

Reliability and Validity of the Masculine Subordination to Women Stress Scale in a Rural Bangladesh Sample

K. M. Rabiul Karim

Abstract—The purpose of this study was to examine the reliability and validity of the Masculine Subordination-to-women Stress Scale (MSS) in the rural Bangladeshi population. The scale was validated using a sample of 342 Bangladeshi married men from 5 northwest villages of the country. Exploratory factor analysis revealed a single-factorial structure of the scale: masculine subordination-to-women stress. The MSS also showed adequate reliability and concurrent validity. It appears that the MSS is a reliable and valid instrument to measure masculine subordination-to-women stress for Bangladeshi men. However, further study of the scale is imperative.

Keywords—Reliability, Validity, Masculine Subordination-to-women Stress, and Bangladeshi Rural Men.

I. INTRODUCTION

MASCULINE stress is one of the central issues in the discussion of masculinity, men's health and their social relationships. Studies have showed that the men who experience higher levels of masculine stress are more likely to engage in verbally and physically abusive behaviors [1]-[3].

Masculine subordination-to-women stress (MSS) is the stress that men appraise when they find themselves in the situation that they are about to be subordinated to women [4]. Studies [1], [2], [4], [5] suggest that MSS is a crucial variable in the study of women's changing status, dominance and marital violence. The proposition of MSS implies that men will appraise stress in situations where they will perceive a threat to their masculine identity; e.g. a threat to the loss of their patriarchal family authority [6]. And, stress and coping theory proposes that married men may cope with their stress by abusing their wives [7]-[11]. In the context of rural Bangladesh, studies also indicate that women's changing status and a challenge to patriarchal dominance can increase the appraisal of MSS among men, which may in turn increase the frequency of marital violence [1], [2], [5], [12], [13]. However, there had been a lack of validated scale to measure MSS in the Bangladesh context, though it is necessary in the study of women's changing role, masculine health and marital violence. The aim of this study is to examine the reliability and validity of a Likert-type scale to measure Masculine Subordination-to-women Stress in a sample with Bangladeshi rural men.

II. MASCULE SUBORDINATION-TO-WOMEN STRESS: CONCEPTUALIZATION AND MEASUREMENT

Measures of 'masculine stress' assess the extent to which men appraise stress when failing to uphold traditional masculine standards [4]. And the measures of 'masculine subordination-to-women stress (MSS)' assess the level of masculine gender role stress appraisal among men when they are supposed to be subordinated to women [4]. The Masculine Subordination-to-women Stress Scale (MSS) validated in this study was adapted from the Masculine Gender Role Stress (MGRS) Scale developed by Eisler and Skidmore [4].

The MGRS scale was developed to assess the level of cognitive stress appraisal among men when they are not able to uphold their socially expected masculine identity [4], [5]. The original 40-item MGRS scale has five inter-related factors: 1) physical inadequacy – stress appraisal related to the situation when men are unable to maintain a socially preferred – manly – physical appearance, 2) emotional inexpressiveness – stress appraisal related to the situation where men are unable to express their emotions, 3) subordination to women – stress appraisal related to the situation where men are supposed to be subordinated to women, 4) intellectual inferiority – stress appraisal related to the situation when men are exposed as less intelligent than their friends or colleagues, and 5) performance failure – stress appraisal related to the situation where men fail in their occupational or sexual performances [4].

The MSS sub-scale of the MGRS scale validated in this study had 9 observable variables or items [4]. Each item was measured on a 6-point Likert-type scale ranging from 0 = "not stressful at all", to 5 = "extremely stressful". The summation of all the scores of the items was expected to provide a composite score of the degree of masculine subordination-to-women stress (MSS); with a higher score indicating a greater degree of MSS among the studied men.

The MSS scale (adapted from the MGRS scale) has been used considerably in many studies focusing on men's aggressive behaviors [1], [3]. The scale also demonstrated a high test-retest reliability over a two-week period, $r = .93$ [6]. It also provided support for good internal consistency reliability, $\alpha = .90$ [14]. The construct validity – the factorial structure of the scale was also supported in other studies [15]. Regarding concurrent validity, the scale also demonstrated significant relationship with the Revised Conflict Tactics Scale (CTS2) and with men's physical aggressive behavior [1], [16]. However, the scale had not been validated in the Bangladesh context, though a validated MSS scale is needed to study

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masculine health and their violent behaviors in the context of women's increasing participation in the labor market and so their changing socioeconomic position as household provider in the country.

The purpose of the present study is therefore to explore the factor structure of the Masculine Subordination-to-women Stress Scale (MSS) and its psychometric properties with specific reference to reliability and concurrent validity. Since the Masculine Gender Role Stress Scale is originally developed in the Western context, it is of great worth to extend this scale to a Bangladesh sample with different cultures in providing evidence of generalization.

III. DATA AND METHODS

A. Introduction

The validation of the Masculine Subordination-to-women Stress Scale (MSS) was carried out as part of a larger study, "Gender Ideology, Microcredit Participation and Marital Violence against Women in Rural Bangladesh", conducted in 2009. The focus of the main study was to examine a causal path related to the influence of husband's gender ideology on their violence behaviors, operating through women's microcredit participation leading to their changing status, household dominance, and masculine subordination-to-women stress.

B. Study Participants

The study participants were currently married men from five villages of Paba – a typical sub-district of northwest Bangladesh. The total number of married men in the villages was enlisted at 1367. Therefore a simple random sampling procedure was followed to determine the sample size, which gave each married man in the area an equal chance to be selected [17]. The minimum required sample size was estimated at 310 [18]:

$$\text{Sample size: } n = \frac{N}{1 + N(e)^2} = 309.45$$

where, n = sample size

N = total number of married men (= 1367)

e = the level of precision (assuming 5 %) = .05

However, considering the possibility of withdrawal and non-consent of some study participants, a sample pool was created with a 20% oversample [17]. In total, 376 married men were therefore included in the sample pool. Simple random numbers were used to select the 376 married men from the sample list [19]. However, only 342 of them successfully completed the interview; and so these 342 men's data were included in the final analysis.

The married men included in the study were from 20 to 65 years. The range of their marital duration with their current wife was from 1 to 49 years. On the average, couples had 2.26 children ($SD = 1.31$). By religion, most of the participants (95.9%, $N = 328$) were from Muslim families. 31.6% ($N = 108$) of the men did not attend any school, 53.8% ($N = 184$) completed less than Secondary School Certificate (SSC) (<10

years) level education, and only 14.5 % ($N = 50$) attended higher level of education (\geq SSC). By landholding size, 36% ($N = 123$) households were landless, 45% ($N = 154$) owned less than 3 *bigha* (99 decimals) of land, and only 19% ($N = 65$) owned 3 *bigha* and more (\geq 99 decimals) of land (see Table I). Landless are the poorest households as they live on off/non-farm occupations. The households owning less than 3 *bigha* of land are classified as marginal/subsistence peasant households, as they mostly combine cultivation and other off/non-farm activities for subsistence. And the households owning 3 *bigha* or more of land are considered rich farming households [20], [21].

TABLE I
SAMPLE PROFILE AND DESCRIPTIVE STATISTICS

Variables	M	SD
Men's Age (Yrs.)	36.76	10.89
Wife's Age (Yrs.)	29.93	9.42
Years Married	14.93	10.35
Number of Children	2.26	1.31
Religion	N=342	%
Muslim	328	95.9
Non-Muslim	14	4.1
Family Type		
Nuclear	286	83.6
Joint	56	16.4
Household Landholding		
Landless	123	36.0
Marginal	154	45.0
Better-off	65	19.0
Husband's Education		
No Schooling	108	31.6
Up to SSC (X)	184	53.8
SSC and Above	50	14.6
Wife's Education		
No Schooling	58	17
Up to SSC (X)	248	72.5
SSC and Above	36	10.5
Women's Microcredit Participation		
Non-participation	167	48.8
Nominal Participation	142	41.5
Active Participation	33	9.6
Husband's Monthly Income		
Less than Tk. 3000	167	48.8
Tk. 3000 – Tk. 4999	115	33.6
Tk. 5000 and Above	60	17.5
Wife's Monthly Income		
No Cash Income	177	51.8
Less than Tk. 500	95	27.8
Tk. 500 and Above	70	20.5
Wife's Relative Income		
0% of Couple's Income	177	51.8
1-20% of Couple's Income	89	26.0
>20% of Couple's Income*	76	22.2

*These 76 wives were regarded household co-breadwinners

51.2% ($N = 175$) of the women (wives of the study participants) took a loan and maintained a loan-account with a microcredit organization for more than a year. However, only

9.6% ($N = 33$) of the women were active microcredit participants – where the woman herself used the loan toward an income-generating enterprise(s). The largest portion of the men (48.8%, $N = 167$) were earning below the poverty line with a monthly income of less than Tk. 3000.00 [22]. Regarding wife's income, only 22.2% ($N = 76$) women had a significant income – regarded as the co-breadwinners of the households (see Table I).

C. Study Measures

To establish the concurrent validity of the Masculine Subordination-to-women Stress Scale (MSS), data on other scales namely: The Attitude toward Women Scale (AWS) and The Marital Violence against Women Scale (MVW) were also taken into account.

1. Gender Ideology– Attitude toward Women

Men's gendered ideology was measured using a scale called the Attitude toward Women Scale (AWS), 25-item short version [23], [24]. The AWS was developed to assess people's attitudes toward women's socioeconomic roles and rights in six areas: vocational, educational and intellectual; the freedom and independence rights of women compared to men in society; the acceptability of various dating behaviors for men and women; the acceptability of drinking behaviors, swearing and joke-telling behaviors; the issue of premarital sex; and attitudes toward marital relationships and family obligations [24], [25]. The following is the example of an item included in the scale: "A woman should not expect to go to exactly the same places or to have quite the same freedom of action as a man". However, each item of the scale was scored on a 4-point Likert-type scale ranging from 0 = most conservative view (strongly agree), to 3 = most liberal view (strongly disagree). Summated scores across items yield a total score ranging from 0 to 75, where a lower score indicates a conservative gendered ideology. The Attitude toward Women Scale (AWS) was a widely used scale to measure men's gendered ideology in the western context [26]. Within the context of the current study – the main study, the AWS scale was also validated in a Bangladesh population.

2. Marital Violence against Women

This study conceptualizes marital violence against women (MVW) as any act by a husband that results in physical, sexual or psychological harm or suffering to his wife [27]. A survey questionnaire designed by a WHO multi-country team related to psychological abuse, physical attack and sexual coercion was used in this study [27]. The WHO–MVW survey questionnaire on MVW includes 14 items related to psychological abuse, physical attack, and sexual coercion and they were similar to the items included in the Conflict Tactics Scale (CTS) developed in a western context [27]–[29]

The survey questionnaire in the present study incorporated 14 questions related to psychological abuse (4 items), physical attack (6 items), and sexual coercion (4 items). Marital violence against women (MVW) was measured on an interval scale. For every item, each married men's answer was rated on a five-point Likert type scale, ranging from 0= never, to 4= 7

times or more. The summated scores of all items in each category related to the three subscales represented the scores of psychological abuse, physical attack, and sexual coercion, respectively. The scores ranged 0–16, 0–24, and 0–16, with higher scores indicating greater degrees of psychological abuse, physical attack, and sexual coercion, respectively.

The MVW questionnaire had been administered in 14 countries and their content validity has been established in all the countries surveyed, including in Bangladesh. Nevertheless, information on the construct validity and reliability of the scale was not available in their publications. Within the context of the current study – the main study, the MVW scale was also validated in a Bangladesh population.

D. Translations and Content Validation of the Instruments

The MSS scale and the instruments used in the current study required appropriate translation and representation validation in Bangladesh context. Regarding this, a pilot study was conducted between April 2009 and May 2009. All the instruments were translated/redesigned into Bengali and their representation validity was established. Four postgraduate students (along with the author) were engaged to translate the scales independently. The translation followed culturally appropriate meanings of the items. After that, a group discussion was arranged to finalize the translation. On the other hand, the face validity of the all the scales and overall questionnaire was evaluated by two scholars (faculty of social sciences) in a Bangladeshi university. Both of them favorably rated the face validity of the questionnaire.

E. Data Collection

The data collection was conducted between September and December 2009. The selected study participants were interviewed face-to-face. A structured questionnaire was used. A Bengali version of the questionnaire was implemented. Special attention was given to establish a rapport with the respondents. All the interviews were held in private, which ensured maximum privacy. A non-judgmental attitude was maintained throughout the interviews. Respondents were also assured that their personal identity would not be disclosed.

F. Ethical Issues

The study was conducted in accordance with the operational guidelines and procedures recommended by the Human Research Ethics Committee for Non-Clinical Faculties, The University of Hong Kong (Reference No.: EA520309; Dated Approved on: March 31, 2009). Ethical guidelines for public health research with human subjects recommended by the Bangladesh Medical Research Council (BMRC) were also taken into account. All the study participants were informed about the purpose and procedures of the study and their oral consent was obtained before the data collection. Written consent was waived because there were supposed to be many illiterate study participants. All the study participants were reminded repeatedly that his participation was completely voluntary and he had no obligation to complete the interviews and he might drop out of the study at any time during the interview. The study participants were also informed that they

might feel discomfort with some of the questions. Anonymity and confidentiality of the interviews were maintained.

IV. RESULTS

A. Content Validity

Masculine Subordination-to-women Stress Scale (MSS) was adapted from the MGRS, which was developed in the United States of America context and had not been validated in Bangladesh. Therefore the scale was translated into Bengali and its representational validity was established. Four postgraduate students were engaged in translating the scale independently, following culturally appropriate meanings of the items. After that, a group discussion was arranged to finalize the translation. The MGRS scale was not fully used because many MGRS items were considered inappropriate in the Bangladesh context. A total of 13 items were proposed for deletion from the original MGRS scale as their representational validity was not favorably supported by Bangladeshi scholars. However, except for two items, the representational validity of the 9-item “subordination to women” sub-scale of MGRS was well established and therefore the Masculine Subordination-to-women Stress Scale (MSS) was adapted in the study. Item no. MGRS38 was removed because it was considered closer to the physical inadequacy sub-scale rather than to subordination to women (see Table II). Also item no. MGRS9 was deleted because we lacked an appropriate meaning for this item in the Bengali context. However, the rest of the seven items were found appropriate in the Bangladesh context. Two scholars in a Bangladeshi university also favorably rated the face validity of the translated version of these seven items. In the end, a few married men in the villages near to the study site were interviewed and it was found that the translated items made clear sense to them.

TABLE II
ITEMS OF THE MASCULINE SUBORDINATION-TO-WOMEN STRESS SCALE

Item No.	Descriptions of Original Items	Items accepted
MGRS3	Being outperformed at work by a woman	✓
MGRS7	Having a female boss	✓
MGRS9	Letting a woman take control of the situation	×
MGRS13	Being married to someone that makes more money than you	✓
MGRS18	Being with a woman who is more successful than you	✓
MGRS23	Being outperformed in a game by a woman	✓
MGRS28	Needing your spouse to work to help you support the family	✓
MGRS33	Admitting to your friend that you do housework	✓
MGRS38	Being with a woman who is much taller than you	×

Note: Scale Type 0-5 Likert, Non-stressful – Highly Stressful

B. Construct/Factorial Validity

The Masculine Subordination-to-women Stress Scale (MSS) was expected to be unifactorial [4], [5]. Therefore, principal factor analysis (PFA) was conducted to test the unifactorial dimensionality of the scale. A priori criterion was used to extract a single factor, therefore the number of factors

to be extracted was set to 1 [30]. Items with a factor loading of less than 0.40 were chosen for exclusion [30], [31].

Results showed that the extracted factor explained almost 42% of the total variance. The Kaiser-Meyer-Olkin measure was 79.7% and the Bartlett test result was also significant; $\chi^2(21, 342) = 505.72, p < .001$. This indicated that the items of the MSS were adequately correlated with each other, which provided a basis for the factor solution. The factor loadings related to all the 7 items were also satisfactory, which suggested a unifactorial dimension (see Table III) [30]. Therefore, it was concluded that the seven items of the MSS were made of a single construct, and thus they were kept in the measurement.

TABLE III
PRINCIPAL AIX FACTOR ANALYSIS WITH THE MSS ITEMS

Item No.	Observable Variables	Factor Loading
MGRS3	Being outperformed at work by a woman	.57
MGRS7	Having a female boss	.63
MGRS13	Being married to someone that makes more money than you	.46
MGRS18	Being with a woman who is more successful than you	.47
MGRS23	Being outperformed in a game by a woman	.63
MGRS28	Needing your spouse to work to help you support the family	.58
MGRS33	Admitting to your friend that you do housework	.61
	Sum of squares (eigenvalue)	2.92
	Percentage of trace*	41.65

*Trace = 7.0 (sum of eigenvalues)

C. Reliability Analysis

Item correlation with the total score was computed to test whether all the items shared significant variance in the scale. Results showed that all of the item-total correlations were significantly high (i.e., the lowest correlation co-efficient accounted for item no. MGRS 13, $r = .43$). Therefore the convergent validity of the MSS scale was further supported. Moreover, the Cronbach's alpha was computed for the homogeneity (internal consistency) test and it showed that the internal consistency of the scale was generally satisfactory, $\alpha = 0.76$ (see Table IV). Therefore it was concluded that the MSS was a reliable scale to measure masculine subordination-to-women stress.

TABLE IV
RELIABILITY STATISTICS OF THE MASCULINE SUBORDINATION-TO-WOMEN STRESS SCALE (MSS)

Scale	N	M	SD	RNG	SK	KR	α
Masculine Subordination-to-women Stress (MSS)	7	22.79	7.47	0–35	-0.89	0.72	0.76

D. Comparative Analyses

Preliminary analyses were conducted to examine whether the mean MSS score varied according to the socio-demographic characteristics, and the results are presented in Table V.

Comparison using the ANOVA test found no significant age difference in MSS. There were also no significant family-

type difference, education difference, landholding difference, and study site difference in MSS (see Table V). It appears that the MSS is rather consistent.

TABLE V
DESCRIPTIVE CHARACTERISTICS OF THE MASCULINE SUBORDINATION-TO-WOMEN STRESS

Variables	N	The Masculine Subordination-to-women Stress	Test Statistic	Post-hoc Test
Age Group			F = 0.62	N/A
≤30	133	22.73 (7.91)		
31-45	141	23.22 (7.30)		
>=46	68	22.00 (6.93)		
Family Type			F = 0.32	N/A
Nuclear	286	22.88 (7.15)		
Joint	56	22.27 (8.95)		
Education			F = 1.27	N/A
No Schooling	108	23.42 (7.37)		
Less than SSC	184	22.79 (7.25)		
SSC and Above	50	21.38 (8.36)		
Landholding			F = 0.68	N/A
Landless	123	22.17 (8.02)		
Marginal	154	23.22 (6.82)		
Better-off	65	22.92 (7.87)		
Study Site			F = 0.63	N/A
Village 1	59	22.37 (6.79)		
Village 2	71	24.01 (8.42)		
Village 3	38	22.13 (8.82)		
Village 4	73	22.50 (7.22)		
Village 5	101	22.61 (6.77)		

*p < .05; **p < .01; ***p < .001

E. Concurrent Validity

As a criterion-related validity, concurrent validity was assessed with the correlation statistics between MSS and other theoretically related variables. With regard to the theories of masculine stress, it was hypothesized that MSS would be negatively associated with Attitude toward Women (AWS) and positively associated with Marital Violence against Women (MVW) [2], [4], [25], [32]. The association between MSS and the criterion variables were examined by calculating its Pearson product moment correlations with both AWS and MVW.

As can be seen from Table VI, MSS was significantly correlated in the expected direction with both AWS, $r(340) = -.55$, $p < .001$ and MVW, $r(340) = .30$, $p < .001$. These results provide initial evidence that the MSS scale has good concurrent validity.

TABLE VI
CORRELATION OF MSS WITH THEORETICALLY RELATED MEASURES

	MSS	AWS	MVW
Masculine Subordination-to-women Stress (MSS)	1	-.544***	.30***
Attitude Toward Women (AWS)		1	-.09
Marital Violence against Women (MVW)			1

*p < .05, **p < .01, ***p < .001

F. Masculine Subordination-to-Women Stress among Bangladeshi Men

The distribution of Masculine Subordination-to-women

Stress (MSS) was negatively skewed, which indicated that most of the men were very stress-prone. The average stress appraisal related to subordination to women (in the situation where men were supposed to be subordinated to women) was 22.78 ($SD = 7.46$, $RNG = 0-35$). Therefore, theoretical cut-off points were used to categorize the variable into two groups: (i) high stress-prone men – where the level of stress appraisal on the MSS scale was 60% or more, and (ii) low stress-prone men – where the level of stress appraisal on the MSS scale was less than 60% [33]. Results showed that 65.5% ($N = 224$) of the men appraised very high level of stress related to subordination to women (see Fig. 1).

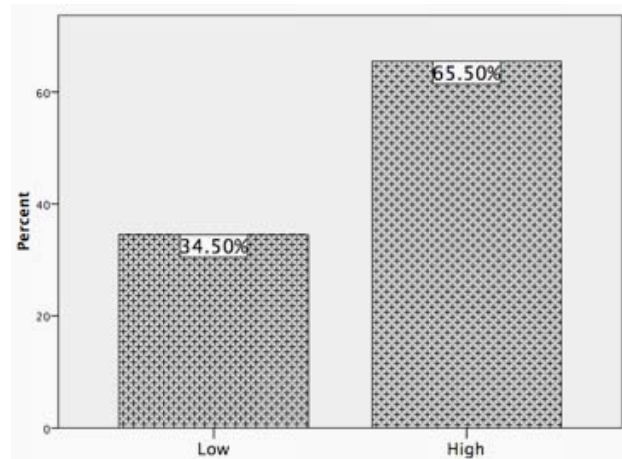


Fig. 1 The level of masculine subordination-to-women stress appraisal among Bangladeshi rural men

V. DISCUSSION

The 7-item Bengali version MSS scale was considered a valid and reliable instrument for assessing men's masculine stress appraised from the situation of being subordinate to women. The construct validity of the scale was supported and this showed that the items were made of a single factor, as conceptualized in this study [1], [4]. The study also showed that the MSS has adequate internal consistency and good concurrent validity. The coefficient alpha for the scale suggests that the scale can be used with good reliability. Consistent with previous findings, MSS is also found here to have a negative correlation with men's gender ideology [2]; and a positive correlation with marital violence [1], [2]. The effect sizes are also shown to be moderate; all reached a significance level of .001. The study also supports that masculine stress might be deep-rooted in gender ideology and how a man endorses his cultural beliefs about gender roles [2], [4], [34]. In the context of low-income patriarchal societies, masculinity is crucial in household domains, such as the identity of household headship [35]. Therefore, in the contexts of changing gender relations in patriarchal societies, where women are increasingly participating in the labor market as well as acquiring new status as household co-breadwinner, men may experience masculine stress related to subordination to women, which may in turn increase marital violence [1], [2],

Despite these findings, the present study has several limitations in terms of its external validity. The stability of the MSS over time has not been tested. It is recommended that future studies investigate its test-retest reliability. It will also be useful to evaluate this scale in the urban areas of the country, where masculine gender role stress may be more striking, and which would certainly provide adequate comparison with other major urban and rural areas worldwide.

In conclusion, the current study provides empirical support for the validity and reliability of the MSS in Bangladesh context. Academicians and researchers who are seeking an instrument to assess masculine subordination-to-women stress may find it useful. Moreover, it may stimulate researchers to think about strategies for helping men to cope up with masculine stress from a positive viewpoint. It may also help practitioners to improve men's mental health at different Bangladesh settings.

Rxeb mnR bq eis Dİvb-cZfþ ficyi| gvybl wewfbœ Ae˘vq nZvk nq| Avwg GLb wKQZ Ae˘vi K_v ejþZ hvw˘Q þhLvþb AþbþKB nZvk nq l gvbwmK hš;bv Abyfe Kþi| RvbþZ PvBe Avcwb hw˘ Hme Ae˘vi mª§~Lxb nb Zvnþj þKgb gvbwmK Pvc/þUbkþ Abyfe Kiþeb| Avcwb 0 - 5 Gi gþª˘ GKwU msl˘v ejþZ cvþib; þhLvþb 0 = me©wbgœ A˘vvr H Ae˘vi gyþLvgywL nþj Avcwb ÔþKvb gvbwmK PvcB Abyfe Kiþeb bþÔ Ges 5= Zxeª gvbwmK Pvcv Abyfe Kiþeb|

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