i.e., completing day-to-day tasks) • Solo experiences

Inappropriately, acceptance into the domain of evidence-based practice involves providing proof of active ingredients contributing to outcomes and finding what precise technique or disorder fits best within the AT framework [26]. With the Dodo's verdict that *all are deserving of prizes*, the therapeutic forces of AT may be the same factors contributing to change across various modalities.

4.1. Limitations

For reviewing direct comparison trials, Wampold [43] recommended using only studies that contain manualized treatments in order to track the specifics of each treatment. For this review, each study would have needed an in-depth rationale for each experimental condition. The lack of an agreeable definition does create a limitation in understanding what it is that these studies are purporting to call AT. Where manualized therapies, like cognitive behavioral therapy, include a set of specific techniques or ingredients that can be more easily isolated, the lack of coherent presentations of AT may have distorted these findings. With a small sample of available studies, we preferred to conduct a scoping study as AT practice remains varied and is not a manualized modality [25]. Limited discussion about the experimental groups and the treatments provided were available, leaving it difficult in some cases to determine whether a control group was, in fact, designed to be therapeutic. Given that half of the studies included were conducted over a decade ago, some of these studies may lack currency and understanding. Further, studies excluded for employing nontherapeutic controls [e.g. 60] and qualitative work [e.g. 61] have added theoretical arguments. In mapping this AT literature, it is important that we emphasize the many ways of knowing and understanding experience [62]. We preferred, for this study, to present the available direct comparison trials based on recent calls in the literature for comparison group studies [24].

5. Conclusion

This scoping review located 13 studies where outcomes of adventure therapy, provided in clinical settings, were directly compared with other therapeutic conditions. Like other direct comparison trials [6,29], few significant differences were found to pinpoint specific ingredients required to produce significant change. If the person of the client and therapist are responsible for the lion's share of change [31], future research may abandon the search for specific ingredients and begin exploring what can lead to improved outcomes. While studies routinely measuring outcomes are starting to occur [e.g., 70], researchers could conduct more patient-focused research to explore the *dose-response* relationship [71] finding the connection between outcomes and time spent on an AT program “to mark a point in treatment at which cases that have not shown any measurable improvement should be subjected to clinical review” [71, pp. 163–164]. These methods [65] can help further explore the variance between therapists and help certain programs establish plans for continuous quality improvement. By privileging the AT participant's experience above the model and engaging influence of the therapeutic relationship, AT practitioners can systematically monitor outcomes to simply rely on whether or not the service they are providing is working for each individual client, not what the service is or how it is defined.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

- [1] L. Carroll, *Alice's Adventures in Wonderland*, Penguin, Harmondsworth, Middlesex, 1865.

- [2] S. Rosenzweig, Some implicit factors in diverse methods of psychotherapy, *Am. J. Orthopsychiatry* 6 (1936) 412–415.
- [3] J.D. Frank, *Persuasion and Healing: a Comparative Study of Psychotherapy*, Johns Hopkins University Press, Baltimore, MD, 1961.
- [4] T.P. Asay, M.J. Lambert, The empirical case for the common factors of therapy: quantitative findings, in: M.A. Hubble, B.L. Duncan, S.D. Miller (Eds.), *The Heart and Soul of Change: What Works in Therapy*, American Psychological Association, Washington, DC, 1999, pp. 33–56.
- [5] M.A. Hubble, B.L. Duncan, S.D. Miller, B.E. Wampold, Introduction, in: B.L. Duncan, S.D. Miller, B.E. Wampold, M.A. Hubble (Eds.), *The Heart and Soul of Change: Delivering What Works in Therapy*, second ed., American Psychological Association, Washington, DC, 2010.
- [6] H. Ahn, B.E. Wampold, Where oh where are the specific ingredients? A meta-analysis of component studies in counseling and psychotherapy, *J. Counsel. Psychol.* 48 (3) (2001) 251–257.
- [7] S.D. Miller, M.A. Hubble, D.L. Chow, J.A. Seidel, The outcome of psychotherapy: yesterday, today, and tomorrow, *Psychotherapy* 50 (2013) 88–97.
- [8] M.L. Thomas, The contributing factors of change in a therapeutic process, *Contemp. Fam. Ther.* 28 (2) (2006) 201–210.
- [9] B.E. Wampold, How important are the common factors in psychotherapy? An update, *World Psychiatr.* 14 (3) (2015) 270–277.
- [10] J.D. Frank, *Persuasion and Healing: a Comparative Study of Psychotherapy*, second ed., Johns Hopkins University Press, Baltimore, MD, 1973.
- [11] J.D. Frank, J.B. Frank, *Persuasion and Healing: a Comparative Study of Psychotherapy*, third ed., Johns Hopkins University Press, Baltimore, MD, 1991.
- [12] M.J. Lambert, The efficacy and effectiveness of psychotherapy, in: M.J. Lambert (Ed.), *Bergin and Garfield's Handbook of Psychotherapy and Behavior Change*, sixth ed., Wiley, Hoboken, NJ, 2013, pp. 169–218.
- [13] D.E. Orlinsky, K. Grawe, B.K. Parks, Process and outcome in psychotherapy—noch einmal, in: A.E. Bergin, S.L. Garfield (Eds.), *Handbook of Psychotherapy and Behavior Change*, fourth ed., Wiley, New York, NY, 1994, pp. 270–378.
- [14] M.L. Smith, G.V. Glass, Meta-analysis of psychotherapy outcome studies, *Am. Psychol.* 32 (9) (1977) 752–760.
- [15] B.E. Wampold, The research evidence for common factors models: a historically situated perspective, in: B.L. Duncan, S.D. Miller, B.E. Wampold, M.A. Hubble (Eds.), *The Heart and Soul of Change: Delivering What Works in Therapy*, second ed., American Psychological Association, Washington, DC, 2010.
- [16] G.S. Brown, G.M. Burlingame, M.J. Lambert, E. Jones, J. Vaccaro, Pushing the quality envelope: a new outcomes management system, *Psychiatr. Serv.* 42 (2001) 925–935.
- [17] S.D. Miller, B.L. Duncan, M.A. Hubble, Beyond integration: the triumph of outcome over process in clinical practice, *Psychother. Aust.* 10 (2) (2004) 2–19.
- [18] M.J. Lambert, A.E. Bergin, The effectiveness of psychotherapy, in: A.E. Bergin, S.L. Garfield (Eds.), *Handbook of Psychotherapy and Behavior Change*, fourth ed., Wiley, New York, NY, 1994, pp. 143–189.
- [19] C.R. Fernee, L.E. Gabrielsen, A.J. Andersen, T. Mesel, Unpacking the black box of wilderness therapy: a realist synthesis, *Qual. Health Res.* 27 (2017) 114–129.
- [20] M.A. Gass, H.L. Gillis, K.C. Russell, *Adventure Therapy: Theory, Research, and Practice*, Routledge, New York, NY, 2012.
- [21] K.C. Russell, What is wilderness therapy? *J. Exp. Educ.* 24 (2) (2001) 70–79.
- [22] N.J. Harper, L. Peeters, C. Carpenter, Adventure therapy, in: R. Black, K.S. Bricker (Eds.), *Adventure Programming and Travel for the 21st Century*, Venture Publishing, State College, PA, 2015, pp. 221–236.
- [23] N.J. Harper, Contact with nature as a research variable in wilderness therapy, in: C. Notcon, C. Carpenter, A. Pryor (Eds.), *Adventure Therapy Around the Globe: International Perspectives and Diverse Approaches*, Common Ground, Champaign, IL, 2015, pp. 536–551.
- [24] C.L. Norton, A.R. Tucker, K.C. Russell, J.E. Bettmann, M.A. Gass, H.L. Gillis, E. Behrens, Adventure therapy with youth, *J. Exp. Educ.* 37 (2014) 46–59.
- [25] S.P. Becker, K.C. Russell, Wilderness therapy, in: R.J.R. Levesque (Ed.), *Encyclopedia of Adolescence*, second ed., Springer, New York, 2016.
- [26] N.J. Harper, Future paradigm or false idol: a cautionary tale of evidence-based practice for adventure education and therapy, *J. Exp. Educ.* 33 (1) (2010) 38–55.
- [27] C. Baldwin, J. Persing, D. Magnuson, The role of theory, research, and evaluation in adventure education, *J. Exp. Educ.* 26 (3) (2004) 167–183.
- [28] H. Arksey, L. O'Malley, Scoping studies: towards a methodological framework, *Int. J. Soc. Res. Meth.* 8 (1) (2005) 19–32.
- [29] I. Elkin, T. Shea, J.T. Watkins, S.D. Imber, S.M. Sotsky, J.F. Collins, M.B. Parloff, National institute of mental health treatment of depression collaborative research program: general effectiveness of treatments, *Arch. Gen. Psychiatr.* 46 (1989) 971–982.
- [30] B.E. Wampold, *The Great Psychotherapy Debate: Models, Methods, and Findings*, Lawrence Erlbaum, Hillsdale, NJ, 2001.
- [31] K.M. Laska, A.S. Gurman, B.E. Wampold, Expanding the lens of evidence-based practice in psychotherapy: a common factors perspective, *Psychotherapy* 51 (4) (2014) 467–481.
- [32] F. Kelly, D. Baer, *Outward Bound: an Alternative to Institutionalization for Adolescent Delinquent Boys*, Fandel Press, Boston, MA, 1968.
- [33] L.E. Gabrielsen, C.R. Fernee, G.O. Aasen, L.T. Eskedal, Why randomized trials are challenging within adventure therapy research: lessons learned in Norway, *J. Exp. Educ.* 39 (1) (2015) 5–14.
- [34] A.R. Tucker, A. Reingold, Enhancing fidelity in adventure education and adventure therapy, *J. Exp. Educ.* 33 (3) (2011) 258–273.
- [35] K.C. Russell, Exploring how the wilderness therapy process relates to outcomes, *J. Exp. Educ.* 23 (3) (2000) 170–176.
- [36] M.T. Lam, H.R. Lam, L. Chawla, Application of magic in healthcare: a scoping review, *Compl. Ther. Clin. Pract.* 26 (2017) 5–11.
- [37] D. Levac, H. Colquhoun, K.K. O'Brien, Scoping studies: advancing the methodology, *Implement. Sci.* 5 (1) (2010) 69.
- [38] D. Gough, J. Thomas, S. Oliver, Clarifying differences between review designs and methods, *Syst. Rev.* 1 (1) (2012) 28.
- [39] R. Valaitis, R. Martin-Misener, S.T. Wong, M. MacDonald, D. Meagher-Stewart, P. Austin, R. Savage, Methods, strategies and technologies used to conduct a scoping literature review of collaboration between primary care and public health, *Prim. Health Care Res. Dev.* 13 (3) (2012) 219–236.
- [40] D. Moher, A. Liberati, J. Tetzlaff, D.G. Altman, The PRISMA Group, Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement, *PLoS Med* 6 (7) (2009), e1000097, <https://doi.org/10.1371/journal.pmed1000097>.
- [41] D.J. Bowen, J.T. Neill, A meta-analysis of adventure therapy outcomes and moderators, *Open Psychol. J.* 6 (2013) 28–53.
- [42] H.L. Gillis, R.A. Gass, K.C. Russell, The effectiveness of project adventure's behavior management programs for male offenders in residential treatment, *Resid. Treat. Child. Youth* 25 (3) (2008) 227–247.
- [43] B.E. Wampold, Methodological problems in identifying efficacious psychotherapies, *Psychother. Res.* 7 (1) (1997) 21–43.
- [44] M.D. Peters, C.M. Godfrey, H. Khalil, P. McInerney, D. Parker, C.B. Soares, Guidance for conducting systematic scoping reviews, *Int. J. Evid. Base. Healthc.* 13 (3) (2015) 141–146.
- [45] A.R. Tucker, S. Javorski, J. Tracy, B. Beale, The use of adventure therapy in community-based mental health: decreases in problem severity among youth clients, *Child Youth Care Forum* 42 (2) (2013) 155–179.
- [46] N.A. Magle-Haberek, A.R. Tucker, M.A. Gass, Effects of program differences with wilderness therapy and residential treatment center (RTC) programs, *Resid. Treat. Child. Youth* 29 (3) (2012) 202–218.
- [47] S. Bendoroff, *Wilderness Family Therapy: An Innovative Treatment Approach for Problem Youth*, University of South Carolina, SC, 1992.
- [48] L. Hyer, S. Boyd, R. Scurfield, D. Smith, J. Burke, Effects of outward bound experience as an adjunct to inpatient PTSD treatment of war veterans, *J. Clin. Psychol.* 52 (3) (1996) 263–278.
- [49] I. Eikenaes, T. Gude, A. Hoffart, Integrated wilderness therapy for avoidant personality disorder, *Nord. J. Psychiatr.* 60 (4) (2006) 275–281.
- [50] M. Walsh, K.C. Russell, An exploratory study of a wilderness adventure program for young offenders, *Ecopyschology* 2 (4) (2010) 221–229.
- [51] J. Paquette, F. Vitaro, Wilderness therapy, interpersonal skills and accomplishment motivation: impact analysis on antisocial behavior and socio-professional status, *Resid. Treat. Child. Youth* 31 (3) (2014) 230–252.
- [52] S. Romi, E. Kohan, Wilderness programs: principles, possibilities and opportunities for intervention with dropout adolescents, *Child Youth Care Forum* 33 (2) (2004) 115–136.
- [53] R.C. Callahan, *Academic and Therapeutic Potential of the Sierra II Process: An Evaluation of an Adapted Outward Bound Diversion Program for Adjudicated Juvenile Delinquents* (doctoral dissertation), Old Dominion University, Norfolk, Virginia, 1989.
- [54] V. Walsh, G. Golins, *The Exploration of the Outward Bound Process*. ERIC, Outward Bound Publications, Denver, CO, 1976. Retrieved from, <http://www.wilderdom.com/theory/OutwardBoundProcessModel.html>.
- [55] S. Bendoroff, D.G. Scherer, Wilderness family therapy: an innovative treatment approach for problem youth, *J. Child Fam. Stud.* 3 (2) (1994) 175–191.
- [56] H. Guthrie, *Adventure Therapy for Children with Mental Disorders: a Treatment Outcome Study*, The University of Akron, OH, 2004.
- [57] C.D. Jones, L.A. Lowe, E.A. Rislser, The effectiveness of wilderness adventure therapy programs for young people involved in the juvenile justice system, *Resid. Treat. Child. Youth* 22 (2) (2004) 53–62.
- [58] B.A. Larson, Adventure camp programs, self-concept, and their effects on behavioral problem adolescents, *J. Exp. Educ.* 29 (3) (2007) 313–330.
- [59] R.S. Rosenberg, W. Lange, B. Zebrack, S. Moulton, S.M. Kosslyn, An outdoor adventure program for young adults with cancer: positive effects on body image and psychosocial functioning, *J. Psychosoc. Oncol.* 7332 (2014) 37–41 (July).
- [60] M. Gelkopf, I. Hasson-Ohayon, M. Bikman, S. Kravetz, Nature adventure rehabilitation for combat-related posttraumatic chronic stress disorder: a randomized control trial, *Psychiatr. Res.* 209 (3) (2013) 485–493.
- [61] C.R. Fernee, L.E. Gabrielsen, A.J. Andersen, T. Mesel, Unpacking the black box of wilderness therapy: a realist synthesis, *Qual. Health Res.* 27 (2017) 114–129.
- [62] J. Dewey, Experience and education, *Education* 50 (3) (1938) 96.
- [63] M.A. Gass, Evidence-based research: catalyst for action and future paradigms for NATSAP programs? *J. Therapeut. Sch. Progr.* 1 (2) (2006) 4–10.
- [64] C.L. Norton, Exploring the process of a therapeutic wilderness experience: key components in the treatment of adolescent depression and psychosocial development, *J. Therapeut. Sch. Progr.* 4 (1) (2010) 24–26.
- [65] W. Dobud, Towards an evidence-informed adventure therapy: implementing feedback-informed treatment in the field, *J. Evid.-Inf. Soc. Work* 14 (3) (2017) 172–182.
- [66] S. Newes, S. Bendoroff, What is adventure therapy?, in: S. Newes, S. Bendoroff (Eds.), *Coming of Age: The Evolving Field of Adventure Therapy*, Association of Experiential Education, Boulder, CO, 2004, pp. 1–30.
- [67] S.P. Becker, Wilderness therapy: ethical considerations for mental health professionals, *Child Youth Care Forum* 39 (1) (2010) 47–61.

- [68] Government Accountability Office, Residential Treatment Programs: Concerns Regarding Abuse and Death in Certain Programs Troubled Youth, United States Government Accountability Office, 2007. Retrieved from, www.gao.gov/new.items/d08146t.pdf.
- [69] D.A. Scott, L.M. Duerson, Continuing the discussion: a commentary on “wilderness therapy: ethical considerations for mental health professionals”, *Child Youth Care Forum* 39 (1) (2010) 63–68.
- [70] H.L. Gillis, D.M. Kivilighan, K.C. Russell, Between-client and within-client engagement and outcome in a residential wilderness treatment group: an actor partner interdependence analysis, *Psychotherapy* 53 (2016) 413–423.
- [71] K.I. Howard, K. Moras, P.L. Brill, Z. Martinovich, W. Lutz, Evaluation of psychotherapy: efficacy, effectiveness, and patient progress, *Am. Psychol.* 51 (1996) 1059–1964.