

The Purpose of Self-Injury and Clinical Implications for Acupuncturists

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Abstract

Self-injury is prolific, often chronic and linked to suicide risk. Conventional medical research into self-injury is extensive, but CAM research is limited to a single study (Bell et al, 2011) that demonstrates that self-acupuncture reduces self-injury. This paper uses literature research to derive a TCM interpretation of how self-injury works, and then explores clinical implications.

Results

Self-injury relieves negative and produces positive affect (mood); and may induce, suppress and cure disease. The affect states that self-injury relieves correlate with specific TCM syndromes; and the changes in affect that it produces correlate with a number of TCM treatment principles.

Conclusions

The changes in affect that patients experience through self-injury are diagnostically relevant for acupuncturists, the modes of action of self-injury influence treatment strategy, and self-injury cessation should be managed similarly to withdrawal from mood-regulating medication. Research is needed into self-injury site and technique choice, TCM differentiations for self-injury, and treatment strategies for users.

Background

'Self-harm' commonly describes intentional tissue damage (e.g. cutting) as well as general self-destructive behaviours like alcoholism. To avoid confusion, this paper uses 'self-injury' to describe intentional tissue damage only.

Self-injury is prolific, often chronic and linked to suicide risk. A survey of teenagers estimated that over ten per cent of girls and three per cent of boys self-injured in the previous year (Evans et al, 2002). Thirty-nine per cent of people hospitalised for self-injury reported previous episodes or were readmitted following further episodes (Hawton and Zahl, 2004). At least one in fifteen people who report self-injury or are hospitalised because of it, will die by suicide within nine years of the indexed episode (Bhatti et al, 2011). Effective treatment is essential to reduce repeated hospitalisation and suicides.

Conventional medical research into self-injury is extensive, encompassing techniques, emotional responses, mood-regulating biochemistry, mental illness associations, recurrence and suicide correlation. Reliable research into self-injury site choice is almost absent.

The literature search discovered only one CAM study: Bell et al. (2011) explored substituting self-injury with self-acupuncture. It found that triggers for self-injury and self-acupuncture were similar. Despite no instruction beyond safe needle insertion, participants were deliberate when selecting needle location, technique and retention duration. Improvement in mood over six weeks approached statistical significance despite a sample of only ten. This may be attributable to placebo, feeling fewer negative emotions associated with self-injury (e.g. guilt) as frequency declined, or indeed intuitive self-treatment through acupuncture. The study did not report sufficient data to extrapolate TCM treatment principles that may have been effected, and made no recommendations for practitioner-administered acupuncture.

Understanding the extent to which changes in affect motivate self-injury and how it works in TCM terms, may inform diagnosis, treatment strategy and patient management – producing acupuncture treatment that reduces recurrence and suicide risk. This paper advances this knowledge by:

- Deriving TCM syndromes and treatment principles from the changes in affect reported by self-injury users.
- Determining possible modes of action of self-injury (i.e. whether it induces, suppresses and/or cures disease).
- Exploring implications of these findings for practitioner-administered acupuncture.

Methods

A three-step literature review was used to:

1. Identify changes in affect resulting from self-injury, compiling the output into:
 - Profile A: listing affect states relieved through self-injury.
 - Profile B: listing affect states produced by self-injury.
2. Derive from the profiles possible TCM syndromes addressed and treatment principles achieved through self-injury.
3. Determine the modes of action of self-injury.

Literature searches were done online via Google Scholar and PubMed. These were restricted to peer-reviewed journals with specific keywords (e.g. 'self', 'injury') in the title or abstract. Manual searches were conducted at Reading Library, Reading University library and the College of Integrated Chinese Medicine library.

Results

Step 1: Changes in affect resulting from self-injury

Profiles A and B were primarily derived from Klonsky (2007)

because his review collated data across 18 studies that met the inclusion criteria: they directly investigated variables motivating self-injury and excluded self-injury associated with suicidal intent, learning difficulties and psychosis. No studies were found that met the inclusion criteria and pre-dated Klonsky (2007). Subsequent studies (Klonsky & Muehlenkamp (2007), Klonsky (2009), Klonsky (2011), Dierker et al. (2007), Crosby et al. (2009) and Claes et al. (2010)) did not add to the list of affect states already cited in Klonsky (2007).

Klonsky (2007) reviewed sixteen self-report and two physiological studies. For self-report results, participant responses were interpreted into simple wording for inclusion in the Profiles, e.g. 'excitement' in Profile B was derived from 'for excitement' (Nixon et al., 2002), 'excited' (Laye-Gindhu & Schonert-Reichl, 2005) and 'to provide a sense of excitement' (Shearer, 1994).

The physiological studies used self-injury proxies including participants holding their hands in iced water (Russ et al, 1992) and watching self-injury videos (Brain et al, 1995). They found that physiological arousal (increased Heart rate, breathing and skin resistance level) preceded self-injury proxy, and declined afterwards.

Profile A: Affect states relieved by self-injury	Profile B: Affect states produced by self-injury
Anger	Calmness
Anxiety	Excitement
Bad feelings	Exhilaration
Confusion	Feeling high
Depression	Feeling real
Emptiness	Happiness
Feeling out of touch	Peacefulness
Frustration	Relaxation
Hurt	Relief
Irritability	
Loneliness	
Numbness or feeling dead	
Pent-up feelings	
Physiological arousal	
Racing thoughts	
Rage	
Restlessness	
Sadness	
Stress	
Tension	
Terror	
Unhappiness	

Data quality

Klonsky (2007) expresses reservations about data from self-report studies:

- 'verbal reports of mental processes are often invalid' and people may 'misunderstand or miscategorise their mental processes' (Klonsky, 2007, p.230)

- inaccurate or fabricated accounts may arise if participants don't know why they self-injure, have difficulty articulating why, feel embarrassed when explaining socially unacceptable behaviour, or have inaccurate memories.

Proxies used in the physiological studies reviewed by Klonsky (2007) may not be valid in life. However, findings from these studies were consistent with those that used self-report (Klonsky, 2007).

Each sample used in the studies reviewed by Klonsky (2007) and in subsequent studies, reflected a sub-set of the self-injuring population (e.g. prisoners, borderline personality disorder sufferers). However, Klonsky (2007) found that 'the general pattern of findings ... tended to remain consistent, regardless of the type of sample'.

The Profiles may not be exhaustive because many of the studies required participants to pick responses from a list, so may not have elicited all possible responses. However, from a Chinese medical perspective, the full gamut of clinically diagnostic emotions (anger, joy, fear, etc.) is arguably expressed.

Step 2: Derived TCM syndromes and treatment principles

When viewed as symptoms, the affect states listed in Profile A (i.e. feelings relieved by self-injury) can be correlated to TCM syndromes. Affect states listed in Profile B (i.e. feelings produced by self-injury) cannot be viewed as symptoms, as they are acute changes that occur as a result of the injury itself. A matrix (illustrated in Worked Example 1) was used to correlate Profile A only with TCM syndromes as described by Maciocia (2005). For example:

- physiological arousal (increased heart rate, breathing and sweating), anxiety, restlessness and terror are symptomatic of Heart *yin* Deficiency
- irritability, anger, stress, tension, numbness, frustration and pent-up feelings indicate Liver *qi* Stagnation.

The derived list of TCM syndromes was then compared to Maciocia's (2008) differentiations of mental-emotional problems.

Complete analysis of the results indicates that symptoms of the following TCM syndromes may be alleviated through self-injury. (* Indicates overlap with Maciocia's (2008) differentiations of mental-emotional problems, all of which appear in the list below.)

- Qi Deficiency (Heart, Lung)*
- Heart Blood Deficiency*
- Fire (Heart, Stomach, Liver)*
- Phlegm Misting the Heart*
- Liver qi Stagnation*
- Yin Deficiency (Heart, Lung, Kidney, Liver)*
- Heart yang Deficiency
- Liver yang Rising
- Stomach yin Deficiency

When viewed as changes resulting from self-injury, affect states

listed in Profile B can be correlated with treatment principles. Another matrix (illustrated in Worked Example 2) was used to correlate affect states listed in Profiles A and B with TCM treatment principles for the above syndromes, as per Maciocia (2005). For example:

- relief from physiological arousal, anxiety, restlessness and terror – and producing calmness and peacefulness instead – indicates that self-injury may clear Empty Heat and/or nourish Heart *yin*
- relief from irritability, anger, stress, tension, numbness, frustration and pent-up feelings – and producing calmness, peacefulness and relaxation – indicates that self-injury may disperse the Liver and regulate *qi*.

Complete analysis of the results indicates that self-injury may achieve the following treatment principles:

- Tonify *qi* (Heart, Lung)
- Tonify and warm *yang* (Heart, Lung)
- Nourish Heart Blood
- Nourish *yin* (Heart, Kidney, Liver, Lung, Stomach)
- Clear Empty Heat
- Clear Fire (Heart, Liver, Stomach)
- Sedate the Liver
- Subdue Liver *yang*
- Disperse the Liver and regulate *qi*
- Resolve Phlegm in the Heart
- Open the Heart's orifices
- Pacify the *shen*

Worked Example 1: Extract from matrix correlating Profile A with TCM syndromes

TCM syndromes as described by Maciocia (2005)
Heart <i>qi</i> Deficiency
Lung <i>qi</i> Deficiency
Heart <i>yang</i> Deficiency
Heart Blood Deficiency
Heart <i>yin</i> Deficiency
Lung <i>yin</i> Deficiency
Stomach <i>yin</i> Deficiency
Kidney <i>yin</i> Deficiency
Liver <i>yin</i> Deficiency
Liver <i>yang</i> Rising
Heart Fire Blazing
Stomach Fire
Liver Fire Blazing Upwards
Liver <i>qi</i> Stagnation
Phlegm Misting the Heart

Worked Example 2: Extract from matrix correlating Profiles A and B with treatment principles

Treatment principles as described by Maciocia (2005)	From Profile A: Self-injury relieves ... Anger
Clear Empty Heat	
Clear Heart Fire	
Clear Liver Fire	X
Clear Stomach Heat	
Disperse the Liver, regulate <i>qi</i>	X
Nourish Heart Blood	
Nourish Heart <i>yin</i>	
Nourish Kidney <i>yin</i>	
Nourish Liver <i>yin</i>	
Nourish Lung <i>yin</i>	
Nourish Stomach <i>yin</i>	
Open the Heart's orifices	
Pacify the <i>shen</i>	
Resolve Phlegm in the Heart	
Sedate the Liver	X
Subdue Liver <i>yang</i>	X
Tonify and warm Heart <i>yang</i>	
Tonify and warm Lung <i>yang</i>	
Tonify Heart <i>qi</i>	
Tonify Lung <i>qi</i>	

Data quality

The lists of syndromes and treatment principles may be incomplete because affect state descriptions from the Profiles that could not be correlated to TCM syndromes or treatment principles with confidence (e.g. 'bad feelings') were omitted.

Data from the Profiles were correlated to TCM syndromes and treatment principles without context in case histories, potentially identifying syndromes and treatment principles incorrectly,

e.g. 'sadness' may be interpreted as lack of joy (symptomatic of Heart *qiyang* Deficiency) or grief (symptomatic of Lung *qiyin* Deficiency), leading to identification of both syndromes, and treatment principles including tonify/warm Heart *qiyang* and nourish Lung *yin*. The injury may also have affected syndromes underlying those which produced the symptoms alleviated at the time of injury.

Step 3: The modes of action of self-injury

It is possible that self-injury may 'directly counteract the symptoms ... of a disease process rather than its root cause' (Stephenson, 2011, p38), and hence suppress disease. Stephenson (2011) argues that suppressive drugs may give rise to addiction. The suppressive action of self-injury is evidenced in Aggarwal et al.'s (2002) findings that self-injury has addictive qualities, and links between escalating suicide risk and duration of self-injury use (Bergen et al., 2012).

Self-injury may also suppress disease because it 'artificially stimulates natural bodily functions' (Stephenson, 2011, p. 38) by causing the release of chemicals like β -endorphins (Ekman et al., 2009). β -endorphin levels are naturally maintained through exercise (Hoffmann et al., 1990) and their release can also be stimulated through acupuncture (Bessera et al., 1980). Physiological changes resulting from self-injury and acupuncture are similar (Bell et al., 2011). Hence, self-injury may function similarly to an extreme form of acupuncture, over-stimulating the release of natural chemicals. This overstimulation may make self-injury more prone to being suppressive.

Self-injury induces disease because it causes tissue damage. It may also exacerbate or induce a syndrome. For example, someone with Heart *yin* Deficiency may injure themselves to cause profuse bleeding. This brings acute affective relief by clearing Empty Heat, but exacerbates their *yin* Deficiency in the long term.

Self-injury may also cure where the injury addresses the primary imbalance (e.g. it may disperse the Liver and regulate *qi* where Liver *qi* Stagnation is primary).

Discussion

Results and their validity

In Step 1, analysis of self-reports from self-injury users and evidence from physiological studies, provided conclusive evidence that self-injury produces change from negative to positive affect.

Results from Step 2 indicate that self-injury may directly address pathologies that are Empty or Full, *yin* or *yang* in nature. Twelve of the fifteen pathologies identified overlap with all of Maciocia's (2008) differentiations of mental-emotional problems, including Heart and Lung *qi* Deficiency; Heart Blood Deficiency; Heart, Lung, Kidney and Liver *yin* Deficiency; Heart, Stomach and Liver Fire, Phlegm Misting the Heart, and Liver *qi* Stagnation.

Pathologies not mentioned by Maciocia (2008) include:

- Heart *yang* Deficiency – if viewed as severe Heart *qi* Deficiency, this falls within Maciocia's (2008) differentiations

- Liver *yang* Rising – arising from syndromes included in Maciocia's (2008) differentiations (Kidney and/or Liver *yin* Deficiency)
- Stomach *yin* Deficiency.

Step 3 applied Stephenson's (2011) interpretation of the modes of action of drugs to self-injury. It found that self-injury may induce, suppress and cure disease.

Regarding validity of the results, the Profiles from Step 1 are likely to be reliable but not exhaustive, and some syndromes and treatment principles may have been erroneously identified in Step 2.

Significance of results

The results are significant in that they indicate that self-injury may include a component of self-treatment with strong similarities to TCM theory:

- Changes in affect resulting from self-injury correlated well with TCM syndromes and treatment principles, implying that self-injury and acupuncture produce similar changes in affect. This is corroborated by Bell et al.'s (2011) findings.
- Self-injury is primarily motivated by the changes in affect that it produces: Klonsky (2007) cites a study where self-laceration users 'overwhelmingly' rated affect-regulation as their 'primary reason' for self-injuring, although other reasons like 'self-punishment' were also cited as significant but secondary motivators. Klonsky's (2007) review concludes that 'self-injury is most often performed with intent to alleviate negative affect'.
- The overlap between TCM syndromes derived from affect states relieved through self-injury, and Maciocia's (2008) differentiations, may explain why self-injury is associated with mental health issues, and may suggest an instinctive urge to self-treat through self-injury.

The finding that self-injury may induce, suppress and cure disease also has clinical significance for acupuncturists. This is explored in the following section.

Implications for clinical acupuncture practice

Self-injury has diagnostic relevance for acupuncturists because it may express instinctive self-treatment with strong similarities to TCM theory. The fact that the full gamut of clinically diagnostic emotions (anger, joy, fear, etc.) is arguably expressed in the profiles does not imply that any TCM treatment that affects the emotions would benefit all self-injury users. As each user only experiences a sub-set of the affect states listed in the profiles, it is the specific changes in affect experienced by each individual that has implications for their diagnosis. Questioning patients about the changes they experience may point to TCM syndromes that play a significant role in their mental-emotional state.

The mode of action of the individual patient's self-injury may influence treatment strategy:

- Self-injury that induces disease should be considered as aetiology for syndromes that present. Differentiating between syndromes arising from self-injury, and syndromes producing

an urge to self-injure, could inform treatment priorities. Logically, syndromes arising from self-injury would worsen after an episode, whereas treating the underlying syndrome would reduce self-injury frequency and severity.

- Treating the *ben* becomes urgent when self-injury suppresses disease, as suppression produces a compulsion to repeat and escalate self-injury.
- Should acupuncturists discourage curative self-injury? As self-injury induces disease by definition (causing tissue damage), it may be replaced by acupuncture that closely mimics its effect – so maintaining the cure whilst eliminating tissue damage.

Self-injury may be powerful self-treatment, producing acute positive affective change in individuals at higher risk of suicide (Bhatti et al, 2011), and may be used to avoid suicide (Klonsky, 2007). Consequently, self-injury belongs in Category III of Stephenson's (2011, p. 676) Categorisation of drugs for withdrawal, where 'withdrawal may have serious physical or mental health consequences ... because the underlying condition is serious'. Her five steps for managing withdrawal therefore apply:

1. 'Ask "how much will the patient benefit from withdrawal at this time?"'

Acupuncturists may consider patients' progress towards mental-emotional health; their support network including psychiatric care; and to what extent self-injury suppresses underlying imbalances and hence if withdrawal might increase suicide risk.

2. 'Check that the patient is clear about the reasons for withdrawal, and is keen for the process to occur.'

3. 'Ensure that the patient has the support of their doctor in this.' Acupuncturists should communicate patients' intentions to reduce self-injury to appropriate psychiatric care team members, so they can manage and support patients through the process.

4. 'Withdraw the drug slowly'

Where patients withdraw from suppressive self-injury, acupuncturists should look out for recurrence of symptoms previously treated through self-injury, or new symptoms at a deeper level. Short-term symptomatic treatment may be appropriate, alongside treatment of the *ben* – especially where 'withdrawal' symptoms may overwhelm the patient, prompting renewed self-injury or suicide. Acupuncture that closely mimics the effect of patients' self-injury technique and site may be used to effectively reduce the 'self-injury dose' in a controlled manner.

5. 'Focus on withdrawing only one medication at a time'

Simultaneous withdrawal from self-injury and medication may compound and confuse withdrawal symptoms.

Conclusion

Self-injury may tonify Heart and Lung *qi* and *yang*; nourish Heart Blood; nourish Heart, Kidney, Liver, Lung and Stomach *yin*; clear Empty Heat; clear Heart, Liver and Stomach Fire; sedate the Liver; subdue Liver *yang*; disperse the Liver and regulate *qi*; resolve Phlegm in the Heart; open the Heart's orifices; and pacify the *shen*.

Self-injury may express instinctive self-treatment with strong similarities to TCM theory, so changes in affect that users experience through self-injury have diagnostic relevance. Treatment strategy is influenced by whether the patient's self-injury induces, suppresses or cures disease. As it produces positive acute affective change in people at higher risk of suicide, withdrawal from self-injury should be managed in a similar way to withdrawal from powerful mood-regulating medication.

Although the data may be incomplete, the evidence nevertheless supports these conclusions. A need exists for research into self-injury site and technique selection, TCM differentiations for self-injury and treatment strategies for users.

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