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The Marital Relationship, and its Association with the Physical and Emotional Health of Women in a Low-Income Community of Mumbai, India

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Dedication and Acknowledgements

This thesis is dedicated to the memories of my beloved father Mohan Bahadur Thapa (08/31/1947 to 04/11/2017). My father was a constant source of inspiration to my life. Although he is not here to support me, I always feel his presence to urge me to face challenges with faith and humility.

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Introduction

Mental disorders are responsible for nearly 14% (450 million) of the disability-adjusted life years (DALYs), making them the second leading cause of the global burden of disease after cardiovascular disease. By 2020, they will account for nearly 15% of DALYs (Prince et al., 2007), with depression and anxiety being responsible for the largest proportion of global burden of disease (Murray, 1996). The World Health Organization (WHO) reported that by the end of century depression and anxiety threaten to become the most common mental illness, especially for women (Willenz, 2002). Globally, an estimated 73 million women experience depressive symptoms at least once a year (WHO, 2013). The mental health of women is particularly critical given their role in maintaining the health and well-being of families and communities (Stack, 1998).

Many married women in urban poor communities in India face challenges to their traditional role of maintaining the household as a result of the limited income generated by husbands. Many husbands must cope with insecure jobs, daily wage work and variable income that can undermine their traditional role as provider and head of the household. When spousal communication is limited and challenges mount, the result can have a negative impact on marital dynamics resulting in frequent arguments, intimate partner violence and extreme gender inequality (Jejeebhoy, 1998; Mehrotra et al., 2014; S. Schensul et al., 2018). At the same time, there is some evidence to suggest that couples with a more positive and equitable relationship seem to be more successful in coping with the challenges characteristic of low-income communities (Brault et al., 2018). The purpose of this thesis is to test the proposition that the quality

of the marital relationship has a significant bearing on the physical and emotional health of married women. This hypothesis is explored in an economically marginal community of 600,000 in Mumbai, India.

The data for this study was collected as a part of a project for prevention of HIV/STI among women conducted by the University of Connecticut School of Medicine and the Asia Regional Office of the International Center for Research on Women (ICRW) in Mumbai. The project involved a formative research phase leading to a randomized controlled trial (RCT) testing the efficacy of individual counseling and group couples' intervention. In the formative phase, in-depth interviews were conducted with 42 women and a total of 1,125 married women coming to an Urban Health Center (UHC) with vaginal discharge and related gynecological symptoms who were administered a comprehensive survey assessing health, mental health and social factors.

Women in Low-Income Communities

Over 50% of the total population of urban residents in India are living in officially-designated "slum" communities, informally organized settlements with substandard housing, inadequate roads, poor sanitation and a limited water supply (Karn et al., 2003). Housing in slum communities consists of *pucca* (permanent or organized structures) multi-residence buildings (*chawals*), semi-*pucca* (a combination of durable and found materials and *katccha* (constructed of found materials tarp, burlap and poles) that are crowded with little outdoor space and lack of privacy from one residence to another. The great majority of families live in a single room where cooking, eating, washing and sleeping occur in the same floor space. The families consist of couples

and children only, or extended families living together that may include in-laws, husband's siblings and families. The major problem of the community is availability of both water and the toilet facilities.

Due to a lack of employment and job training opportunities, men are dependent on low-skill daily wages job like auto-rickshaw driving, vegetables/fruits vendors and working as a transporter of goods and produce with hand drawn carts. These daily wages job may make sufficient income on one day and little or nothing on the next. As men are most frequently the sole provider for the family, this financial inconsistency creates economic hardship. The financial inconsistency of families translates into food insecurity, difficulty in supporting children's school fees, and lack of money for daughters' dowry expenses.

Young women are seen as a financial burden to the family. Daughters' education is rarely prioritized and they are often forced to drop out at early age to help in household chores and prepare for marriage. Due to financial concern, gender roles and cultural belief, many women enter marriage at an early age and move from being subservient to their fathers to being subservient to their husband and husband's family. Young women enter marriage with limited education and knowledge and are often ill prepared for challenges that come with the husband's dominance, sexuality, requirement for early conception and their status as a junior member of their husband's family (Weitzman, 2014). These young women usually lack life skills and are financially vulnerable, making their lives in their new role even more challenging (Weitzman, 2014). Women entering extended and joint family households co-reside with in-laws with multiple roles of wife, mother, and daughter-in-law and are expected to conceive

quickly and perform the household responsibilities of cooking, cleaning, fetching water and taking care of children, husband and in-laws (S. Schensul, Verma, et al., 2009).

However, due to limited space and security, the economical constraints, interpersonal dynamics the traditional pattern of arranged marriage for lower-income women in India is changing, challenging the dominant patrilocal family structures (George, 2002). The married couples may live together or move out of the nuclear or joint families depending on social and financial conditions of families(Allendorf, 2013). Studies have suggested that the transitions from joint to nuclear families are good for young married women because their health is better in nuclear families due to less work demand and household responsibilities (Santow, 1995; Vlassoff et al., 1998).

Though arranged marriages predominate, love marriage choosing their own partner, in the urban low income community is increasing influenced by globalized media and Hollywood and Bollywood romantic movies (Netting, 2010) . Love marriages are not always sanctioned by the families (Chowdhry, 2007; Donner, 2002; Netting, 2010). Love marriage may also be inter-cast and inter-religious further making it unacceptable to the society. Couples whose families oppose their choice of love marriage can face threats of physical and verbal abuse from the family and society (Allendorf, 2013; Chowdhry, 2007; Grover, 2009). While love marriages escapes some of the restrictions impose by the extended family, they also frequently lose family support.

Each type of marriage carries physical, sexual and emotional risks for women (Brault et al., 2018). Physical risks experienced by women include domestic violence from family and husband (Das et al., 2014). Sexual risks are from women's refusal for

sex on husband's demand and his forcing his wife for unwanted sexual acts (McDougall et al., 2011). The negative aspects of marriage contribute to women's stress (Maitra et al., 2015). Most frequently, stress is expressed in terms of physical symptoms. This phenomenon is described as somatization, a process through which an individual expresses psychological suffering, stress from underlying life problems and health issues through physical symptoms (Patel & Oomman, 1999). The process of somatization enables these women to seek medical help for culturally acceptable and non-stigmatized health problems.

One of the most frequent of these problems is *safed pani* (literally "white water" in Hindi) and referring to vaginal white discharge. It is the most common complaint of Indian women seeking treatment at an allopathic or non-allopathic health facility (Kostick et al., 2010). Past studies on women's health in India indicate that *safed pani is* an "idiom of distress" (Nichter, 1981) or as a "metaphors for psychological distress"(Nichter, 1981; Patel et al., 2007; Patel & Oomman, 1999; Winter et al., 2013).

Kamjori ("general state of weakness") is another physical symptom often reported together as an associated factor for *safed pani* (Patel & Oomman, 1999; Prasad et al., 2003; S. Schensul, Verma, et al., 2009). Along with *safed pani* women also mentioned the association of *kamjori* with stress and anxiety, food insecurity and financial hardship (Gittelsohn et al., 1994). *Kamjori* can include a number of psychological and physical symptoms including loss of appetite, difficulty with sleeping, headache, backache weakness" and tiredness/lack of capacity/loss of energy and generalized weakness (Patel & Oomman, 1999).

In recent years, *tenshun,* derived from the English term tension has been commonly used to describe emotional status (Maitra et al., 2015; L. J. Weaver, 2017). *Tenshun* is often used to describe the association of health problems and distress that includes a wide range of stress from day-to-day household challenges to severe mental illness (Chatterjee et al., 2008; R. Weaver, 2014). The symptoms to describe *tenshun* include “weakness” and tiredness/lack of capacity/loss of energy, sadness, worry (*chinta*), anxiety, *udasi/mayoosi* (depression) or “feeling of helplessness” (Karasz, 2005; Karasz, Dempsey, et al., 2007; Karasz & McKinley, 2007; Maitra et al., 2015; Pereira et al., 2007).

Tenshun was related to depression and anxiety symptoms among the diverse community in India (Ha et al., 2018). In one study women who reported chronic *tenshun* were more likely to have higher depressive symptoms scores on Hopkins Symptom Checklist-25 and on CSED scale (Ha et al., 2018; L. J. Weaver, 2017). These reported results support the view that the cultural concept of *tenshun* maps on to depressive symptoms as measured by standardized instruments. The cultural concept of *tenshun* provides an opportunity for women to describe their emotional status and avoid the stigma associated with mental illness. In this paper we measure emotional health with an Emotional Well-being Scale, a component of Subjective Well-Being Scale (SUBI) extensively used in India and thought as consistent with other scales for anxiety and depression (S. Schensul, Saggurti, et al., 2009). The SUBI emotional status scale published in 1992 has been used in number of studies in India and Sri-Lanka (Helmut, 2015; Maitra et al., 2015).

Women's Mental Health

Depression and anxiety disorders are also the most common mental illness among Indian women (Mathur, 2009). Although the women are more likely to experience these mental health problems they are less likely to get treatment when compared to men (Nurullah, 2010; Patel, 2007). Disadvantaged social status, the stigma of mental illness and the perception that depression and anxiety are not real problems contribute to failure to seek treatment (Kulesza et al., 2014). Furthermore, there exists a gender bias where male primary care providers fail to recognize the emotional problems in women patient (Malhotra et al., 2015).

Common Mental Disorder (CMD)

Common Mental Disorder (CMD) has been used to describe emotional symptoms which are commonly encountered in community and primary care settings, and whose occurrence signals a breakdown in normal functioning, but are often unrecognized (D. Goldberg et al., 1992; Ormel et al., 1994; Patel, Araya, et al., 1999; Patel et al., 2003; Risal, 2011). These clinical and subclinical symptoms interfere with daily routine and overall functioning of an individual causing significant impact on daily life (Maitra et al., 2015; WHO, 2001).

CMD usually manifests with a mixture of mild to moderate depression, anxiety and unexplained somatic symptoms. These disorder are classified under ICD-10 as "neurotic", "stress-related and somatoform disorders" and "mood disorders" (D. Goldberg, 1994; Ormel et al., 1994; Patel et al., 2003; Patel et al., 1998; W. H. O. WHO, 1992). The common presentations of CMD are somatic complaints with no bizarre behavior or personality changes (Fryers et al., 2003; Maitra et al., 2015; Patel et al.,

1998; Paykel et al., 1992). Common complaints of CMD include insomnia, fatigue, nervousness, depressive symptoms, feeling of hopelessness, irritability, forgetfulness, difficulty concentration and other nonspecific symptoms can lead to some degree of functional incapacity (Fonseca, 2008). Studies have also shown a close relationship between physical and CMD symptoms (Patel, Kirkwood, Pednekar, Weiss, et al., 2006).

Factors Associated with CMD

The National Mental Health Survey (NMHS) of India has estimated that about 10% of Indian population suffer from CMD, women being the most vulnerable group (Gururaj, 2015-2016). Women are 2 to 3 times at greater risk of suffering from CMD compared to men (Thara, 2001). Biological and hormonal factors related to their reproductive cycle increase women's vulnerability to CMD (Parry, 2000; Parry et al., 2003). However, a review by Piccinelli and Wilkinson 2000 found little evidence to support the role of hormones and biological mechanism in contributing to CMD among women. They found the presence of CMD related more to adverse life experiences and events and the limited coping skills of women who experienced these problems (Piccinelli et al., 2000; K. Rao et al., 2011).

Poverty is the most commonly identified factor responsible for CMD (Patel, Araya, et al., 1999). The emotional stress associated with poverty may impair an individual's ability to cope with economic hardship and can lead to a vicious cycle of despair and deprivation (Patel et al., 1998). Prior studies have concluded that women living in poverty with social and economic disadvantages are exposed to more stressful life experiences (Lund et al., 2010; Patel et al., 2003). Adverse life issues like living in crowded conditions, food insecurity, limited education, difficulty in performing daily

chores and limited access to running water in the home, are stressors contributing to CMD (Patel, 2006). “The double burden of gender disadvantage and poverty” increases the risk of CMD in Indian women, restricting their autonomy and limiting access to resources and social support (Patel, Kirkwood, Pednekar, Pereira, et al., 2006). This is particularly true among married women (Qadir et al., 2011).

In patriarchal societies where women are less empowered and gender roles are rigidly defined, women deviation from expected behavior as a result of CMD increases the risk of domestic violence (Jejeebhoy, 1998). A study conducted in Bangladesh found that women not meeting husband’s expectations in daily household chores were more vulnerable to intimate partner violence (IPV; (M. Khan et al., 2014). IPV is associated with depression, posttraumatic stress disorder, anxiety, low self-esteem and suicidal ideation (Hammett, 2017; Krug et al., 2002; Patel & Kirkwood, 2006; Patel, Kirkwood, Pednekar, Weiss, et al., 2006). Previous studies have estimated the prevalence rates of domestic violence in India to be in the range of 18%-70% (Ellsberg et al., 2008; Hassan et al., 2004). The multi-site household survey in India, International Clinical Epidemiology Network (INCLEN) found 40.3% of women reported being physically assaulted by their husband and in-laws at least once in their married life, and 43.5% of women experienced emotional violence in their lifetime (Ellsberg et al., 2008). The WHO multi country study on women’s health and domestic violence found that women who experienced partner violence at least once in their lives had more emotional distress, suicidal thoughts and suicidal attempts than non-abused women (Ellsberg et al., 2008).

Marriage and Emotional Health of Indian Women

Married women in India are more prone to psychological distress compared to single women (Patel & Kirkwood, 2006; Patel, Kirkwood, Pednekar, Weiss, et al., 2006). Research in High Income Countries (HICs) has shown that the quality of marital relationship has significant impact on physical and emotional wellbeing of the spouses (Robles et al., 2014). The degree of marital dissatisfaction has a detrimental effect on physical and emotional health (Lorenz et al., 2006). However, research in LMICs has only recently begun to investigate the relationship of marital quality and the mental health of women (Ruark, 2017).

A study conducted among married Pakistani Muslim women reported that elements of marital quality including “perceived social support”, “marital satisfaction” and “marital adjustment” are associated with emotional status which further influences women’s mental health. Perceived social support is found to enhance marital relationships by reducing marital distress, which further influences women’s mental health (Jaiswal, 2016). Lack of social support from husband, particularly husband’s help in household chores, has been shown to be negatively associated with wives psychological distress and marital dissatisfaction (Khawaja et al., 2007). Similarly, increased marital satisfaction is a protective factor against depression. It has also been suggested that higher and perceived dissatisfaction from marriage has been associated with increase risk of CMD (Chi, 2011; M Khan, 1998; Proulx, 2007; Qadir et al., 2005; Scorsolini-Comin et al., 2012).

Sinha and Mukherjee (1990) define marital adjustment, as “the state in which there is an overall feeling between husband and wife, of happiness and satisfaction with

their marriage and with each other". The marital adjustment problems could be due to psychological, social and biological stress in women as a result of adjusting to unique social role and responsibilities in new family, taking care of family, childbearing and motherhood role (Patel & Kirkwood, 2006; T. S. S. Rao, Nambi, S., Chandrashekhar, H., 2009).

Past literature on marital adjustment has identified various psychological, social, demographic and personal factors that are associated with marital adjustment and their impact on marital relationship (Manyam, 2014; Olson, 2011; Sandhya, 2009). The particular areas of adjustment for married couples are living with in-laws, work responsibilities, gender specific roles, financial management, child bearing and rearing, anger management and sexual relationship. Although, researchers focused on these factors influencing marital adjustment there is a limited information from India regarding stress from marital adjustment in contributing to the emotional status of women, emphasizing the need to explore this area (Jaiswal, 2016). The aim of this study is to help fill the gap in the evidence base, with the objective of describing the association between marital relationship and women's physical and emotional health.

Methods

The Parent Project

The data for this study was collected as a part of the women's project RISTHA (Research and Intervention in Sexual Health: Theory to Action), "The Prevention of HIV/STI among Married Women in Urban India (2007-2013;RO1 MH075678; S. Schensul, PI)", conducted from 2009-2013. This research project was Indo-US collaboration between School of Medicine, University of Connecticut and Asia

Regional Office of the International Center for Research on Women (ICRW) whose offices were located in Delhi and Mumbai. The project involved formative research phase leading to a randomized controlled trial (RCT) that tested the efficacy of individual counseling and group couples' intervention. RISTHA meaning "relationship" in Hindi and Urdu, is a multilevel project involving community level interventions focused on gender equity, the organization of Women Health Center (WHC) at the community's municipal urban health center (UHC) and the implementation of RCT.

The WHC was established in 2008 at UHC, which focused on providing care for women of reproductive age who came to UHC with vaginal discharge and related gynecological symptoms that include *safed pani*, burning micturition, lower abdominal pain, inguinal swelling, genital ulcers and itching. Along with gynecological examinations (including pelvic examination by female physicians from Topiwala National Medical College), healthcare worker in UHC provided STI/RTI testing, syndromic management, health education, sexual counseling, follow-up and referrals to higher-level centers for patients who were in need of further medical attention.

The Study Community

The project was conducted in a low-income, urban, "slum" community in the northeastern part of Mumbai, India with a total population of 600,000. This community consists primarily of Muslims (80%), Hindus (15%) and 5% of other religions, mainly Christian and Buddhists. Most of the residents were migrants (56.9%), coming from other parts of Indian States of Uttar Pradesh (51.2%), rural Maharashtra (22.2%) and Tamil Nadu (9.1%), with a 14 years the median length of time spent living in the community (Saggurti et al., 2009).

Men were the sole provider for the majority of households (63%), primarily involved in daily wages job such as driving auto rickshaws and trucks, masonry and carpentry work, working in local *zari* (golden embroidery) and selling fruits and vegetables on community streets. The employment rate is lower among women with 28% working for cash income both outside and inside the home, primarily involved in home based tailoring and sewing work. The average household income of a family was INR 5,900 per month (approximately US$100). According to a study the majority of the population (90%) lived in a single room houses, mostly in nuclear households with an average of 6 family members including children.

Recruitment

The participants for the study were recruited from the women coming to UHC with gynecological related symptoms. Women presenting with at least one of the six gynecological and related symptoms that included: burning micturition, vaginal discharge, genital itching, lower abdominal pain, inguinal swelling and genital ulcers were directed to WHC where further eligibility for the RISTHA project was established. The inclusion criteria for RCT included married women of reproductive age between 18-40 years, not pregnant or not having delivered a baby within last three months, living with their husband in the study community for at least a year, and presenting with at least one of the gynecological and related symptoms mentioned above. Regardless of their eligibility and consent to participate in the study, women were provided with standard care at WHC.

Once the women met the inclusion criteria, thumbprint impression or signed consent were obtained after explaining the purpose and aim of the study, randomization

methods, STI/RTI testing and participation in WSS survey. The consent was translated in Hindi, a common language of the participants. After appropriate consent for RCT, participants were enrolled in medical care from WHC and randomly assigned into one of the 4 groups along with medical treatment; individual counseling (IC), group couples intervention (CI), both individual and couple intervention (IC+CI) and a control group receiving only medical treatment. Among 11,757 women served by WHC, 5,770 were assessed for the eligibility of the project and 1,125 provided consent to participate in the study. A total of 556 women were randomly selected to receive treatment that included either individual counseling or the combination of individual counseling and group couples intervention.

The 1,125 married women who were recruited for RCT completed the Women Structure's Survey (WSS). Participants completed three WSS, the first at the time of recruitment, the second at six months (follow up) and the third at one year (post recruitment). The WSS instrument measured socio-demographic information with scales to measure household/couple's income, food insecurity, age at marriage, women's empowerment, couple communication, gender equitable norms, marital relationship, emotional status, women's health problem and other variables. The survey was completed from June 12, 2009 to March 31st; 2012.The quantitative data analysis for this study is based upon the baseline WSS survey of 1,125 participants.

Data Collection and Data Analysis

Qualitative Analysis

This study includes both qualitative and quantitative data collection. The qualitative interviews were conducted in 2-3 sessions lasting 1-1.5 hours each in private settings away from husbands and children. Interviews were conducted by trained female counselors who explored different domains of women's lives like socio demographic factor (including religion, education, income, family dynamics, financial conditions), marital relationship, emotional and physical health, social support, gender empowerment, sexual relationship etc. The data used in this project were collected at baseline, before interventions were implemented. For qualitative analysis, the sessions were transcribed and translated in English, and entered in ATLAS.Ti (Version 8), a qualitative research analysis tool. The code category was generated based on the project research model and analyzed using ATLAS.Ti. The qualitative data analysis synthesized information from 42 in-depth interviews with the study population. To better understand the relationship between different codes, families of codes were created. Multiple project staff coded the text and checked for the reliability.

Quantitative Analysis

Data from the WSS survey were entered and managed using quantitative data analysis software, i.e. SPSS software. The WSS survey explores the same domains of women lives as those addressed qualitatively. In addition, the WSS survey consisted of series of scales that measured emotional status, marital relationship (marital issues, couple's communication, husband's anger) and women's health problems. Descriptive analyses were conducted to study the distribution and frequency

of the emotional status of women and women's health problems. Binary logistic regression was conducted to assess the relationship between dichotomized emotional status and women's health problems variables with the independent variable marital relationship (marital issues, couple's communication and husband's anger).

Structural Equation Modeling (SEM) for pathway analysis was conducted using m-plus software (Muthen et al., 2017) between three constructs: Composite Marital Relationship Scale, Women's Health Problem Scale and Emotional Well-being Scale. For the pathway analysis "Emotional Well-being Scale" (α = 0.88) subscale of subjective wellbeing (SUBI) was used. The summarized score of responses as described above was used. This scale assessed the emotional status of women with a 3-point Likert scale (1= "Not so much", 2= "To some extent", 3= "Very Much"). The composite score for the scale was the mean of the recoded responses.

Composite Marital Relationship Scale (α = 0.71) was created by a summation of questionnaires from Marital Issues Scale, Husband Anger Scale and Couple's Communication Scale. Prior to summation, the three Point Likert scales of Marital Issue and Couples Communication were recoded into a two point Likert scale (1= "Yes", 2= "No").

Description and Operationalization of Variables

The analysis for this study utilized questions that explain women's emotional status (dependent variable), women's health problem (dependent variable) and marital relationship (independent variable). The interrelationship between the dependent and independent variable was examined by creating scales. The dependent variable emotional status of married women was assessed by an Emotional Status Scale, which

is a part of SUBI mostly used in international mental health studies particularly in India and Sri-Lanka (Sell, 1994). Similarly, another dependent variable women's health problem was assessed using Women's Health Problem Scale. The independent variable scales created was Marital Relationship Scale which includes Marital Issues Scale, Husband's Anger Scale and Couple's Communication Scale.

Dependent variables:

Consistent with literature, due to the close relationship of emotional health and women's health problem we are using both of these as dependent variables.

Emotional Status Scale (α = 0.88), a dependent variable scale was created by utilizing 9 items questionnaire from Emotional Status (Section 9) of WSS baseline survey. Emotional Well-being is a scale that assessed the emotional health of women with questions like *"Do you get easily upset if things don't turn out as expected?"* The response to questionnaires is a 3-point Likert (1= "Not so much", 2 = "To some extent", 3 = "Very Much"). Prior to computation of the composite score, negative responses were recoded to zero, midpoint responses recoded to 0.5 and positive responses were recoded to 1.0. The responses were then summed up to create a composite score representing emotional status. Due to the high skewness and model distribution of the scale at zero, the scale was transformed to a categorized variable by using the cutoff of 20.1 to distinguish into two groups: Group 1/Poor Emotional Status (20.1 and below) and Group 2/ Good Emotional Status (21 and above).

Women's Health Problem Scale (α = 0.80) was created combining 29 items from the Women's Health Problem Scale from the baseline WSS survey. Women's Physical Health Scale is a composite scale that measured the presence of women's

physical symptoms like backache, headache, dizziness, pain in the body, loss of appetite, chest pain, palpitations, pain in lower abdomen, swelling of glands in the groin, irregular menses, pain or cramps during menses, excessive bleeding from vagina, infertility, obstructed urine flow, pain while urinating, burning urination, white discharge from vagina, ulcers in and around vagina, itching in and around vagina, swelling in ankles, pain during intercourse, sexual dissatisfaction, loss of sexual desire, body weakness, sleeplessness, increased frequency of micturition, fatigue, lethargy and constipation. The responds to these questions were 1 = “Yes” and 2 = “No”. The composite score for the Women’s Physical Symptom Scale was calculated by taking the mean of these 29 responses.

Husband’s Help and Support scale (α = 0.82) is a composite 10-item scale that was created to measure the involvement of a husband in household chores helping his wife (study participants) in the last three months with a three-point Likert scale (1= R “Regularly”, 2= S “Sometimes” and 3= N “Never”). The household chores item included cooking, fetching water from common tap, washing clothes, washing utensils, home cleaning, taking family members to the doctor, purchasing vegetables and groceries, payment of electricity bill, going to shop and taking care of children. Negative response (lack of help and support) from the item was recoded to 0, midpoint responses were recoded as 0.5 and positive response or behaviors from husband were recoded to 1. Recoded responses from the item were summed up and their average was taken. Then, Husband’s Help and Support score was created with 1 the highest attainable measure and zero representing the lowest.

Food Insecurity Scale (α = 0.89) is a composite 4-item scale that is created to assess women's food security. The food insecurity scale included questions regarding going bed hungry and not enough food in household. The composite score for food insecurity scale was calculated by taking mean of all 4 responses.

Marital Relationship Scale (α = 0.71) is assessed with Marital Issue Scale, Husband's Anger Scale, and Couple's Communication Scale.

I. Marital Issues Scale (α = 0.77) is a composite 10-item scale from Tenshun created to measure the daily life stressors of married women with a three-point Likert scale (1= To a great extent, 2= To some extent and 3= Not at all). The marital issues item included concerns about household finances, relationship with in-laws, children (education, health, future), daughter (behavior, future marriage, etc.), pressure from husband or family to have children, reputation among neighbors (neighborhoods gossip), obtaining/preparing enough food for your family/self, relationship with natal family, water problem, unhealthy environment (bad smell, garbage, fly etc.). The Marital Issues Scale was created by calculating the mean of these responses with a higher score translating to more stress from marital issues.

II. Husband's Anger Scale (α = 0.76) was created combining five questions from Husband's Anger from baseline WSS survey. The Husband's Anger Scale is a composite scale that measured the reaction of husband when he gets angry. The husband's reaction towards wife upon getting angry included insulting and humiliating, yelling, criticizing, nagging and disagree with each other. The response to these questions included 3-point Likert scale (1= "Always", 2 =

"Sometimes" and 3 = "Never"). The composite score for Husband's Anger scale was calculated by taking mean of these 5 responses.

III. Couple's Communication Scale (α = 0.74) was created combining eight items questions from Communication from baseline WSS survey. Couple's Communication Scale is a composite scale that measured the communication between husband and wife on household issues. The communication on household issues consisted of suggestions about family matters, discussing sex freely, sharing problem and feelings with each other. The responses to Couple Communication Scale comprised of 3-point Likert scale (1= "Always", 2= "Sometimes" and 3= "Never"). The composite score for Couple's Communication Scale was calculated by taking mean of these 8 responses.

Results

The demographic characteristics of the sample are presented in **Table 1**.

Table 1. Demographics of WSS Baseline survey

Characteristics	Study populations
Sample size	1125
Mean Age (Range)	28.6 (18-40) years
Religion (Category) • Muslim • Hindu • Buddhist	 91.6% 8.1% 0.4%
Average family size	6.05 people
Mean Number of Children	2.63 living children
Mean Years of Education	5 years
Employment • Husband • Wife	 96.6% 25.4%
Average Monthly Income	4920 rupees (US 70.44$)

The mean completed age of 1,125 women enrolled in the RCT was 28.6 years old, with an average age at marriage of 17.7 years. The majority of the sampled women were Muslim. Though the community is approximately 80% Muslim, the baseline Women's Structured Survey sample is 91.6% Muslim. This disproportionate representation is due to the fact that the majority of the Muslim population in the study includes the poorest households, and private health care is very expensive. Most of them visit Urban Health Center due to its low cost. Among the total population, over 70.2% of the women live within a nuclear structure family with an average family size of 6.05 people and a mean of 2.63 living children.

The mean level of education was 5 years with 30.1% of illiterate and 20.8% completing school through grade 9 or more. In terms of household income, the majority

of men (96.6%) were employed and average monthly household income of 4,920 rupees (US$70.44).

Characterizing Emotional Status

To better understand the distribution of "Emotional Status" (Dependent variable), the frequencies of the 9 items on the scale are presented in **Table 2.** The value for Emotional Status ranges from 1 (*Very Much*) to 3 (*Not so much)* with a mean of 2.49 (standard deviation = 1.097 and skewness = 0.425). Due to the high skewness and model distribution of the scale at zero, the scale was transformed to categorized variable by using the cutoff of 20.1 to distinguish between two groups: Group 1/Poor Emotional Status (20.1 and below) and Group 2/Good Emotional Status (21 and above).

Table 2. Raw Responses of "Emotional Status" Scale Component Statement Percentage Results (n=1125)

Questionnaire from WSS survey	**Not so much % (3)**	**To Some Extent % (2)**	**Very Much % (1)**
Do you get easily upset if things do not turn out as expected?	14.8 (166)	28.0 (315)	57.2 (644)
Do you sometimes feel sad without reason?	38 (427)	37.5 (422)	24.5 (276)
Do you feel too easily irritated?	15.1(170)	28.7 (323)	56.2 (632)
Do you feel disturbed by feelings of anxiety and tension?	15 (169)	34 (382)	51 (574)
Do you feel your life is boring/uninteresting?	30.1(339)	32.6 (367)	37.2 (419)
Do you worry about the future?	12.4 (139)	23.5 (264)	64.2 (722)
Do you feel your life is useless?	33.5 (376)	32.1 (361)	34.4 (387)
Do you feel that minor things upset you more than necessary?	21.6 (243)	38.5 (433)	39.9 (449)
Do you get easily upset if you are criticized?	18.9 (213)	30.6 (344)	50.4 (566)

Table 2. More than 50% of women answered "Very much" to at least 5/9 questions that assessed Emotional Status.

Using, the qualitative data, we were able to better explore the emotional health of women. The concept of *tenshun* was used to investigate the ways in which women describe their emotional status. Women described *tenshun* as a combination of emotional and physical symptoms like irritation, helplessness, depression *(mayooshi)* headache, bodyache, sleeplessness, loss of appetite and palpitations. A small subset of women also reported to have suicidal thoughts. Some women attributed constant *tenshun* in their lives to deteriorating physical health, restricting themselves to perform their daily chores. While these issues themselves cannot cause ill physical health of women; they can prolong or aggravate the symptoms.

"When I am tensed I have headache. I cannot sleep well and I also feel very weak. I cry at the silliest thing and then feel everyone including my husband is saying things to me purposely to hurt me. Sometimes I feel very lonely too (22 years, married with one child)".

"These days I have started feeling very weak. I don't feel like doing any work nor do I feel like going out anywhere. I just feel like sleeping at home. I have started getting pain in my calf muscles. I cannot stand for long nor can I walk for long distances. I get irritated for no reason. I understand I should not do this to my children but then I cannot help it when I am irritated or angry. I think all this happens to me due to tension (30 years, married women with 2 children)."

"Sometimes when I am upset or tensed, I get angry very soon. Sometimes thoughts of suicide or running away from everyone come to my mind. Then I don't understand what to do. (36years, married with one child)."

Women with emotional difficulties seek help with physical symptoms rather than emotional complaints. However, the primary care provider is only aware of their physical symptoms and their underlying stressors for their emotional health is often unrecognized.

If I am upset or tensed I start having a headache. I have got a CT scan done at Bombay hospital. The doctor said that there is no problem. I also went to the eye specialist (aankh ka dactar) but then he too said that there was no problem

Women's Health Problems

In an effort to better understand how women's health problems are associated with the emotional health of women, it is important to first understand which health problems are reported by women in this study. Table 3 below, shows the frequencies of the health problems that were used to make the composite dependent variable scale, Women's Health Problem Scale.

Table 3. The raw responses for the questions that were used to create the Women's Health Problem Scale (n=1123)

Have your experienced the following symptoms in last 3 months?	Yes (Percent %)	No (Percent %)
Backache	947 (84.2)	176 (15.6)
Headache	937 (83.3)	186 (16.5)
Giddiness (Dizziness)	854 (75.9)	269 (23.9)
Pain in body	967(86)	156(13.9)
Loss of appetite	552 (49.1)	571 (50.8)
Chest pain	475 (42.2)	648 (57.6)
Palpitations	672(59.7)	451 (40.1)
Pain in the lower abdomen	772 (68.6)	351 (31.2)
Swelling of glands in the groin	256(22.8)	867 (77.1)
Irregular menses	365 (32.4)	758 (67.4)
Pain or cramps during menses	469 (41.7)	654 (58.1)
Excessive bleeding from vagina	243 (21.6)	880 (78.2)
Obstructed Urine flow	158 (14.0)	865 (85.8)
Pain while urinating	187 (16.6)	936 (83.2)
Burning urination	398 (35.4)	725 (64.4)
White discharge from vagina	1005 (89.3)	118 (10.5)
Ulcers in and around vagina	133 (11.8)	990 (88)
Itching in and around vagina	435 (38.7)	688 (61.2)
Swelling in ankles	222 (19.7)	901 (80.1)
Pain during intercourse	436 (38.8)	687 (61.1)
Loss of Sexual desire	435 (38.7)	688 (61.2)
Body Weakness	275 (24.4)	571 (50.8)

Sleeplessness	356 (31.6)	767 (68.2)
Fatigue	923 (82)	200 (17.8)
The Lethargy	846 (75.2)	277 (24.6)
Constipation	233 (20.7)	319 (28.4)

Relationship between Emotional Status of Women and Women's Health Problems

Binary logistic regression assessed the relationship between two dependent variables, Emotional Status of women and Women's Health Problems. The result of binary logistic model (Table 4.) shows that the relationship between Emotional status of women and Women's health problem is statistically significant ($p<0.001$). One unit increase in women's health problems resulted in 26.452 fold increase in odds of having poor emotional status.

Table 4. Logistic regression model of Emotional Status of Women and Women's Health Problems

Characteristics	B	Odds Ratio (95% CI)	*P* value
Women's Health Problems	3.275	26.452 (12.016-58.232)	<0.001

Health problem created significant *tenshun* among women. As a woman is unable to perform her duties and responsibilities due to her ill health the relationship with in-laws and husband is affected, which would cause her *tenshun*. Additionally, women reported to have significant *tenshun* over paying and obtaining health care due to financial strains. The women's health problem followed a cyclical pattern where her ill health would cause her *tenshun,*her *tenshun* would further aggravate her symptoms, making *tenshun* worst.

Sister, when my health is not well so I have tension. There is uneasiness in the whole body (Apa aise tabiyat thik nahi rahti tab tension ho jaata hai. saare badan me uljhan rahati hai (27 years married with 3 children).

The illnesses I mention earlier are all because I am very weak. I was not like this before I got married. I was very healthy and fine. Since I am married I have lots of tensions. All the tensions make my health very bad. Sometimes the medicines also do not help (28 years married with 3 children).

My health is not only disturbing the work in the house but it is also disturbing my relation with in-laws. Earlier I was very strong and could do all the work without any problem. Now a day with all these health problems I cannot do any work. This gives me tenshun…. (22 years married woman with two children).

Identification of Factors Associated with Emotional Health of Women

Binary logistic regression assessed the association between the independent variable that characterizes marital adjustment, couple's communication, husband's anger and emotional status and women's health problems. The results of binary logistic regression model (**Table 5.**) show that each one unit increase in marital adjustment resulted in a 1.18 fold increase in the odds of having poor emotional status; each one unit increase in husband's anger resulted in a 2.15 fold increase in odds of having poor emotional status; each one unit increase in women's health problems resulted in 1.52 fold increase in odds of having poor emotional status and each one unit decrease in couples communication resulted in 2.1 fold increase in odds of having poor emotional status.

Table 5. Logistic regression model of factors associated with Emotional Status of Women.

Characteristics	B	Odds Ratio (95% CI)	*P* value
Marital Issues	0.180	1.197 (1.136-1.262)	<0.001
Couple Communication	-0.772	0.46 (0.339-0.631)	<0.001
Husband's Anger	0.817	2.264 (1.733 -2.857)	<0.001
Couples Income	0.000	1.0 (1.0-1.1)	0.344
Women's Age at marriage	-0.22	0.979 (0.936 -1.023)	0.266
Food Insecurity	0.129	1.137 (0.827-1.565)	0.429
Husband help and support	0.135	1.145 (0.819-1.6)	0.429

None of the demographic variables like household income, food insecurity, ages at marriage were found statistically significant. Similarly, husbands help and support was found statistically not significant. CI: Confidence Interval, B: Coefficient, p: Statistical significance

Marital Relationship

Women mentioned a number of daily stressors of their marital relationship associated with *tenshun*. The major part of marital relationship that women discussed in qualitative interview were stress from marital issues, couple's communication and husband's anger. The stress from marital issues include minor issues like challenges of daily livings, to the biggest issues like financial anxiety, future of the children, health related stress and relationship issues with husbands and in laws. Of all the responses given by women for the cause of *tenshun*, marital issues regarding financial anxiety on maintaining the household, relationship issues with husbands and lack of marital

communication were the predominate responses. In addition, *tenshun* also impacted and aggravated marital communication and domestic violence, affecting marital relationship.

I have a lot of tension. I am tensed about my married life, I am tensed about my husband's behaviour, I am tensed about my mother-in-laws behaviour towards me and also about my elder sister's marriage. There is a lot to say but I am not very sure if you would like to hear to all this (mujhe bahut kehna hai magar mujhe paata nahi aapko aacha lagega ki nahi) (26 years married with 1 child)

Marital Issues

Marital issue, a component of marital relationship, includes stress from financial anxiety, living with in laws and children's future. The frustration of the financial situation was the major source of stress for many women in the study. Women who were compelled to maintain a household with limited finances were undergoing high degree of stress. The family's financial hardships were due to limited income of the husband, responsibilities of too many members in the family and dowry payment for their daughters. Women were restricted from working outside of the house. For the majority of women their attempts to work outside of the house to support the household income were not easily accepted by husbands.

Inadequacy of money is always a cause of tension. I just keep thinking about my tensions. I cannot do anything more than this. I have no one to talk to. I don't even go anywhere out to distract my mind. I just keep thinking and then trying to figure out different options. This leads to arguments with husband. (28 years married women with 2 children)

I did it. If some work comes in hand he works but there is no fixed income. I tell him sometimes that I could do some work like Thread cutting, folding clothes or house work. I used to do household work at others place before marriage. But he does not allow. He says that there is no need to do any such work. 'You do not need to work. I am still alive and bring the money from anywhere (tumhe kam karne ki koi zaroorat nahi. Abi mai

mara nahi hu. Jab tak zinda hu mai hi paise launga chahe kahi se bhi lau)(25 years married with 2 children).

The financial anxiety and women's restrictions on working outside of the home act as sources of *tenshun,* which lead to arguments and harsh words affecting marital dynamics. When the relationships with husbands are negative and spousal communications are difficult the stress from financial hardship affect women more, resulting in significant *tenshun.*

This upsets me a lot. But my husband keeps telling me not to get upset, as this is the way life is. He cannot see me being upset (36 years married with 1 child).

When I am tensed, I talk to my husband. He makes me understand. He says its useless taking tension as all that is in one's destiny will happen ……. Everyone does not get everything in life. So one has to be happy with whatever one has. I at least have a good husband. The other tensions will go with time (22 years married with one child).

Similarly, children-related concerns are another cause of stress for women. Examples of children-related concerns included ensuring good education, health and future of their children and timely arrangement of dowry related money for daughter's marriage. Some women worked outside of home to support household income and dowry related expenses. However, women working outside of house without husband's permission created disagreement and fights between couples.

Biggest tension I have is upbringing of so many children. They are five of them now. I am worried if we (my husband and me) will be able to fulfill all their needs (29 years married women with 4 children).

I am tensed about my children's future. Now daughter is growing up. I have tension of her marriage. We have to give lot of dowry. Because of it I am doing this work. I will make ornaments from that money. Sometimes quarrel takes place at home. Husband doubts on me and does not allow me to talk with anybody. I have tension of all those things (25 years married women with 3 children).

Living with in laws in the same household is a significant challenge for Indian Women. Women experienced distress while dealing with the relationship with in laws while adjusting to their new homes and new family and greater responsibilities. Furthermore, the husband inability to support his wife in the family disputes affected marital relationship as well as her emotional health.

Mother-in-law creates problems in my life. My mother in law told me to leave her house with the children. They complained against me to my husband. So in the morning he also started verbally abusing me (galat salat kahne lage). I do not have anybody here to go to and share my feelings ….I feel lonely (34 years married woman with 7 children).

When a woman is unable to perform her duties and responsibilities due to her ill health the relationship with in laws and husbands are affected. Furthermore, the financial cost associated with women's health is a big burden for a family who is already struggling with financial crisis. These problems with in laws are a main cause of husband and wives conflict leading to physical violence; Even after physical violence women are forced to stay with husbands due to their financial dependency on husbands and for the future of their children.

The same routine had resumed- my mother-in-law complaining to my husband and my husband hitting me, this has continued till date. He still beats me listening to my mother-in-law (32 years married woman with 2 children).

Couple Communication

In marital relationships with good communication women were more empowered and possessed autonomy in household decision-making. Also for those relationships in which there is good marital communication, the marital relationship acts as an effective strategy in reducing finance related *tenshun.* The women with good marital communication also experienced lesser couple's conflicts and fights. These couples

don't communicate on their conflicting issues and preferred to keep quite. As a result domestic violence was absent among these couples whereas poor communication led to anger, verbal abuse and domestic violence among couples. Women who lacked good spousal communication reported a higher level of domestic violence. Stressors from domestic violence created significant *tenshun* among women.

Me and my husband both get stressed but sabar karke rahte hain (have patience), there are expenditures to be fulfilled every month, like the school fees, rent, etc. We talk and discuss things very little as my husband does not like to talk much (32 years married women with 5 children).

I make all major decisions in the family.... my husband gives all his salary to my hand every month. We are taking each decision with after discussing with each other. My husband is very understanding, loving, caring, and supportive. He takes concern for any of my issues There is no violence. My husband is very calm and quiet, very rare does he get angry (28 years married women with 2 children)

Husband's Anger

Husband's anger causes significant *tenshun* for women. Concerns about household chores, finances, children and in-laws were the cause for the husband's anger. Husband's anger resulted in abusive words, yelling and violence. In order to avoid husband's anger and violence women limited their communication with husband further affecting their marital relationship.

Quarrel and fight take place due to the household work. He beats in such a way that body pain and I do not wish to get up in the morning. I get tension because of all these things….(28 years married women with 2 children)

I told him to find work and get money. So he started shouting at me. He said nobody gives him work. He said he couldn't work now. He was shouting at me and abusing me. Then he ran towards me to hit me (26 years married women with 1 child).

If ever I try to talk to him on any issue it turns into an argument and finally he beating me. When my husband himself is the major source of tension for me, you think I will be able to talk to him about it? …..You are talking about talking to him about my tensions; I

cannot talk to him even about my necessities (28 years married with 3 children).

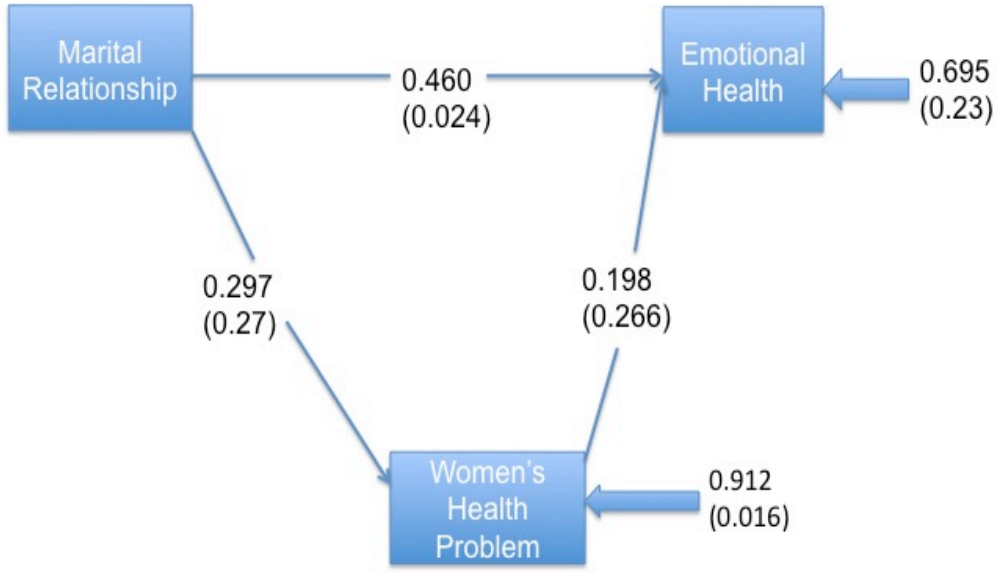
Marital Relationship as a Pathway to Emotional Health of Indian Women

The qualitative data showed a notable association of emotional status (as defined by *tenshun*) with marital relationship. However, the marital relationship pathway to emotional status is yet to established. To see the association, we studied the relationship between marital relationship, women's health problem and emotional status. We hypothesized that those women with poor marital relationship usually present with health problems leading to poor emotional health.

The result showed that significant association between all three direct outcomes ($p<0.001$): Marital relationship with Women's health problem (unstandardized b=0.012, β=0.198), Marital relationship with Emotional Status (unstandardized b=0.06, β=0.46), Women's health problems with Emotional Status (unstandardized b=0.665, β=0.912). Furthermore, the indirect outcome of Marital relationship on Emotional status via Women's health problem was also significant (unstandardized b=0.08, β= 0.059). The model for pathway analysis is depicted in figure 1.

Figure 1. Shows schematic description of path analysis. The raw correlation between Marital relationship and Emotional status is r= 0.519, raw correlation between Women's health problem and Emotional status is, r= 0.334 and raw correlation between Women's health problem and Marital relationship is r= 0.297.

Figure 1. Marital Relationship as a pathway to Emotional Health and Women's health problem



The values shown are path coefficients and standard errors (in parenthesis). All the relationships are statistically significant (p<0.001).

We used qualitative data to better describe this pathway. When asked about the onset and duration of tensions, women mentioned that they had normal lives before marriage and tensions started soon after their marriage. However, the duration of tensions varied among these women. For some women it is acute in onset, triggered by some stressful events like an argument with their husband or mother in law or a financial crisis while for others it's chronic and constant, going for many years, although it might fluctuate in severity.

I was perfectly fine before marriage. Since I am married I have lots of tensions. All the tensions make my health very bad … (28 years married with 3 children)

I had tensions in between when my husband was leaving for Saudi. I was worried for finances …. (25years, married 2 two children)

In the world all have loan on them we are also one of them. This is also one tension. Till we are alive the tension is going to continue. These tensions are making me weak... (26 years married with 2 children).

Discussion

Living in a 'slum" community comes with many challenges including limited residential space, tightly packed households, inconsistent water supply, poor sanitation, undeveloped lanes, standing pools of water in the monsoons and blowing dust and heat in the dry seasons. Most families living in these communities have limited and inconsistent income creating further challenges for adequate family nutrition, school fees, and expenses associated with the marriage of children and resources for improvement of living conditions. The research literature on marital relationships in these communities has emphasized a patriarchal determined early marriage and husband dominance over wives resulting in immediate conception, minimal autonomy with regard to mobility, sexuality and decision making exacerbated by poverty. The end result is poor physical health and mental health for women in these communities.

This thesis presents a more nuanced picture of women's participation in the marital relationship and its impact on health and mental health outcomes in urban poor, "slum communities". The result from the study showed more variation in association of factors contributing to the emotional status of women than is typically reported in the literature. The principal finding of the study is that despite all the challenges of living in a slum community and having to cope with limited income, it was the nature of the

marital relationship that was significantly associated with the physical and mental health of women.

The close relationship of primarily subclinical physical symptoms with emotional status was affirmed with results from binary logistic regression. The result from binary logistic regression found that elevated women's health problems were statistically associated with the poor emotional status of women, a pattern consistent with previous studies in India and other low-income countries (Hallowell, 2014; Rashid, 2007). The qualitative data illustrated how women's health problems contributed to their *tenshun*. Women's *tenshun* resulted from their inability to perform household work due to ill health and financial stress for the treatment of their health problem. The health problem followed a cyclical pattern where a poor health condition contributed to *tenshun* in women; the *tenshun* would further exacerbate the ill health, increasing women's *tenshun.*

The path analysis showed two significant pathways: first a direct relationship between marital relationship and emotional status and second an indirect pathway from marital relationship to women's health problems to emotional status. This pathway analysis supports those women with underlying daily lives stressors from marriage present with physical symptoms that could affect their emotional health. These results are important because early recognition of *tenshun* associated with presenting women's health problems can prevent the burden of mental health problems among Indian women as well as to help improve their emotional status.

The cultural concept of *tenshun* provided an appropriate and culturally acceptable way of communicating with women concerning their emotional and physical

health. The use of the concept of *tenshun* by the interviewer to start the conversation about the mental health issues among women avoided the stigma associated with mental illness while assessing the emotional health of women. *Tenshun* in this study was described as both acute and chronic with subclinical physical symptoms as headache, palpitations, loss of appetite and sleeplessness combined with feelings of irritation, helplessness and depression.

In the qualitative interview when women discussed their emotional health, the greatest part of the *tenshun* was from women's physical health and poor marital relationship. The factors that measure the quality of the marital relationship and show an association with women's physical and emotional health are marital issues, couples communication and husband's anger. Couples who had better marital relationship had better equity, good couple communication, joint decision making in household, along with lack of intimate partner violence which in turn resulted in better women's physical and emotional health.

The result from the logistic regression found that as the stress from marital issues, couple's communication and husband's anger improved, so did women's emotional status. The in-depth interview data further showed that good couple communication was helpful in maintaining effective marital relationship even while facing the challenges of characteristics of low-income communities. Women with positive relation and good couple communication reported to have lesser *tenshun* from financial anxiety, daughter's marriage related dowry burden, children's future and stress from relationship with in-laws. Better couple communication also reduced husband's anger, incidences of domestic violence and women's health problem.

In summary, this paper concludes that the marital relationship is the dominant part of women's life, particularly in patriarchal Indian society. Thus, a poor marital relationship with marital issues, limited or no couple communication and husband's anger have a serious detrimental impact on overall women's health.

Future Recommendation

The results of the study suggest that improving the physical and emotional health of women requires a holistic approach of management that addresses inequitable gender norms and marital and social relationships that affect their overall health of women. A multilevel intervention that addresses these factors at three different ecological levels would be a better recommendation for future.

At the individual level, there are various ways to address the marital and social factors that affect the women's emotional and physical health. As the underlying stressor for emotional problems is often missed in the primary care settings, the health care provider can be trained to identify women seeking treatment with somatic symptoms with underlying stressors. While addressing the physical symptoms, health care providers should also assess their emotional status and marital and social life. Once the health care staff identify these women, they should be prepared to provide counseling regarding emotional health and discuss the ways to reduce *tenshun* and develop coping skills to deal these stressors effectively.

At the couple's level, while treating women's physical symptoms health care providers should work to improve marital relationships through couple counseling. The couple counseling should be focused on the importance of marital communication and

gender equity within the marriage in addressing the challenges of marital issues. During counseling healthcare workers should work with the couple to find different positive ways of coping with daily stressors to improve their marital relationship. Through counseling the health care worker should make couples aware of their own and their partner's emotional health and encourage treatment-seeking behavior for these conditions.

And finally, at the community level, community partnerships with NGOs and healthcare organizations could be done to improve the overall health of women. These organizations should work collaboratively with community based organizations, Muslims religious sectors and individuals involved in services to residents like *anganwadi* or healthcare workers to change the social structure of early marriage, gender inequity within marriage, and reduce the burden of social consequences of economic marginality while living within patriarchal societies (S. L. Schensul et al., 2015). To improve marital dynamics these organization should promote women's empowerment, gender equity within marriage, women's decision-making power and societal status of women through education and training.

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Table 1. Demographics of WSS Baseline survey

Characteristics	Study populations
Sample size	1125
Mean Age (Range)	28.6 (18-40) years
Religion (Category) • Muslim • Hindu • Buddhist	 91.6% 8.1% 0.4%
Average family size	6.05 people
Mean Number of Children	2.63 living children
Mean Years of Education	5 years
Employment • Husband • Wife	 96.6% 25.4%
Average Monthly Income	4920 rupees (US 70.44$)

Table 2. Raw Responses of "Emotional Status" Scale Component Statement Percentage Results (n=1125)

Questionnaire from WSS survey	**Not so much % (3)**	**To Some Extent % (2)**	**Very Much % (1)**
Do you get easily upset if things do not turn out as expected?	14.8 (166)	28.0 (315)	57.2 (644)
Do you sometimes feel sad without reason?	38 (427)	37.5 (422)	24.5 (276)
Do you feel too easily irritated?	15.1(170)	28.7 (323)	56.2 (632)
Do you feel disturbed by feelings of anxiety and tension?	15 (169)	34 (382)	51 (574)
Do you feel your life is boring/uninteresting?	30.1(339)	32.6 (367)	37.2 (419)
Do you worry about the future?	12.4 (139)	23.5 (264)	64.2 (722)
Do you feel your life is useless?	33.5 (376)	32.1 (361)	34.4 (387)
Do you feel that minor things upset you more than necessary?	21.6 (243)	38.5 (433)	39.9 (449)
Do you get easily upset if you are criticized?	18.9 (213)	30.6 (344)	50.4 (566)

Table 2. More than 50% of women answered " Very much" to at least 5/9 questions that assessed Emotional Status.

Table 3. The raw responses for the questions that were used to create the Women's Health Problem Scale (n=1123)

Have your experienced the following symptoms in last 3 months?	Yes (Percent %)	No (Percent %)
Backache	947 (84.2)	176 (15.6)
Headache	937 (83.3)	186 (16.5)
Giddiness (Dizziness)	854 (75.9)	269 (23.9)
Pain in body	967(86)	156(13.9)
Loss of appetite	552 (49.1)	571 (50.8)
Chest pain	475 (42.2)	648 (57.6)
Palpitations	672(59.7)	451 (40.1)
Pain in the lower abdomen	772 (68.6)	351 (31.2)
Swelling of glands in the groin	256(22.8)	867 (77.1)
Irregular menses	365 (32.4)	758 (67.4)
Pain or cramps during menses	469 (41.7)	654 (58.1)
Excessive bleeding from vagina	243 (21.6)	880 (78.2)
Obstructed Urine flow	158 (14.0)	865 (85.8)
Pain while urinating	187 (16.6)	936 (83.2)
Burning urination	398 (35.4)	725 (64.4)
White discharge from vagina	1005 (89.3)	118 (10.5)
Ulcers in and around vagina	133 (11.8)	990 (88)
Itching in and around vagina	435 (38.7)	688 (61.2)
Swelling in ankles	222 (19.7)	901 (80.1)
Pain during intercourse	436 (38.8)	687 (61.1)
Loss of Sexual desire	435 (38.7)	688 (61.2)
Body Weakness	275 (24.4)	571 (50.8)
Sleeplessness	356 (31.6)	767 (68.2)
Fatigue	923 (82)	200 (17.8)
The Lethargy	846 (75.2)	277 (24.6)
Constipation	233 (20.7)	319 (28.4)

Table 4. Logistic regression model of Emotional Status of Women and Women's Health Problems

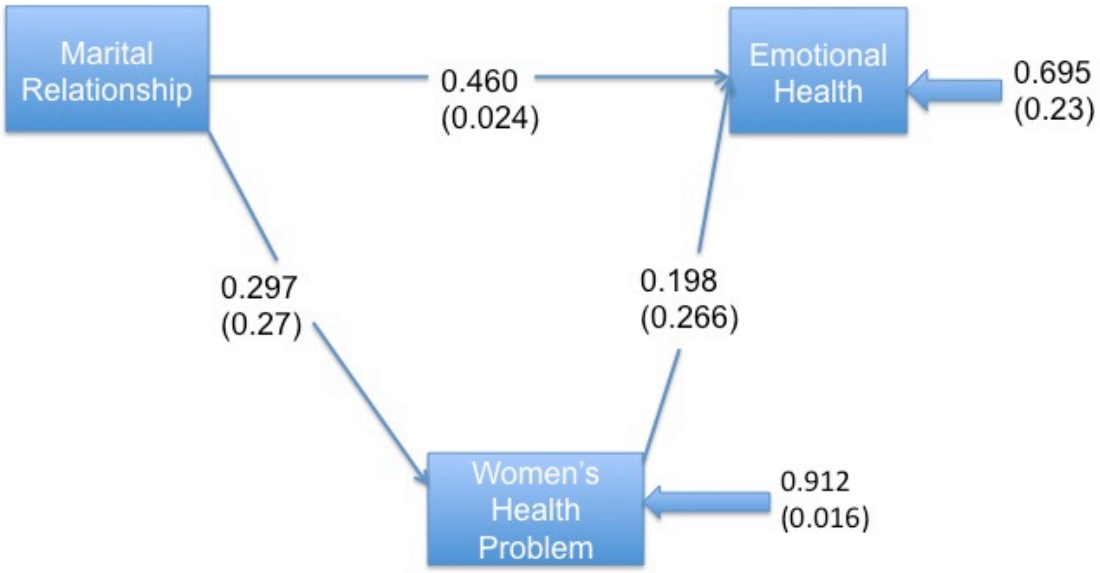
Characteristics	B	Odds Ratio (95% CI)	*P* value
Women's Health Problems	3.275	26.452 (12.016-58.232)	<0.001

Table 5. Logistic regression model of factors associated with Emotional Status of Women.

Characteristics	B	Odds Ratio (95% CI)	*P* value
Marital Adjustment	0.180	1.197 (1.136-1.262)	<0.001
Couple Communication	-0.772	0.46 (0.339-0.631)	<0.001
Husband's Anger	0.817	2.264 (1.733 -2.857)	<0.001
Couples Income	0.000	1.0 (1.0-1.1)	0.344
Women's Age at marriage	-0.22	0.979 (0.936 -1.023)	0.266
Food Insecurity	0.129	1.137 (0.827-1.565)	0.429
Husband help and support	0.135	1.145 (0.819-1.6)	0.429

None of the demographic variables like household income, food insecurity, ages at marriage were found statistically significant. Similarly, husband help and support was found statistically not significant. CI: Confidence Interval, B: Coefficient, p: Statistical significance

Figure 1. Marital Relationship as a pathway to Emotional Health and Women's health problem.



Marital Relationship is a composite scale of Marital issues, Couple communication and Husband's Anger.

The values shown are path coefficients and standard errors (in parenthesis). All the relationships are statistically significant ($p<0.001$).