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CHAPTER 10

Potential treatment mechanisms of counseling for children in Burundi: Series of *n*=1 studies

Abstract

Little is known about the impact and treatment processes of psychosocial counseling in low-income countries. This study aimed to generate hypothesis on key working mechanisms of counseling in Burundi. We carried out eleven empirically grounded n=1 studies with children (11-14 years) screened for depression and anxiety, who received counseling. We used quantitative (symptom scales) and qualitative instruments (treatment content and perceptions). Weekly measurements were taken pre-intervention (n=4), during the intervention period (n=8-10) and post intervention period (n=4). Five treatment mechanisms continuums appeared associated with outcome trajectories: client centeredness, therapeutic alliance, active problem-solving, trauma-focused exposure and family involvement. Higher levels appeared associated with better outcomes. Contrarily, cases that demonstrated no change were characterized by a heavy focus on; counselors' norms, containment & self-control, unstructured retelling and explicit avoidance, advice oriented problem solving, and non-inclusion of family members, respectively. We found distinct clustering of outcome trends per therapist. The findings suggest that integrative counseling, which combines universal therapist variables with active use of specific therapeutic techniques and a systemic perspective, may be an adequate strategy to treat mental health symptoms of children in Burundi.

Introduction

Development of psychosocial and mental health services in low- and middle- income countries (LAMIC) poses a number of challenges, including limited mental health resources (Saraceno et al., 2007). Mental disorders account for 11.1% of the total burden of disease in LAMIC, and an array of social determinants (i.e. social exclusion, violence) increases the risk for mental health problems and non-pathological psychological distress (Patel et al, 2007). A vast gap between child and adolescent mental health needs and service delivery has been reported (Patel, Flisher, Nikapota, & Malhotra, 2008). A recent review of the literature on treatment for war-affected children demonstrated that the evidence for child-focused interventions is still scarce and inconsistent (Jordans, Tol, Komproe, & de Jong, 2009).

In order to scale up mental health and psychosocial care and overcome the treatment gap in LAMIC, a primary focus on low-intensity and broad community-, and group-based interventions are required. Such focus inevitably results in the identification of individual children with more severe mental health problems, which necessitates more individualized care. Increasing evidence for the effectiveness of Cognitive Behavioral Therapy (CBT) for children exposed to traumatic events (Silverman et al., 2008) would point in the direction of CBT for this level of care. However the number of appropriately trained CBT therapists needed to meet demands is currently unattainable in LAMIC. Moreover, large contextual disparities limit transfer of treatments with substantial evidence from high-income to low-income settings and require adaptation of treatment modalities or development of new interventions to achieve affordable interventions suitable for primary care settings. Generic counseling is therefore commonly employed as a feasible alternative treatment in community settings in LAMIC (Jordans et al, 2009). However, with large discrepancies on content, training and aims of counseling globally, better understanding on working mechanisms is required before determining efficacy and scaling up (Campbell et al., 2000).

At present, little is known about the impact and treatment mechanisms of counseling children in LAMIC. Moreover, given the need for broad community-based care, interventions often target non-specific problems (i.e. psychological distress rather than a specific disorder). For these reasons a protocolized intervention is not available at this point in time. A better understanding of the working mechanisms of counseling in these settings is required. Single case studies can play an important role in exploring treatment mechanisms.

Evaluation studies on counseling in Western settings demonstrate inconsistent results. One randomized controlled trial shows that counseling is not better or worse than routine GP treatment (Hemmings, 1997). Another study comparing three forms of counseling with different theoretical approaches shows equivalent positive outcomes (Stiles, Barkham, Twigg,

Mellor-Clark, & Cooper, 2006), arguing for the effectiveness of generic underlying therapeutic concepts. A systematic literature review concludes that counseling is associated with modest short-term improvements compared to usual general practitioner care, without clear advantages in the long term (Bower & Rowland, 2006; Bower, Rowland, & Hardy, 2003).

Evaluation studies of counseling in LAMIC are scarcer. The only trial has demonstrated efficacy of community counseling in reducing anxiety- and depression symptoms among women in Pakistan (Ali et al., 2003). Reflections on cultural compatibility and relevance of counseling in non-Western settings have more commonly been reported, e.g. in Cambodia (van de Put & van der Veer, 2005), India (Ruwanpura, Mercer, Ager, & Duveen, 2006), Nepal (Tol, Jordans, Regmi, & Sharma, 2005; Jordans, Keen, Pradhan, & Tol, 2007), Uganda (Baron, 2002) and Sri Lanka (van der Veer, Somasundaram, & Damian, 2003). Although recommending local adaptations, these reports generally advocate counseling as a promising culturally compatible intervention.

There is a renewed interest among psychotherapy researchers in studying not only whether treatment works, but also how and under what conditions it works (Laurenceau, Hayes, & Feldman, 2007), and identifying common and effective ingredients (Stiles, Honos-Webb, & Knobloch, 1999). Single case studies, N=1 studies, or intra-subject designs, focus on the temporal unfolding of variables within individual subjects, and allow for evaluation of processes of change (Hilliard, 1993). Empirically grounded single case studies, case-based time-series designs with baseline measurement, are commonly accepted as a viable approach, alongside the more common group designs, to expand our knowledge about whether, how, and for whom psychotherapy works (Bockhardt et al., 2008). To our knowledge no treatment process research has been conducted of counseling for children in LAMIC settings.

The present study took place as part of a process to develop a research-informed psychosocial care system for children in areas of armed conflict in LAMIC (Burundi, Sudan, Indonesia, Sri Lanka and Nepal). The program entailed a multi-layered care system that included community-level intervention to target contextual determinants of mental health, group-based interventions to target moderate levels of distress, as well as individual counseling to cater for children with more severe mental health problems.

The study aimed to increase conceptual understanding of possible treatment mechanisms of counseling children in LAMIC by associating treatment process data with   individual change trajectories. Specifically, the aim of the study was to determine how change occurs and to identify, interpret, describe and define treatment mechanisms and processes that are associated with change trajectories over the entire course of the treatment. The study thus represents explorative research and not an evaluation of the impact (effectiveness or

efficacy) of counseling. Better understanding of the processes of change directs treatment refinement and development of counseling children in LAMIC, thereby setting the stage for future efficacy and effectiveness trials.

Methods

Setting

The present study was conducted in Burundi, a country that has suffered from decades of cyclic violence along ethnic lines including a recent civil war, which lasted for over 12 years. Since 1993, 250,000 to 300,000 people were killed and 880,000 people displaced (Amnesty International, 2004). In 2003 peace agreements were signed between the government and the main rebel parties. Although violence has since significantly decreased, the peace process has been arduous and the last rebel group, Palipehutu-FNL, has not yet demobilized. High levels of poverty and damaged social and moral fabric due to the violence have found to be central risk factors for mental health problems in Burundi (Tol, Jordans, Reis, & de Jong, 2009).

Design

This study followed an exploratory single case quantitative-qualitative analysis design, aiming to generate hypotheses on how and which therapeutic modalities result in improvement (Hilliard, 1993). Review of trends within and between cases explored treatment commonalities associated with client improvement. Quantitative techniques were used to analyze the temporal unfolding of outcome variables. This study followed a classic reversal (ABA) design (Ottenbacher & Hinderer, 2001). The baseline measurements (A) were taken during a wait-list period (4 weekly time-points), followed by measurements during the intervention period (B) (8-10 weekly time-points), and the withdrawal phase to assess for sustained trends after termination of the intervention (A) (4 weekly time-points). Through a series of single case studies (*n*=11), we studied changes in levels of symptomatology (i.e. depression-, anxiety-, posttraumatic stress- symptoms) and resilience (i.e. prosocial behavior and hope) before, during and after the provision of counseling and their association with treatment strategies and therapeutic processes (through structured qualitative data collection). The four measurements before the start of the intervention thereby become the within-case controls.

Participants, screening and procedure

Study participants were included as part of a comprehensive psychosocial care program for children in areas of armed conflict in Burundi and elsewhere, as mentioned above. The multi-

layered care package included a brief primary screening procedure validated for Burundi (Jordans, Komproe, Ventevogel, Tol, & de Jong, 2008) to detect children with elevated psychological distress who were offered a Classroom Based Intervention (CBI). CBI is a structured 15-sessions eclectic group intervention that aimed to reduce distress and increase resilience. Subsequently, children with a need for more individualized treatment were referred to individual counseling. The study respondents (n=11) concerned the latter group, and were all school-going children aged between 11-14 years. See figure 1 for study flowchart. All participating children lived in the provinces Bujumbura, Bujumbura Rurale and Bubanza. Data were collected between June and December 2007.
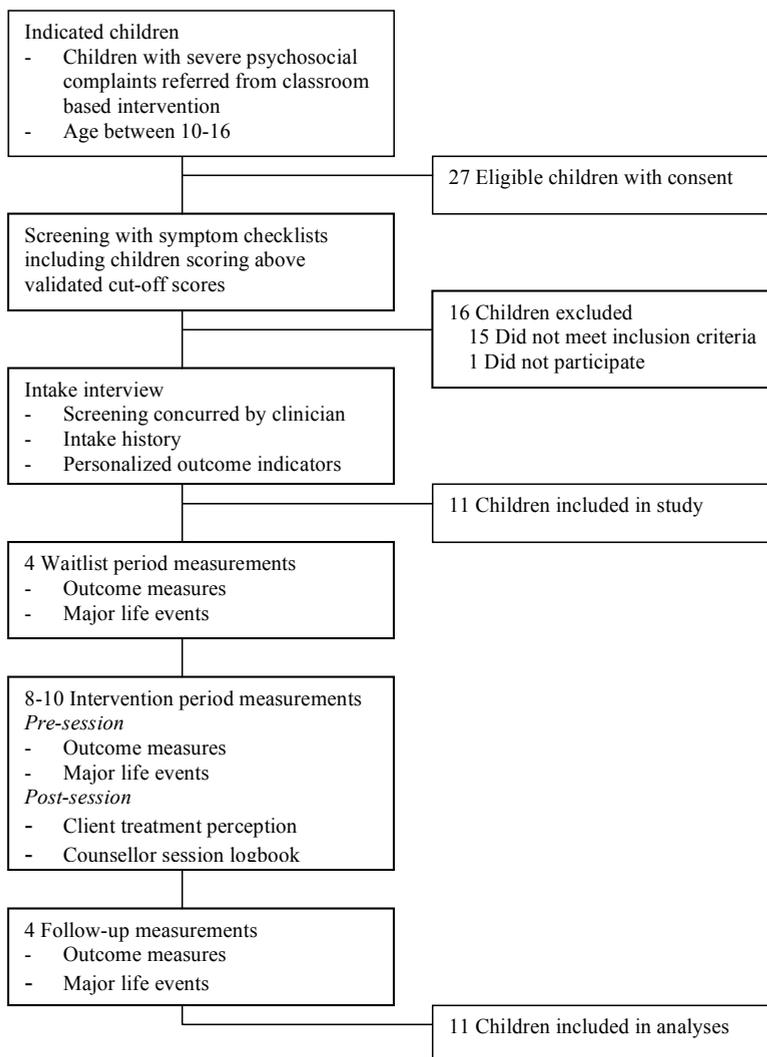

Figure 1: Study Flow Chart

Study inclusion followed 3 steps; (1) children with sustained elevated psychosocial distress after termination of CBI were referred for counseling by CBI group facilitators; (2) a secondary screening procedure, with validated instruments, determined level of depression-, anxiety-, and posttraumatic- symptoms of referred children; (3) an in-depth intake interview was conducted by the treating counselor and a psychiatrist that had experience with psychiatric assessment of children in order to concur the indication for counseling. The intake interview further served to determine client-specific personalized outcome indicators (see below) and to construct a brief case history with the client. Exclusion criteria were mental health problems requiring psychiatric treatment (e.g. psychotic disorders), and problems that were considered too severe to allow postponed treatment due to waitlist period (e.g. suicidality).

The baseline and follow-up measurements included the below-mentioned outcome indicators, the intervention period measurements were divided into pre-session (outcome indicators) and post-session (client treatment perception and counselor session logbook). Throughout the study period major life events were assessed in order to study their possible impact on the respondents and on the treatment process. All measurements took place on a weekly basis and were done by the research assistants.

Participating children and their parents were informed about intervention and study. Subsequently, written consent was obtained from both children and caretakers. The International Review Board of the Vrije University Amsterdam approved the design of the study. The waitlist period (during which measurements were taken) was consistent with care process as usual, because of insufficient counselors to meet treatment demands. Independent research assistants administered checklists and conducted all interviews. Research assistants were from the same areas as the respondents, had a bachelor degree and were trained for a 4-week period in research methods, skills and ethics.

Intervention

The counseling practiced in the above-mentioned program is a non-specialized intervention that borrows from key counseling approaches, but does not follow one school in particular (Ivey & Ivey, 2007; Egan, 1998). In essence, the intervention constitutes of; (a) a face-to-face engagement between a trained counselor and a client; (b) a supportive process that is problem-specific and goal-directed; (c) working towards reduction of a client's psychosocial problems. The counselor makes use of a variety of counseling techniques, such as problem assessment and formulation, stress reduction techniques, plans of action, working with clients' coping strategies and acquired problem solving skills, mobilization of social support, psycho-education, and recounting of traumatic experiences if necessary. The para-professional counselors typically receive a 3-months skills-oriented course (Jordans, Tol, Sharma, &

van Ommeren, 2003), with subsequent short follow-up sessions. The training course follows several cycles of alternating classroom-based learning and supervised practical placements, with role-plays, group work, and supervision as the core learning tools. Minimum duration of counseling (8 sessions) was standardized for the purpose of this study, with weekly sessions.

Instruments

Rating scales were used to measure changes in levels of symptoms, function impairment, and resilience. Internal reliability (Cronbach's alpha), test-retest reliability (Spearman-Brown coefficient) and concurrent validity (Area Under the Curve) of the symptom scales were assessed in Burundi, and have been added below in brackets, respectively. The external criterion measure for the concurrent validation was psychiatric assessment consisting of an interview with the *Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS)*. Post-traumatic stress complaints were assessed with the 17-item *Child PTSD Symptom Scale* (CPSS) (α=.84; r=.80; AUC=.78) (Foa, Johnson, Feeny, & Treadwell, 2001). Anxiety symptoms were assessed with the 41-item, *Screen for Child Anxiety Related Emotional Disorder* (SCARED-41) (α=.92; r=.83; AUC=.69) (Birmaher et al., 1999). Depression symptoms were assessed with the 18-item *Depression Self-Rating Scale* (DSRS) (α=.72; r=.92; AUC=.85) (Birleson, 1981). Function impairment was assessed with a 10-item *Children's Function Impairment* (CFI) (α=.80; r=.75) questionnaire developed in Burundi using an adapted methodology described by Bolton and Tang (2002). The 6-item *Children's Hope Scale* (CHS) (α=.70; r=.66) assesses a sense of hope, with a higher score denoting more hope (Snyder et al, 1997). All above-mentioned rating scales were translated into Kirundi using a five-step procedure, developed for transcultural research (Van Ommeren et al., 1999). Additionally, during the initial interview counsellor and child identified the major problems that were disturbing the child at the time of intake. These were subsequently included as self-report Personalized Outcome Indicators, scored with a 11-point Subjective Unit of Distress Scale (SUDS), at each of the measurements (0=no distress; 10=highest possible distress) (Wolpe, 1982; Shapiro, 1989). This set of instruments was selected to assess mental health problems that have commonly been reported in the literature on children in areas of armed conflict. Also, we were interested to distinguish change trajectories in different domains that generic counseling is likely to have an impact on, such as symptomatology, functioning and resilience indicators.

The qualitative instruments included; (1) a one-question form to identify any meaningful life events between two measurements that may have impacted change on outcome indicators [i.e. any important event(s) that happened in the past week]; (2) a treatment perception questionnaire to be completed after the session [i.e. client's description, reflection and evaluation of session]; (3) a counsellor session logbook [i.e. counselor's description of session topics/summary, used strategies and client progress]; and (4) parental observations of their

child's behavior and functioning at home, and changes thereof, completed bi-weekly. The instruments for the child and parents (1 & 4) were verbally administered. Interviewers read the questions out loud and recorded participants' responses. This was done to control for the variable levels of literacy among participants and because of respondents' unfamiliarity with questionnaires. The instruments for the counselors (2 & 3) were self-report questionnaires.

Analyses

First, two raters (MJ & WT) independently performed visual inspection of case-by-case change trajectories separately for all outcome variables. Visual inspection was conducted to examine change trajectories and obtain information regarding trends that cannot be obtained from the statistical analyses in the next step (i.e. interpreting successive measurements per single indicator with regression analyses), for example the identification of multiple changes in trends, sudden changes or inconsistencies and similarities in multi-indicator trends. Criteria for labelling trends upon visual inspection were; (a) parallel per-case multiple-indicator change trends (positive or negative), and (b) abrupt changes (positive or negative) on any of the outcome variables between two measurement points ('milestone changes'). Inter-rater reliability for the visual inspection was assessed using Cohen's Kappa, a chance-adjusted measure of agreement, resulting in $\kappa = .803$. Second, linear regression analyses were conducted to test stability of observed change trends per outcome variable per case. We used linear regression analyses to estimate a beta coefficient as a statistical indicator for a slope or trend in the successive measurements of one single indicator, in order to substantiate the visual inspection observations. Significant β's indicate that it is possible to define a stable trend in the sequence of measurements as an increase or decrease on a given outcome indicator. This was done as a prerequisite step to the study's main analyses that focused on matching quantitative outcome trajectories with qualitative process data. Using statistical analyses to interpret change trajectories, in addition to visual inspection alone, has been proposed in the literature (Park, Marascuilo, & Gaylord-Ross, 1990). The above-mentioned steps aimed to examine patterns of change during the course of treatment (Bockhardt, et al., 2008). Third, content analysis of qualitative treatment data was performed to (iteratively) analyze the treatment process to: (a) relate overall multiple change trends of symptoms and resilience scores with treatment processes, and (b) explore treatment mechanisms or life events prior to specific milestone changes in order to validate the former trends. Content analyses consisted of identification and coding of themes in client and counselor statements regarding perceptions of treatment-, content, -process, -progress and –outcomes. Duration and levels of satisfaction were assessed per session. Fourth, based on regression analyses outcomes we clustered individual cases into sub-groups; *very positive* outcome if between 76-100% of the indicators showed a stable improving trend; *positive* if between 51-75%, and *no-change* if between 0-50%. Essentially, we define change as improvement or deterioration when similar

trends are qualified on multiple indicators. Subsequently, we assessed and categorized similarities and differences of treatment processes between sub-groups by analyzing the presence and level of elements of the established treatment mechanism in the former step.

Results

Sample Characteristics

The sample consisted of 11 individual counseling clients, 9 girls and 2 boys. The age ranged between 11 and 14 years and location varied between *Bujumbura Mairie* (*n*=4), *Bujumbura Rural* (*n*=3) and *Bubanza* (*n*=4). The study consisted of a heterogeneous respondent group. The majority of the sample (73%) scored above locally validated cut-off scores for psychiatric caseness on one or more of the screening checklists for anxiety-, depression-, and posttraumatic stress disorders (of overall sample: 63.6%, 45.5%, and 63,6%, respectively) – see Table 1. In addition, most frequently presented problems at intake included; conduct problems (i.e. aggressivity, revenge, oppositional-defiant) (54%); family problems (i.e. parental conflict, maltreatment) (45%); sleeping problems (i.e. nightmares) (45%); fear and nervousness complaints (45%); financial and socio-economic problems (27%); and social withdrawal (i.e. isolation) (27%). All children reported exposure to traumatic events, with several children (36%) mentioning posttraumatic complaints (i.e. intrusive thoughts) at intake. None of the children received other medical or psychological treatment during the time of treatment.

Table 1. Baseline scores on all outcome indicators

Resp.	CPSS (0-51)	DSRS (0-36)	SCARED (0-82)	CHS § (1-36)	CFI (1-40)
3	28*	31*	49*	13	21
4	23	27*	54*	15	16
5	27*	28*	53*	11	20
8	17	13	34	18	11
11	15	14	38	18	11
13	28*	17	50*	21	19
15	18	17	31	11	10
17	30*	14	59*	24	14
19	27*	21*	37	14	16
23	28*	27*	56*	11	24
27	30*	18	46*	10	15

Note. CPSS=Child PTSD Symptom Scale; DSRS=Depressions Self Rating Scale; SCARED=Screen for Child Anxiety Related Emotional Disorder; CHS=Child Hope Scale; FI=Function Impairment; * Above validated threshold for Burundi; § Higher scores on CHS indicates more hope

Visual inspection of change charts and regression analyses

Visual inspection of multi-indicator trajectories demonstrated several within-case and between-cases patterns (see Figure 2); (1) steady multi-indicator improvement shortly after start of the intervention (cases 4, 8, 11, 15); (2) sharp multi-indicator reduction of symptoms in the second half or towards the end of the treatment process (cases 19, 13, 17, 27); (3)

Pattern 1; Respondent 8

Pattern 3; Respondent 5

Pattern 2; Respondent 19
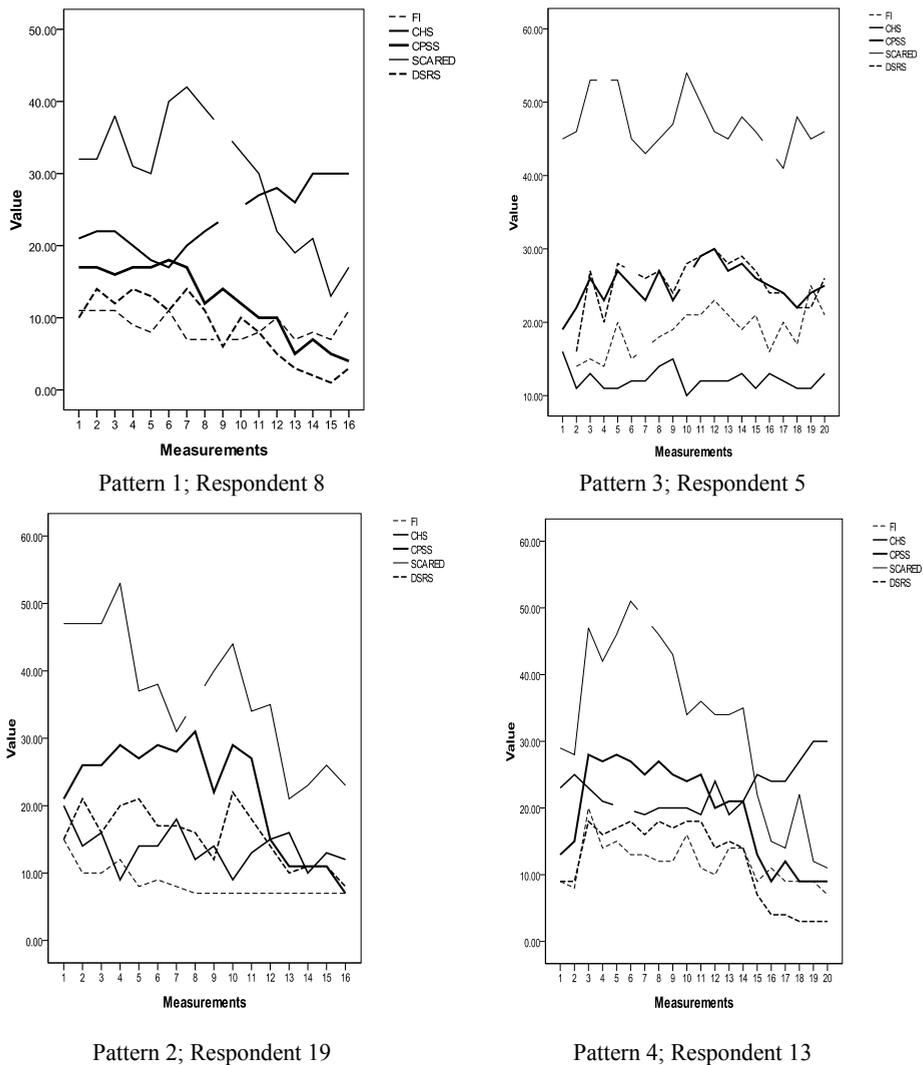
Pattern 4; Respondent 13

Figure 2: Example of patters of multi-indicator trajectories

Note: CPSS=Child PTSD Symptom Scale; DSRS=Depressions Self Rating Scale; SCARED=Screen for Child Anxiety Related Emotional Disorder; CHS=Child Hope Scale; FI=Function Impairment; POI=Personalized Outcome Indicator.

almost all of the outcome indicators remain approximately the same over the measurements (cases 3, 5, 23), and; (4) increase in symptoms before the start of the intervention (cases 3, 13). See figure 2 for examples of these trends. In addition, we distinguished many milestone changes at various time points (cases 8, 11, 13, 15, 17, 19, 27). For each client, regression analyses were conducted on the data of the repeated assessments with each outcome indicator (see Table 2). Regression coefficients can be interpreted as a simple description of the change pattern over all measurements, with significant β's indicating the presence of a trend and non-significant β's indicating an absence of a trend. The last column of Table 2 presents

Table 2. Results visual inspection and regression analyses

	CPSS	DSRS	SCARED	CHS	FI	POI 1	POI 2	POI 3	POI 4	Total	
	β (se); *p*	β (se); *p*	β (se); *p*	β (se); *p*	β (se); *p*	β (se); *p*	β (se); *p*	β (se); *p*	β (se); *p*		
3	-1.174 (.211); .000*	-.797 (.267); .014	-1.297 (.290); .001*	-.189 (.128); .172	.175 (.205); .414	-.227 (.090); .030	-.017 (.058); .771			2/7 (29%)	0
4	-1.257 (.224); .000*	-1.110 (.131); .000*	-1.971 (.296); .000*	-.255 (.116); .049	.231 (.147); .142	-.029 (.016); .109	-.024 (.029); .414			3/7 (43%)	0
5	-.107 (.128); .420	-.277 (.133); .058	-.206 (.189); .298	-.026 (.070); .712	.168 (.146); .273	-.163 (.030); .000*	-.065 (.036); .098			1/7 (14%)	0
8	-1.325 (.118); .000*	-1.150 (.156); .000*	-2.325 (.441); .001*	1.252 (.120); .000*	.036 (.143); .806	-.648 (.050); .000*	-.649 (.077); .000*			6/7 (86%)	++
11	-1.411 (.202); .000*	-1.343 (.185); .000*	-2.734 (.427); .000*	1.129 (.139); .000*	.010 (.130); .937	-.154 (.034); .001*	-.343 (.069); .001*			6/7 (86%)	++
13	-1.482 (.137); .000*	-1.222 (.155); .000*	-2.714 (.253); .000*	.822 (.130); .000*	-.400 (.096); .001*	-.462 (.032); .000*	-.474 (.047); .000*	-.457 (.056); .000*		8/8 (100%)	++
15	-1.165 (.225); .000*	-.725 (.172); .001*	-1.200 (.273); .001*	-.093 (.227); .689	-.110 (.065); .121	-.148 (.116); .227	-.418 (.103); .002*	-.192 (.102); .087	-.385 (.100); .003*	5/9 (56%)	+
17	-2.150 (.411); .000*	-.888 (.236); .004*	-4.034 (.709); .000*	-.458 (.288); .143	-.185 (.084); .051	-.469 (.055); .000*	-.199 (.094); .059			4/7 (56%)	+
19	-2.182 (.364); .000*	-.934 (.256); .004*	-1.461 (.504); .018	-.210 (.205); .331	-.126 (.041); .012	-.479 (.075); .000*	-.196 (.039); .001*			4/7 (57%)	+
23	-.786 (.126); .000*	-.511 (.204); .029	-1.578 (.317); .001*	.110 (.081); .200	.192 (.208); .376	-.203 (.040); .000*	-.115 (.020); .000*			4/7 (57%)	+
27	-1.422 (.281); .000*	-1.198 (.205); .000*	-2.367 (.492); .001*	.919 (.210); .001*	-.346 (.117); .013	-.220 (.081); .019	-.290 (.102); .015	-.448 (.085); .000*	-.510 (.104); .000*	6/9 (67%)	+

Note. * Statistical significance (with Bonferonni correction); CPSS=Child PTSD Symptom Scale; SCARED=Screen for Child Anxiety Related Emotional Disorder; DSRS=Depressions Self Rating Scale; CHS=Child Hope Scale; FI=Function Impairment; POI=Personalized Outcome Indicator.

the percentage of positive change on all outcome indicators per case, in order to create sub-groups of highly improving [cases 8, 11 and 13], moderate improving [cases 15, 17, 19, 23 and 27] and no-change patterns [cases 3, 4 and 5].

Identification of treatment mechanisms

Almost all clients, whether more or less clear in their reported changes, perceived the counseling intervention as supportive. The sense of being listened to, an adult to confide in, being taken seriously, and to be encouraged was appreciated across all respondents. Furthermore, based on regression analyses and qualitative data no deterioration of complaints was reported for any of the cases. When processes of change (i.e. mechanisms or factors that may explain change) identified in the qualitative data were related with observed change trends from visual inspection and calculations of regression coefficients, several treatment mechanisms appeared associated with differences in outcome trends. The results of this combined qualitative and quantitative method present the formulation of these hypothesized treatment mechanisms of counseling.

First, we distinguished a continuum of directiveness, with more positive change associated to a counseling process that is more client-oriented, compared to a heavy emphasis on the opinions of the counselor in the no-change cases. On the latter side of the continuum we found counselors who were more normative and moralistic in their approach (e.g. life lessons and instructions for self-control and obedience, such as; "*Respect your parents*"; and "*The counselor told me to avoid bad friends, forgive my father, respect my parents and continue to study*"). In contrast, the more client-centered counselors demonstrated a focus on reflection and open expression of emotions (e.g. "*It was good to express myself, because where I live nobody needs to listen to the problems of another one, and parents do not have time to listen to us*"; and "*It was like I was carrying a heavy bag; but with [counselor] I could express and understand my problems, in time I will become like other kids*").

A second continuum identified concerned the therapeutic alliance, which was found to include trust formation through explicit focus on rapport building, confidentiality and safety. Clients that indicated they felt at ease with the counselor, which in turn facilitated disclosure, demonstrated evident positive milestone changes (e.g. "*In this session I finally dared to tell him that in my family nothing is going well, I dared to speak of a big problem that I had kept a long time*"). Contrarily, among cases with no-change patterns, we found a counselor's emphasis on containment and client's self-control to hamper development of an alliance that is based on the counselors determination to accept, understand and help (e.g. "*What disturbed me was that the counselor told me not to get angry if my parents insult me; he told me to accept the situation and respect my parents, then my parents will notice they did something wrong and*

Table 3. Overview of treatment mechanism continuums

Treatment mechanisms	Characteristics change trajectories		Characteristics milestone changes	
	Positive trends	No-change trends	Indicators [b,c]	Example
Level of *Directiveness*	Empathic reflections allows for open expression of (bottled-up) emotions (3/11)	Normative and moralistic approach emphasized through life-lessons (3/11)	0/11	A 14-year old girl (Bujumbura Mairie) complains of maltreatment and parental conflict and shows beginning sign of auto-mutilation and oppositional-defiant disorder. While providing emotional support, the counseling process is chiefly characterized by a value-based instructions (e.g. conforming to family rules) and directive advice (e.g. you have to pray). Client and counselor perceptions of treatment process are structurally divergent ('counseling successful because the client understands my advice' vs. 'I am waiting for the counselor to talk to my father'). No significant change is detected during and after the counseling process.
Level of *Therapeutic alliance*	Trust and feeling at ease permit disclosure (4/11)	Belittleling and focus on need for client self-control are associated with sense of guilt and stigma (3/11)	SCARED (3/11) DSRS (2/11) CPSS (2/11) CHS (2/11)	A 13-year old girl (Bujumbura Rurale), who witnessed the killing of her father, reports a combination of fear, nightmares & sleep problems and passivity. From the start of the counseling process the client expresses a sense of relief and reassurance in being able to express her feelings, especially as she feels ashamed of her thoughts/problems and no adult is available to lend a listening ear. The trust in the counselor, consequently feeling at ease, allows for verbalization of confronting memories. Several treatment ingredients may account for improvement, yet the client's treatment perception and attributions for changes centre around an emotionally supportive and confiding relationship with the helping person.
Level of *Problem solving*	Active, integrative and combined use of strategies focus on cause of problem (6/11)	Passive use of strategies, advice-oriented and minimizing problems emphasize acceptance of problem (2/11)	DSRS (3/11) SCARED (2/11) CPSS (2/11)	A 14-year old girl (Bubanza) presenting with fear, nightmares, withdrawal and grief reactions, demonstrates significant reduction in psychological difficulties, anxiety- and depression symptoms after the 3rd and 5th sessions. Sessions 2-5 almost exclusively focus on a combination of problem solving techniques; (a) problem formulation and goal setting; (b) identification of, and advise of, coping strategies (e.g. praying before sleeping to reduce fear and nightmares) and; (c) activity scheduling (e.g. collective games to reduce social withdrawal); (d) development of an action plan to sustain problem management strategies. Symptom reduction, increased contact with peers and decreased nightmares are attributed by the client to utilization of strategies.
Level of *Trauma-focused Exposure* [a]	Structured approach to retelling includes focus on mastery and cognitive restructuring (4/11)	Containment and masking encourage child to tolerate posttraumatic complaints (3/11)	CPSS (3/11) SCARED (2/11) DSRS (1/11)	An 11-year old girl (Bujumbura Rurale) case with disturbing sleep and concentration problems due to recurrent traumatic triggers, trauma-focused exposure techniques (sessions 3 and 4) preceded substantial reduction in post-traumatic and anxiety complaints. These techniques included; (a) explicit attention building trust and a sense of safety; (b) psycho-education focusing on explaining posttraumatic symptoms and normalizing these reactions; (c) retelling of traumatic events (and traumatic triggers); (d) retelling is combined with challenging of negative beliefs and mood monitoring.
Level of *Family Involvement*	Involvement of caretakers includes child's context in process (4/11)	Caretakers are not included when indicated (1/11)	DSRS (3/11) CPSS (3/11) SCARED (2/11)	An 11-year old girl (Bubanza) demonstrated high levels avoidance, signs of selective mutism, aggressivity and severe depression. After 6 sessions characterized by reluctance and silence, parents are included in the process who refer to their child's problem as "wind fear". It appears that since a 2003 armed attack of the rebels during a heavy storm, winds serve as a traumatic trigger for the child. Subsequently, the counselor emphasizes; (a) parental awareness on post traumatic reactions (and triggers); (b) normalization of these reactions; (c) coping strategies and general parental support/guidance to deal with the child's reactions and difficulties.

Note. [a] Treatment mechanisms specifically for posttraumatic complaints; [b] Personalized Outcome Indicators excluded due to variability of content; [c] Scoring based on observations of treatment mechanisms during sessions directly preceding (single- or multiple-) milestone changes.

change"). Moreover, we saw more attributed stigma and guilt attached to the counseling process (e.g. "*The child wants to behave as someone who is always unhappy; other children with the same problems are able to control themselves*") among clients that did not report a strong therapeutic alliance. Milestone changes can be associated to disclosure, trust-formation and feeling at ease in respondents 4, 11 and 13.

Third, a continuum of trauma-focused exposure was differentiated, as a counseling strategy to deal with posttraumatic complaints. A structured and often gradual approach to retelling, with explicit focus on mastery and/or cognitive restructuring (i.e. challenging negative beliefs) was associated with specific positive milestones and multi-indicator change trajectories (on both PTSD symptoms and other outcome indicators) (e.g. "*Each time that I present myself in the session, something in me forbids me to say things; but today I have overcome it, I felt that it was necessary to say all and I did*" and "*Every time when I am telling my problems, my heart beats a lot; sometimes I felt that unhappy things come back to me again when telling my problems; but through the conversations I can slowly master myself*"). Whereas all counselors used retelling of traumatic events at some point in the counseling process (100% of the cases reported experiencing traumatic events), the counseling in the no-change cases was characterized by one-off or unstructured retelling and explicitly avoiding of negative traumatic memories (e.g. "*I told her to put her negative thoughts aside in order to continue her school activities normally*"). Whereas a therapists' avoidance of exposure can be considered an adequate treatment strategy when clients do not evidence the strength to endure the stresses of exposure, the transcripts rather revealed a denying and minimizing attitude towards such events. Milestone changes were associated to retelling in respondents 8 and 11.

Fourth, we found the level of problem-solving to be significantly different between counselors. Multi-indicator positive outcome patterns appeared associated with higher levels of 'active problem-solving', demonstrated by employing a variety of strategies, action plans geared to problem-focused coping, and the integration of problem solving with other counseling techniques (e.g. "*We discussed strategies to remove my problem, like playing with other children and doing prayer before going to sleep*" – coping strategies were re-discussed in subsequent sessions and incorporated in a plan of action). On the other side of this continuum we found 'passive problem-solving' characterized by direct advice, discussion of coping without follow-up, emphasizing acceptance and self-control (e.g. "*Don't walk away from home*"). Milestone changes were associated to problem solving, coping and activity scheduling in respondent 15.

Fifth, family involvement is the last category that was distinguished. The inclusion of parents or family members in the counseling process (i.e. home visits, psycho-education on parental role-modeling, family mediation, child rearing support) appeared to be associated with the

positive changes sub-group (e.g. "*Today we met the parents and discussed how they can be a good example and supportive to their children, [client] was happy to see me at home*). Milestone changes were associated to involvement of parents and family in respondents 13, 19 and 27.

In addition to milestone changes that supported the above-mentioned mechanisms, milestone changes pointed to the impact of the mere starting of the support process [respondents 8, 13], as well as to external contextual factors, such as the provision of school supplies [respondents 3, 4; e.g. "*Someone bought school materials for me; now I am happy because I can study without worrying*"]. It further demonstrated non-treatment related processes, such as increased awareness of problems resulting in pre-intervention increase of symptoms [respondent 13]. The Personalized Outcome Indicators (POI) were included in the iterative analyses resulting in findings presented above, demonstrating sizeable reductions in perceived distress in client-specific presented problems (i.e. general state of ill-being; sleep problems; school performance; thinking too much; somatic complaints).

The most dominant predictor for explaining differences in outcome trends was *which counselor* was providing the service; i.e. when considering multi-indicator changes, the difference between subgroups was identical to the three counselors. Also, the mentioned treatment mechanism continuums were overlapping, as may be expected. This is especially apparent when considering the overarching level of *control* among the no-change cases, demonstrated by the counselors' efforts to avoid de-stabilization, minimize problems, emphasize submission and overall containment. The study provided no information to clarify whether high level of control was related to counselors' avoidance of personal traumatic histories or due to skills and approach.

Discussion

The study generated hypotheses on treatment mechanisms of counseling associated with client improvement. Five key treatment mechanisms emerged; (a) client focusing and centeredness; (b) therapeutic alliance, explicit trust formation and disclosure; (c) active use of problem solving; (d) structured trauma-focused exposure and (e) family involvement and parental support. For all variables higher levels were generally associated with more positive outcome trajectories. Less effective counselors (i.e. no-change outcome patterns) were characterized by a counselor's directiveness, containment and acceptance of the problem and moralistic attitude. Increased therapist directiveness has previously been associated with less beneficial treatment outcome (Svartberg & Stiles, 1992; Najavits & Strupp, 1994). The present study identified the service provider to be the best predictor of positive outcome trends. The difference of utilization of the above-mentioned treatment mechanisms between

196

the counselors was a further validation of the primary study results. Distinct clustering of outcome trends per therapist has been demonstrated (Luborsky, McLellan, Diguer, Woody, & Seligman, 1997) and deriving treatment process hypotheses from comparing 'less effective', 'effective' and 'most-effective' therapists is not uncommon (Najavits & Strupp, 1994). A strength of the study is the utilization of a multi-indicator approach. We classified change as improvement or deterioration when trends of repeated measures were qualified by the beta coefficients on several indicators.

A widespread argument in psychotherapy process research is that a set of common ingredients explains the equivalence of outcomes between different psychotherapies, despite apparent non-equivalence of theory and treatment processes (Stiles, 1999; Luborsky et al., 2002). Commonalities of working ingredients underlying different treatments include mainly therapeutic alliance, such as a counselor demonstrating warm and reflective involvement allowing disclosure and client focusing, as well as a healing setting, a conceptual scheme, a ritual that required active participation, the absence of negative or moralistic counselor behaviors and the opportunity to express and reflect on one's thoughts and feelings (abreaction) (Frank & Frank, 1991; Stiles et al., 1999; Luborsky et al., 2002). Our study is consistent with the notion that such universal therapist variables drive the therapeutic change. In addition, more specific problem-focused treatment mechanisms (goal-, and coping-orientedness, in-session activity, challenging negative beliefs) are similarly associated with positive treatment outcome trajectories. This trend is consistent with recent evidence and recommendations for CBT (Task Force on Community Preventive Services, 2008), albeit with caution and in relation to the CBT components used in counseling as practiced in Burundi. Finally, the result with regards to family involvement as a key treatment mechanism is consistent with evidence for the positive effect of parent participation during treatment and family interventions (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Fjermestad, Haugland, Heiervang, & Öst, 2009). In effect, this suggests combining non-specific commonalities with specific therapeutic techniques in an integrated approach, which combines (a) a generic treatment approach that is derived from non-directive and therapeutic alliance premises, (b) an active PST approach and strategic use of CBT techniques, and (c) a systemic perspective that ensures the inclusion of the client's context.

While the confirmations of common notions is not entirely surprising given existing evidence, it is particularly salient given that treatment process research is almost entirely based on research in high-income settings, specialized interventions and mainly for adults. Given the cultural distance between the context of development of psychotherapeutic concepts and context of implementation, it could be expected that radically different treatment mechanisms would prove beneficial (e.g. direct advice giving in settings where an emphasis on social hierarchy would make top-down care to be expected). Yet, the present results do

not point in that direction. Rather than identifying new treatment mechanism it appears to be the quality and integration of the utilization of common treatment mechanism that is associated with increased positive changes.

Implications for research, policy and practice

This study has several implications for the further development of counseling in Burundi and potentially other low-income settings. First, the findings correspond with the notion of 'integrative psychotherapy' in high-income countries, which advocates an emphasis on common therapeutic ingredients and fusing different theoretical approaches and techniques (Norcross & Goldfried, 2005). Given low mental health resources in LAMIC, which make formal psychiatric diagnosis and disorder specific psychotherapy unfeasible, integrative counseling by para-professionals appears an adequate strategy of focused care. In such settings we therefore recommend that training of general therapeutic techniques (common factors) is prioritized, followed by specific therapeutic techniques. Second, the aims of theory formation are to better design and evaluate treatment. Increased knowledge on treatment mechanism will facilitate the process of scaling up interventions, as well as efficacy research as the intervention can be better protocolized and indicators matched, in LAMIC settings. Third, the finding of distinct clustering of counselor outcome trends combined with other research demonstrating stability of therapist performance (Luborsky et al., 1997), suggest that improvements across a counselor's caseload may be the most effective indicator for counselor selection or evaluation. Moreover, these results point towards the need for train-ing and supervision as mechanisms of quality control, especially focusing on the identified treatment mechanism continuums. Fourth, in addition to contributing to the theory forma-tion process, Personalized Outcome Indicators demonstrated clinical usefulness within n=1 methodology as a culturally appropriate and pragmatic tool for counselors to track client progress on indicated problems.

Future research needs to look into the impact of severity and type of baseline symptomatol-ogy, the counselors' levels of expertise and counselor client interaction variables. Also, we did not assess the possible impact of the repeated measurements on the change trajectories. While we saw some examples of influence (an increase in symptomatology after initiating the measurements before the start of the intervention; one transcript making mention of the unfamiliarity with an interviewer), we did not identify any systematic effects of the recurring interviews. Using independent assessors, as we did, is likely an important method to limit such influence.

Limitations

Several limitations need to be noted. The research design does not permit any conclusions on the effectiveness of counseling. This study aimed to develop hypotheses on possible treatment mechanisms of counseling in a LAMIC setting. Moreover, we did not quantify and subsequently correlate process and outcome indicators, thus limiting evidence for causal pathways, because of the tendency of both therapist and client to make appropriate adjustments as a result of perceived changes. As this study was aimed to generate theoretical hypotheses, future research possibly using latent growth modeling, will have to test these hypotheses. It should be noted that all respondents received CBI before counseling, which likely increased susceptibility for psychosocial treatment due to increased preparedness and/or familiarity. Finally, while coding of treatment process data followed systematic steps of content analyses, it did not involve multiple raters to assess inter-rater reliability of the identified themes. We compensated this limitation with the use of the multi-indicator approach to defining changes on the outcome indicators.

Conclusion

In summary, the study generated hypotheses on treatment mechanisms. The five identified treatment mechanisms are a combination of universal therapist variables (therapeutic alliance and client-centeredness) congruent with the common factors theory, specific problem-focused intervention strategies (problem-solving and trauma-focused exposure) congruent with CBT techniques and family involvement congruent with a systemic approach. This series of single case studies further suggests that the service provider's caseload change trajectories are the best predictors of treatment outcome trends. Based on the results we hypothesize that in Burundi, integrative psychosocial counseling may be an adequate treatment strategy for targeting symptom reduction in children presenting with mental health symptoms within a primary care setting in Burundi.

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