

Development and Validation of an Indigenous Jealousy Scale for Polygamous Women

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The present study aimed to develop a culturally relevant and indigenous scale to assess the jealousy among polygamous women. In study one, 16 semi-structured in-depth interviews with the age range of 18-60 years women (Polygamous, monogamous, experts) were conducted, and 65 items of the scale were empirically validated through content validation and Exploratory Factor Analysis on polygamous women ($N = 200$). The findings indicated that the Jealousy Scale for Polygamous Women has five factors having internally consistent (emotional, cognitive, behavioral, sexual, and possessive jealousy). Further, independent *t*-test was applied to seek the differences between first and second wives on jealousy and its subscales. Means scores revealed a significant differences between first and second wives as the first wives showed more emotional, cognitive, sexual, and overall jealousy, while lower possessive jealousy than the second wives. Study II was a conducted to determine the convergent validity with psychological distress while discriminant validity with psychological well-being of newly developed Jealousy scale for polygamous women. Both were subscales of the Mental Health Inventory (MHI, Veit, & Ware, 1983). The findings revealed the positive relationship between jealousy and its sub-scales with psychological-distress while the negative relationship with psychological well-being among polygamous women. Results indicate Jealousy Scale for Polygamous Women is a valid, reliable, and promising tool in the indigenous setting.

Keyword. Indigenous, development, validation, jealousy, polygamous women

Polygamy is a common practice in many societies. It is more prevalent in Muslim communities. A marital relationship that involves multiple wives is called polygamy (Thobejane & Flora, 2014). While

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practicing polygamy many psychological problems provoke when a man is unable to maintain equality among co-wives. Jealousy is one of those which are common in polygamous women (Kanwar, et al., 2015).

Jealousy is a complex reaction activated by a real or perceived threat to the relationship (Martinez-Leon et al., 2017). It's a response to protect a loved relationship when a partner feels some threat about that relationship (Bevan, 2004). This reaction can be conceptualized as cognitive, emotional, or behavioral (Guerrero, et al., 2004). Jealousy has involved two themes. First, it entails a triad form, as it is composed of three components, an individual having feelings of jealousy, a partner, and a third party or rival (might be first/second wife) who has been perceived as a threat. The second one is a response towards that threat which is spoiling a marital or dyadic relationship. Both themes can be implemented in a qualitative study that has been explored that polygamous women reported jealousy and used multiple coping strategies in the presence of co-wives to save their relationship (Naseer et al., 2021). Aversive emotions or behavior are typically involved while using such strategies which are supposed to be protective to maintain an intimate relationship between two people. In numerous scientific studies, the essential meaning of jealousy is formed by these two themes (Guerrero, et al., 2004).

Jealousy is a very common phenomenon both in monogamous and polygamous marriages (Thobejane & Flora 2014). Jealousy can be seen in both positive and negative stipulations in a marital relationship. An individual stands to lose her or his investment to secure the intimate relationship without jealousy when he or she perceived some extra-relationship threat. When the expression of jealousy serves to secure the relationship then it can be viewed as a positive connotation. But extreme jealousy causes negative connotations, especially in polygamous families. A previous study on polygamous women indicated that extreme jealousy causes marital dissatisfaction which leads to mental health issues among co-wives (Naseer et al., 2021).

Pfeiffer and Wong (1989) have presented a theory of jealousy as multidimensional construct which is based upon three components as cognitive, emotional, and behavioral and it is evident from several existing theoretical frameworks (Bringle & Williams, 1979; White, 1981). Different theorists have proposed that jealousy is not a mixture of sole emotion but a combination of numerous emotions either negative or positive (Bringle & Williams, 1979; Buunk, 1997). The cognitive component of jealousy deals to perceive a threat to a loved and valued romantic relationship by a partner. Emotional reaction is

displayed by a person in the absence of an actual threat to his or her valued relationship. Behavioral jealousy is the third component of jealousy which occurs as cognitive and behavioral strategies to cope the emotional distress. The behavioral strategies can be conceptualized as a detective or protective method to take when a person perceives a relationship rivals either real or imaginary.

Buunk (1997) has also proposed three important kinds of jealousy in his theory. He defined reactive jealousy as the reaction towards his or her valued or intimate partner when he or she might be engaged in a sexual or close relationship with a third person. The second kind of jealousy is known as possessive jealousy. It involves a person's behavior to prevent one's partner to engage in an intimate relationship with some other person. Similarly, Obsessions and suspicions are the characteristics of anxious jealousy about some potential which are a threat for some intimate or loving relationship (Buunk, 1997). Newberry (2010) also found another component that is sexual. Numerous studies have been conducted to investigate the psychosocial problems of polygamous families. Jealousy has remained one of the main factors. Naseer et al. (2021) have been recently found in an indigenous qualitative study the causes, consequences, and coping strategies of polygamous women. Infertility, husbands' love marriage, family pressure, and only female children are the main causes of polygamy. These causes lead to jealousy, unhappiness, and loneliness among co-wives. Jealousy, unhappiness, loneliness, sense of competition, and lack of intimacy with the spouse were also identified as disadvantages of polygyny in another study (Tabi et al., 2010). Polygamy affects the mental health status of family members. Many family members suffer symptoms of depression, anxiety, trauma, somatic symptom disorder, interpersonal sensitivity, phobias, obsessive-compulsive tendencies, paranoia, and psychotics (Abd Razak et al., 2020). Gadban and Goldner (2020) investigated different polygamous women's experiences through drawing tests that indicated complex emotions of anger, jealousy, sadness, loneliness, and lack of power. Few also expressed romantic relationships with their husbands and some of them also reported a desire for justice, equality, and revenge.

Jealousy causes marital dissatisfaction among polygamous women that leads to psychological distress among co-wives. Findings revealed that marital dissatisfaction mediates between jealousy and mental health issues of polygamous women. Jealousy always remained a key factor in such family structures (Naseer et al., 2021). These experiences of polygamous women are most common but the intensity of their feelings and behavior is varied according to co-wives

order. Literature indicated first wives reported more problems than the junior wives as first wives showed more financial issues than the new ones (Heath et al., 2020). Husband's equal and fair emotional response towards both wives develops emotional security (Edalati et al., 2009; Uzun, 2019). But inequality and injustice cause jealousy, marital dissatisfaction, and mental health issues among them, especially among the first wives. It has been explored that first wives indicated higher jealousy, lower marital satisfaction, and psychological well-being than the second wives (Naseer et al., 2021). The senior wives of polygamous marriages often feel as old and could not meet the standards of a successful life. So, they reported lower self-esteem and loneliness due to the presence of new wives (Al-Krenawi, 2002). In some cases, junior wives express more jealousy and insecurity because of first wives if she is getting more privilege in the family (Al-Krenawi & Graham, 2006; Naseer et al., 2021).

Jealousy was a significant phenomenon in monogamous as well as a more serious and key factor in polygamous women. In previous studies (Bringle & Williams, 1979; Bush et al., 1988) have measured jealousy construct by using imagery tasks. Several tools were constructed to assess and quantify the overall amount of jealousy experienced by a person or partner (Bringle, 1981; Mathes & Severa, 1981; Rusch & Hupka, 1977; White, 1981). However, very little work was done in the areas of empirical analysis of different aspects of the jealousy experienced itself. Clanton and Smith (1977) explained jealousy as the Rorschach Term which was associated with images and a variety of people. While in reality jealousy holds too many meanings and there is semantic confusion in its usage as a whole construct. This construct can be better understood if a variety of aspects of this construct can be identified and measured empirically rather than limited to imagery or subjective techniques.

A measure for jealousy constructed by Pfeiffer and Wong (1989) is named as multidimensional jealousy scale. It has 24 items comprised of three subscales used to assess the marital jealousy between monogamous couples based upon 7-points Likert scale. The Cronbach's alpha reliability of the subscales is very high for cognitive, emotional and behavioral component. This indicated that this scale has strong psychometric properties. This tool was widely used all over the cultures on measuring jealousy both in males and females in different aspects. This scale is although culturally fair to use but not appropriate for measuring the co-wives jealousy especially in Islamic communities where a husband has been permitted to marry four women at a given time. The current study was conducted to construct an indigenous measure to assess the jealousy which is

common in co-wives. This phenomenon is expressed varied from culture to culture and leads towards many psychological issues among polygamous women. In the West, co-wives prefer to divorce after adding some other female in their husbands' life while in Muslim communities females prefer to compromise instead of divorce option (Tabi et al., 2010). Then jealousy becomes a part of their lives. They use different unhealthy coping strategies while tolerating a new female in her husbands' life, like the use of aggression, revenge, and even suicidal ideations. There is a need for time to measure the level of jealousy and to provide training and arrange interventions for the co-wives to avoid further negative consequences. This tool would help to measure the level of jealousy among polygamous women, especially in Pakistani culture. If the scores fall in some alarming category then serious steps can be taken and arrangements can be made for the mental health of the co-wives and they can facilitate by guiding how they can cope with such feelings and relationships rather than separation or some other step. Women's health of such families is very important because they have to run families and jealousy-like feelings can cause serious many mental health problems. This tool will be relevant and appropriate to measure the jealousy.

The main objectives of the present study were:

1. To develop an indigenous scale to assess jealousy among polygamous women.
2. To determine the psychometric properties for Jealousy Scale for Polygamous Women.
3. To investigate the differences between first and second wives in terms of jealousy.
4. To establish the convergent and discriminant validity of the Jealousy Scale for Polygamous Women.

Method

The current research was based upon two phases. Phase one was based on exploring the phenomenology and items generation. Whereas in phase two, the psychometric properties of the scale were determined as well as a comparison was made between first and second wives on this newly developed tool. Furthermore, convergent and discriminant validity was established by assessing the relationship of JSPW with subscales of mental health inventory (psychological-distress and psychological well-being).

Phase I: Exploring Phenomenology and Item generation

Items Pool Generation. The construct was conceptualized and the items pool generation was done with the help of psychologists, polygamous women, the general population, and literature review with the help of a prepared interview guide by conducting ($N=16$) semi-structured in-depth interviews.

Psychologists

Semi-structured in-depth interviews were conducted with those clinical psychologists who have treated polygamous families especially multiple wives and knew their mental health issues including the severity of jealousy. An open-ended questionnaire related to jealousy was given to four psychologists (Fountain House, Punjab Institute of Mental Health, and Bait-UL-Mall). One psychologist was selected from Fountain House, two from Punjab Institute of mental health, and one from Bait-UI-Mall. A preliminary question had been asked whether such cases have visited in their clinic or hospital or not then asked these questions after taking the consent. The sample of the questions in the interview guide was like "what are the thoughts of wives in the present of co-wife in their husbands' life?"

Polygamous Women. Eight interviews were conducted with the polygamous women having an age range of 18-60 years (First wives = 4, second wives = 4). The questions of the interview guide were asked to the polygamous women after making a friendly environment and rapport building with a few personal preliminary questions. The wide age range was finalized because of the unique and rare sample in the community. The sample of the questions in the interview guide was like "what do you think about 2nd and 1st wife?"

General Population. The women of monogamous families were also taken for interviews having the same age range as 18-60 years. The purpose to take the 4 monogamous women in the interview was to seek their perception of feelings of jealousy when their husbands might be interested to marry in some other woman. The sample of the questions was like "What will be your thoughts if your husband intends to marry another woman?"

Literature. The accessible literature was assessed and some secondary items of each factor of the jealousy scale were selected.

The 16 recorded interviews were transcribed and carefully reviewed to exclude the repeated and redundant items. 270 verbatim were drawn. 70 statements were formulated from these verbatim and given to the experts for evaluation in the next step.

Content Validation. After organizing the item pool of 70 statements for the scale of polygamous women, it was given to experts (One post-Doc., one Ph.D., and two M.Phil. degree holders in psychology). They evaluate the content validity of the statements. So after reviewing few statements were rephrased and 3 items were added based on verbatim. 2 items were scored reversed. Overall numbers of items were decreased to 65 for JSPW. The responses categories were decided with a 4-point Likert scale where (0 = *Never*, 1 = *Sometime*, 2 = *Often*, and 3 = *Always*) for test tryout.

Try Out. To pretest the suitability of a scale, it was administered on ($N=10$) polygamous women as *first* wives ($n = 5$) and *second* wives ($n = 5$) with an age range of 18-60 years. It was assured about the difficulty level, comprehensibility, and readability of the items by the target population. Few items were revised based on the feedback of sample.

Phase II: Establishing the Psychometric Properties of the Scale

In phase II, a scale was administered on the polygamous women and psychometric properties were established. An independent *t*-test was also run to seek the differences between first and second wives in the newly developed construct.

Sample

Because of the rare sample for empirical evaluation 200 women of polygynous marriages both first and second wives were approached setting the 3:1 as criteria for factor evaluation. Snowball sampling strategy was used to select the participants from Punjab. Few had to discard and the final 173 women were selected as first wives ($n = 99$) and second wives ($n = 74$). Their age range was 18-60 years ($M = 33.83$, $SD = 9.60$). First wives had mean age ($M = 40.30$, $SD = 7.86$) while second wives had mean age ($M = 26.60$, $SD = 7.41$).

Measure

The details of the scales are as followed.

Jealousy Scale for Polygamous Women. The final 65 items of JSPW that were developed in phase I were used for data collection. The responses were given on a 4-point Likert scale with respective categories 0-3 (0 = *Never*, 1 = *Sometimes*, 2 = *Often*, 3 = *Always*). The possible minimum and maximum scores for 65 items are 0-195. It was developed to measure dimensions (emotional, cognitive, behavioral, anxious, reactive, possessive, and sexual). Demographic information was also taken with the questionnaire. The high scores on Jealousy Scale for Polygamous women reflected polygamous women's high

feelings of jealousy and the low score indicated low feelings of jealousy of co-wives. The sample item is "I feel helplessness in the presence of another wife in my husband's life." The English translated sample items were included because the original tool is in Urdu language. Item no 42 and 57 were scored reversed.

Mental Health Inventory (MHI). Urdu version of Mental Health Inventory (Veit & Ware, 1983) translated by Khan, et al. (2015) composed of 38 items was used. It consisted of two subscales. Psychological distress comprised of 22 items. The scale was rated on a 6-point rating scale ranging from 1 to 6 with score range of 22-132. This subscale was used to seek the convergent validity. The sample item of Psychological distress is "How much of the time have you felt lonely during the past month?" Psychological well-being consists of 16 items. This subscale of mental health inventory was used to evaluate the discriminant validity of the JSPW. The sample item of Psychological Well-Being is "How happy, satisfied, or pleased have you been with your personal life during the past month?" The scale was rated on a 6-point rating scale ranging from 1 to 6 with score range of 16-196. Mental Health Inventory showed overall adequate reliability and strong internal consistencies ranging from .83 to .96.-

Procedure

After getting approval from the institution the data from participants were collected from Punjab. The sample was already determined and approached before final data collection by using the snowball sampling strategy. The ethical guideline was strictly followed because of the sensitivity of the phenomenon. The participants who met the criteria were asked to fill the questionnaire by choosing the suitable option that applies best to their opinion after reading each statement carefully. Their consent was obtained and the participants were ensured about the confidentiality of their responses. They were also acknowledged for their contribution and cooperation. The data was collected from 200 participants. Few had to discard due to incomplete information. So the response rate was 87% of the study.

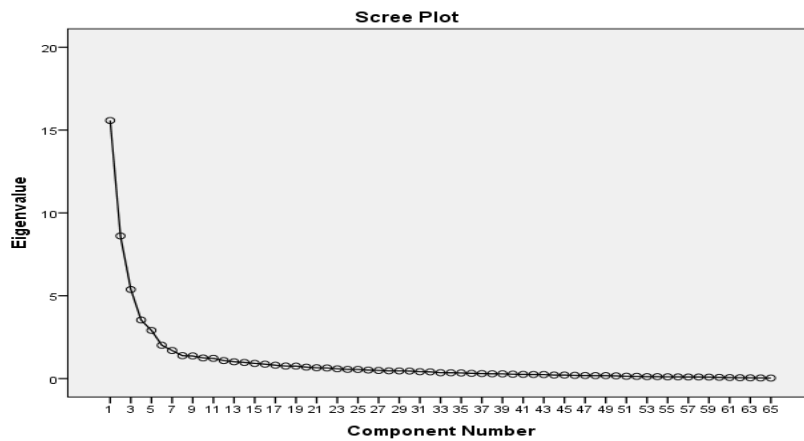
Results

To choose the items for the final JSPW, item-total correlation analysis was computed on 65 items; 62 items exhibited significant item-total correlation (see Table 2). The items with less than .20 values were not continued in the final structure, also by considering these values, the items were being chosen in their relevant factors. KMO measure was 0.850 which falls in the category of great. Bartlett's Test of Sphericity was observed as highly significant which

was $\chi^2(2080) = 9064.44$, $p < .001$ which indicated that the correlation between items was sufficiently large for PCA (Hutcheson, 2020). To determine how many components (factors) to extract, using Kaiser's (1960) criterion, only those components were selected that have an Eigenvalue of 1 or more. So the first 5 factors were retained based on Eigenvalues combine with the help of other criteria of assumptions.

Scree plot was considered for retaining those factors that lie above the elbow of the plot. The scree plot figure suggested five factors solutions.

Figure 1. Scree Plot for Jealousy Scale for Polygamous Women.



The Monte Carlo PCA Analysis indicated that 5 extracted factors through principle component analysis have an acceptable range. All the accepted factors have appropriate Eigen values (see Table 1).

Table 1

Parallel Component Analysis using Monte Carlo PCA (N = 173)

Factors	Eigen values from parallel analysis	Eigen values from PCA	Decision
1	1.49	15.57	Accept
2	1.35	8.61	Accept
3	1.25	5.37	Accept
4	1.18	3.53	Accept
5	1.14	2.90	Accept
6	1.12	1.69	Reject
7	1.10	1.09	Reject

Considering the scree plot and Monte Carlo parallel analysis, analysis was rerun with suppression of five factors using principal component analysis with orthogonal (Varimax) rotation.

Table 2

Factor Loading, Eigen Values for Exploratory Factor Analysis with Orthogonal Varimax Rotation of Jealousy Scale for Polygamous Women (N = 173)

S.No	JSPW Items	Factor Loadings					r^2
		1	2	3	4	5	
Factor 1: Emotional Jealousy							
1	13	.85	.04	.04	.03	-.01	.70
2	58	.81	.13	.21	-.04	.19	.65
3	15	.81	.16	.21	.06	.05	.67
4	14	.79	.04	.05	.15	.19	.67
5	20	.79	.01	.04	.03	-.01	.63
6	02	.79	.15	.13	.02	.10	.52
7	35	.78	.15	-.01	.12	.02	.70
8	11	.78	.07	.08	.09	.05	.65
9	06	.75	-.02	.11	.04	.10	.62
10	08	.74	.11	.19	.06	.07	.68
11	18	.74	.07	-.14	.08	-.06	.55
12	07	.74	-.04	-.03	.07	.09	.55
13	54	.73	.09	.10	.01	.16	.59
14	57(R)	.73	.02	.05	.04	.17	.61
15	04	.73	-.18	-.02	-.06	.03	.49
16	49	.72	.00	.13	.07	.12	.61
17	24	.72	.03	-.07	.07	.00	.56
18	52	.71	-.07	.16	.08	.10	.59
19	26	.71	.01	-.26	.06	.05	.52
20	33	.71	.01	-.02	.07	.05	.55
21	34	.65	-.06	.05	.11	.10	.52
22	42(R)	.64	.20	.12	.19	.14	.69
23	01	.64	-.05	-.07	.06	.20	.47
24	36	.62	.10	.08	.09	.01	.32
Factor 2: Cognitive Jealousy							
25	19	.09	.83	.05	.11	.09	.45
26	30	-.01	.86	.06	.09	.01	.36
27	32	-.05	.83	.00	-.01	.09	.26
28	40	-.03	.76	.02	.10	-.09	.27
29	31	.02	.74	.06	.09	.01	.29
30	56	-.00	.69	-.08	.04	.02	.30
31	38	-.01	.67	.28	.15	-.12	.25
32	21	.16	.63	.03	.01	.06	.37
33	05	-.01	.59	.23	.00	.03	.28
34	37	.00	.58	.06	-.11	.13	.24
35	23	.26	.58	.18	.14	.13	.56

Continued...

S.No	JSPW Items	Factors Loadings					r^{it}
		1	2	3	4	5	
36	39	-.11	.57	.10	.11	.00	.20
37	44	.20	.56	.11	.10	.05	.47
38	25	.04	.55	.09	.06	.03	.30
Factor 3: Behavioral Jealousy							
39	46	-.03	.10	.82	.10	.05	.32
40	50	.05	.18	.77	-.03	.12	.35
41	51	-.04	.08	.76	.01	.04	.26
42	17	.06	-.12	.74	-.08	-.06	.20
43	47	.13	.20	.74	.03	.06	.35
44	09	.14	-.07	.72	-.00	-.07	.25
45	12	.08	.11	.66	-.02	.17	.36
46	45	.01	.09	.66	.05	.19	.31
Factor 4: Sexual Jealousy							
47	22	.14	.07	.05	.91	.05	.35
48	29	.13	.09	.06	.90	.00	.34
49	43	.17	.09	-.04	.89	.03	.35
50	27	.18	.04	.00	.89	-.05	.34
Factor 5: Possessive Jealousy							
51	63	.09	-.05	.16	-.07	.81	.25
52	53	.16	.06	.13	-.04	.79	.34
53	61	.14	.06	.00	.03	.78	.28
54	59					.72	.33
Eigen value		15.57	8.61	5.37	3.53	2.90	
% of Variances		23.96	13.24	8.27	5.44	4.47	

Note. Factor Loading $\geq .35$, r^{it} = item total correlation $\geq .20$, JSPW = Jealousy Scale for Polygamous Women.

Table 2 shows the final five factors that comprised 54 items with factor loading $>.35$ criteria exclusively on one factor. 11 items were excluded due to having less than .35 loading or loading more than one factor. The accumulated variance for the retained factors was 55.40%. The items included in five factors indicated good item-total correlation. The items included having item correlation $>.20$.

Factor 1: Emotional Jealousy.

It included 24 items as 13, 58, 15, 14, 20, 2, 35, 11, 6, 8, 18, 7, 54, 57, 4, 49, 24, 52, 26, 33, 34, 42, 1 and 36. The items clustered under factor 1 were labeled as emotional jealousy of having a woman for other women who has a legal right in her husband's life. Item 42 and 57 were scored reverse. The score range of this sub-scale is 0-72. The Cronbach's alpha of this sub-scale is .96.

Factor 2: Cognitive Jealousy

It included 14 items as 19, 30, 32, 40, 31, 56, 38, 21, 5, 37, 23, 39, 44 and 25. Factor 2 was labeled as cognitive jealousy. Cognitive jealousy included feelings of doubt, distrust, and uncertainty about her husband both in first and second wives. The score range of this factor is 0-42. The Cronbach's alpha of this sub-scale is .92.

Factor 3: Behavioral Jealousy

The items clustered under factor 3 were labeled as behavioural experiences of jealousy. It deals with the behaviour of the first or second wife which she expressed when her husband showed concern to the other wife. It included 8 items as 46, 50, 51, 17, 47, 9, 12 and 45. The range of scores of this factor is 0-24. The Cronbach's alpha of this sub-scale is .87.

Factor 4: Sexual Jealousy

The items of factor 4 were labeled to the Sexual experiences of jealousy. Sexual jealousy is a special form of jealousy in sexual relationships, based on suspected or imminent sexual infidelity in the presence of another wife. The Cronbach's alpha reliability of this factor was .95. Items 22, 43, 29, and 27 are included in this factor. The range of scores is 0-12

Factor 5: Possessive Jealousy

The Cronbach's alpha of this factor was .85. The items clustered under factor 5 were related to possessive jealousy. It also included 4 items as 63, 53, 61, and 59. The score range of this factor is 0-12.

Results in Table 3 depicted the number of items, means, standard deviations, ranges of the score, and internal consistency of the JSPW and its subscales. The Cronbach's alpha for subscales and total scale were quite good.

Table 3

Psychometric Properties of Total Jealousy Scale and its Sub Scales

Scale and Subscales	<i>k</i>	<i>M</i>	<i>SD</i>	Ranges		α
				Potential	Actual	
1. Emotional Jealousy	24	3.81	1.77	0-72	2-71	.96
2. Cognitive Jealousy	14	3.43	1.50	0-42	5-41	.92
3. Behavioural Jealousy	8	4.13	1.73	0-24	3-22	.87
4. Sexual Jealousy	4	3.71	2.20	0-12	0-12	.95
5. Possessive Jealousy	4	3.25	1.62	0-12	0-11	.85
6. JSPW Total	54	3.71	1.09	0-162	24-144	.93

Note. JSPW = Jealousy Scale for Polygamous Women

Table 3 showed the mean and *SD* of the sample for full and all subscales. The value of Cronbach's alpha demonstrated that all subscales and total scales have sufficient reliability.

Table 4

Inter Correlations among Jealousy Scale for Polygamous Women and its Subscales (N =173)

Variables	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
1. Emotional Jealousy	-	.57***	.70***	.70***	.46***	.38***	3.81	1.77
2. Cognitive Jealousy		-	.52***	.67***	.32***	.78***	3.43	1.50
3. Behavioural Jealousy			-	.55***	.56***	.80***	4.13	1.73
4. Sexual Jealousy				-	.25***	.75***	3.71	2.20
5. Possessive Jealousy					-	.56***	3.25	1.62
6. JSPW Total						-	3.71	1.09

Note. JSPW= Jealousy-Scale for Polygamous Women.

****p* < .001.

Table 4 indicated that the total scale and all subscales as emotional, cognitive, behavioral, sexual, and possessive jealousy have a significant positive relationship with each other. The significant relationship among the whole scale and its subscales supported adequate construct validity.

Determining the Categories of Jealousy Scale for Polygamous Women. In the current study, four levels of jealousy as mild, moderate, moderately severe, and severe were determined by using percentile rank. Each category indicates the specific level of jealousy by the respondents which has been given in Table 5.

Table 5

Categories of total Jealousy Scale for Polygamous Women (JSPW) (N=173)

Levels of Jealousy	JSPW Total	f (%)
Mild	≤-63	44(25.4)
Moderate	64-82	46(26.6)
Moderately Severe	83-95	40(23.1)
Severe	96-144≥	23(24.9)

Note. JSPW=Jealousy Scale for Polygamous Women.

Table 6

Comparison of First and Second Wives on Jealousy, and it's in Polygamous Marriages (N =173)

Scale and Subscales	First Wives (n = 99)		Second Wives (n = 74)		t(173)	p	Cohen's d
	M	SD	M	SD			
Emotional Jealousy	4.20	1.64	3.28	1.81	4.76	.001	.5
Cognitive Jealousy	3.69	1.42	3.10	1.54	3.65	.05	.3
Behavioral Jealousy	4.12	1.76	4.15	1.71	1.68	.09	
Sexual Jealousy	4.09	2.18	3.20	2.13	4.11	.001	.04
Possessive Jealousy	3.06	1.81	3.39	1.45	3.11	.05	.2
JSPW Total	3.99	1.03	3.34	1.07	3.32	.05	.5

Note. JSPW = Jealousy Scale for Polygamous Women.

* $p < .05$. ** $p < .01$. *** $p < .001$.

The findings of Table 6 indicated that there is significant difference in total jealousy scale of polygamous women and its subscales (Emotional, Cognitive, Sexual, and Possessive) between first and second wives. Mean scores revealed that the first wives showed more emotional jealousy $t(173) = 4.76$; $p < .001$, cognitive jealousy $t(173) = 3.65$; $p < .05$, Sexual jealousy $t(173) = 4.11$; $p < .001$, and total jealousy $t(173) = 3.32$; $p < .05$ while lower possessive jealousy $t(173) = 3.11$; $p < .05$ than the second wives.

Convergent and Discriminant Validity

To establish the construct validity of JSPW, the convergent validity of the JSPW was determined by comparing it with the Psychological-Distress and Psychological Well-Being was used for determining the discriminant validity of the newly constructed scale. Both are subscales of the Mental Health Inventory (Veit & Ware, 1983).

Table 7
Correlations Among total Jealousy Scale for Polygamous Women, its Sub-Scales, Psychological Well-being and Psychological Distress (N = 173)

Variables	1	2	3	4	5	6	7	8
1. Emotional Jealousy	-	.57***	.69***	.38***	.46***	.33***	.75***	.72***
2. Cognitive Jealousy		-	.52***	.23**	.32***	.19*	.48***	.55***
3. Behavioural Jealousy			-	.40***	.56***	.20**	.68***	.51***
4. Sexual Jealousy				-	.21**	.56***	.45***	.18**
5. Possessive Jealousy					-	.33***	.47***	.49***
6. JSPW total						-	.32***	.22**
7. Psychological-Wellbeing							-	.67***
8. Psychological-Distress								-

Note. JSPW = Jealousy Scale for Polygamous Women.

* $p < .05$. ** $p < .01$. *** $p < .001$.

The findings of Table 7 revealed that the total jealousy scale and its subscales (emotional, cognitive, behavioural, sexual, possessive) were significantly negatively correlated with psychological well-being whereas the total jealousy scale and its subscales (Emotional, cognitive, behavioural, sexual, possessive) showed a positive and significant relationship with psychological-distress. Results indicated satisfactory discriminant and convergent validity of the newly developed Jealousy scale for Polygamous Women.

Discussion

The current study was conducted to develop an indigenous assessment tool to measure the jealousy among polygamous women in Muslim families of Pakistan. The current research was based upon two phases. In the first phase, the items pool was generated by conducting 16 interviews with Polygamous women (first and second wives), Monogamous women, and psychological experts to explore the perception of jealousy in our culture which is collectivist. More focus was given to information elicited through polygamous women because they are bearing another woman in their husband's life having a legal right. The factor structure of the scale was analyzed through Principal Component Analysis with orthogonal (Varimax) rotation. Five distinct factors were selected based on criteria of Eigenvalue greater than 1, Monte Carlo parallels analysis, Scree plot, no factor fewer than three items, and theoretical relevance (Hair et al., 2010; Kline, 2013).

Jealousy Scale for Polygamous Women is a unique and multidimensional measure in terms of its content and sub-scales. It is the first indigenous and according to culture scale constructed for polygamous women to understand their thinking, feelings, and behavior in the presence of other women in their husbands' life. Jealousy in marital couples is an aversive emotional reaction that is followed by thoughts, emotions, and actions towards an imagined or a potential rival who threatens the quality of the romantic relationship (Naseer, et al., 2021; Sahana & Ganth, 2016). This construct is expressed among married couples differently because of the Muslim state where polygamy is allowed by religion and Law. However, there are several questionnaires have been constructed to quantify the overall amount of jealousy experienced by a person (Bringle & Williams, 1979; Rusch & Hupka, 1977). But, little work has been conducted in the area of theoretical and empirical analysis of the qualitatively different aspects of the jealousy experience itself. Only Multidimensional Jealousy Scale by Pfeiffer and Wong (1989) was an empirically valid measure but only for general marital couples and old as well. Since 1989, no tool was constructed about jealousy and its different dimensions as the expression of jealousy vary with age or time. With this concern and need a Jealousy Scale for Polygamous Women has been developed.

Jealousy Scale for Polygamous Women indicates the importance of true representativeness of ones' culture by assessing jealousy with an indigenous developed tool. The current scale has five subscales which are emotional jealousy, cognitive jealousy, behavioral jealousy, sexual jealousy, and possessive jealousy. Multidimensional Jealousy Scale by Pfeiffer and Wong (1989) has been constructed jealousy of marital couples also based upon three components but not valid to measure the jealousy among co-wives.

After empirical analysis, the toll was comprised of multiple factors. Factor 1 comprised statements and items depicting feelings of love, hated, care, helplessness, inferiority, and trust, etc. are included for their husbands' in the presence of second wives. This factor was labeled as Emotional Jealousy. For instance statements of this factor are like "I feel helplessness in the presence of co-wife in my husbands' life." Emotional jealousy is the most common component in the marital relationship which occurs in the absence or presence of a perceived threat to a relationship (Pfeiffer & Wong, 1889; Scelza, 2013). Pfeiffer and Wong (1889) developed a standardized tool having this component. Moreover, in marital life, the more close to ones' relationship is positively associated with emotional jealousy as proposed by Attridge in 2013.

The second component of the Jealousy Scale for Polygamous Women is named Cognitive Jealousy as the women of polygamous marriages revealed their thoughts of doubt, uncertainty, insecurity, and vagueness towards their husbands in the presence of second or co-wives which is a threat for their marital life. Pfeiffer and Wong (1889) also proposed in their multidimensional theory of jealousy the similar component as Cognitive jealousy which occurs when the person becomes aware of a threat to a valued romantic relationship. The items of the cognitive jealousy in the currently developed scale are as I am scared to lose my husband due to the presence of co-wife in my husbands' life.]

The third subscale of the Jealousy Scale for Polygamous women is Behavioral Jealousy. Normally in marital couples, behaviour jealousy occurs as cognitive and behavioural strategies used to cope with emotional upset. This behaviour is conceptualized as detective or protective measures a person takes when relationship rivals (real or imaginary) are perceived (Pfeiffer & Wong, 1889). In the currently developed tool, the items included in this factor reveal the behaviour, activities, and reactions of co-wives that might either protect or spoil their relationship. For example "I engage myself in different activities so I cannot think about my husband and co-wife."

Sexual Jealousy is the fourth factor of the Jealousy Scale for Polygamous Women. Sexual jealousy is a special form of jealousy in sexual relationships, based on suspected or imminent sexual infidelity (Buss, 2013). Particularly towards their husbands as a result of another wife in their lives. For example, the item of this component is "I cannot sleep when my husband is in the company of another wife." Further "I think my husband has good sexual relations with other wife than me."

The 5th factor of the Jealousy Scale for Polygamous Women Wives (JSPW) included feelings of sole right on their husbands in the presence of other wives. Buunk (1997) also defines possessive jealousy as behaviour an individual engages in to prevent their partner from intimate contact with a third person. In t included items as "The co-wife is more possessive than me." Further "I deserve more attention of my husband than the co-wife."

In phase II of study one, both first and second wives were compared in total jealousy scale and other subscales, and a significant difference was found in overall jealousy scale, emotional jealousy, cognitive jealousy, sexual jealousy, and possessive jealousy. This difference might be due to husbands' biased attitude towards co-wives, inequality in affection, lack of family and financial support which also

decline the mental well-being of co-wives (Razak, 2021; Naseer et al., 2021). The finding of another study indicated that first wives reported on more family problems, less self-esteem, higher jealousy, more anxiety, more paranoid ideation, and more psychoticism than second and third wives (Al-Krenawi, 2013). Wife-order is very important in polygamous family structures, the senior wives may be perceived themselves as older and fail to fulfill the standard of their marital life (Al-Krenawi & Graham, 2006). So significant difference is found in the level of jealousy among first and second wives as in the present study.

In the current study, convergent and divergent validity of the construct was also found. Jealousy total and its subscales have a positive significant relationship with psychological distress a subscale of mental health. While, negative significant correlation with psychological well-being another subscale of mental health inventory. Inequality and injustice from husbands produce jealousy, sadness, loneliness, emotional distress, and despair which leads to mental health problems even suicidal ideation among polygamous women (Gadban & Goldner, 2020). In another study, suicidal behavior and mental health issues of the polygamous women and children were highlighted as being a wife of a husband with three and more other wives. Feelings of insecurity, illiteracy and poor social support were related to these issues (Kassaw & Shumye, 2021). Naseer et al. (2021) also recently explored, that jealousy has a positive relationship with psychological distress whereas the negative association with psychological well-being among polygamous women. The components of jealousy like emotional, cognitive, behavioral, sexual, and possessive negatively deteriorate the mental health of the co-wives found in the current study. In a systematic review of literature it was explored that polygamous families have distinct household problems, usually stemming from jealousy between co-wives over the husband's affections and resources. These factors cause higher chances of depression both in polygamous women as well as children (Shaiful et al., 2021). The agencies involved in polygamous practices should broaden and enhance their understanding of the correct practice of polygamy.

Limitations, Suggestions, and Implications

The findings of the study are helpful to understand the feelings of polygamous women in-home settings especially for guiding husbands as well as to understand the emotions of multiple wives for each other to build a healthy family environment and society. It can be helpful

for counselors, family advisors, and clinical psychologists to analyze the psychological issues of polygamous women and to train them on how they can cope with such kinds of feelings. The Govt. should take some serious steps for the mental health of polygamous women as jealousy negatively affect the psychological well-being of polygamous women, especially first wives. Many other issues can be linked with this phenomenon so further psychological problems can be highlighted in polygamous women through the study of this construct. The sample was from Punjab and only polygynous women have included a further diverse sample of polygamous women must be comprised to seek whether the level of jealousy remains the same or changes after blending another co-wife in their husband's life. Cross-cultural studies can be conducted to seek the level of this construct and their behavior how the diverse co-wives express this phenomenon.

Conclusion

The present study is the preliminary work to measure the feelings of jealousy in Pakistani polygamous women. This research will assist in and a better understanding of the multifaceted feelings of jealousy of a female for other females having legal rights in her husband's life.

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