

# Cross Cultural Variation in Emotion Regulation: A Systematic Review

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## Abstract

A systematic review of literature on emotion regulation is carried out with the aim to identify, analyze and compare the commonly used emotion regulatory strategies (cognitive reappraisal and expressive suppression) in individualistic and collectivistic cultures including Pakistan and to study outcomes of different emotion regulation strategies in culture specific context. A systematic search has been conducted for required articles which have been published between 1990 and 2015. Only those studies have been included in the review which reported either cognitive reappraisal or expressive suppression in their findings. Review indicates that individualistic cultures prefer emotional expression to regulate emotions while collectivistic cultures, such as in Pakistan, focus more on expressive suppression. Emotional suppression can cause mental disease, physiological illness, and poor social and psychological adjustment. To sum up, culture predicts whether individuals are motivated to express or suppress their emotions. Collectivist culture encourages greatest control on emotion expression

while interacting with family and friends with more emphasis on maintaining social harmony. On the other hand, individualistic culture endorses comparatively less expression of negative emotions especially towards strangers. Adjusting one's emotion to the social environment is more important in cultural context.

**Key words:** Cognitive appraisal; Expressive suppression; Individualistic; Collectivistic.

## Introduction

Emotions are central components of human experiences, which are understood as outcomes of emotion regulation.<sup>1</sup> Emotional experiences may be similar across different cultures.<sup>2</sup> Peeping in to the background, the concept about emotion regulation has been conceived by researchers in different ways. It refers to all means, intrinsic or extrinsic, of appraising and adjusting emotion reactions in order to establish and maintain good relationships.<sup>3</sup> Gross, (2001)<sup>4</sup> defines emotion regulation as a conscious and non-conscious strategies employed to increase, maintain, or decrease one or more components of an emotional response. Gross, Richards, and John, (2006)<sup>5</sup> defined emotion regulation as 'all the processes that help to attain culturally appropriate (or functional) emotional experiences'. However, strategies employed to regulate emotional experiences may vary due to variations in cross cultural orientations such as in individualistic (independent) versus collectivistic (interdependent) cultures. For example, passive emotion regulation strategies may be compensatory strategies in some culture but optimal solutions in.<sup>6</sup>

Two frequently used emotion regulatory strategies cognitive reappraisal (antecedent-focused) and expressive suppression (response-focused) not only determine the type of emotion, but also decide when and

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how to show that emotion.<sup>7</sup> Cognitive reappraisal comes early in emotion-generative process. It is an attempt to reinterpret an emotion-eliciting situation in a way that alters its emotional impact.<sup>8</sup> Expressive suppression (response-focused) comes late in the emotion-generative process. It is an attempt to hide, suppress or reduce ongoing / already generated emotion and thus modifies behavioral aspect of emotional response.<sup>9</sup> These strategies are important because they take place for many reasons: such as it helps in feeling good, to express one's feelings out and in pursuing different goals which are interpersonal in nature.<sup>10</sup>

The process of emotion regulation is multi-faceted. It is not the emotion regulation alone which causes the differences in emotions. Gross (1998, p.283)<sup>1</sup> proposed two types of processes namely: Firstly, Situation selection involves approaching or avoiding certain people, places, or objects in order to regulate emotions. Second is Appraisal which is used to reduce the emotional intensity by changing the meaning of an upcoming event. It is related to cognitive change and usually used after an emotion has occurred.<sup>11</sup> Reappraisal has been shown to effectively modify (increase or reduce) subjective emotional responding.<sup>12</sup> Regulation more often takes the shape of re-appraisal, when other persons/conditions provide different perspective on the emotion situation.<sup>2</sup>

What are possible explanations for cross-cultural variations of emotion regulation? How and why might cultures differ in their use of emotion reappraisal and emotion suppression? The key aspects of these variations have been mentioned as cultural orientation towards collectivism or individualism and dialectical beliefs.<sup>13</sup> Individualistic cultures view individuals as self directed and self-sufficient beings that they do not need to be tie strongly to any family or group. Thus, individuals are encouraged to express themselves and to develop their own individuality.<sup>14</sup> People oriented towards individualism are more likely to perceive emotion suppression as compromising their sense of control, less satisfactory, and stress inducing. The suppression in return results in poor adjustments, both psychologically and physically.<sup>15</sup> Collectivism on the other hand, refers to the way in which each member of a group is strongly interconnected with one another and they are assumed to be loyal with each other throughout their life. The collectivistic culture emphasizes on minimizing individuality by defining preset goals, attitude and behavior from birth to onwards. The collectivistic culture endorses the emotion regulation strategy as it is adaptive in fulfilling pro-social

goals.

Dialectical Beliefs or cultural scripts play an important role in emotion regulation strategies. In Eastern collectivist culture, emphasis is on "middle way".<sup>16</sup> Asian collectivistic values are more accustomed to moderated emotions, more tolerant of negative emotions and more flexible in their employment of emotion-regulation strategies. Research has shown that Western culture socialize children to regulate their positive emotions and minimize negative emotions according to their cultural script.<sup>17</sup>

It is valuable to know that how emotions are generated. Research has shown the role of brain network in emotion regulation processes. The differences in emotion regulation strategies have been studied with the help of neuro-imaging studies in response to emotional stimuli.<sup>18</sup> Down regulation of negative emotions through cognitive reappraisal seems to be due to increased activation of medial and lateral prefrontal cortex (PFC) and simultaneous diminished activation of brain structures called amygdala and insula. Similarly, dispositional reappraisal is associated not only with activation in both dorsal anterior cingulate cortex (dACC) and dorsolateral PFC but at the same time there is decreased activity in amygdala, insula and hippocampus.<sup>19</sup> Findings indicate that expressive suppression heavily relies on anterior insula and reduction of amygdala activation during suppression of emotions.<sup>20</sup> Overall, it is suggested that individual differences in emotion regulation and expression suppression has been associated with higher amygdala activation.

## Objective

To examine and compare the commonly used emotion regulation strategies in individualistic and collectivistic cultures including Pakistan and possible outcomes of using these strategies in culture specific context.

## Method

### Inclusion Criteria for Study Selection

A systematic search has been conducted for required articles which have been published between 1990 and 2015. Little work was done on psychology of emotion regulation prior to the mid 1985s. Bulk of the work on emotion regulation strategies has been done after 1990s. Only those studies have been included in the review which reported either cognitive reappraisal or

expressive suppression in their findings. Moreover, for the study of emotional responses, studies recruiting adult and child population belonging to various demographic groups (such as college / university students or clinical patients) have been considered in the review. The included studies exhibited at least two cross-sectional groups of different cultures or same culture. The emotional responses of the groups were noted either on experimental manipulation of their emotional state or on self-report questionnaire of emotion regulation.

The literature searched included a total of 42 research papers and dissertation that discussed the emotion regulation strategies and relevant outcome variables associated with emotional regulation across cultures, 31 studies including 2 dissertations meeting the inclusion

criteria were considered suitable for systematic review.

**Sources Used**

Relevant articles were searched by using different sources including online central database or directory of e-thesis of national level universities and available journals of educational universities, HEC Research Repository, Medline, Pub Med, Springer and an Internet search with Google Scholar followed by manual searching. The search included the different combinations of terms including emotion regulation, cognitive appraisal, expressive suppression, individualistic, collectivistic cultures.

**Results and Discussion**

**Table 1:** *Characteristics and Findings of Emotion Regulation Studies in Collectivistic Cultures.*

| Sr. No. | Author Name/Year/Country  | Design/ Method  | Sample Details  | Assessment Tools  | Key Findings   |
|---------|---|-----------------|---|---|--|
| 1.      | Kitayama, Markus, Matsumoto, and Norasakkunkit, (1997)<br>Japan | Cross sectional | College students including Japanese (n = 253) and Americans (n = 102) | Self generated situations comprising success instructions and failure instructions related to self-esteem | Japanese culture emphasizes self-criticism in order to live up to the expectations of others, which may promote calmer emotional states as compared to western culture who make individual to feel unique and happy independent self.                |
| 2.      | Wang, (2001)<br>China   | Observational   | 25 Chinese mothers and 22 American mothers                            | Self developed tasks related to emotion-explaining style and emotion-criticizing style                    | American mothers focused on personal and non-social events as compared to Chinese mothers.   |
| 3.      | Kitayama, Mesquita, and Karasawa, (2006)<br>Japan               | Cross-sectional | College students including Japanese (n = 38) and American (n= 49)     | Four self developed emotion scales, defined by pleasantness and social orientation                        | Results indicated that interdependent cultures like Japan were more likely to express engaging emotions such as friendliness and guilt whereas independent culture like North American culture fosters disengaging emotions such as pride and anger. |
| 4.      | Balkier, Arenas, Wolff, and Barrow, (2012)<br>Turkey            | Cross-sectional | Women N = 108 including Turkish and Germany mentally                  | Emotion Regulation Questionnaire , Dysfunctional Attitude Scale Form A, Loneliness Scale,                 | Participants with a Turkish cultural background engaged more in emotion suppression than German participants. It   |

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|     |   |                        | healthy immigrants (n=28), & (n=26), Turkish and German patients with Major Depressive Disorder (n=29) & (n=25). | Positive and Negative Affect Schedule  | was also observed that emotion suppression did not lead to negative outcomes in psychological adjustment and well-being.  |
| 5.  | Tahmouresi, Bender, Schmitz, Baleshzar, and Tuschen-Caffier, (2014)<br>Iran | Cross-sectional        | 269 children including Iranian (n = 126 ) and German (n = 143)   | Children’s Emotion Management Scale, and Cognitive Emotion Regulation Questionnaire                                  | Iranian children use more suppression and inhibition strategies than German children. Iranian children show stronger relation between emotion regulation and psychopathology than German children.                                  |
| 6.  | Savani, Morris, Naidu, Kumar, andBerlia, (2011).<br>India                   | Cross sectional        | College students including Americans (n = 45)and Indians (n = 40)  | Self developed interpersonal situations of affordances   | Indians reported initially more adjustment to situations, and Americans reported situations more influential in experiencing emotions.  |
| 7.  | Morling, Kitayama, and Miyamoto, (2002)<br>Japan                            | Cross-sectional design | College students including Americans (n = 100) and Japanese (n = 96).  | Self developed situational questionnaire comprising feelings of efficacy and feelings of relatedness.                | Americans reported more efficacies in influence situations and Japanese reported more relatedness in adjustment situations. This responding type was not limited to local situation with which they might be particularly familiar. |
| 8.  | Rukmani, Sudhir, and Bada Math, (2014)<br>India                             | Cross-sectional        | 60 adults including social phobic patients (n= 30) and normal healthy adults (n= 30)                             | Cognitive emotion regulation questionnaire, Frost's- Multidimensional Perfectionism Scale, Ruminative Response Scale | Social phobic patients tend to use less positive reappraisal as an emotion regulation strategy and it is associated with maladaptive dimension of perfectionism as compared to control group.                                       |
| 9.  | Kalantarkousheh, Doostian, Godini, and Aazami (2015)<br>Iran                | Cross sectional        | 120 addicted individuals taking treatment (n = 40), addicts without treatment (n = 40) and normal (n = 40)       | Cognition Emotion Regulation Questionnaire (CERQ)  | Study concluded that emotional failure against stressors was an important factor in the tendency toward narcotics use.  |
| 10. | Butt, Sanam and Gulzar (2012)   | Cross-sectional        | 100 participants (50 men and 50  | Heartland Forgiveness  | Cognitive emotional regulation was not the  |

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|     | Pakistan                                      |                 | women).   | Scale, Cognitive Emotional Regulation Questionnaire  | predictor of forgiveness and men were more forgiving than women because they regulate more their emotions.   |
| 11. | Gul and Khan (2014)<br>Pakistan               | Experimental    | 80 participants including bipolar patients (n = 40) and healthy adults (n = 40)   | 48 photographs of happy and neutral faces and Emotion regulation questionnaire   | Bipolar patients reported more frequent use of emotion suppression and lesser use of cognitive reappraisal as emotion regulation strategy.   |
| 12. | Gul and Ahmad (2014)<br>Pakistan              | Experimental    | 144 participants including patients with psychogenic non-epileptic seizures (PNES) (n = 72) and healthy control (n = 72)        | 48 photographs of happy and neutral faces and Emotion regulation questionnaire   | Patients with PNES used expressive suppression to regulate their emotions more frequently and reappraise their cognitions less frequently than healthy individuals.  |
| 13. | Naheed, Dildar and Kauser, (2014)<br>Pakistan | Cross sectional | 210 adults including Primary hypertensive group (n = 70), Secondary hypertensive group (n = 70) and normal individuals (n = 70) | Difficulties in Emotion Regulation Scale, Difficulty Describing Feelings Subscale of Toronto Alexithymia Scale,          | Hypertensive patients reported significantly more emotion regulation difficulties, expression suppression and difficulties in describing emotions than normal adults.  |
| 14. | Arshad and Fatima (2014)<br>Pakistan          | Cross sectional | 200 marital couples   | Emotion Regulation Questionnaire, Marital Aggrandizement Scale, and Marital Satisfaction Questionnaire for older Persons | Results revealed that wives' marital aggrandizement mediated the relationship between own and her husband's cognitive appraisal and marital satisfaction whereas husbands' marital aggrandizement do not mediate cognitive reappraise and marital satisfaction of their own wives. |

**Table 2: Characteristics and findings of emotion regulation studies in individualistic cultures.**

| Sr. No | Author name/year/country               | Design/ Method  | Sample Details                                    | Assessment Tools   | Key Findings  |
|--------|--|-----------------|---|--|---|
| 1.     | Lee, Aaker, and Gardner, (2000)<br>USA | Cross sectional | College students including Americans (n = 98) and | Positive and Negative Affect Schedule and Importance Index | Interdependence situations have regulatory focus and prevention focus motivation leads to relief in the case of success, and anxiety in the |

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|    |   |                   | Hong Kong (n = 117)   | & Independence-Interdependence scale  | case of failure  |
| 2. | Schmidt, Tinti, Levine and Testa (2010)<br>Italy                      | Cross-sectional   | Italian students (N = 610)  | Self developed questionnaire related to different emotions and emotion regulation strategies                            | Experienced emotions were related to different appraisal profiles like feelings of anxiety/fear and frustration/powerlessness.   |
| 3. | Trommsdorff and Friedlmeier, (2010)<br>Germany                        | Cohort sequential | Sample consist of pre-school girls and their mothers from Japan (n = 20) and German (n = 30)                              | Self developed conditions related to mothers' task and distress-related sensitivity and children's distress expression. | German mothers focused on the children's distress when their children faced mishap situations as compared to Japanese mothers. No cultural differences occurred for girls' intensity of immediate distress expression.   |
| 4. | Matsumoto, (1990).<br>USA   | Experimental      | College students including Americans (n = 42) and Japanese (n = 45)   | Japanese and Caucasian Facial Expressions of Emotion  | Results showed that Japanese subjects as compared to Americans express negative emotions to out groups and positive emotions to in group.  |
| 5. | Matsumoto, Kasri, and Kookan (1999)<br>USA                            | Experimental      | University graduates including Americans (n = 128), and Japanese (n = 80).  | Japanese and Caucasian Facial Expressions of Emotion  | Americans have outward tendencies of emotions display and Japanese intended to have internal subjective experiences of suppression.  |
| 6. | Matsumoto, Takeuchi, Andayani, Kouznetsova, and Krupp, (1998).<br>USA | Cross-sectional   | Undergraduate students including South Korean (n = 71), Americans (n = 251), Russians (n = 159), and Japanese (n = 120).  | Individualism-Collectivism Interpersonal Assessment Inventory and Display Rule Assessment Inventory                     | Russians had greatest control on emotion expression while interacting with family and friends whereas Americans had more emotional control while interacting with strangers. Moreover, Americans and Japanese had more social harmony, whereas Korean and Russians preferred more social identification and social sharing of recognition. |
| 7. | Matsumoto, HeeYoo, Fontaine and et. al., (2008a)<br>USA               | Cross-sectional   | Cross national sample including Buddhist (8.7%), Catholic (21.3%), Christians (18.6%), Hindu (8.5%), and Muslims (18.7%). | Display Rule Assessment Inventory   | Findings indicated that individualistic cultures endorsed relatively less expressions of negative emotions to out-group as compared to in-group interactants. They also endorsed expressivity norms of happiness and surprise to out-groups relative to in-groups.   |

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| 8.  | Matsumoto, HeeYoo, Nakagawa, and et.al., (2008b)<br>USA                   | Cross-sectional | Sample taken from 23 countries including Buddhist (2.9%), Christian (38.4%), Hindu (7.7%), and Muslims (4%).                     | Emotion Regulation Questionnaire  | Cultures that emphasized the maintenance of social order they tended to score high on suppression. In contrast, cultures that minimized the maintenance of social order and better adjustment with country level scored high on Suppression, and Reappraisal scale. |
| 9.  | Matsumoto, Nezek, andKoopmann, (2007)<br>USA                              | Cross-sectional | Data taken from 36 countries   | Expressive reactions were measured with self developed checklist of 11 nonverbal reactions and eight verbal utterances. | Collectivistic cultures with high in long term orientations were not associated with greater intensity of shame or guilt experiences and they tend to be less emotionally expressive.   |
| 10. | Eid and Diener, (2001)<br>USA   | Cross-sectional | College students from the United States (n = 443), Australia (n = 292), Taiwan (n = 553), and China (n = 558).                   | Self developed questionnaire for life satisfaction, experience of emotions, and personality in native languages.        | American students used more positive reappraisal and acceptance, whereas Hong Kong students differed most strongly in self-blame. Moreover, strong intra-national variability in norms for affect was present particularly for collectivistic nations.              |
| 11. | Gross, and John (2003)<br>USA   | Cross-sectional | College students including Latino (n = 49), European-American (n = 172), Asian-American (n = 131) and African-American (n = 14). | Emotion Regulation Questionnaire, and Positive and Negative Affect Schedule   | Results indicated that Latino, Asian, and African-American participants were found to be significantly more oriented toward emotion suppression than European-American participants.  |
| 12. | Soto, Perez, Kim, Lee, and Minnick, (2011)<br><br>USA                     | Cross-sectional | Subsamples including European American (n = 71) and Chinese (n = 100)  | Emotion Regulation Questionnaire, Satisfaction with Life Scale, & Beck Depression Inventory                             | Results indicated that emotion suppression to be associated with adjustment difficulties (i.e., negatively associated with life satisfaction but positively associated with depression) among European-American participants.                                       |
| 13. | Ehring, Caffier, Schnulle Silke, Fischer, and Gross (2010)<br>Netherlands | Experimental    | 73 university students including recovered depressed group (n = 30), never   | Emotion Regulation Questionnaire The Strategies Questionnaire of Emotion, & The   | Individuals vulnerable to depression tend to spontaneously use more dysfunctional emotion regulation strategies, but are as effective as controls in using  |

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|     |  |                 | depressed group (n = 43).  | Positive and Negative Affect Schedule   | functional strategies when instructions were given how to regulate their emotions on given task.   |
| 14. | Butler, Lee, and Gross, (2007)<br>USA  | Cross-sectional | 166 women including Asian American (n = 63), European American (n = 74), Latin American (n = 15), and African American (n = 14). | Emotion Regulation Questionnaire, The Circumplex Scale of Interpersonal Values, The Asian values scale, & European American Values Scale for Asian Americans. | Results indicated that emotion suppression appeared to be problematic only for participants oriented toward individualistic culture as compared to collectivism. Asian women avoid using suppression in situations where it would have a negative social impact as compared to women with European values. |
| 15. | Tsai, Levenson, and Carstensen (2000)<br>USA                                   | Cross-sectional | College students including European Americans (n = 201) and Asian Americans (n = 196)  | Actual and ideal affect Scale and Self- Construal Scale   | European American individuals value high-arousal positive affect. Culture influences ideal affect more than actual affect. Both affects play a role in mental health.  |
| 16. | Tahmouresi, Bender, Schmitz, Baleszhar, and Tuschen-Caffier, (2014)<br>Germany | Cross-sectional | 269 children including Iranian (n = 126 ) and German (n = 143)   | Children’s Emotion Management Scale, Cognitive Emotion Regulation Questionnaire & Youth Self Report questionnaire for Internalizing & externalizing symptoms. | Iranian children use more suppression and inhibition strategies than German children. Therefore, Iranian children show stronger relation between emotion regulation and psychopathology than German children.  |
| 17. | Buttler, Egloff, Wilhelm, Smith, Erickson and Gross, (2003).<br>USA            | Experimental    | Undergraduate female students (N = 84)   | Self constructed Positive and Negative Emotion Scale and Emotion Regulation Questionnaire   | Expressive suppression leads to decreased rapport and willingness to affiliate. Moreover it leads to increase blood pressure.  |

**Measurement of Emotion Regulation Strategies**

To analyze the emotion regulation strategies in different cultures, it is important to discuss the measures used in emotion regulation studies. Most commonly used measures in majority studies are Emotion Regulation Questionnaire<sup>7</sup> and Cognitive Emotion Regulation Questionnaire. These scales have shown good alpha reliability for reappraisal factor (.80 to .82) and suppression factor (.73 to .76). In some studies, subjective account of individuals was taken by using self-

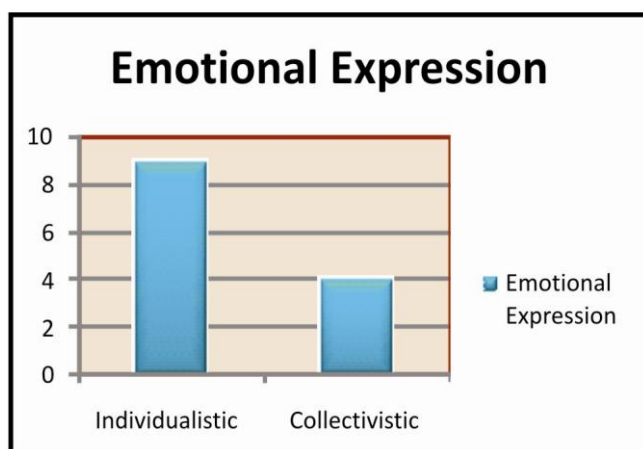
developed statements related to emotion-explaining style and emotion-criticizing style. These subjective accounts were used either in observation studies or in experimental studies with the combination of other affect related objective measures. It has also been noticed that most of the surveys conducted in both individualistic and collectivistic cultures, employed the Emotion Regulation Questionnaire. In Pakistan, Urdu version of Gross and John’s Emotion Regulation Questionnaire has been used in many studies. As far as



other cultures are concerned, researchers have used same questionnaire in their native languages.

### Cross-cultural Variations in Emotion Expression

Literature has posited that cultures endorse different forms of emotion expressions which lead to different ways of emotion regulation. After reviewing the studies from both cultures included in the current systematic review, it has been observed that most studies have been conducted in the individualistic culture where emotional expression is mainly employed in emotion regulation (Figure 1).



**Fig. 1:** *Emotional Expression in Individualistic and Collectivistic Cultures.*

Possible cross-cultural variations in emotion regulation have begun to emerge since Gross and John's introduction of the 'Emotion Regulation Questionnaire' (2003). It has demonstrated that different cultures hold different standards, ideals and values which led the individuals to exercise different emotion regulation strategies accordingly. More direct evidence to support individualistic and collectivistic cultural differences in emotion regulation comes from a pioneering study by Matsumoto et al. (2008a).<sup>21</sup> These researchers examined suppression and reappraisal use, in 23 different countries by using 'Emotion Regulation Questionnaire'. They found that individuals from individualistic nations, such as the USA, Canada, and Australia, reported less use of suppression than did individuals from East Asian nations, such as China, Japan, and Korea. In contrast, they found no evidence for individualistic and collectivistic nation-level differences in reappraisal. Other studies have compared the tendencies of emotional display rules with reference to

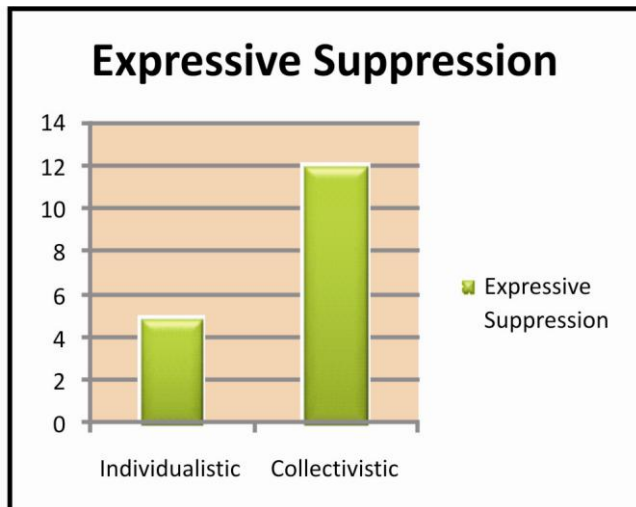
individualistic and collectivistic culture. On the whole, studies suggested that Japanese intended to show negative emotions in front of strangers<sup>22</sup> and Americans have outward tendencies of positive emotions to strangers as compared to Japanese according to their display rules.<sup>23</sup> Moreover, the level of emotion expressivity is more frequent in individualistic cultures. Compared to collectivistic cultures, individualistic cultures also stresses on exhibiting more amount of negative emotions within group members, but more positive emotions towards strangers.<sup>24</sup>

One study included in the review from collectivistic culture have corroborated that culture high in long term orientation tends to be less emotionally expressive. In particular, greater exposure to individualistic culture and its strong emphasis on independence of self-expression is associated with less use of suppression to maintain social harmony. For example<sup>25</sup> reported in their study that North American students use more positive reappraisal and acceptance, whereas Hong Kong students were found to use more of self-blame. Similarly Chinese culture also views the positive emotions as undesirable.<sup>26</sup> Such cultural variation in positive appraisal is largely due to the freedom of emotion expression which is foster by a relevant culture among their individuals. Taken together, the results suggested that emotion expression in independent and interdependent culture varies due to their cultural orientations but these findings provide the broad overview of individualistic culture not from collectivistic culture as current review has included one study on emotion expression from collectivistic culture.

### Cross-cultural Variations in Emotion Suppression

This review indicates that in collectivistic cultures (such as in Latino, Asian, and African-American set ups) participants were found to be significantly more oriented toward emotion suppression than participants of individualistic cultures (European-American set ups) (Figure 2).

Emotion regulation strategies have been investigated in areas of both intra-personal and interpersonal level in individualistic and collectivistic cultures. For example when expression suppression was investigated in collectivistic culture like Turkey and Iran in term of intrapersonal level, findings demonstrated that participants with a Turkish and Iranian cultural background engaged more in emotion suppression than German participants. Turkish are assumed to exhibit more respect for family members in order to maintain



**Fig. 2:** *Expressive Suppression in Individualistic and Collectivistic Cultures.*

social harmony.<sup>27, 28</sup>

At the interpersonal level, emotion suppression has been found to have less adverse outcomes among individuals oriented toward collectivism. For example Butler, Lee, and Gross, (2007)<sup>29</sup> investigated the cultural variability in emotional suppression and its social consequences. Findings showed that in emotion suppression, European American participants were less responsive in their social interactions and were perceived as negative and hostile by those with whom they interacted as compared to Asian Americans. It is indicated that emotion suppression seems to be challenging only for those participants belonging to an individualistic culture, not those oriented toward collectivism. Similar results reported by.<sup>30</sup> They found that Asian women were vigilant while using suppression in situations where it would cast negative impact on social relations as compared to those belonging to individualistic or European culture background. The possible explanation of this phenomenon of expressive suppression can be that Asian culture gives much weight on fulfilling societal demands and accommodating others that's why they practice suppression more than expression.<sup>31</sup>

To sum up, it can be concluded that habitual suppression is self-protective in collectivistic cultures but can be problematic as it lowers receptiveness and has negative social consequences for people belonging to individualistic cultures. Culture plays an important role in using suppressive strategy, and it is not something that took place solely on individuals' own will.

## Sources of Cultural Variation in Emotion Regulation

Review of the literature has also revealed that it is not the emotion regulation alone which causes the differences in emotions but there are some other underlying sources involved in emotion regulation.<sup>32</sup> The individual tendencies, relational co-regulation, and structural condition are assumed to be the major sources of situation selection and appraisal and culture play a major role in underneath these sources.

Results of studies taken from collectivistic culture have shown that our social relations with close family members play an important role in experiencing certain type of emotions too. This phenomenon is called a co-regulation. In collectivistic cultures, mothers are assumed to shape the emotional experiences of their children by discussing and talking about those events in which other people considered more important rather talking about independent self. By doing so, mothers inculcate the interdependent nature of emotions in their children.<sup>33</sup>

In individualistic cultures, the selection of situation that occurs habitually may structure individual's emotional life in some way. It has been observed that individualistic culture structure the social life in a way that make individual feels special and unique and ultimately happy independent self-compared to collectivistic cultures like Japanese culture which emphasizes on expression suppression in social life to promote calmer emotional states at individual life.<sup>34</sup>

Researches in the current review also suggest some sources of appraisal in emotional experiences. Mainly two sources have been identified in current review: how one perceives the world based on his own beliefs and adopting other people's appraisal as a reference. This is called a 'social referencing'. The evidence for these sources of appraisal comes from the studies conducted in the individualistic culture. A study conducted<sup>35</sup> have indicated that when Iranian students related the exams controllable they perform well and when they rate the exams as uncontrollable then their appraisal profile was based on more frustration, anxiety and fear. The notion of social referencing has been reinforced by the study of.<sup>36</sup> They found in their study that children interpret the events with reference to those situations which have been authenticated by parents.

Although most of studies confirm that emotion regulation strategies are influenced by individual tendencies and relation with others. But there are some evidences that indicated that emotion regulation also

dependent in the ways, the individual's environment is structured. It is evident in the study conducted by.<sup>37</sup> In this study, Indian and European students were shown a large no of interpersonal situations relevant to their culture. Results indicated that both types of situation and individual tendencies together played a crucial role in students' reactions pertaining to cultural differences.

After reviewing the studies from individualistic and collectivistic cultures, it can be concluded that people are either internally motivated in selection of situations or their viewpoint about the world will direct their appraisal while experiencing certain emotions. They usually adopt either a promotion focused motivation or a prevention focused motivation. When one promotes a desired emotion it leads to happiness and when someone is deprived of exhibiting particular emotion that causes negative feelings like depression and failure.<sup>38</sup>

### **Outcomes of Emotion Regulation Strategies**

The current review has identified some outcomes associated with differently used emotion regulation strategies especially with expressive suppression. Cognitive reappraisal and its outcomes remain relatively constant across culture as compared to expressive suppression. Data synthesis revealed that expressive suppression has major consequences in the psychological, social and physiological domains. Each domain has been discussed separately in reference to cultural context.

### ***Psychological Consequences of Suppression***

Current review has suggested that continued emotional suppression can cause mental disease, illness, and poor psychological adjustment in both eastern and western cultures. A comparative study was conducted by,<sup>39</sup> on European American and Chinese students. Results indicated that in European Americans emotion suppression to be associated with adjustment difficulties like poor satisfaction with life and increased level of depression. However, among Hong Kong Chinese who reported greater emotion suppression, these associations found to be absent. Similar outcomes of habitual use of suppression were reported by American students. They reported poor social adjustment, decrease in well-being and higher level of negative affect,<sup>40,41</sup> and greater rate of psychopathology in Turkish.<sup>28</sup>

This pattern of emotional suppression is found to be similar in studies conducted in the collectivistic culture as well. Experimental investigation comparing the

suppression between those having psychological disorders and healthy controls, the tendency to use suppression was higher in bipolar patients<sup>42</sup> Social phobic patients<sup>43</sup> and in patients of psychogenic non-epileptic seizure who used expressive suppression more frequently to regulate their emotion and reappraise their cognitions less frequently than healthy individuals.<sup>44</sup>

### ***Social Consequences of Suppression***

The current review has suggested that expressive suppression has some utilitarian function if it is used within limited boundaries. However, an unnecessary use of expressive suppression is found to be linked with poor social interactions and decreased altruistic behavior in both cultures.<sup>45</sup> One of the pioneer studies of emotion regulation in social domain has conducted.<sup>46</sup> Results have indicated negative consequences of expressive suppression that in some contexts at least suppressing emotions disrupts the communication in couples. It may also limit access to new relationships and may hinder the maintenance of existing relationships. Similar findings have been reported by,<sup>47</sup> in their study they found expressive suppression was related to husbands' marital dissatisfaction and cognitive reappraisal was positively linked to marital satisfaction of wives. Expressive suppression also has been found to have some utilitarian function in some culture. For example two large scaled cross nation survey conducted by<sup>21</sup> and.<sup>48</sup> They included the sample from different 36 countries including varying ethnic backgrounds like Buddhism, Christian, Hindu, and Muslims. Results have indicated that suppression was associated with better adjustment in those countries who emphasized the maintenance of social order and power distance. Findings also suggested that suppression was important to maintain existing social hierarchies.

Mostly studies conducted to identify social consequences of expressive suppression have come from the individualistic cultures, so more studies are needed to confirm this pattern of social consequences in collectivistic cultures as well.

### ***Physiological Outcomes of Suppression***

Studies included in current systematic review have also indicated that poorly used emotion regulation strategies lead towards mal functioning of physiology. For example some studies conducted in collectivistic culture including Pakistan have shown that emotional failure against stressors was an important factor in the

tendency toward narcotics use.<sup>49</sup> In another study expressive suppression was assessed in hypertensive patients and normal adults. Results indicated that hypertensive patients reported significantly more emotion regulation difficulties, expression suppression and difficulties in describing emotions than normal adults and expressive suppression was significant factor in precipitating hypertension.<sup>50</sup> The similar pattern of negative consequences also found in studies conducted in individualistic culture. Buttler, Egloff, Wilhelm, Smith, Erickson and Gross, (2003)<sup>46</sup> conducted a study on 84 female students with different cultural background to observe the physiological consequences of expressive suppression on their arterial blood pressure. Results indicated that in experimental condition, students who experienced more suppression on given task, the level of their blood pressure was higher as compared to control group.

Altogether, review of these studies suggests that excessive use of emotion suppression at interpersonal level not at intrapersonal level in collectivistic and individualistic cultures positively related to psychological maladjustment, negative social consequences and poor physical health outcomes.

## Conclusion

The present review suggests that culture predicts whether individuals are motivated to express or suppress their emotions. Collectivist culture encourages greatest control on emotion expression while interacting with family and friends and lays more emphasis on maintaining social harmony. On the other hand, individualistic culture endorses comparatively less expression of negative emotions towards strangers. Individuals from individualistic cultures may benefit more from cognitive reappraisal compared to expressive suppression because adjusting one's emotion to the social environment is more important in cultural context<sup>24</sup> and.<sup>21</sup> In this review it has been observed that most studies have focused in identifying expressive suppression in both cultures. The studies conducted in individualistic cultures, include large scaled surveys involving comparison of different ethnic groups using students' population. This pattern was also consistent in studies conducted in collectivistic cultures except those studies that have been done in Pakistan. Most of the studies in Pakistan have focused in identifying emotion regulation strategies in healthy versus morbid individuals. It is also evident from current review that it is not the emotion regulation alone which causes the differences

in emotions but individual tendencies, relational co-regulation, and structural condition are assumed to be the major sources of emotion regulation.<sup>32</sup> But these evidences have been supported by the studies conducted in individualistic culture only. In collectivistic culture, the observed evidence for these related sources is neither prominent nor have been tested empirically. Moreover it has been observed that, researchers have used survey research design. Experimental research design was found to be least employed design especially, in collectivistic culture. Emotion regulation strategies have several outcomes; especially expressive suppression has debilitating effects in areas of psychological, social and physiological domains. The expressive suppression has both positive and negative consequences in psychological and social domains. Most of the studies have been under taken in individualistic cultures to identify inter-individuals variability in emotion regulation. However, in the collectivistic culture large scale studies are needed to endorse similar findings regarding intra-individual variability in emotion regulation strategies.

## Identified Directions of Future Research

1. Present review suggests that emotion regulation has different strategies and is linked to different outcomes. Mostly researchers have measured these strategies with one single scale so far. Thus, future research should measure both strategies distinctively by developing independent measures of cognitive appraisal and expressive suppression.
2. It is important to point out that above mentioned studies have focused on two dimensions (independent and interdependent) of cultural values while recruiting two cultural groups (Asian Americans and European Americans). It will be interesting to expand this research area to other cultural values like cultural hierarchy, traditions, socioeconomic status and region.
3. The current review includes those studies which have investigated inter cultural variations in emotion regulation but intra individual differences in emotion regulation in cultural context have not been examined much. The futures researches may focus both on inter- and intra-individual differences in emotion regulation strategies.
4. The studies in current review have a limited ethnic and gender diversity. It is important to study cross cultural variations in emotion regulation strategies in more diverse population.

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