



Contents lists available at ScienceDirect

## Journal of Ayurveda and Integrative Medicine

journal homepage: <http://elsevier.com/locate/jaim>

Original Research Article (Clinical)

## Holistic assessment of anger in adolescents – Development of a rating scale

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## ARTICLE INFO

## Article history:

Received 1 December 2016

Received in revised form

11 April 2017

Accepted 14 April 2017

Available online xxx

## Keywords:

Adolescent anger scale

Assessment of anger

Anger

## ABSTRACT

**Background:** Anger related issues in adolescents are an important contributor to adolescent mortality and many negative developmental outcomes. Anger being the most primitive defence mechanism, determining its maladaptive nature is a complex phenomenon. Further, it lacks clarity in terms of its definition, demarcation from aggression and hostility, and also its assessment. Available anger rating scales do not represent anger adequately or comprehensively.

The concept of anger is dealt with exhaustively in Indian classical texts. According to these texts, anger is an evil virtue that is born out of *Rajasic* nature and leads to momentary loss of cognitive functional abilities. Manifestation of anger occurs at behavioural (*kayika*), verbal (*vachika*) and mental (*manasika*) levels. Based on these principles, a psychometric scale is developed for assessment of anger in adolescents.

**Materials & methods:** Item generation was done referring to the existing scales, texts on spirituality and psychology. It also included discussions with children, teachers and parents. Item reduction was carried out using expert opinion, focused group discussion and factor analysis. Test-retest reliability was checked with 127 children (63 girls and 64 boys). The final scale was administered to 757 children (427 girls and 330 boys) to ascertain reliability co-efficient values.

**Results:** Co-efficient of Alpha value for final scale recorded .804. Test-retest reliability showed .835 correlation.

**Conclusion:** Anger can be assessed holistically using *Trikarana* (*kayika*, *vachika* and *manasika*) concept as dealt in almost all Indian classical texts. A 23-item adolescent anger scale is a comprehensive tool to assess behavioural, verbal and mental anger in adolescents.

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## 1. Introduction

Anger is the most frequently occurring and problematic emotion during adolescence [1]. The effects of adolescent anger are substantial and adversely affect major institutions of society such as individual, family, neighbourhoods, schools, sports and recreation [2,3]. Multi-dimensional consequences, far reaching effects, lack of conceptual clarity and non-availability of homeostatic level of anger that is considered healthy make it a complex construct to assess.

Anger assessment is generally done using self-reporting inventories and observation methods, both in clinical and non-

clinical settings. Assessment is done considering factors that cause anger (stimulants), bio-physiological symptoms of anger (experience) and individual's reaction to such stimulants (response). In the absence of a specific bio-marker or a gold standard, the rating of anger levels is done based on the scores obtained in comparison with other subjects of the same group/study.

During experience and expression of anger, the limbic part in the brain (amygdala, the storehouse for emotional memories) overrides the cortex and responds irrationally and destructively. It is marked by activation of sympathetic arousal leading to sudden physical and emotional upsurge due to release of excessive hormones and neurotransmitter chemicals. The impact of this hormonal flush leads to chemical imbalance and lasts for several minutes and, at times longer, until the prefrontal cortex re-engages and acts. Despite the universality of its physiology, variations in terms of conceptualisation, perception and expression of anger

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Peer review under responsibility of Transdisciplinary University, Bangalore.

<http://dx.doi.org/10.1016/j.jaim.2017.04.012>

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Please cite this article in press as: Alaka Mani TL, et al., Holistic assessment of anger in adolescents – Development of a rating scale, J Ayurveda Integr Med (2017), <http://dx.doi.org/10.1016/j.jaim.2017.04.012>

explains the complexity of embodiment of anger [4]. Further, experience and expression of anger vary with respect to age [5], culture [6] and gender [7].

Anger is a strong predictor of violence [8], peer pressure, narcissistic personality [9] and suicidal tendency [10]. Adolescent anger has a negative association with academic performance, adjustment scores [11], perceived family support, self-esteem, and optimism [12] and a positive correlation with higher risk taking behaviour [13], mental health issues like depression and many negative life events [12,14,15].

According to a survey conducted in USA during 2013–14, about 58 percent of public schools recorded one or more incidents of physical attack or fight without a weapon and, 47 percent of schools recorded one or more incidents of threat of physical attack without a weapon [2]. Youth violence is a critical problem in America [2]. Studies conducted in other countries also report higher levels of anger, aggression and violent behaviours among adolescents [15–18].

On par with the global trend, anger related issues in schools and colleges in India are also on the rise. The few available studies on anger and related constructs carried out in India report negative effects of anger. Prevalence of high levels of state anger, trait anger and moderate levels of anger control were observed in 44.9%, 22.7% and 60% of children respectively, in a survey conducted among 1220 high school children in South Bangalore [19]. Another survey conducted in different cities of India reports high aggression scores in 18% of 5476 youths [20]. Aggression has shown negative correlation with interpersonal and romantic relationships among the youth in India [21]. Alcohol-dependent youths in India reported low levels of anger control, high levels of trait anger and poor quality of life [22].

Researchers across the globe have developed various theories of anger and an array of psychometric scales to measure adolescent anger [4]. Among these, Spielberger's State and Trait anger taxonomy is a widely-accepted theory. Popular adolescent anger scales are State Trait Anger Expression Inventory [23], Multi-dimensional School Anger Inventory [24] and Adolescent Anger Rating Scale [25]. The available anger scales use different frameworks and components of anger to assess; such as state anger, trait anger, anger control, anger expression, anger suppression, anger hostility, etc.

A review study reports that these scales differ from one another, as they measure different aspects of anger [26]. Another review study states that the available adolescent anger scales do not represent the construct adequately [27]. A study also reports self-reporting questionnaires for anger must be adapted for cross-cultural usage and should not be back-translated [28]. Further, these scales appear to have the limitations of culture specificity and sensitivity as the words used to describe anger have a variety of meanings in different cultures (e.g. word 'mad') [19,29,30].

The concept of anger is also dealt in Ayurveda and spiritual sciences. According to Ayurveda, anger is the result of an imbalance in the *tridosha* (3 body constitutions – *vata*, *pitta* and *kapha*), particularly excessive presence of *pitta dosha*. A study of anger and its correlation with *prakruti* reported high, moderate and low levels of anger in *vata*, *pitta* and *kapha* predominant *prakruti*s respectively [31]. According to Charaka Samhita (Ch.Ni. 1-14 and 1-22), anger, enmity and greed are the causative factors for 8 types of diseases. Further food consumed during angry state aggravates *pitta* dosha which leads to indigestion and fever.

Indian classical texts throw enormous light on the concept of anger and its management. Bhagavad-Gita (BG 2-62, 63) expounds on the concept of anger, its origin, causes, dynamics and consequences [32]. The concept of *adhija-vyadhija* from Yoga Vasista establishes the relationship between mind and diseases. The concept of *Panchakosha* in Taittiriya Upanishad explains human existence holistically. According to it, human existence comprises

of five sheaths – *Annamaya*, *Pranamaya*, *Manomaya*, *Vijnanamaya* & *Anandamaya Koshas* (gross, energy, mental, intellectual and bliss body) [33]. Anger being a strong modification of mind, is considered as a *vritti* and a variance of it, *dwesha*, is regarded as a *klesha* (obstacle) in *Patanjali Yoga Sutra* [34]. The concept of anger and various techniques of anger management are dealt in Mahanarayana Upanishad (1–56, 62-1 and 66-3) [35], Brihadaranyaka Upanishad (Chapter 5, brahmana 2, verse 1) [36], Mahabharata (vanaparva, section 27), Manyu Sukta etc.

The concept of *trikarana* (three instruments i.e. *kaya-vak-manas* (body-speech-mind)) is dealt in many texts in different contexts. The verses from Mahanarayanopanishad (156) and Srimad Bhagavatam (SB 11.2.36) describe pleading to destroy sins committed and total surrendering at *kayika vachika manasika* level respectively.

This concept of *trikarana* is considered as a guiding principle in development of this anger scale. Accordingly, anger can manifest in one or more of these domains such as *kayika* (bodily/behavioural), *vachika* (verbal) and *manasika* (mental). This way the spectrum of anger is holistically defined in the Vedic and Vedantic scriptures.

Even though anger is a major risk factor for many health problems and conducts disorders in schools and colleges, adolescent anger has received little attention from researchers. Furthermore, adolescent anger is not studied adequately in the Indian context and there are no scales developed in the Indian context to assess anger in adolescents. The aim of this study was to develop a culturally suited psychometric scale to assess anger in adolescents, by considering the well-known concept of *kayika* (behavioural), *vachika* (verbal) and *manasika* (mental) which is expounded in almost all the scriptures.

**Aim:** To develop a psychometric scale to measure anger in adolescents, in the Indian context.

**Objectives:** To understand the concept of anger from the perspective of Indian scriptures and develop a psychometric scale that assesses anger holistically and adequately.

## 2. Materials & methods

### 2.1. Literary review

A thorough literary survey of Indian classical texts was carried out to understand the concept of anger from a holistic perspective. Texts such as Patanjali Yoga Sutras, Bhagavad-Gita, Yoga Vasista, Taittiriya Upanishad, Mahanarayanopanishad, Shatarudriyam and Manyu Suktam were referred to derive the operational definition for anger.

### 2.2. Operational definition

Anger is defined as a wave of thought that has great destructive potential. It is born out of a predominance of the *Rajasic* constituent in the body and has its origin in mind. Manifestation of anger occurs at three levels behavioural (*kayika*), verbal (*vachika*) and mental (*manasika*). At these domains, anger is either expressed directly or indirectly as detailed below.

**Behavioural (Kayika):** Expressions of anger using body or gestures including assaultive, hurtful, rebellious, aggressive, violent acts, self-defeating or addictive behaviours, crying etc.

**Verbal (Vachika):** Expressions of anger through verbal assault like abusive language, insults, contempt, disrespect, cynical humor, disgust, blaming, teasing, name calling, critical etc.

**Mental (Manasika):** Expressions of anger in the form of hostility, resentment, withdrawal state, disruptive thought patterns, non-cooperation, vengeance, suspiciousness, argumentative attitude, unsympathetic feeling and mental illness such as depression, anxiety, suicidal tendency etc.

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