Cognitive-behavioural therapy for deliberate self-harm

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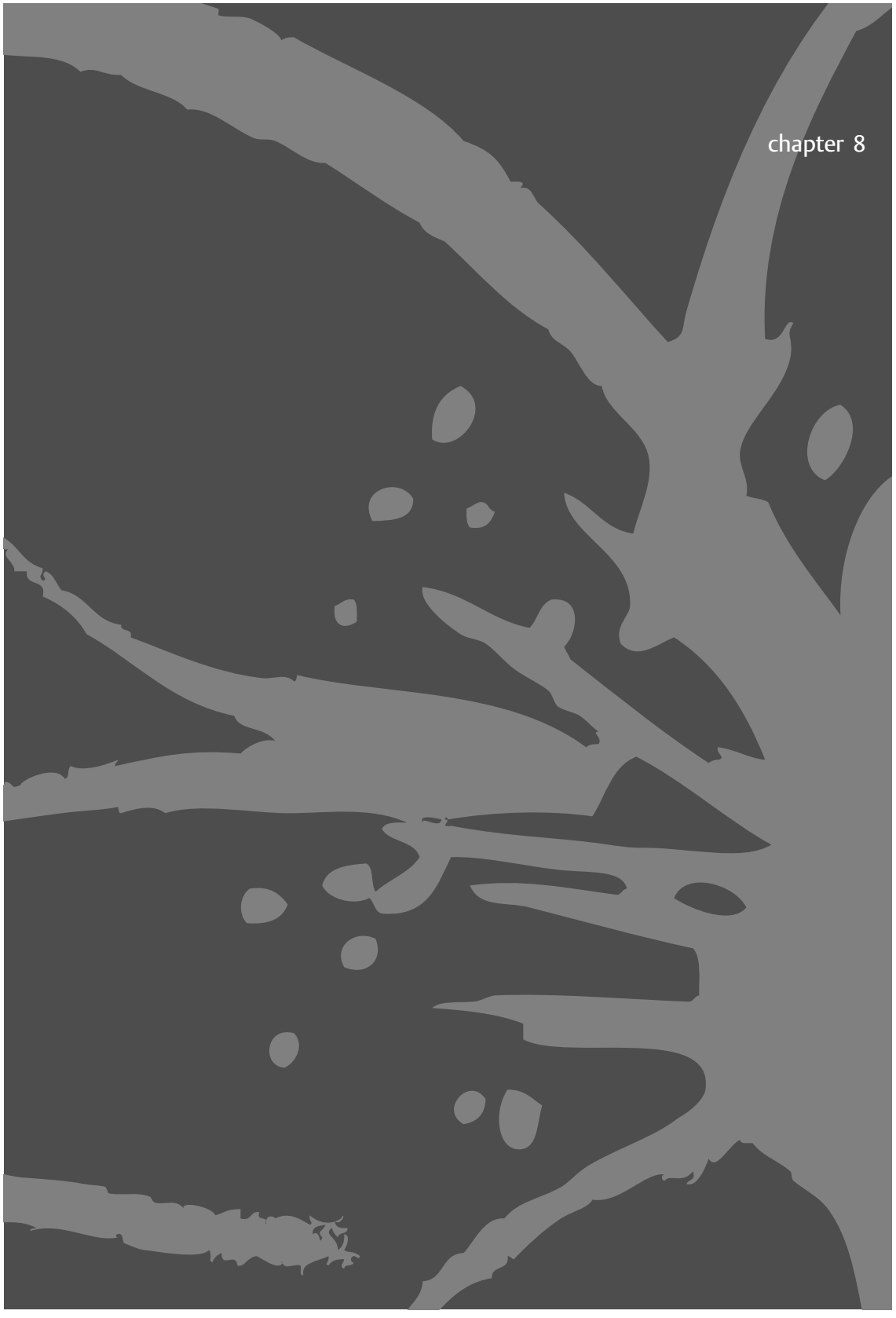
chapter 8

Summary and General Discussion

The studies presented in this thesis aimed to contribute to the understanding of DSH and to the development of evidence-based psychotherapeutic interventions to treat this complex human problem. This chapter starts with a summary of the major findings from the studies reported in this thesis, followed by general conclusions and a discussion of their methodological strengths and limitations. Finally, recommendations for future research and clinical implications of this thesis will be presented.

8.1 Summary

The questions addressed in Chapter 2 were: What do DSH patients need? How can we be more effective in treating DSH? To detect essential ingredients for treatment, three different cognitive-behavioural theories of DSH were reviewed: (1) the cognitive-behavioural theory Linehan (1993) developed to reduce DSH in patients with borderline personality disorder, (2) the cognitive theory of Berk et al. (2004), and (3) the cognitive-behavioural theory of Rudd et al. (2001). A critical discussion of these theories led to the formulation of four mechanisms of change that could guide therapists in their work with patients who engage in DSH: (1) a trusting patient-therapist relationship, (2) building emotion regulation skills, (3) cognitive restructuring (4) behavioural skills training. The three therapies might work by targeting these mechanisms of change. However, the specific mechanisms behind the favourable outcomes of the therapies are still unclear. Consequently, the ultimate aim here was to provide a framework that encourages practitioners to look for these mechanisms of change in the context of their work with DSH patients. In particular, the framework may help therapists to decide what to do when patients fail to progress and their approach does not seem to work. With this framework therapists can quickly identify the specific cognitive, emotional, behavioural or interpersonal aspects most needing—and most amenable to—change.

Building on the theoretical framework described in Chapter 2, we developed a time-limited (12 session) cognitive behavioural therapy (CBT) intervention for DSH patients. The intervention aims to reduce DSH by targeting cognitive, emotional, behavioural and interpersonal problems. The intervention consists of three phases. In the early phase of treatment (session 1 and 2), DSH is assessed, treatment goals are formulated and therapist and patient make agreements about the conditions for treatment. In the middle phase of treatment (session 3-10), the treatment focuses on cognitive, emotional, behavioural and interpersonal problems that maintain DSH. In the last phase of treatment (session 11 and 12) the emphasis is on relapse prevention. A detailed description of the intervention was given in Chapter 3.

Chapter 4 described the outcomes of the randomized controlled trial of the CBT intervention outlined in Chapter 3. The CBT intervention was designed to supplement usual care following an episode of DSH. The study involved 90 people (95% females),

aged 15–35 years, who were randomly assigned to CBT in addition to treatment as usual (TAU) or to treatment as usual only. The main study hypothesis, that CBT in addition to TAU would be more effective in reducing repetition of DSH than TAU only, was supported. Furthermore, those who received CBT in addition to TAU were shown to have significantly greater reductions in depression, anxiety and suicidal cognitions, and significantly greater improvements in self-esteem and problem solving ability. It is reasonable to assume that these positive findings are attributable to the effect of the CBT, given the random assignment as well as the absence of between group differences with respect to demographics, DSH, history of DSH, psychopathology and use of health care services. It is encouraging that these results are found for people with recurrent and chronic DSH, with high risk of repetition, and with high levels of psychiatric co-morbidity.

On the basis of contemporary psychological theories of DSH, it makes sense to ask whether the changes resulting from CBT are mediated by changes in emotion regulation difficulties. However, this assumption had never been studied in a randomized controlled trial. The aim of the study described in Chapter 5 was to investigate whether changes in emotion regulation in DSH patients treated with CBT indeed mediated treatment outcome, as assessed in the randomized controlled trial described in Chapter 4. The findings showed that during the course of treatment, changes in DSH were partially mediated by changes in emotion regulation difficulties, particularly difficulties with impulse control and goal-directed behaviours. In addition, the potential mediating role of depressive symptoms, symptoms of anxiety and suicidal cognitions was examined. Although the CBT intervention significantly reduced depression, anxiety and suicidal cognitions, these measures of symptom severity did not play a mediating role. These findings suggest that interventions for DSH should not primarily focus on mental disorders associated with DSH, but be DSH-specific and target specific emotion regulation difficulties.

Very few studies have examined whether DSH patients differing in demographic characteristic, psychological and psychiatric problems and in particular a history of childhood abuse respond equally well to treatment. To address this important issue, the study described in Chapter 6 examined the impact of these factors on treatment outcome as assessed in the randomized controlled trial of the CBT intervention (see Chapter 4). Patients differing in demographics, psychological problems and psychiatric problems benefited equally from the intervention. Assessment of childhood abuse showed that 47% of the patients had a history of physical abuse, 46% had a history of sexual abuse, 96% had a history of emotional abuse and 29% had a history of combined physical and sexual abuse. Those with a history of childhood physical abuse, sexual abuse and combined abuse suffered from the most severe psychological and psychiatric problems at baseline. However, despite the more severe initial impairment, individuals with a history of abuse responded equally well to the CBT intervention. This seems to indicate that a CBT

intervention that does not address abuse history directly but focuses on current problems can be used successfully in abused DSH patients. However, those who had a history of sexual abuse had a poorer outcome on repetition of DSH in the TAU condition, suggesting the need to address emotion regulation difficulties and problem solving deficits in abused DSH patients. CBT seems to be the best choice for DSH patients with extensive abuse histories.

Chapter 7 described the relationship between the use of different cognitive strategies to regulate emotions and DSH. Young women who harmed themselves (n=85) were compared with young women without a history of DSH (n=93) across several measures of cognitive content (e.g., perceived burdensomeness, helplessness, poor distress tolerance) and cognitive processes (e.g., lack of clarity of emotional responses, lack of awareness of emotional responses, nonacceptance of emotional responses). Significant group differences were found for all measures, even when depression severity was controlled for. In addition, logistic regression analyses showed that cognitive content strategies of suicide cognitions, self-concept and self-blame made significant, independent contributions to the prediction of group membership, as did cognitive process strategies of lack of clarity of emotional responses, difficulties controlling impulses and nonacceptance of emotional responses. Controlling for depression severity, suicidal cognitions and (to a smaller extent) nonacceptance of emotional responses independently predicted DSH. The strong association between suicidal cognitions and DSH seems to indicate the important role of these cognitions in recurrent and chronic DSH. The association between nonacceptance and DSH underscores the notion that DSH can be a way to avoid emotional problems. These findings were discussed in relation to recent CBT interventions, specifically Cognitive Therapy, Dialectical Behaviour Therapy, Mindfulness Based Cognitive Therapy and Acceptance and Commitment Therapy, to further insight into how these interventions might work.

8.2 General conclusions

The studies presented in this thesis found evidence for the efficacy of a time-limited CBT intervention for DSH patients. The finding that in this study a time limited CBT has decreased DSH contrasts with the results reported by Hawton et al. (1998) and Tyrer et al. (2003). The difference in outcome could be attributed to the fact that all subjects who had started with the CBT completed all sessions, a fact that probably contributed to its efficacy. These results replicate recent positive findings with another DSH-specific CBT intervention (Berk, Henriques, Warman, Brown, & Beck, 2004; Brown, Ten Have, Henriques, Xie, Hollander, & Beck, 2005). Furthermore, the studies in this thesis show that CBT does not only reduce DSH, but also associated problems, such as depression, anxiety, suicidal cognitions, low self-esteem, problem solving deficits (see Chapter 4) and

emotion regulation difficulties (see Chapter 5). In addition, the studies contribute to our understanding of emotion regulation difficulties in the development and perpetuation of DSH. Emotion regulation difficulties were found to partially mediate therapeutic change (see Chapter 5). Depressive symptoms, symptoms of anxiety and suicidal cognitions, on the other hand, were not found to mediate treatment outcome (see Chapter 5). These findings suggest that although it is important for interventions to take into account the complexity and severity of co-morbid disorders, the primary focus should be on emotion regulation difficulties. Moreover, building emotion regulation skills seems to be a particularly important ingredient of therapy with sexually and physically abused patients.

8.3 Methodological strengths and weakness of the studies.

This section describes the methodological strengths and weaknesses of the studies presented in this thesis, in particular the treatment outcome study. The key questions are internal validity, external validity, construct validity and statistical conclusion validity.

Internal validity

A treatment is called internally valid if the treatment itself, rather than extraneous influences, is considered to account for the results (Kazdin, 1998). The way randomization was conducted ensured as good as possible internal validity. However, internal validity is compromised by the absence of a specified TAU and/or a no-treatment comparison condition. We recorded three forms of TAU: "psychotropic medication", "psychotherapy" and "psychiatric hospitalisations" on the basis of self-report by the patient themselves. In addition, we recorded whether psychotherapy in TAU had a focus on DSH. We can conclude that patients in both conditions received a comparable level of care within these broad categories of treatment (see Chapter 4). However, we did not systematically record the specific types of psychotherapy or psychotropic medication the comparison condition received, nor did we record the specific types of psychotherapy or psychotropic medication the experimental condition received next to the DSH-focused CBT, the main reason being that we did not have the research capacity to collect more specific data on medical consumption among the different care givers in TAU. Therefore, it is unclear if the conditions were equivalent in this respect. In addition, it is unclear whether the treatment effects are attributable to specific ingredients of the CBT or to the total package of the CBT in addition to TAU. For ethical reasons, a no-treatment control condition is not possible in studies among DSH patients. However, a specified TAU condition might help to detect the active ingredients of the CBT.

Another issue with regard to internal validity is the way study withdrawals were handled. Multilevel analysis (MLA) uses all available data, but assumes that withdrawals occur at

random, which is questionable in this population. As the assumption of randomness is unlikely, we also executed and reported the results with the completers sample (n=73), the sample without the 8 early withdrawals (n=82) and the intent-to-treat sample (n=90). These different analyses led to similar findings (see Chapter 4). These convergent findings give credibility to our data.

A last issue with regard to internal validity involves the timing of the baseline interview. Patients who entered the study were in crisis. At that time, the risk of DSH was elevated, their mood was particularly low, suicidal cognitions were persistent, and they had great difficulty solving the problems they were facing. It has been argued that crises are by themselves time-limited, even for those exhibiting recurrent and chronic DSH (Rudd et al., 2001). Taking into account the statistical phenomenon of regression towards the mean, patients with extremely high scores at baseline can be expected to have less extreme scores by the next assessment for purely statistical reasons. However, the magnitude of the interaction effects in the MLA clearly show the unique additional effect of CBT (see Chapter 4).

External validity

External validity refers to the extent that the results can be generalized beyond the conditions of the study to other populations, settings and conditions (Kazdin, 1998). To maximize external validity, the sample selection procedures of the study had prioritized a psychologically and socioeconomically diverse sample of DSH patients, reflecting clinical practice. The prediction study described in Chapter 6 showed that no variables could predict lack of treatment effect of the CBT intervention. However, mostly young women of Dutch nationality participated in the studies in the thesis. Various sources of research indicate that patterns of DSH vary by age (Chan, Banerjee, & Draper, 2007; Hawton & Harriss, 2006; Hawton et al., 2007), gender (Gratz, Conrad, & Roemer, 2002; Roy & Janal, 2006) and culture (van Bergen, Saharso, Smit, & Kerkhof, 2007). Therefore, the results of the present studies cannot easily be generalized to an older, male, culturally diverse population. However, having a sample with mostly females also reduced heterogeneity, which may be useful given the literature on sex differences in, for example, emotion dysregulation (Gratz et al., 2002).

Another observation is that most participants had a long history of DSH. So-called "first-evers" were almost absent. Previous research in the same region of the Netherlands had given a different picture of the patient population (Arensman, 1997). Changes in the clinical profile of DSH patients have also been noticed in other countries. For example, a 30-year cohort comparison of suicide attempters in the USA found marked increases in psychopathology, with present-day suicide attempters making suicide attempts at about four times the rate of the earlier cohort in the year following the index episode (Henriques,

Brown, Berk, & Beck, 2004). Possible explanations for these changing profiles include increased alcohol and drug use, decreases in the levels of social cohesion in society and changes in health care systems.

Although the sample selection procedure of the present study was similar to that of previous studies (e.g. Arensman, 1997), the sample mainly consisted of females with a long history of DSH, an extensive abuse history, and severe psychological and psychiatric problems. These characteristics of the study sample are relevant to the interpretation of many findings in this thesis. They are particularly relevant to the outcome of the CBT trial (see Chapter 4), since individuals with a high rate of repetition are perhaps more likely to show a reduction in overall repetition rates than individuals where repetition is an uncommon event. In addition, the characteristics of the sample have implications for treatment. For example, in Chapter 4 it is stated that "inpatient treatment is the standard care for DSH patients", but this is only true for patients with chronic DSH who are in crisis. Most DSH patients are treated in the community by their GP or mental health professionals. Furthermore, the characteristics of the study sample may explain why the prevalence rates for a history of abuse are so high and the association between abuse history and psychopathology is so strong (see Chapter 6). However, it is not clear how the sample selection procedure has led to the inclusion of this specific group of DSH patients. There are a number of variables, which could be considered as potential influences, such as the referral policy of the General Practitioner (GP) and recruitment within Mental Health Center Rivierduinen. Except in a medical emergency, the GP is usually the first person who learns about an episode of DSH. Patients can not contact mental health services directly, but need to ask their GP to arrange for a meeting with a mental health practitioner. In milder cases of DSH, GP's may decide to provide support themselves (e.g. with regular appointments and/or psychotropic medication). In addition, in the present study, patients were not only recruited from a general hospital population, but also from a mental health center population. As a result, the sample may differ from a general hospital DSH population. Recruitment within Mental Health Center Rivierduinen may have led to a selection of more chronic DSH patients. Therapists may have been more likely to inform chronic DSH patients (those who had not responded to previous treatments) about the possibility to participate in the present trial than patients with milder forms of DSH.

Construct validity

While internal validity refers to having evidence that the study caused the outcome, it does not tell whether the study influenced what was intended -this is a construct validity issue (Kazdin, 1998). To maximize construct validity, it was important to think through the concepts under study, so that the CBT intervention was a good operationalization of what we wanted and that the outcome measures reflected what we wanted them to reflect.

For example, the studies presented in this thesis included many new, theory-guided, and DSH-specific self-report questionnaires, such as a measure of suicidal cognitions (Rudd et al., 2001) and a measure of emotion regulation difficulties (Gratz & Roemer, 2004). On theoretical grounds, it was hypothesized that CBT in addition to TAU, would yield a larger effect both on DSH and presumed mediating variables such as emotion regulation difficulties than TAU only would. The first hypothesis with regard to differential treatment effects was confirmed (see Chapter 4). Furthermore, mediation analyses revealed that emotion regulation difficulties partially mediated treatment outcome, whereas symptom severity did not (see Chapter 5). These results contribute to a better understanding of specific mediators of treatment change. Furthermore, the results are consistent with theoretical assumptions regarding the advantages of a DSH-specific treatment over a treatment focusing on mental disorders.

Another issue concerns the conceptual confusion in the field of suicidology. Researchers agree that important differences exist between people who consider DSH, people who have once engaged in DSH, and people with chronic DSH. However, some studies do not provide a definition of the concept under study or use terms interchangeably. In addition, many of these studies do not provide enough information on the study population. In order to understand, treat and prevent DSH, it is important to accurately specify the subtypes of DSH. However, there are many obstacles to coming to consensus, including concepts such as intent, motivation and lethality (Linehan, 1997; Linehan, Comtois, Brown, Heard, & Wagner, 2006; Silverman, 2006). Still, suggestions are made to elucidate these issues (Linehan et al., 2006; Silverman, 2006; Claes & Vandereycken, 2007). For example, Claes and Vandereycken (2007) propose a functionalist approach, which starts with a microanalysis of the meaning (motives, functions) of a particular episode of DSH for a

Table 1. Proportions of patients who did and did not self-harm during the follow-up period (between 6 and 9-month assessment)

	CBT (n=40)		**TAU (n=42)**	
Valid	N	Percent	N	Percent
0	31	77.5	24	57.5
1	4	10.0	1	2.4
2	2	5.0	1	2.4
3	1	2.5	-	-
>4	2	5.0	16	37.7
Total	40	100	42	100

particular patient. Such a functionalist approach may be the cornerstone of effective therapeutic management and prevention of DSH.

A related issue is the frequency of DSH, and how this can be assessed. Both infrequent self-harm and habitual self-harm are impulsive acts, and the difference between them seems to be a matter of degree. For research purposes, it is important to specify how habitual self-harming behaviour is assessed. In this study, repetitive acts of self-harm were recorded as a single episode of DSH if they occurred within a clear time frame (e.g. one evening). We found that people have a hard time remembering the exact number of acts of self-harm within a single episode of DSH, since they often use multiple methods of DSH (e.g. overdosing, cutting), till the acts have brought about a release of tension. Recording episodes of DSH in stead of counting acts of self-harm may give more reliable results. Another advantage of recording episodes of DSH is that they can usually be linked to a precipitating event.

Statistical conclusion validity

Statistical conclusion validity refers to the extent to which a relation is shown, demonstrated, or evident, and how well the investigation can detect effects if they exist (Kazdin, 1998).

The study produced a wealth of data and offered many possibilities for statistical analysis. Multilevel analysis (MLA) was chosen to study the development of DSH over time (see Chapter 4). Another possibility is to calculate actual proportions of patients who did and did not self-harm during the period following receipt of CBT in addition to TAU or TAU only (in the period between 6-month follow-up and 9-month follow-up). These descriptive data show whether most individuals continue to self-harm, and it is just the frequency of self-harm that is reduced, or whether most individuals no longer engage in DSH, which may have different implications for the longer term prognosis regarding DSH. Table 1 shows that over three-quarters of patients who had received CBT (77.5%, n=31) had not harmed themselves during follow-up. In addition, the majority of those patients who had harmed themselves had done this one or two times in a three month period, which is a marked reduction considering the high rate of repetition of DSH found at baseline. Of note is that only 2 patients (0.5%) reported 4 or more episodes of DSH. It seems that the large majority of the patients who received CBT has a good prognosis regarding DSH. Table 1 also shows that more than half of the patients in TAU (57.1%, n=31) did not self-harm during the follow-up period. However, the reduction of self-harm in TAU is less pronounced, especially because over a third of patients in TAU (38.1%, n=16) report 4 or more episodes of DSH during the follow-up period.

The study design was constrained to a maximum of four measurements per participant. Given this restriction, a power analysis was performed to determine the sample size needed

to detect between-group differences on the primary outcome measure: the number of episodes of DSH during the last three months. Results obtained with the program PINT (Snijders & Bosker, 1993) indicated that a sample size of approximately 45 participants in each group would be sufficient to detect a difference in average time slope between the groups of .40 (corresponding to a small effect size) with adequate power (.80) and an alpha of .05. One hundred individuals were invited for the baseline interview. Ten people failed to meet the inclusion criteria. The 90 individuals who entered the study were randomly assigned to 12 CBT sessions in addition to TAU (n=48) or to TAU only (n=42).

With 90 participants, suicide can not be studied as a study outcome. It has been argued that interventions to reduce repetition of DSH could have an impact on suicide rates (Gunnell & Frankel, 1994). In the present study, there were no suicides in the CBT condition and two suicides in TAU (see Chapter 4). The CBT intervention of Brown et al. (2005) also showed a trend towards lower levels of suicide (Crawford, Thomas, Khan, & Kulinskaya, 2007). However, Crawford et al. (2007) argue that the relatively modest reduction in repetition of DSH as found in the Brown et al. (2005) trial cautions against the view that this therapy is likely to be associated with marked reductions in levels of subsequent suicide. The same might apply for the present CBT intervention, since the power of the study was inadequate to detect differences in suicide rate between conditions. In addition, the relative rarity of suicide following DSH in the short term means that even large trials of people who engage in DSH lack sufficient power to explore effects on suicide (Gunnell & Frankel, 1994; Crawford et al., 2007). Results of a meta-analysis do not provide evidence that additional psychosocial interventions following self-harm have a marked effect on the likelihood of subsequent suicide (Crawford et al., 2007).

A final issue is that validated instruments of the number of episodes of DSH were not available at the start of the project. To investigate the reliability of the assessment of the number of episodes of DSH, the retrospective self-reports were compared with hospital records, as well as with information coming from the treatment sessions. The correlations between the three measures were high, with correlations ranging from .88 to .90. Secondary outcome measures were also assessed with reliable and valid self-report instruments. However, to get a more detailed understanding of the concepts under study, future studies might include measures of physiological arousal and expressive behaviour, in addition to self-reports. Moreover, most data were retrospectively collected. Retrospective reporting raises concerns about the accuracy of participants' recall. An electronic diary may have potential as a research tool. In recent years, Schwartz and Stone (1998) have pioneered a technique known as ecological momentary assessment in which multiple data entries are requested each day and the subject is asked to record how they feel at that point in time. Ecological momentary assessment may be well suited to investigate links between moment-to-moment changes in mood and repetition of DSH.

8.4 Future directions

In this section, implications of the research on DSH will be addressed in terms of future directions in research and treatment. Some of the suggestions for future research have already been raised in the chapters and are now recapitulated.

What are the most "active ingredients" of the CBT intervention ?

Our findings show that change in difficulties with impulse control and change in difficulties engaging in goal-directed behaviours partially mediate reduction in DSH. However, although the observed effects formally satisfy the Baron and Kenny (1986) conditions for mediation, the effect of the mediators is small. Clearly, there is a need for further testing. Other mechanisms of change may also be at work, since the relationship between different treatment components seems to be complex. According to Lang's 'three systems' model (Lang, 1988), there are physiological, behavioural, and cognitive aspects to psychological problems. Producing change in one system is thought to induce change in the other two. For example, behavioural activation works directly on the behavioural system, but may also produce change in the cognitive and physiological systems. Likewise, change in suicidal cognitions may produce changes in physiological arousal associated with negative emotions. So, each component of the CBT intervention might work on different systems. Furthermore, the combination of cognitive, emotional and behavioural techniques may be more effective than either of them alone. Alternatively, it might be that the effectiveness of this treatment largely depends on the therapists' expertise with the broad range of therapeutic techniques. In addition, non-specific therapeutic factors (e.g. the quality of the therapeutic relationship) may underpin treatment change.

The discussion of potential "active ingredients" of CBT can also be found among proponents of traditional and more recent CBT interventions. Proponents of the recent so-called "Third Wave" CBT (Linehan, 1993; Segal, Williams, & Teasdale, 2002) lay an increased emphasis on attentional control, emotion regulation and skills training. At the same time, these recent developments have led to a decreased emphasis on the rational challenge of the content of thoughts (see Chapter 7). An important question for future research is whether these more recent interventions reduce DSH to a greater extent than traditional CBT interventions.

What are the most important emotion regulation difficulties to target in treatment?

Acceptance of emotions was a key concept of the CBT intervention. Patients were invited to foster an interested, kindly and accepting stance in relation to negative emotions. As such, an emphasis was placed on the control of behaviour when emotions are present, rather than the control of emotions themselves. As expected, those who received CBT in addition to TAU were shown to have significantly greater reductions in nonacceptance of

emotional responses. However, nonacceptance of emotions did not mediate treatment outcome (see Chapter 5). This is surprising, since acceptance of emotions is suggested to be a protective factor for DSH (Chapman, Gratz, & Brown, 2006). Furthermore, nonacceptance of emotions distinguished young women who self-harmed from young women without a history of DSH (see Chapter 7). Nevertheless, the findings showed that not nonacceptance of emotions, but impulse control difficulties and difficulties engaging in goal-directed behaviours partially mediated the treatment effect (see Chapter 5). The different studies in this thesis seem to point to the importance of different emotion regulation difficulties. How can these contradictory findings be explained? First, although power was adequate to detect changes in DSH, the number of participants is relatively small. As a result, potential mediators could have been missed. Second, the relationship between DSH and nonacceptance of emotions described in Chapter 7 was only marginally significant. Third, the difficulty of identifying mediators of therapeutic change may also reflect the quality of measures of emotion regulation. A combination of self-report, physiological and behavioural measures might reveal a mediating role of nonacceptance of emotions. Fourth, the different subscales had high intercorrelations, which may also have influenced the findings.

To what extent should emphasis be placed on learning patients new skills and to what extent should patients be helped to learn to accept themselves?

The CBT intervention combines acceptance-based strategies and problem solving strategies, although the relative frequency of each depends on the particular patient and the current situation and vulnerability of a patient. It has been argued that many treatment impasses are due to an imbalance of one strategy over the other (Miller, Rathus, & Linehan, 2007). According to Dialectical Behaviour Therapy, the entire focus of change-based therapies can be aversive for patients with histories of invalidating experiences, since by necessity the focus contributes to and elicits self-invalidation (Linehan, 1993). However, therapies that focus exclusively on validation and acceptance can prove equally problematic, because DSH patients experience life as painful and often this pain is experienced as unbearable. Our findings seem to confirm that both acceptance-based strategies and problem solving strategies are essential components of DSH interventions. The association between nonacceptance of emotions and DSH (see Chapter 7) seems to underline the importance of acceptance-based therapeutic strategies. However, we also found evidence that CBT can effectively change problem solving deficits (see Chapter 4). In addition, difficulties with impulse control and difficulties with goal-directed behaviour have been found to partially mediate treatment outcome (see Chapter 5). Future research is required to determine the specific contribution of the acceptance- and skills-training components to the therapeutic process.

Will one DSH intervention ultimately suffice in the treatment of all DSH patients or are several varieties of treatments needed?

Intentionally, the sample selection procedures of the study had prioritized a psychologically and socioeconomically diverse sample, because a diverse group of patients would best reflect clinical practice. This included patients with different levels of psychiatric co-morbidity and a wide range of psychosocial problems. The CBT intervention seemed equally effective for DSH patients differing in demographic characteristic, psychological and psychiatric problems, and history of childhood abuse, which suggests the robustness of the intervention (see Chapter 5). The strength of the treatment may be that it integrates components from different therapeutic approaches (e.g. Cognitive Behavioural Therapy, Dialectical Behaviour Therapy, Problem-solving Therapy) and delivers them in an integrated and systematic manner. Coordination of multiple interventions is achieved by emphasizing the treatment frame of addressing the cognitive, emotional, behavioural and interpersonal problems associated with DSH. A multi-component treatment approach seems to be most suitable for this multi-problem group of patients. The intervention gives therapists the flexibility to tailor the treatment plan to the needs of an individual patient. Future studies may reveal if a single-component treatment approach to DSH (e.g., with a focus on problem solving or a focus on mindfulness skills) is equally effective as this multi-component-treatment approach.

How should assessment of DSH be conducted?

At the start of the project, a valid and reliable instrument that covered all aspects of DSH (e.g. past episodes, circumstances of the index episode, motives, intent, consequences) was not available. Instead, the present study combined a whole series of instruments to capture the totality of DSH. The development of a proper measure could be an important goal for future research. Not only could a proper measure equip psychotherapists to conduct the best possible assessment of past episodes of DSH, but a proper assessment could also set the stage for treatment planning. Furthermore, such a measure is essential if research on DSH is to proceed, since the field of DSH is still characterized by definitional confusion (Silverman, 2006).

Recently, a more comprehensive instrument has been developed to assess the multiple factors associated with suicide attempts and nonsuicidal self-injury: The Suicide Attempt Self-Injury Interview (SASII) (Linehan, et al., 2006). Preliminary findings show that the SASII is a reliable and valid measure. Another strength of the SASII is that it allows researchers to assess the suicide intent of an act independent of the method or lethality of the act itself, preventing the definitional confusion mentioned above. Since the SASII also assesses variables related to contextual characteristics of the episode, including antecedent events, preact behaviours, and states of mind and consequences, essentially,

the SASII conducts a behavioural analysis of each self-injurious act, which makes it not only helpful for research purposes but also for clinical work with individual patients.

While the SASII assesses past acts of DSH, it does not predict risk of future DSH or suicide. To develop such an instrument, it might be relevant to study the most serious cases of DSH in more detail, since they may be suitable as a "proxy" for suicide in research studies and could improve suicide prevention. However, the reluctance of severely suicidal patients to be interviewed may be a difficulty for future research (Douglas, Cooper, Amos, Webb, Guthrie, & Appleby, 2002).

What is the link between childhood abuse and DSH in adolescence or adulthood?

Developmental models of DSH suggest the role of childhood abuse in the pathogenesis of self-harming behaviour (Yates, 2004). From this perspective, abuse undermines positive adaptation on many levels, which necessitates the use of alternative regulatory strategies such as DSH. On a cognitive level, it has been hypothesized that if children are abused by significant others, fundamental assumptions are formed such as the idea of being inherently bad or that nobody can be trusted (Arntz, 1994). In one of the few studies on this topic, a small study of patients with borderline personality disorder, cluster C- personality disorder and controls, maladaptive borderline beliefs were found to mediate the relationship between childhood abuse and borderline pathology (Arntz, Dietzel, & Dreesen, 1999). Future studies could examine other aspects of personality as a possible link between childhood abuse and DSH. For example, previous research has shown that childhood abuse contributes to the development of DSH, but that lack of secure attachment helps maintain it (Van der Kolk, Perry, & Herman, 1991). Combining clinical and neurobiological findings might also be useful, since neurobiological studies indicate that trauma may have long lasting neurobiological effects that may contribute to the development of psychopathology (De Bellis et al., 1999a; De Bellis et al., 1999b), including borderline personality disorder (Rinne et al., 2002). A better understanding of the pathway to DSH could help to identify vulnerability and protective factors with greater precision, thereby improving treatment for DSH patients.

How about resilience?

Resilience is an important psychological process that is thought to protect against the development of psychiatric disorders. Resilience is associated with a quality of bouncing back and moving on in life after adversity, it is associated with a strong belief that whatever life brings the individual will persevere and it is associated with adaptability, social support, sense of humour and self-esteem (Earvolino-Ramirez, 2007). To date, only one study has examined the relation between resilience and DSH. The outcomes showed that patients who had attempted suicide had significantly lower resilience scale scores

than patients who had never attempted suicide (Roy, Carli, & Sarchiapone, 2007). This suggests that low resilience may be a risk factor for DSH. Likewise, it has been argued that the risk of DSH following traumatic experiences may be counterbalanced by resilience factors such as social support, but there is not much literature actually evaluating the impact of these factors on DSH (Lewinsohn, Rohde, & Seeley, 1993; Resnick et al., 1997; Maris, 2002; Kidd et al., 2006). In order to test the mediating role of resilience, it will be essential to examine its effects prospectively. The resilience factors to be considered could include positive cognitions, emotion regulation skills and problem solving ability, because these could reveal how traumatic experiences are dealt with. In addition to psychological measures of resilience, biological measures could be part of the research, such as structural and functional brain imaging (Rutter, 2007). The purpose of including biological measures is that it allows research on resilience to broaden its horizon and examine gene X environment interactions. Future research may also show that resilience has its limits and that there are enduring biological effects of childhood abuse that are difficult to reverse.

How can DSH be prevented?

Now that there is evidence for the efficacy of a time-limited CBT intervention, a remaining question is how DSH can be identified at an early stage or even be prevented. First, it is important that DSH is recognized. Childhood DSH is often mistaken for accidents. Therefore, it would be helpful to initiate DSH and suicide awareness programs for all school staff and parents at the elementary school level (Fish, 2000). If parents, school staff, general practitioner or emergency staff find out that a child has harmed him or herself, it is important that they arrange for a psychological assessment. Depending on the individual situation, the child might then be referred to a paediatrician or psychotherapist. It is critical that psychiatrists, paediatricians and psychotherapists receive proper training in effective treatments for DSH, as well as in suicide risk assessment. Effective treatments may lower the risk of future episodes, prevent the development of chronic DSH and deflect the suicidal process.

Second, there is a need for greater attention on preventive work with children, adolescents and their families. Early intervention, support, and training for parents with special difficulties (e.g., mental disorders) could have great preventive significance for DSH. For example, it has been found that children of mothers with borderline personality disorder are at greater risk of emotional, behavioural and somatic problems (Barnow, Kessler, Freyberger, Spitzer, & Grabe, 2006). Preventive efforts may reduce the risk factors in the lives of children and adolescents and strengthen the resources of families and young people. Parenting programmes have been shown to decrease children's psychopathology, including DSH (Toumbourou & Gregg, 2002; Anderson, Vostanis, O'Reilly, 2005; Edwards,

Hughes, Hutchings, Cilleachair, & Bywater, 2007), and to increase maternal care and parent-child communication (Toumbourou & Gregg, 2002). It is promising that parenting programmes have an impact on risk and protective factors relevant to DSH and suicide. However, parenting programmes often lack sustainable treatment effects (Anderson et al., 2005). Furthermore, prevention of DSH and suicide does not depend only on an understanding of how to prevent psychopathology, but also on knowledge concerning how other social, economic and medical factors affect risk (Gunnell & Lewis, 2005).

Third, given the clear link between abuse in childhood and DSH during adolescence and adulthood (see Evans, Hawton, & Rodham, 2005 for a review), it is important that suspected abuse cases are reported to the investigating agency "Advies en Meldpunt Kindermishandeling" (AMK). Health care professionals need to be aware of the paradoxical patterns that suggest sexual abuse, such as passivity, acting out, or detachment and a reluctance to talk about the abuser. These behaviours may be seen in many adolescents, but when they are observed in combination with depression, drug use, hypersexual behaviour, or isolation, there is cause for concern (Harner, 2005). In addition, physicians and nurses need to be trained to recognize signs of physical abuse (Ziegler, Sammut, Piper, 2005; Stirling, 2007).

Fourth, recent studies on help seeking behaviour of adolescents with DSH show that friends are most likely to know about an episode of DSH (Evans, Hawton, & Rodham, 2005). Therefore, adolescents need to be provided with education and advice on how best to help friends with problems, including DSH or thoughts of suicide. This could be done in the context of mental health education programmes in schools. It should include advice on when an adolescent needs to seek help for a peer from adults.

Finally, concern has been raised about Internet sites dealing with suicide and their potential negative influence on adolescent suicidal behaviour. However, the Internet may also provide opportunities for suicide prevention. For example, there are websites for young people who experience emotional difficulties such as low mood (e.g., www.zwaarweer.nl). Furthermore, these websites give links to help lines (e.g., www.kindertelefoon.nl).

8.5 Clinical implications

Although there is growing evidence for the efficacy of psychotherapeutic interventions for DSH, dissemination of the effective treatments for DSH is limited due to a lack of treatment manuals and training opportunities in the efficacious treatments. While research designs are usually described in scientific journals, there is often little information on the specific manuals of the treatments studied. Books and book chapters describe treatments for DSH, but these interventions have not always been studied in randomized controlled trials. Dialectical Behavioural Therapy (Linehan, 1993; Miller, Rathus, & Linehan, 2007),

Mentalization Based Therapy (Bateman & Fonagy, 2004) and Schema Focused Therapy (Young, 1994; Giesen-Bloo et al., 2006) are some of the few well-studied treatments with published manuals. These interventions are also some of the few treatments for which training is currently available. The present dissertation aimed to contribute to the dissemination of effective treatments for DSH by providing a treatment manual of the studied CBT intervention (see Chapter 3).

Besides the lack of manuals and training, there are several other implications of this dissertation that are worth considering for clinical practice. First, many clinicians assume that inpatient treatment is the most effective treatment for a patient who has become suicidal or has made a suicide attempt. The overview of effective CBT treatments as given in Chapter 4 highlights that while inpatient treatment is the standard of care for chronic DSH patients, it has never been found effective in a clinical trial (Comtois & Linehan, 2006). In addition, hospitalisation has serious disadvantages compared to outpatient treatment. Not only is hospitalisation associated with high costs, it may also make a person feel more severely ill, because he or she is no longer in touch with aspects of daily life that are worth living for. Furthermore, a lack of stimulation and interaction with others has been found to increase the risk of DSH (Nijman & Campo, 2002).

Third, the results of controlled studies indicate that outpatient treatments targeting DSH directly are effective in reducing the risk of future DSH. Both Dialectical Behaviour Therapy (Linehan, 1993) and Cognitive Therapy for suicidal patients have showed these effects (Brown et al., 2005) (see Chapter 2 and 4). Similarly, the present DSH-intervention is not a diagnosis-specific intervention, but targets emotion regulation difficulties, suicidal cognitions and problem solving deficits, independent of psychiatric diagnosis. This leads to the question how the DSH intervention would fit into the diagnosis-specific programs ("Zorgprogramma's") as currently offered by mental health centers in the Netherlands. One possible solution might be to integrate the CBT intervention in a stepped-care program, in which DSH is addressed first, followed by a treatment focusing on underlying personality characteristics, such as Schema Focused Therapy (Young, 1994) or Mentalization Based Therapy (Bateman & Fonagy, 2004), or group therapy for young adults.

Fourth, another important clinical implication is related to compliance. Many factors may contribute to a high rate of non-compliance among DSH patients. In addition to the complexities in the therapist-patient relationship, exploration of the feelings underlying DSH can evoke strong fears. If patients are informed about the possibility that strong unpleasant emotions may arise during treatment, and are helped to develop emotion regulation skills, they might be more likely to stay in therapy.

A fifth implication for clinical practice is related to the use of no-suicide contracts. Reviewing the literature on the use of no-suicide contracts in clinical practice with

DSH patients, Rudd, Mandrusiak and Joiner (2006) conclude that there is no empirical foundation for their effectiveness. The authors provide a so-called commitment-to-treatment statement as a possible alternative to the no-suicide contract. The treatment manual described in Chapter 3 includes such a commitment-to-treatment statement. In line with the proposal of Rudd et al. (2006), it is defined as an agreement between the patient and therapist in which the patient agrees to make a commitment to the treatment process and living by: (1) identifying the roles, obligations and expectations of both the therapist and the patient in treatment: (2) communicating openly about all aspect of treatment including suicide and: (3) using the so-called "crisis-plan" (e.g., taking good care of oneself, taking protective measures, contacting emergency services if needed). The advantage of the commitment-to-treatment statement above a no-suicide contract is that it does not restrict the patients' rights with respect to the option of suicide. Instead, it emphasises a commitment to living. In our experience, the use of a commitment-to-treatment statement strengthens the therapeutic process. The low drop out rate found in the present study may be partially the result of the use of a commitment-to-treatment statement. However, this hypothesis has not been formally tested. Consequently, it is still unclear whether a commitment-to-treatment contract differs from a no-suicide contract with respect to treatment compliance, satisfaction with treatment and the prevalence of DSH or suicide. Future research should compare the effectiveness of commitment-to-treatment statements and no-suicide contracts.

Sixth, the strong association between suicidal cognitions and DSH as described in Chapter 7 implies that it may be beneficial for therapists to target specific suicidal cognitions. The CBT intervention described in Chapter 3 aimed to increase the patient's hope by systematically targeting cognitions of perceived burdensomeness, helplessness, poor distress tolerance and unlovability. This occurred as the therapist, while validating the patient's emotions, modeled hopefulness and the ability to improve the current situation through the identification and modification of unhelpful thoughts as well as through the use of effective problem solving skills. The potential relevance of these interventions is confirmed by the positive treatment outcomes presented in Chapter 4.

Seventh, the strong association between emotion regulation difficulties and DSH as described in Chapter 7 implies that it may also be beneficial for therapists to target specific emotion regulation difficulties. Changing these emotion regulation difficulties in CBT involved interventions geared toward mindfulness, acceptance and exposure with response prevention (see Chapter 3). For example, patients were invited to foster an interested, kindly and accepting stance in relation to negative emotions. The potential relevance of these interventions is confirmed by the finding that changes in emotion regulation difficulties partly mediate changes in DSH (see Chapter 5). Moreover, building emotion regulation skills seems to be a particularly important ingredient in therapy with

sexually abused patients (see Chapter 6).

Eighth, DSH patients can evoke strong negative feelings in the therapist. One way therapists may use any negative feelings evoked by the patient in a session is to recognize that the same feelings are likely present in the patient's family relationships and friendships. As such, it is important that the therapist helps the patient to become aware of thoughts and behaviours common to DSH that might negatively affect interpersonal relationships (e.g. thoughts of helplessness, thoughts of being a burden to loved ones, social isolation). Such guidance may help to maintain and develop the social support network of the patient over time. Chapter 3 gives suggestions to improve the communication between the patient and relevant others.

Ninth, working with DSH patients, it is important to be realistic about the goals for therapy and the standard for evaluation. Obviously, complex and deeply ingrained problems require more than 12 sessions of CBT. Part of the effectiveness of the CBT intervention might be that only those problems are discussed that have a direct relationship to DSH. Being explicit about the goals of therapy and not skipping from problem to problem makes therapy more effective. Furthermore, this may teach patients to prioritize.

Finally, the multi-component treatment approach to DSH was generally well accepted by the therapists who worked with it, possibly because the intervention gives therapists the flexibility to tailor the treatment plan to the needs of an individual patient. A study of a single component treatment (e.g. problem solving training or mindfulness training) may be less acceptable to therapists, because DSH patients usually present with multiple problems. It might be hard for therapists to work with a treatment protocol that focuses on only one problem area (e.g., problem solving deficits) and uses only one technique (e.g. building problem solving skills). Future studies may reveal if a single-component treatment approach is equally acceptable to therapists as this multi-component-treatment approach.

As may have become clear from the summary and discussion above, many questions still remain unanswered. Hopefully, this thesis makes a contribution to our knowledge of DSH and the possibilities for treatment. It is hoped that this thesis will inspire further research on this important human problem.