

## **Role of Social Support and Cognitive Emotion Regulation in Mental Health Outcomes of Women Behind Bars in Punjab Province**

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### **Abstract**

**Purpose.** The current research investigates the role of social support and cognitive emotion regulation strategies in mental health outcomes of women behind bars in the Punjab province of Pakistan.

**Method.** A sample of 200 female prisoners above 18 years of age (both convicted and under-trial; 50% each) was drawn from four district jails of the Punjab province using purposive sampling technique. Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2001), General Health Questionnaire-28 (GHQ-28; Goldberg, 1978) and Multidimensional Scale of Perceived Social Support (MSPSS, Zimet et al., 1988) were used to measure cognitive emotion regulation strategies, mental health and social support among female prisoners respectively.

**Results.** Results of regression analysis revealed that social support by significant others predicted adaptive cognitive emotion regulation approaches whereas, lack of perceived social support contributed to maladaptive cognitive emotion regulation strategies. Lack of social support from significant others and two maladaptive strategies i.e. catastrophizing and rumination predicted poorer mental health outcomes. Group difference based on age and type of imprisonment were however significant for depression and social dysfunction and also for types of social support especially across convicted and under-trial inmates.

**Conclusions.** This study provides an understanding of the differential mental health problems of women inmates and the relevant social and personal factors that may help the psychologists in correctional settings to develop and implement evidence based clinical interventions for transforming lives of women in prisons.

**Keywords.** *Cognitive emotion regulation, perceived social support, female prisoners, mental health.*



## Introduction

Since the last two decades, the ratio of women prisoners has almost 53% increased than the previous years, which resulted in a rise of worldwide female prison population (Walmsley, 2017). South Asian countries include one quarter of the world population and with the growing population, these countries have shown an increase in crime rates and resulting mental health issues (Thara & Padmavati, 2013). Pakistan is one of these South Asian countries having no exception in crime rates and psychological problems of prisoners regardless of the gender (Jamadar, 2012). Though the number of women inmates is far less than men (884 as compared to 47840 in all prisons of the Punjab, Pakistan), as reported in (“884 female inmates”, 2021); however, they may undergo worse mental health issues as compared to their male counterparts (Ali & Shah, 2011; Bartlett & Hollins, 2018).

Imprisonment itself is tough, stressful and challenging for all the prisoners. General Strain Theory (GST) considers the environmental stressors as one of the reasons for developing negative affectivity (Agnew, 1992) such as sadness and anger that may result in psychopathological outcomes like depression and anxiety in prison set up (Weißfloga et al., 2012). Several personal and social factors may contribute to adverse mental health conditions of prisoners (Fazel, et al., 2016). In addition to individuals' predispositions, their ability to combat stressful situation such as coping skills and emotion regulation strategies are linked to mental health conditions of incarcerated individuals (Saeed, 2021) including women (Khalid & Naz, 2019). There is evidence for both gender-specific and gender-neutral mental health sufferings of imprisoned offenders as well (Edgemon & Clay-Warne, 2019). Both men and women in prison face miserable physical, psychological and social conditions yet the case becomes worst especially for female prisoners as there are several reports of physical and sexual victimization not only by jail authorities but also by the other prison inmates (Zadeh & Ahmad, 2012). Almost 80% percent of the female prisoners worldwide reported mental health problems (Cai et al., 2017). There is five times more risk for females who are behind the bars to develop mental health problem than the women in general population (Tyler et al., 2019). Mostly, female prisoners had the long histories of domestic, emotional, sexual and physical abuse before the commitment of crime and imprisonment, which may be a causal factor to trauma and other related mental health issues (Alves et al., 2016; Gunter, 2012; Jewkes et al., 2019; Karlsson and Zielinski, 2018).

Prevalence rate of overall psychological disorders among female prisoners is approximately 3.9% (Fazel et al., 2016). Various personal and environmental factors may contribute to such problems. Some common personal factors are poor physical health, maladaptive cognitive emotion regulation strategies and drug abuse (Alves et al., 2016). Whereas some social and environmental factors such as long periods of segregation from families and significant others, poor social support during prison and after release, job loss, stigmatization and disapproval from the society lead female prisoners towards somatic symptoms, sadness, insomnia, anger, anxiety and even suicidal ideations and attempts (Baranyi et al., 2018; Pratt et al., 2010). The collectivist nature of our culture highlights the need to consider social support while explaining the psychopathological outcomes among female population in prison.

Social support can be defined as one's belief that he/she is cared for, being valued and esteemed, and one of a member of a set-up with shared rights and responsibilities. Family, friends or other close companions are regarded as major sources of such social support (Chan & Cheng, 2004; Zimet et al., 1988). Such type of relationships with shared rights and responsibilities among people can regulate and control negative consequences of environmental stressors (Moore, 2021). These social support mechanisms have positive effects on inmates' adjustment to prison through healthy cognitive and behavioral mechanisms (Jiang & Winfree, 2006). Due to the implications of social support for the reduction in offenses (Balogun, 2014; Zadeh & Ahmad, 2012), numerous studies have concluded that good social support lead a person towards positive mental health outcomes, whereas poorer social network had negative consequences on physical and mental health of individuals (Berkman & Glass, 2000; Balogun, 2014). A strong family bond can provide passionate support, understanding of one another's problems, give the sense of well-being and provide comfort, which strengthens the individuals during stressors and enables them to cope with the adversities of life (Birmingham, 2003). Social support may be considered more crucial rule for women prison inmates as compared to men (Bartlett & Hollins, 2018) due to the impact on family ties and social stigma, associated with crime and prison especially in a patriarchal society.

Social support networks to women prisoners are not adequate and they mostly seek support from on their fellow prisoners (Enos, 2001), so there is need to sort the type and resource of social support for using this interpersonal strength to enhance the psychological wellbeing of women prisoners (Ehsan, 2021). Reentry to community, after life in prison may also be demanding for women and lack of social support may affect their ability to cope with this stress. Social support and emotion regulation patterns are closely associated, as the results of a longitudinal study concluded that people who had rigid and fix emotional patterns and poor emotion regulation strategies regarding situations, had lesser social support from their groups than those with flexible emotional and behavioral patterns (Tamir et al., 2007).

According to Garnefski et al. (2001) the notion of cognitive emotion regulation can be defined as intellectual dealing with the adversities of life, with several behavioral, emotional, cognitive and physiological mechanisms. Cognitive emotion regulation strategies involve both adaptive (for example: positive reappraisal, positive-refocusing, acceptance and putting into perspective) and maladaptive approaches (such as: cognitive restructuring, blaming oneself, ruminating, catastrophising, blaming others). Adaptive strategies are vital for health and positive functioning and are essential for the commencement of a task, eagerness to do something new, and overall success in a task, however maladaptive approaches usually resulted in maladaptive behaviors and negative consequences and ultimate negative physical and mental health outcomes (Pejičić et al., 2018). Contemporary research had established the link among cognitive emotion regulation strategies, social network and inner well-being during stressful life events. As Vanderhasselt et al. (2014) suggested that maladaptive cognitive strategies which emerge during stressful situations can lead towards poorer mental health consequences. On the other hand, solicitous usage of several adaptive strategies moderates the correlation between maladaptive behavior and mental health issues. A recent study (Saeed et al., 2021) with Pakistani women in prison demonstrated the effectiveness of psychological intervention to enhance adaptive cognitive emotion regulation approaches further resulting in increased wellbeing of inmates.

The literature provides sufficient evidence for the interrelationship of social support, use of compatible and non-compatible cognitive emotion regulation strategies, and psychological health especially during stressful life situations. Mental health strain experienced in prison during and after incarceration may lead to adverse circumstances especially in the form of high rates of prisons' misconduct (Ehsan, 2021), reduced chances of employability after the period of imprisonment (Mallik-Kane & Visser, 2008) and risk of severe psychiatric illness (Bartlett & Hollins, 2020). It is therefore important to address the mental health issues of the prisoners right in time to identify potential factors associated with mental adversities.

## **Hypotheses**

1. High level of perceived social support would predict adaptive cognitive emotion regulation whereas decreased level of social support would predict maladaptive cognitive emotion regulation strategies among women behind bars.
2. Lower level of social support would predict poorer mental health outcomes (depression, anxiety/insomnia, somatic symptoms and social dysfunction) among women behind bars.
3. Maladaptive cognitive emotion regulation strategies would predict poorer mental health outcomes among women behind bars.
4. Level perceived social support, use of adaptive and maladaptive emotion regulation strategies and mental health outcomes would differ across convicted and under-trial female prisoners.

## **Method**

### **Sample**

A sample of women inmates ( $N = 200$ ) was recruited from four district jails of Punjab (Faisalabad, Jhung, Multan and Shekupura). From the total sample 50 % females were convicted and 50% were under trail drawn purposively. Participants were divided into three age groups, young (19-35), middle aged (35-50) and older (50 years and above). Female prisoners less than 18 years of age were excluded from the sample. The sample was purposively approached on the basis of the participant's age (adults only, without physical disability) and category of imprisonment (convicted or under-trial).

Purposive sampling technique has been frequently used in studies with prisoners (Saeed et al., 2021; Jewkes et al., 2019; Zadeh & Ahmad, 2012) due to the systematic nature of the study for the selection of participant who are proper fit according to the study objectives. The study was based on correlational (cross-sectional) research design. Demographic details of the participants are presented in table 1.

### **Instruments**

**Demographic Data Sheet.** Demographic data sheet was used to obtain relevant information from the participant, such age group, marital status, socioeconomic status, category of prison, and category of education.

**Cognitive Emotion Regulation Questionnaire (CERQ, Garnesfski, Kraaji, & Spinhoven 2001).** CERQ is a multidimensional scale which was developed to assess conscious coping strategies used by individuals who have some adversities in life. It was aimed to find out the conscious aspects of emotional control, people usually use after having any negative life event. It has 36 items and 9 subscales which are graded on a likert point scale which ranges from 1 (almost never) to 5 (almost always). Reliability of all of the nine subscales ranges from 0.66 to 0.83 (Garnefski, Kraaij et al., 2002). Urdu translated version of this questionnaire by Khawar, Butt, Saeed, Malik & Summan (2016) with the reliability of .89 was used in the present study.

**General Health Questionair\_28 (GHQ-28, Goldberg, 1978).** General Health Questionnaire aims to evaluate current overall health of adult population. It is divided into four groups and each one consisted on seven questions. Each seven questioned group form a subscale naming a) Somatic symptoms, b) anxiety symptoms, c) social dysfunction and d) depressive symptoms respectively. Response format of the questionnaire is three point (0-3) Likert scale. Maximum score is 84 and the cut-off score is 23 which depict that a global GHQ score of 23 or above indicates a poorer general health. Urdu version of GHQ by Riaz and Reza (1998) was used in the current research.

**The Multidimensional Scale of Perceived Social Support (MSPSS, Zimet, Dahlem, Zimet & Farley, 1988).** It is an easily administered, self-reported, short scale with just 12 items. This Scale is used to judge the individual's perception regarding the amount of social support, which one is receiving from three sources. These three sources are Significant Others denoted by (SO), Family denoted by (FA), Friend denoted by (FR). Response format of the scale is a seven point Likert scale in which "1" represents "very strongly disagree" and "7" shows "very strongly agree". It has confirmed to be psychometrically up to the mark on varied samples and has sound internal reliability and test-retest reliability. .88 was the total scale reliability.

### **Procedure**

We collected the data from four district jails of Punjab based on formal permission sought from the authorities and availability of sufficient number of prisoners in both of the categories of convicted and under-trial prisoners. We briefed the participants about the purpose of the research and took verbal and written consent from them. Participants were also assured about the confidentiality of their given information. Above-mentioned questionnaires along with the demographic datasheet were administered to assess the presence of social support and nature and severity of any mental health issues faced by them. At the end, they were thanked for their cooperation.

### **Results**

Pearson product moment correlation was computed for all the study variables followed by stepwise multiple linear regression analysis for significantly correlated variables. Mental health was the major outcome variable while social support and cognitive emotion regulation strategies were their contribution to mental health outcome and interrelationship also. Additionally, using Multivariate Analysis of Variance (MANOVA), participants were compared on all the study variables based on categorization into age groups and type of imprisonment.

Table 1 demonstrated the percentages of demographic features of the sample such as age, marital status, socio-economic status, category of imprisonment and education of female prisoners.

**Table 1***Demographic Characteristics of Participants (N=200)*

| Variables                           | <i>f</i> | %      |
|-------------------------------------|----------|--------|
| <b>Age Groups</b>                   |          |        |
| Young adults (18-30)                | 67       | 33.5%  |
| Middle aged (30-50)                 | 69       | 34.5%  |
| Old aged (50 and above)             | 64       | 32.0%  |
| Total                               | 200      | 100%   |
| <b>Marital Status</b>               |          |        |
| Married                             | 144      | 72.0 % |
| Unmarried                           | 24       | 12.0%  |
| Divorced                            | 10       | 5.0%   |
| Widow                               | 22       | 11%    |
| Total                               | 200      | 100%   |
| <b>Socioeconomic Status</b>         |          |        |
| Middle class > 70000Rs.             | 13       | 6.5%   |
| Lower middle class (40000-70000Rs.) | 77       | 38.5%  |
| Low income class < 40000Rs.         | 110      | 55%    |
| Total                               | 200      | 100%   |
| <b>Type of Imprisonment</b>         |          |        |
| Convicted                           | 100      | 50.0%  |
| Under trail                         | 100      | 50.0%  |
| Total                               | 200      | 100%   |
| <b>Education</b>                    |          |        |
| Illiterate                          | 126      | 63.0%  |
| Primary                             | 45       | 22.5%  |
| Matric and above                    | 29       | 14.5%  |
| Total                               | 200      | 100%   |

**Table 2***Inter-correlation among Cognitive Emotions Regulation Strategies, Perceived Social Support and Mental Health Outcomes (somatic symptoms, anxiety, social dysfunction, severe depression) among Women behind Bars (N = 200)*

| Variables                   | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9     | 10      | 11      | 12      | 13     | 14     | 15     | 16 |
|-----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|---------|---------|---------|--------|--------|--------|----|
| 1. Self blame               | 1      |        |        |        |        |        |        |        |       |         |         |         |        |        |        |    |
| 2. Rumination               | .36*** | 1      |        |        |        |        |        |        |       |         |         |         |        |        |        |    |
| 3. Catastrophizing          | .23**  | .43*** | 1      |        |        |        |        |        |       |         |         |         |        |        |        |    |
| 4. Blaming-other            | -.02   | .22**  | .40*** | 1      |        |        |        |        |       |         |         |         |        |        |        |    |
| 5. Acceptance               | .72*** | .43**  | .31*** | .08    | 1      |        |        |        |       |         |         |         |        |        |        |    |
| 6. Positive refocusing      | .21**  | .36*** | .16*   | .12    | .27*** | 1      |        |        |       |         |         |         |        |        |        |    |
| 7. Refocus on planning      | .12    | .26*** | .10    | .03    | .11    | .53*** | 1      |        |       |         |         |         |        |        |        |    |
| 8. Positive reappraisal     | .20**  | .34*** | .36*** | .14*   | .22**  | .59*** | .50*** | 1      |       |         |         |         |        |        |        |    |
| 9. Putting into perspective | .34*** | .25*** | .23**  | .13    | .34*** | .50*** | .32*** | .44*** | 1     |         |         |         |        |        |        |    |
| 10. Significant others      | .04    | -.03   | -.05   | -.03   | .02    | .21**  | .24**  | .19**  | .23** | 1       |         |         |        |        |        |    |
| 11. Family                  | -.07   | -.11   | -.14*  | -.004  | -.08   | .20**  | .13    | .14*   | .16*  | .72***  | 1       |         |        |        |        |    |
| 12. Friends                 | .00    | -.05   | -.11   | -.04   | -.01   | .15*   | .21**  | .17*   | .22** | .72***  | .73***  | 1       |        |        |        |    |
| 13. Somatic symptoms        | .05    | .36*** | .35*** | .26*** | .10    | .12    | .10    | .22**  | .03   | -.33*** | -.33*** | -.30*** | 1      |        |        |    |
| 14. Anxiety                 | -.10   | .16*   | .24**  | .24**  | .03    | .04    | .06    | .00    | .09   | -.25*** | -.17*   | -.19**  | .44*** | 1      |        |    |
| 15. Social Dysfunction      | .07    | .22**  | .29*** | .19**  | .02    | -.01   | -.05   | .01    | .03   | -.38*** | -.34*** | -.30*** | .64*** | .53*** | 1      |    |
| 16. Severe Depression       | .10    | .24**  | .25*** | .21**  | .11    | -.15*  | -.10   | -.09   | -.11  | -.35*** | -.32*** | -.29*** | .45*** | .45*** | .51*** | 1  |

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Table 2 shows the results of inter-correlation among adaptive (acceptance, positive refocusing, refocus on planning, putting into perspective, positive reappraisal) and maladaptive (self-blame, rumination, catastrophizing, blaming others) cognitive emotions regulation strategies; subscales of perceived social support (significant others, family, friends) and general health questionnaire subscales (somatic symptoms, anxiety, social dysfunction, severe depression). Results showed that all maladaptive cognitive emotion regulation strategies (except for self-blame) rumination, catastrophizing, and blaming others were found to be highly significantly related to all the mental health outcomes such as somatic complaints, anxiety, social dysfunction and severe depression (measured through General Health Questionnaire). There was no significant relationship between adaptive cognitive emotion regulation strategies and mental health outcomes but positive reappraisal showed a significant negative association with depression. Among maladaptive strategies, catastrophizing was inversely correlated with social support from the perspective of family. All adaptive cognitive coping strategies (other than acceptance) including positive refocusing, refocus on planning, positive reappraisal and putting into perspective showed significant positive association with all the subscales of social support specially with significant others followed by friends and family. Perceived social support from all sources (friends, family, significant others) was highly inversely correlated with poor mental health outcomes (social dysfunction, somatic symptoms, severe depression and anxiety respectively).

**Table 3**

*Social Support as a Predictor of Adaptive and Maladaptive Cognitive Emotion Regulation Strategies among Female Prisoners (N=200)*

| Predictors         | Outcomes             | B    | SE   | $\beta$ | p    | R <sup>2</sup> |
|--------------------|----------------------|------|------|---------|------|----------------|
| <b>Adaptive</b>    |                      |      |      |         |      |                |
| Significant others | Positive Refocusing  | .61  | .203 | .209    | .003 | .044           |
|                    | Positive Reappraisal | .54  | .200 | .189    | .007 | .036           |
|                    | Put into Perspective | .65  | .199 | .235    | .001 | .055           |
|                    | Refocus on Planning  | .71  | .202 | .243    | .001 | .059           |
| <b>Maladaptive</b> |                      |      |      |         |      |                |
| Family Support     | Ctastrophising       | -.24 | .123 | -.142   | .045 | .020           |

Table 3 demonstrates significant predictors only. Results of stepwise liner regression revealed that social support significantly predicted adaptive and maladaptive cognitive emotion regulation strategies among female prisoners. So for as adaptive strategies were concerned, one of the aspects of social support (i.e. significant others) predicted all types of adaptive strategies other than acceptance while other two aspects (family and friends' support) were excluded being insignificant predictors. Support from significant others significantly predicted positive refocusing ( $\beta=.209, p=.003$ ), positive reappraisal ( $\beta=.189, p=.007$ ), put into perspective ( $\beta=.235, p=.001$ ) and refocus on planning ( $\beta=.243, p=.001$ ) by accounting 4%, 3%, 5% and 6% variances respectively. Whereas, only family subscale of social support predicted ctastrophising (one of the factors of maladaptive cognitive emotion regulation strategies) of female prisoners, while other three factors (rumination, self-blame and blaming others) were not correlated with any of the sub scale of social support hence they were not discussed here. Whereas family subscale of social support significantly predicted ctastrophising ( $\beta=-.142, p=.045$ ) accounting for 2% of variance.

**Table 4**

*Social Support as a Predictor of Mental Health among Female Prisoners (N=200)*

| Predictors         | Outcomes           | B     | SE  | B     | p    | R <sup>2</sup> |
|--------------------|--------------------|-------|-----|-------|------|----------------|
| Significant others | Anxiety insomnia   | -1.97 | .34 | -.374 | .000 | .14            |
|                    | Social dysfunction | -.88  | .24 | -.247 | .000 | .06            |
|                    | Somatic system     | -1.69 | .39 | -.326 | .000 | .10            |
|                    | Severe depression  | -1.7  | .31 | -.357 | .000 | .12            |

Table 4 also reports significant findings only and the results of stepwise multiple linear regression showed that only one aspect of social support (significant others), significantly predicted mental health outcomes of female prisoners, while the other two subscales (support from family and friends) were excluded being insignificant. Table revealed that absence of support from significant others was a significant predictor of anxiety insomnia ( $\beta = -.374, p = .000$ ), social dysfunction ( $\beta = -.247, p = .000$ ), somatic symptoms ( $\beta = -.326, p = .000$ ) and severe depression ( $\beta = -.357, p = .000$ ) by accounting 14%, 6%, 10% and 12% of variances respectively.

**Table 5**

*Maladaptive Cognitive Emotion Regulation Strategies as Predictor of General health of Female Prisoners (N=200)*

| Variables       | B    | SE   | $\beta$ | t    | p    | R <sup>2</sup> | $\Delta R^2$ |
|-----------------|------|------|---------|------|------|----------------|--------------|
| Step 1          |      |      |         |      |      |                |              |
| Catastrophising | 1.66 | .357 | .315    | 4.66 | .000 | .099           | .095         |
| Step 2          |      |      |         |      |      |                |              |
| Catastrophising | 1.20 | .388 | .228    | 3.10 | .002 | .133           | .124         |
| Rumination      | 1.14 | .411 | .204    | 2.78 | .006 |                |              |

Result of multiple linear regression showed that disruptive cognitive emotion regulation approaches predicted general mental health among female prisoners. Results were significant not only for general mental health, but for somatic complaints ( $\beta = .211, p = .021$ ) and depression ( $\beta = .211, p = .006$ ) also. In step 1 catastrophising significantly predicted mental health ( $\beta = .315, p = .000$ ) accounting for 9% of variance. In this step, rumination and blaming others were excluded because of insignificant predictors. Whereas in step 2 catastrophising ( $\beta = .228, p = .002$ ) and rumination ( $\beta = .204, p = .006$ ) accounting for 13% of variance are significant predictors of general mental health among female prisoners. Hence again, blaming others emerged as an insignificant predictor and was excluded.

**Table 6**

*Table 6. MANOVA for General Health Questionnaire Subscales, Adaptive & Maladaptive Cognitive Emotion Regulation Strategies and Types of Social Support across Groups based on Age and Type of Imprisonment (N = 200)*

| Groups | DV's                      | SS         | Df      | MS     | F     | p    |
|--------|---------------------------|------------|---------|--------|-------|------|
| Age    | Depression                | 294.72     | 2       | 147.36 | 4.59  | .011 |
|        | Positive Reappraisal      | 79.25      | 2       | 39.63  | 3.49  | .032 |
| TOI    | Social Dysfunction        | 132.33     | 1       | 132.33 | 7.36  | .007 |
|        | Acceptance                | 191.17     | 1       | 191.17 | 17.79 | .000 |
|        | Self-blame                | 166.88     | 1       | 166.88 | 12.25 | .001 |
|        | Blaming Others            | 113.09     | 1       | 113.09 | 4.56  | .034 |
|        | Significant Other         | 14.92      | 1       | 14.92  | 10.69 | .001 |
|        | Family                    | 42.89      | 1       | 42.89  | 12.09 | .001 |
|        | Friend                    | 16.19      | 1       | 16.19  | 4.80  | .030 |
|        | Error                     | Depression | 6217.69 | 194    | 32.05 |      |
|        | Social Dysfunction        | 3488.28    | 194     | 17.98  |       |      |
|        | Positive reappraisal      | 2203.72    | 194     | 11.36  |       |      |
|        | Acceptance                | 2084.37    | 194     | 10.74  |       |      |
|        | Self-blame                | 2599.66    | 194     | 13.40  |       |      |
|        | Blaming Others            | 4811.43    | 194     | 24.80  |       |      |
|        | Significant Other Support | 270.82     | 194     | 1.39   |       |      |
|        | Family Support            | 688.58     | 194     | 3.55   |       |      |
|        | Friends Support           | 654.02     | 194     | 3.37   |       |      |

Table 6 presents significant results compiled from MANOVAs computed for the main effects and interaction of groups based on age and type of imprisonment on mental health outcomes (GHQ subscales), adaptive and maladaptive cognitive emotion regulation strategies (CERQ subscale) and three types of social support (MPSS subscales). None of the interaction effects was found significant for any of the dependent variables.



However, significant main effect of age was found on severe depression and positive reappraisal of the stressful situation; while type of imprisonment also showed significant main effect on social dysfunction and one adaptive regulation named as acceptance. Main effect of age was insignificant on all maladaptive emotion regulation strategies, whereas type of imprison showed significant main effect on both self-blame and blaming others for the negative event. Age groups did not differ in terms of perceived social support from three sources; yet convicted and under-trial female prisoner showed significant differences on all the types i.e. support from significant other, family and friends. Nature of these differences is illustrated in the table 7. Magnitude of age group differences was further analyzed using Tukey's Poc Hoc test. It shows that younger and older women prisoners were more depressed than middle aged while Post Hoc results were significant across young and middle aged groups only ( $Mdiff = 2.65, SE = .97, p = .01$ ). The middle aged female prisoners scored significantly higher on positive reappraisal than the older group ( $Mdiff = 1.45, SE = .59, p = .03$ ). Convicts were socially lesser dysfunctional than the prisoners under trial. Despite having greater scores on acceptance, convicts reported higher levels of self and other blames than women in the under trial group. Female prisoner going through trials reported higher levels of perceived social support from all the sources as compared to the convicted group. In general, participants reported greater support from family and friends than received from the significant others. Finally, figure 1 illustrates the most frequent type of mental health issue among women behind bars. Somatic symptoms were the most prevalent issue followed by anxiety insomnia and social dysfunction respectively whereas, severe depression was relatively less frequently reported by the participants.

**Table 7**  
*Means and Standard Deviations across Groups on Variables with Significant Differences*

| Variables            | Age            |                 |                | Type of Imprisonment |                      |                |
|----------------------|----------------|-----------------|----------------|----------------------|----------------------|----------------|
|                      | Young<br>M(SD) | Middle<br>M(SD) | Older<br>M(SD) | Convicted<br>M(SD)   | Under-Trial<br>M(SD) | Total<br>M(SD) |
| Depression           | 10.38(6.0)     | 7.73(5.0)       | 8.10 (5.7)     | 9.14(5.1)            | 8.35(6.2)            | 8.74(5.7)      |
| Social Dysfunction   | 9.10(3.9)      | 9.36(4.4)       | 9.32(4.4)      | 8.47(3.8)            | 10.06(4.5)           | 9.26(4.2)      |
| Positive Reappraisal | 13.70(3.9)     | 14.78(3.2)      | 13.32(2.9)     | 13.78(3.4)           | 14.13(3.4)           | 13.95(3.4)     |
| Acceptance           | 11.94(2.9)     | 12.15(3.3)      | 12.64(3.3)     | 13.24(3.3)           | 11.24(3.2)           | 12.24(3.4)     |
| Self-Blame           | 10.43(3.6)     | 11.75(3.8)      | 11.46(3.7)     | 12.18(3.7)           | 10.26(3.5)           | 11.22(3.7)     |
| Other Blame          | 15.80(7.1)     | 14.59(3.5)      | 14.73(3.5)     | 13.47(3.6)           | 10.72(3.5)           | 12.15(3.8)     |
| Significant Other    | 2.79(1.0)      | 2.96(1.2)       | 2.78(1.2)      | 2.58(1.1)            | 3.12(1.2)            | 2.85(1.8)      |
| Family               | 3.85(1.8)      | 4.00(1.9)       | 3.96(1.9)      | 3.44(1.7)            | 4.05(1.7)            | 3.94(1.9)      |
| Friends              | 3.79(1.7)      | 3.86(1.9)       | 3.86(1.8)      | 3.55(1.7)            | 4.12(1.9)            | 3.83(1.8)      |



## Discussion

The current study intended to explore the role of social support and cognitive emotion regulation strategies in mental health outcomes of women behind bars. It was observed that majority of women prisoners belonged to economically disadvantaged groups (lower middle to lower socioeconomic background; 93.5 %) and were married. Literature had supported these statistics by reporting that people with low socioeconomic conditions indulge more criminal acts (Nicolau et al., 2012) and the majority (80%) of women inmates were married (Mitra & Agarwal, 2016). Demographics of the current study also reported that the majority of the female prisoners were not educated (63%), while only 14.5% completed school education. Achakzai et al. (2012), reported that 93% of women inmates in Baluchistan jails were illiterate, supported the findings of our research.

Initially, interrelationships for all the study variables through Pearson Product Moment Correlation were computed and the results showed that maladaptive cognitive emotion regulation strategies e.g. rumination and catastrophizing generally were more strongly associated with somatic symptoms followed by social dysfunction and severe depression. Blaming others was more strongly related to anxiety/insomnia as compared to other types. As negative response to stressful situation, both rumination and catastrophizing have been linked with development of psychopathological outcomes such as depression, anxiety and the somatic complaints as well (Enea et al., 2017). Correlation results (table 2) also showed that social support from significant others and friends had positive correlation with adaptive emotion regulation strategies. Keeping the positive affect regulation mechanism underlying adaptive strategies, we claim the findings to be consistent with the existing literature (Balogun, 2014) that provides evidence for positive correlation between social support and happiness among Nigerian inmates. Among maladaptive cognitive strategies of emotion regulation, only catastrophizing was found to be significantly correlated with support from the family. These findings go in line with (Cai et al., 2017) who concluded that along other variables psychological problems had significant association with negative emotion regulation strategies. Surprisingly, none of the other incompatible strategies correlated significantly with perceived social support among female prisoners (Dadi, 2019).

Table 2 further revealed that social support from all sources was negatively correlated with adverse mental health outcomes assessed through GHQ. Type and sources of social support can play different role in the course of psychopathological symptoms among imprisoned women. Supporting bonds in terms of significant others, are explored further to identify the actual source of such social support. Alves (2016) have also highlighted the importance of supporting bonds over primary bonds for female prisoners.

Table 3 reported that, social support (particularly support from significant others) significantly predicted adaptive coping strategies (other than acceptance), whereas perceived lack of social support from family members significantly predicted catastrophizing tendencies among female prisoners. These findings are consistent with the outcomes of existing literature on social support and cognitive emotion regulation strategies (Kiral et al., 2015). These coping strategies in turn played an important role for their adjustment. The existence of family support was the strongest predictor of cognitive functions and perceived unavailability of social support had an inverse relationship with cognitive emotion regulation strategies (Besser & Priel, 2010; Zhu, Hu & Efid, 2012). Other studies also supported the above findings that social support (both perceived and received) and cognitive emotion regulation strategies are important environmental and personal causal factors respectively (Alves, 2016).

The present study revealed that mental health of female prisoners is not associated with their social support from family and friends, suggesting the possible loss of their primary bonds (Celinska et al., 2022). Results from regression analysis (table 4) revealed that the perception of less social support (especially from significant others) also contributed remarkably towards the presence of mental health problems among participants. It was proposed that lack of support from significant others can lead female prisoners to develop insomnia, social dysfunction, somatic symptoms and severe depression. Yet, it is important to note that overall perceived support scores from family were higher than significant other (table 7). Hence it can be interpreted that even being lesser in magnitude, support from significant other has worthwhile contribution in emotion regulation, coping and resulting psychological health during imprisonment.

These findings may be explained in view of the existing literature that there was an association between social support and mental health of prison inmates. It was found that when the prisoners know that a network of people is available to provide physical and emotional support to them, during imprisonment and after release, there might be lesser chances to indulge in negative environmental stressors of imprisonment (Jamadar, 2012).

Step wise regression analysis (table 5) showed that, malfunctioned cognitive emotion regulation approaches for example catastrophising and rumination considerably predicted poor general mental health of female prisoners. Martin and Dahlen (2005), provided evidence for the above-mentioned findings by stating that the maladaptive cognitive emotion regulation strategies (especially catastrophizing and rumination) were the predictors of mental health problems. These findings were supported by Samyuktha and Sowmya, (2018) who reported that the percentage of female prisoners suffering with poor mental health conditions like neuroticism and psychoticism have always been high because of several internal factors (such as poor health, drug abuse and cognitive strategies to regulate emotions) and external factors (social support, poverty, jobless and stigmatization. Effect of age and Type of Imprisonment (TOI) on mental health (depression, anxiety, social dysfunction and somatic symptoms) of women prisoners were analyzed through Multivariate Analysis of Variance (MNOVA). The results (table 6) revealed main the age of female prisoners had an impact on depression. Findings are somewhat contrasting to the existing literature that reported middle-aged incarcerated women having a high risk of suffering from depression (Khan, 2012). Our result found more depressive tendencies among younger group that could be attributed to lesser maturity level and inability to handle stressful situation in early adulthood compared to later years of age. Hagan and Foster (2003) supported the above findings by reporting that criminal behaviors is prominent among early adults, it starts from minor rule breaking to major criminal acts. A parallel finding from our study itself explains the fact as how middle- aged female prisoners were better able to use adaptive strategy of positive reappraisal than the other two groups, indicating the role of this functional cognitive emotion regulation approach in avoiding deleterious impact of stressful environment.

Table 6 also showed significant main impact of the type of imprisonment on acceptance. Existing literature supported the findings by stating that prisoners manage their emotions through different coping mechanisms response strategies, selection of the situation- specific responses and positive reappraisal of the situation supported these findings (Laws & Crewe, 2015). Age groups did not differ on any other study variables. These findings supported the notion that the imprisonment causes negative cognitive and emotional impacts regardless of prisoners' age.

Moreover, results in table 6 for main effect of type of imprison yielded significant differences on social dysfunction, acceptance, self and others blame and all the three types of social support. Social dynamics seems to vary across convicts and under-trial female prisoners and present a complex picture. Despite having significantly greater perceived support, prisoners under-trial scored higher on social dysfunction. Greater support may serve as a ray of hope to them, yet social deprivation due to imprisonment causes perception of dysfunction. Moreover, this support seemingly prevented under-trial inmates to blame themselves or others for their plight, which was significantly higher in convicts. Convicted women showed greater levels of acceptance of their situation than under-trial women in jails did. Studies have also indicated that type of imprisonment had effect on self-blame (Khan, 2012). It is important take duration of imprisonment and stage of trial into account for drawing conclusions that are more accurate. Findings therefore, must be interpreted with caution.

### **Implications**

In the context of Pakistan, extant literature about female prisoners' environmental and psychosocial plight in the provinces of Sindh and Khyber-Pakhtunkhwa (Junejo & Sharif, 2019; Zakir, 2020) is available while data from Punjab are less documented. Hence, the existing document is a valuable addition to the existing works. Researchers across the world have advocated gender-specific mental health care for prisoners (United Nation office on Drug and Crime, 2012), and the present study may provide evidence for gender-specific mental health recommendations for Pakistani women in prisons. The findings of the study also suggest that women prisoners having mental health problems must be provided with range of psychological and emotional coping tools as part of intervention and rehabilitation programs.

Correctional and forensic psychologists must use strategies to address psychosocial adjustment and emotion regulation needs for dealing with female prisoners' mental health problems.

### Limitations and Suggestions

Although study is significant contribution to the field of psychology, but some limitations were also found. Sample size was limited due to short time period, issues of permission and accessibility. It is suggested to obtain a larger sample to generate results that are more generalizable and design longitudinal studies. Gender based conclusion could be better drawn by comparing men and women prisoners. A matched control group of non-offenders from general population would have provided better understanding. Because there is an overwhelming need to recognize the problems of females behind bars and to rehabilitate them accordingly, intervention studies are suggested. Problems other than mental health issues, such as sexual harassment and abuse, their physical health, and maltreatment should also be considered. Qualitative account of social support especially from significant others may enable the psychologists to identify specific support required for better psychosocial adjustment and improved wellbeing to avoid adverse outcomes of the stressful environment.

### Declaration

**Ethical Approval.** The study was approved by the Board of Studies of the Department of Applied Psychology, Government College University Faisalabad.

**Consent for Publications.** Consent approved by the authors.

**Availability of Data and Materials.** Contact corresponding author.

**Authors Contribution.** All authors contributed to the study equally.

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