

## A preliminary study of the psychological differences in infertile couples and their relation to the coping styles

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### Abstract

**Background:** Studies from Western countries have observed that couples undergoing infertility treatment suffer various physical and psychological difficulties at a higher frequency than the comparable general population. These relate to treatment challenges and other psychosocial stressors, often influenced by coping style, personality factors and available support systems. There is paucity of studies in non-Western populations.

**Objective:** The aim of this pilot investigation was to evaluate characteristics and gender differences in perceived psychological difficulties reported by infertile Malaysian couples. In particular, depression, anxiety and stress, along with correlated coping styles, were examined between spouses.

**Methods:** Demographic information, including age, ethnicity and duration and causes of infertility, were collected from participants treated within a fertility clinic. The Depression, Anxiety and Stress Scale (DASS) and Coping Inventory for Stressful Situation (CISS) were completed to measure psychological distress and coping styles.

**Results:** Depression, anxiety and stress-related difficulties were reported at significantly higher frequency by wives than husbands ( $p < 0.05$ ). There were no significant differences in coping styles between wives and husbands. However, emotional-oriented coping style was associated with significantly higher levels of depression, anxiety and stress ( $p < 0.05$ ) within the overall sample with odds ratios of 2.5, 3.0 and 1.5, respectively.

**Conclusion:** The study confirms that, as with Western subjects, Malaysian infertile couples demonstrate the vulnerability to psychological distress that occurs more frequently among wives than husbands. As anticipated, emotional coping style was associated with greater distress in both genders.

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### 1. Introduction

Published literature indicates that infertile couples often experience emotional and physical distress, including anxiety, depression, stress, social isolation and diminished self-esteem [1,2]. The association between psychological factors such as stress and depression and menstrual disturbances as well as decreased response to ovarian stimulation has been noted [3]. Yet, the direction of this relationship is unclear as infertility may lead to secondary depression and

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significant stress. Other negative sequelae of infertility include impairment of sexual life, marital dissatisfaction and poor marital communication [4]. The stigma associated with infertility can also affect self-esteem [5], as infertile couples often report feelings of isolation and inadequacy [6]. Further, the complexity and cost of treatment and social pressure to have children can be additional stressor on the marital relationship and quality of life (QOL) [7].

While a number of studies have examined the psychological impact of infertility on couples, few have focussed on gender differences in psychological distress between spouses. Some investigations have reported greater emotional distress, anxiety and depression, as well as lower satisfaction with their marriage and sexual life, among wives in comparison to husbands [8–10]. The prevalence of depression is approximately 30%–40% among females within infertile couples [11,12], and gender comparisons have noted psychiatric morbidity to be as high as 61.1% in females and 21% in males [13]. In addition, females are at higher risk of emotional distress even during the course of treatment, and particularly when the cause of infertility was identified as wife-related [14] or when repeated cycles of treatment were needed [15,16]. Low self-esteem and guilt/blame were also reported as higher among females than males [17].

The psychological distress experienced by infertile couples may be associated with various factors that include anticipation of side effects of medications and surgical and gynaecological procedures, the lengthy examination and treatment, expense of medical interventions, and uncertainty of treatment success [18]. Perceived stress associated with the stigma related to infertility has shown to have a significantly greater impact on females than men [5,19], contributing to a higher degree of psychological distress among female partners. However, the majority of the research results are attributed by studies and investigations conducted within the Western countries, with comparatively little data from Asian populations. This is of particular relevance because of the patriarchal nature of Asian societies and the highly valued role of motherhood and fertility [20]. Moreover, differences in values and cultural practices would undoubtedly affect the couples' perception of infertility, and hence influence their psychological profile and coping styles [20]. Thus, data from Western studies may have limited generalizability to non-Western patient samples.

Type of coping style employed significantly affects stress management, with adaptive coping strategies (e.g. task or problem-focused) contributing to better stress adaptation and emotion-focused strategies resulting in greater distress [21], including in infertile couples [22,23]. The available data suggest that, in general, female partners employ more coping strategies and report more stress than their husbands [24,25]. However, these studies have been conducted primarily in Western populations, and to date, there are no published literature on the correlation of coping style with psychological distress in non-Western populations, where gender

relationships are often more complex and significantly influenced by religion and culture.

The present study aimed to fill these lacunae in the literature by evaluating the gender differences in psychological distress in Malaysian infertile couples, and the possible relationship between distress and coping style.

## 2. Methods

### 2.1. Subjects

This cross-sectional study was conducted at The International Islamic University Malaysia (IIUM) Fertility Centre. The centre received referrals within the vicinities of Kuantan and east coast of Malaysia, which are considered as mostly rural areas. Less than half of the population here resides in urban areas. In terms of ethnicity and religion, about 80% of the local population is Malay Muslim, with the remaining ethnicities (Chinese, Indian and others) being affiliated with the Buddhist, Christian, Hindu and other religions [26]. Male and female participants who were literate in English or Malay language and able to provide written consent were included in the study. Couples were considered infertile when they had unsuccessfully tried to conceive a child with natural methods of unprotected regular sexual intercourse for more than 1 year. Exclusion criteria included current syndromal psychiatric disorders or organic brain disorders such as dementia or delirium and were determined through patient report. All patients listed in the IIUM Fertility Centre list were approached and those who fulfilled the inclusion criteria were included in this study. The study was approved by the internal review board of the university ethics committee.

Demographic and subject information was obtained from the medical records of all subjects, including age, gender, education level, income, number of previous IUI/ IVF treatment cycles, duration of infertility, reproductive diagnosis and length of time attempting pregnancy.

### 2.2. Study instruments

The subjects also completed the Depression, Anxiety, Stress scale (DASS). The Malay language version of DASS-21 has well documented reliability and has been validated on various Malaysian samples, including clinical and non-clinical populations, and as such, it was used to measure depressive, anxiety and stress levels in this study [27–29]. Clinically significant symptomatology, for the purposes of the study, was denoted by total scores of >14 for depressive items, >10 for anxiety items and >19 for stress items. Higher scores indicated more depressive, anxiety and stress symptoms. The Coping Inventory for Stressful Situations (CISS) was used to measure the coping styles employed by the subjects. The CISS has been appropriately translated into the Malaysian language and found to have high psychometric properties. The overall Cronbach's alpha was 0.91 with good factor loading for most of its items where 44 items out

Table 1  
Demographic characteristics of the patient sample.

Variable	N	%	Total
Age (years old)			
≤ 34	172	69.9	246
>34	74	31.1	
Gender			
Male	123	50	246
Female	123	50	
Race			
Malays	230	93.5	246
Chinese	7	2.8	
Indians & others	9	3.6	
Employment Status			
Professional	118	48.4	246
Non-professional	119	48.0	
Not working	9	3.6	
Educational Level			
Secondary school	92	37.4	246
College/university	154	62.6	
Source of identified infertility causes			
Women	103	41.9	246
Men	74	30.0	
Idiopathic	69	28.1	
Types of infertility			
Primary	225	47.9	246
Secondary	21	8.5	
Duration of infertility			
Less than 5 years	116	47.9	242
5 years and more	126	52.1	
Previous history of IVF			
Yes	34	13.8	246
No	212	86.2	

of 48 had values of more than 4.0 [30]. Clinically significant propensity to specific coping style(s) was indicated by total scores >60 on task-oriented, emotional, and avoidance coping items.

### 2.3. Statistical analysis

Chi-Square test was used to analyze the different distributions of significant anxiety, depression, stress and

coping styles among wives and husbands. In addition, independent samples t-tests were employed to assess gender differences in coping styles and psychological distress. Spearman's correlation (non-parametric) test was used to determine the strength of relationships between types of psychological distress, and between psychological distress and coping style.

### 3. Results

Out of 248 subjects registered in the clinic registry, a total of 246 subjects (124 couples) met eligibility criteria, agreed to participate, and were enrolled in this study. Only one couple refused to participate and was excluded from this study.

The demographic data (Table 1) indicated that most of our respondents were young, Malays and had obtained tertiary education. Period of infertility (< or >5 years) was relatively equal, and a large majority of subjects had never tried fertility treatments at the time of inclusion in the study.

The key results were: (a) Wives were significantly more likely to report depression ( $p < 0.002$ ), anxiety ( $p < 0.001$ ) and stress ( $p < 0.015$ ) than husbands (Table 2). Among husbands, there was a moderate correlation between their depressive and anxiety scores ( $r = 0.626$ ), their depressive and stress scores ( $r = 0.657$ ), and their anxiety and stress scores ( $r = 0.652$ ) (Table 3). These correlations were slightly stronger among wives, between their depressive and anxiety scores ( $r = 0.700$ ), their depressive and stress scores ( $r = 0.712$ ), and their anxiety and stress scores ( $r = 0.750$ ); (b) There were no statistical differences in coping styles between wives and husbands (Table 2); (c) Emotional coping was associated with reports of higher depression ( $p < 0.002$ ), anxiety ( $p < 0.001$ ) and stress perception ( $p < 0.001$ ) in the pooled sample of both genders (Table 4). In analysis of the strength of this relationship, emotional coping was moderately correlated with depression ( $r = 0.536$ ), anxiety ( $r = 0.586$ ) and stress ( $r = 0.619$ ) among wives, but among husbands, the correlation was moderate only between

Table 2  
Gender differences in psychological distress and coping style among infertile couples.

		Subjects		Total	p-value	Odds ratio
		Husbands	Wives			
Depression	Significant	19	39	58	0.002*	2.5
	Non-significant	104	84	188		
Anxiety	Significant	37	69	106	0.001*	3.0
	Non-significant	86	54	140		
Stress	Significant	23	31	54	0.015*	1.5
	Non-significant	100	92	192		
Task-oriented coping	Significant	54	61	115	0.371	
	Non-significant	69	62	131		
Emotion-oriented coping	Significant	11	17	28	0.227	
	Non-significant	112	106	218		
Avoidance coping	Significant	33	38	71	0.482	
	Non-significant	90	85	175		

\* Significant p-value <0.05.

Table 3  
Gender comparison of correlations between psychological distress and coping styles.

	Depression		Anxiety		Stress		Task-oriented coping		Emotion-oriented coping		Avoidance coping	
	Husbands	Wives	Husbands	Wives	Husbands	Wives	Husbands	Wives	Husbands	Wives	Husbands	Wives
Depression	NA	NA	0.626	0.700	0.657	0.712	-0.324	-0.131	0.394	0.536	0.043	-0.030
Anxiety			NA	NA	0.652	0.750	-0.127	0.036	0.431	0.586	0.207	0.166
Stress					NA	NA	-0.102	-0.002	0.518	0.619	0.067	0.102
Task-Oriented Coping							NA	NA	0.162	0.191	0.442	0.305
Emotion-Oriented Coping									NA	NA	0.293	0.339
Avoidance Coping											NA	NA

emotional coping and stress ( $r=0.518$ ) and was low with depression ( $r=0.394$ ) and anxiety ( $r=0.431$ ). No significant relationship was found with either task-oriented or avoidant coping styles and psychological distress in either husbands or wives.

#### 4. Discussion

This pilot investigation adds to the literature on psychological distress and coping among infertile couples by providing much-needed data from a non-Western population. The key findings of the study were that among infertile Malaysian couples, wives report higher levels of depression, anxiety and stress ( $p < 0.05$ ), at a frequency of 1.5 to 3 times compared to their husbands. This is consistent with findings from studies conducted in Western cultures, which have also shown that wives in infertile couples are more vulnerable to psychological distress than husbands. In both husbands and wives, depression, anxiety and stress were significantly correlated [12,13]. This is unsurprising as anxiety and depression are highly co-morbid and stress (in this case, infertility and affiliated concerns) is a major trigger and consequence of both depression and anxiety.

Successful stress management within infertile couples has been associated with adaptive coping strategies while emotion-focused strategies have been linked with greater distress [28–30]. In this study, no gender differences in coping styles were observed, but there was a significant

correlation between emotional coping and psychological distress (though not with the other two coping styles). This, again, is consistent with findings from Western literature, which indicate that maladaptive coping contributes to psychological distress. The strength of this correlation was stronger overall among wives than husbands, suggesting that maladaptive coping may have a greater negative impact on women than men. Together with the finding that psychological distress is significantly higher among wives, this may also provide a basis for prioritization of psychological intervention and prevention strategies directed at infertile couples. It is somewhat unexpected that no correlation was found with avoidance-oriented coping and psychological distress. However, this lack of association may have been due to various factors such as culture, personal attributes, and other risk factors, which were admittedly not fully explored in this study [31].

We humbly admit several limitations in the present study. First, measures of psychological distress were collected through self-report and not by another objective measure (e.g. clinician rated). Though the measures used in this study have been shown to have good validity and reliability, levels of depression, anxiety and stress were dependent upon the participants' own subjective report. Second, there was a lack of other perceived stress and personality measures. As well, given that the majority of the study sample was Malay (93%) and highly educated, this may limit generalizability of the results. Further, the high cost of infertility treatments may restrict access to highly educated patients of a higher

Table 4  
Correlations between coping style and psychological distress in the pooled patient sample.

Coping styles	Depression			Anxiety			Stress		
	Significant	Non-significant	p-value	Significant	Non-significant	p-value	Significant	Non-significant	p-value
Task-oriented									
Significant	26	105	0.14	53	78	0.37	29	102	0.94
Non-significant	32	83		53	62		25	90	
Emotion-oriented									
Significant	13	15	0.002*	20	8	0.001*	13	15	0.001*
Non-significant	45	173		86	132		41	177	
Avoidance									
Significant	20	51	0.285	35	36	0.21	21	50	0.70
Non-significant	38	137		71	104		33	142	

\* Significant  $p$ -value  $< 0.05$ .

socioeconomic status, again limiting the generalizability of these results to populations of lower education and socioeconomic status.

Many risk factors for development of psychological distress among infertile couples (e.g. cultural and personality factors, social support) were not assessed in this study and are worthy of further exploration. As well, though the percentage of study patients who had already received IVF treatments was small, the cross-sectional study design made it difficult to identify whether the significant stress, anxiety and depressive levels developed prior to or after embarking on IVF treatments. Further studies may benefit from using a more homogeneous patient sample in this regard.

Despite the above limitations, this pilot study provides a valuable non-Western perspective on psychological distress associated with infertility. It would be reasonable to suggest that interventions to improve adaptive stress coping among infertile couples may contribute to alleviation and/or prevention of psychological difficulties. As the double stigma of infertility and psychological distress may be a source of hindrance in seeking the professional intervention, treating physicians can play an active role in the detection and identification of psychiatric comorbidity in this patient group, and provide assistance in their obtaining appropriate help.

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