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Relationship of Sociodemographic Features, Clinical Symptoms and Functioning Level Among Bipolar Patients with Manic Episode and Difference Between These Variables According to Gender

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ABSTRACT

Relationship of sociodemographic features, clinical symptoms and functioning level among bipolar patients with manic episode and difference between these variables according to gender

Objective: We aimed to investigate the difference in socio-demographic features, clinical symptoms, functioning level and relationship between those variables according to gender among bipolar patients with manic episode.

Methods: One hundred men and 100 women between ages 18 and 65, who met DSM-IV criteria for the last-episode of mania in the course of bipolar disorder and required inpatient treatment were recruited. We excluded those who had comorbid mental disorders or history of alcohol and drug abuse or dependence. Patients were assessed by Socio-demographic Evaluation Questionnaire, Brief Psychiatric Rating Scale, Young Mania Rating Scale, Bipolar Disorder Functioning Questionnaire and List for Evaluating Sleep, Libido and Eating Behaviors.

Results: Marriage rate, presence of triggering life events, scores of subscale evaluating household relations were found significantly higher in women. Competence of working, libido and subscales evaluating sexual functioning, participation to social activities, hobbies and occupation were found significantly higher in men. Libido was decreasing with age in women, while it was stable in men. Age of onset for the disease in men was significantly related with their intellectual functioning subscale scores. Marriage was associated with lower scores of subscales evaluating participation to social activities, daily activities, hobbies and taking initiative, self sufficiency in women and feeling of stigma in men.

Conclusions: As a result of the study, certain gender differences were found in socio-demographic features, clinic symptoms, disease severity and functioning of bipolar patients with manic episode. Those differences may stem from both physiological and cultural factors.

Key words: Bipolar disorder, gender difference, mania

ÖZET

İki uçlu bozukluk manik dönemdeki hastalarda sosyodemografik özellikler, klinik belirtiler ve işlevsellik seviyesinin birbiriyle ilişkisi ve cinsiyete göre farklılıkları

Amaç: Bu çalışmada, İki Uçlu Bozukluk (İUB) manik dönemdeki hastalarda sosyodemografik özelliklerin, klinik belirtilerin, işlevsellik düzeyinin ve bu değişkenlerin birbirleri ile ilişkilerinde cinsiyete göre farklılıklarının ortaya konulması amaçlanmıştır.

Yöntem: Çalışmaya, DSM-IV ölçütlerine göre "İUB son hecme mani" teşhisi konan ve serviste yatmayı gerektirecek şiddette hastalığı bulunan, 18-65 yaş arası 100 kadın ve 100 erkek hasta alındı. İUB'ye eşlik eden herhangi başka bir ruhsal bozukluğu olan ve alkol ya da madde kötüye kullanımı veya bağımlılığı öyküsü olan hastalar çalışmadan dışlandı. Hastalar, Sosyodemografik Veri Toplama Formu, Kısa Psikiyatrik Değerlendirme Ölçeği, Young Mani Derecelendirme Ölçeği, Bipolar Bozuklukta İşlevsellik Ölçeği, Uyku-Libido-Yeme Davranışı Listesi ile değerlendirildi.

Bulgular: Kadınlarda evlilik oranı, hastalığın ortaya çıkışını tetikleyen yaşam olayı bulunma oranı ve ev içi ilişkileri değerlendiren alt ölçek puanları, erkeklere göre anlamlı olarak yüksek bulundu. Erkeklerde ise, çalışabilirlik durumu, libido ve cinsel işlevsellik, toplumsal etkinliklere katılım, günlük etkinlikler ve hobiler ile iş işlevselliği alt ölçeklerinin puanları kadınlara göre anlamlı olarak yüksekti. Libidonun kadınlarda yaş ile azaldığı, erkeklerde ise değişmediği saptandı. Erkeklerde hastalığın başlangıç yaşı ile zihinsel işlevsellik arasında ilişki bulundu. Evlilik, kadınlarda toplumsal etkinliklere katılım ile inisiyatif alma ve potansiyelini kullanabilme alt ölçeklerinde, erkeklerde ise damgalanma hissi alt ölçeğinde düşük puanlarla ilişkili bulundu.

Sonuç: İUB manik dönemdeki hastalarda sosyodemografik özellikler, klinik belirtiler, hastalık şiddeti ve işlevsellik alanlarında cinsiyete özgü bazı farklılıklar olduğu saptandı. Bu farklılıkların bir kısmı biyolojik, diğerleri ise kültürel faktörlerden kaynaklanmış olabilir.

Anahtar kelimeler: İki uçlu bozukluk, cinsiyet farkı, mani

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INTRODUCTION

There are several studies about the effect of gender differences on clinical presentation of bipolar disorder (BPD). Research provided information particularly about prevalence, age of onset, treatment adherence, disease course and clinical symptom domains of the disease (1).

Epidemiological studies about BPD showed that lifetime prevalence of a manic episode is 1.7% in women and 1.8% in men and age of onset is similar between genders (2,3). It was reported that disease often starts with a manic episode in men and with a depressive episode in women (4,5). Although women reported to experience higher number and more frequent depressive episodes (4) and reported to have more cycles and mixed episodes (6-9), there are studies showing that these frequencies resemble at both genders (3,10,11).

Clinical symptoms are reported to be similar at both men and women in a study (7). It was reported that age of onset is smaller in men than women in cases whom psychotic symptoms accompany manic episodes and women were reported to have higher Young mania scores, have more depressive episodes and age of onset is smaller than men (12,13).

Psychosocial functionality was reported to vary between genders in BPD (14,15). It was reported that there is no difference between genders for stigmatization but social relation quality is better in women. In a similar study, it was found that women are more successful in conducting interpersonal relations but occupational and social functionality levels are similar between genders (1).

Abovementioned studies make it possible to perform a general evaluation about the relationship between BPD and gender. However, it was generally not detailed what differences patients with BPD show during a certain episode of the disease. Several clinical and socio-demographic differences which may be related with gender can be predicted particularly at the manic episode. In this study, we aimed to evaluate all clinical and socio-demographic characteristics thought to be related with gender and bring up whether there are differences for gender in manic episode of BPD.

METHODS

Sample

A hundred male and 100 female patients who were consecutively hospitalized to women's and men's inpatient departments of Erenköy Training and Research Hospital for Mental Health and Diseases between February and December 2010 and diagnosed as "BPD last episode mania" according to DSM-IV criteria, meeting inclusion-exclusion criteria of the study, accepted to sign the consent form after he/she or relatives of patients were informed about the study and was able to adapt interview.

Inclusion criteria of the study were as follows:

1- Patients with manic episode of BPD according to DSM IV criteria,
2- Patients between the ages of 18 and 65 years,
3- Severe episodes requiring hospitalization

Exclusion criteria of the study were as follows:

1- Patients younger than the age of 18 and older than the age of 65,
2- History of a comorbid Axis I psychiatric disorder or mental retardation,
3- History of alcohol/substance abuse or dependence,
4- Conditions hindering communication such as deafness etc.

Assessment Tools and Administration

Study was started after taking approval from Ethical Committee of Erenköy Training and Research Hospital for Mental Health and Diseases. After patients were diagnosed according to DSM-IV criteria (16), they were informed accordingly and recruitment was done after consent of patient or legal guardian was obtained. All patients were administered "Socio-demographic Data Collection Form" prepared by our team, "Brief Psychiatric Rating Scale", "Young Mania Rating Scale" and "Bipolar Functionality Scale". "Sleep, Libido and Eating Behavior List" which was formed by our team using some items of Bech Rafaelson Mania Scale was

also administered. When patients whom were followed-up after these tests were discharged, types of treatment and durations of hospital stay were determined.

Socio-demographic Data Collection Form: This form was prepared by authors to evaluate demographical and clinical variables such as age, marital status, educational background, profession, history of psychiatric disease, age of onset of disease, age of first treatment, first episode of disease, presence of a life event triggering the disease, total number of episodes, number of hospitalizations and mean duration of hospitalization during an episode.

Brief Psychiatric Rating Scale (BPRS): This scale was developed by Overall and Gorham (17) and used to assess the severity of psychotic and some depressive symptoms. It is a seven-point Likert-type scale consisting of 18 items. In the original version which scoring was done between 0 and 6, scores between 15 and 30 indicate minor and scores over 30 indicate major syndrome. Lowest score is 0 and highest possible score is 108. It is recommended to be used in comparative studies due to absence of a cut-off score. It was translated to Turkish. In our study, scores received from each scale item and total score were compared according to gender.

Young Mania Rating Scale (YMRS): This scale was developed by Young et al. (18) and used to assess the severity of manic attack. Seven items of the 11-item scale is five-point Likert-type and remaining four items are nine-point Likert-type. Lowest possible score is 0 and highest possible score is 44. Validity and reliability of the Turkish version was done (19). Cut-off point was not calculated in the study of Turkish version. In our study, both scores from each item and total scores of the scale were compared according to gender.

Functionality Scale in Bipolar Disorder (FSBD): This scale is a 52-item, self-rating scale used to assess functionality levels of patients with BPD at active episodes or at recovery intervals. It was developed by Aydemir et al. (15). It consists of 11 sub-scales of emotional functionality, mental functionality, sexual functionality, stigmatization, social withdrawal, in-house relations, relations with friends, participation to social activities, daily activities and hobbies, taking initiatives and ability to use the potential and job/occupation. This scale is recommended to be utilized in comparative studies due to lack of cut-off scores.

Sleep, Libido and Eating Behavior List: As already known, 9th item of Bech Rafaelson Mania Scale (20) consists of "duration of sleep reduced by 25%", "duration of sleep reduced by 50%", "duration of sleep reduced by 75%" and "no sleep" options. We added a fifth option to these as "not need to sleep" and formed the item evaluating sleep behavior. Scores between 1 and 6 can be achieved from these options. Also, item evaluating libido was formed by using options from 10th item of Bech Rafaelson Mania Scale such as "Habitual sexual interest and activity", "slight increase in sexual interest and activity", "moderate increase in sexual interest and activity", "marked increase in sexual interest and activity" and "completely and inadequately occupied by sexuality". Scores between 1 and 5 can be achieved from options. Item evaluating eating behavior was designed by authors. For appetite, it was designed to score between 1 and 5 to "absent", "somehow decreased", "normal", "mildly increased" and "very much increased" options. "Sleep, Libido and Eating Behavior List" was formed and achieved scores were compared according to gender.

Statistical Methods

Statistical analyses were performed by SPSS v16.0 software. For statistical analysis, t-test was used to compare numerical values between men and women including parametric assumptions such as age, clinical variables and functionality scale. Socio-demographic variables were compared by using chi-square test. ANOVA test was used to compare clinical variables between groups according to marital status. Paired group origin of numerical variables found to be significant by ANOVA test was determined by Post-hoc

Table 1: Socio- demographic characteristics of groups

	Gender					
	Men		Women			
	N	%	N	%	χ^2	P
Marital status						
Single	53	53	21	21	χ^2=22.59	<0.01
Married	37	37	57	57		
Widow	10	10	22	22		
Occupation						
Unemployed	41	41	81	81	χ^2=35.25	<0.01
State employee/worker	12	12	5	5		
Freelance	28	28	9	9		
Retired	14	14	2	2		
Student	5	5	3	3		
Type of the first episode						
Mania	84	84	69	69	χ^2=6.78	0.03
Mixed	3	3	9	9		
Depression	13	13	22	22		
Triggering life event						
No	56	56	31	31	χ^2=14.06	<0.01
Yes	31	31	41	41		
Inadequate information	13	13	28	28		

χ^2: Chi-square test

Tukey HSD test. Relationship between clinical variables was calculated by Pearson correlation analysis. Numerical variables were represented as mean ± standard deviation. Statistical significance was taken as p<0.05.

RESULTS

Socio-demographic Variables

Age (p=0.92), educational level (p=0.65), history of a psychiatric disease in relatives (p=0.34), age of onset of disease (p=0.71), first age of treatment (p=0.89), total number of episodes (p=0.19), total number of hospitalizations (p=0.31) and mean duration of hospital stay (p=0.97) of female (n=100) and male (n=100) patients participated in the study were found similar. No significant difference was found between groups for number of total manic (p=0.16), mixed (p=0.06) and depressive (p=0.80) episodes; however, marital status (p<0.01), working status (p<0.01) and first episode type (p=0.03) was found significantly different. Frequency of a life event triggering the episode was found significantly higher in women than men (p<0.01) (Table 1).

Clinical Characteristics

No correlation was found between groups for sleep (p=0.95) and eating behavior (p=0.75) scores but libido scores were found significantly higher in men (p<0.01). BPRS scores were found similar between groups (p=0.73). Total YMRS scores were found similar between groups (p=0.10); however, when scores from scale items were compared separately, scores of the third item evaluating increase in sexual desire were found significantly higher in men (p<0.01) (Table 2).

No significant difference was found between emotional functionality (p=0.29), mental functionality (p=0.70), relations with friends (p=0.059), daily activities and hobbies (p=0.75), initiative taking and ability to use potential (p=0.09) scores from BPSD. Scores achieved from sexual functionality (p<0.01), participation at social activities (p<0.01), occupation (p<0.01) stigmatization (p<0.01) domains were found significantly higher in men and scores achieved from in-house relations (p=<0.01) and social withdrawal (p<0.01) domains were found significantly higher in women (Table 2).

No statistically significant difference was found

Table 2: Clinical Findings of Groups

	Gender		t	p
	Men Mean±SD	Women Mean±SD		
Libido	2.32±1.22	1.75±1.07	0.04	<0.01
Young mania item 3	1.18±0.98	0.71±0.83	0.16	<0.01
Sexual functioning	8.17±2.73	6.41±3.06	0.31	<0.01
Feelings of stigmatization	8.09±2.57	7.18±2.49	0.92	<0.01
Social withdrawal	6.82±1.70	7.36±1.52	0.16	<0.01
Household relations	12.9±3.10	14.65±2.79	0.11	<0.01
Participation in social activities	16.46±3.78	14.35±3.92	0.36	<0.01
Occupation	8.84±2.53	6.74±4.38	0.00	<0.01

t: Student's T Test, SD: Standard deviation

between duration of inpatient treatment (p=0.44) and Electroconvulsive Therapy(ECT) administration rates (p=0.62) of men and women.

Relationship between age, age of onset, initial age of treatment, total number of episodes, total number of manic, mixed, hypomanic and depressive episodes, total number of hospitalizations, mean durations of hospital stay, sleep, eating and libido behavioral scores, single and total scores of YMRS items, total scores of BPRS and sub-scale scores of FSBD of patients were examined. Positive linear correlation was found in men between total number of episodes and total number of depressive episodes (r=0.49, p<0.01), total number of manic episodes and mean duration of hospital stay (r=0.28, p<0.01), initial age of treatment and social withdrawal scores (r=0.25, p<0.01); negative linear correlation was found in men between age and participation at social activities (r= -0.21, p=0.02), daily activities and hobbies (r=-0.20, p=0.03), initiative taking and ability to use potential (r=-0.26, p<0.01), age of onset and mental functionality (r=-0.31, p<0.01), initial age of treatment and mental functionality (r=-0.29, p<0.01), total number of hospitalizations and participation at social activities (r=-0.20, p=0.04), mean duration of hospital stay and relations with friends (r=-0.19, p=0.05) and participation at social activities (r=-0.32, p<0.01) scores. In women, positive linear correlation was found between age and 4th item of YMRS evaluating insomnia (r=0.28, p=0.01), age of onset and daily activities and hobbies (r=0.22, p=0.02), total number of episodes and sleep behavior (r=0.19, p=0.05), 4th and 10th items of YMRS (r=0.30, p<0.01), total number of manic episodes and sleep behavior (r=0.25, p<0.01), 4th item of YMRS evaluating insomnia and 5th item evaluating irritability (r=0.34, p<0.01), (r=0.20, p=0.04) and 10th item (r=0.23, p=0.02), total number of hospitalizations and 4th item of YMRS (r=0.35, p<0.01); negative linear correlation was found between age of onset of disease and total number of depressive episodes (r=-0.20, p=0.04), total number of hospitalizations (r=-0.21, p=0.03), stigmatization (r=-0.29, p<0.01), total number of episodes and daily activities and hobbies (r=-0.28, p<0.01), total number of manic episodes and sexual functionality (r=-0.26, p<0.01), relations with friends (r=-0.20, p=0.04), participation at social activities (r=-0.21, p=0.03), daily activities and hobbies (r=-0.25, p<0.01), total number of hospitalizations and daily activities and hobbies (r=-0.24, p=0.01), mean duration of hospital stay and 9th item of YMRS evaluating destructive-hostile behavior (r=-0.21, p=0.02).

Age of onset of disease, initial age of treatment, initial type of episode, total number of manic, mixed, hypomanic and depressive episodes, total number of hospitalizations, mean durations of hospital stay, sub-scale variables of functionality scale were shown at Table 3. Significant correlations were found between marital status and number total hospitalizations (p<0.01), stigmatization (p=0.02), social withdrawal (p=0.04) and relations with friends (p=0.03) in men compared to women; significant correlations were found between sexual functionality (p=0.02), participation at social activities (p=0.04), initiative-taking ability to use potential (p=0.04) scores in women compared to men (Table 3).

Table 3: Relationship between marital status and clinical findings

	Marital status			F	p
	Single Mean±SD	Married Mean±SD	Widowed Mean±SD		
Men					
Age of onset	23.06±5.41	30.92±9.89	29.8±9.37	12.13	<0.01 a
Initial age of treatment	23.02±6.11	32.32±9.48	30.5±9.95	16.05	<0.01 b
Total number of episodes	6±5.4	8.05±9.06	13.1±9.28	4.11	<0.01 c
Total number of manic episodes	5.02±4.56	5±4.52	10.7±9.83	5.25	<0.01 d
Total number of hospitalizations	4.49±4.3	3.81±2.6	9.6±10.41	6.05	<0.01 e
Stigmatization	8.7±2.49	7.19±2.45	8.2±2.78	3.98	0.02 f
Feelings of social withdrawal	6.43±1.72	7.32±1.47	7±2.11	3.15	0.04 g
Relations with friends	11.3±2.42	12.49±1.77	11±2.91	3.55	0.03 h
Women					
Age of onset	20.38±3.34	26.68±8.71	30.46±9.67	8.47	<0.01 ı
Initial age of treatment	21.52±4.42	27.11±8.87	33.68±12.7	9.48	<0.01 j
Total number of episodes	6.14±7.74	8.42±8.37	13.82±14.23	3.62	0.03 k
Total number of manic episodes	5±6.93	6.25±7.87	11.55±14.49	3.12	0.04 l
Sexual functionality	4.57±3.17	7.21±2.36	6.09±3.83	6.49	<0.01 m
Participation in social activities	15.48±4.94	13.49±3.54	15.5±3.39	3.32	0.04 n
Initiative taking and using potential	5.81±1,72	4.86±1,47	5.41±1,68	3.11	0.049 o

a- Age of onset is lower in single men, b- Initial age of treatment is lower in single men, c- Total number of episodes is higher in widowed men,
d- Total number of manic episodes is higher in widowed men, e- Total number of hospitalizations is higher in widowed men, f- Stigmatization is lower in married men,
g- Social withdrawal is lower in single men, h- Relations with friends is higher in married men, i- Age of onset is lower in single women,
j- Initial age of treatment is higher in widowed women, k- Total number of episodes is higher in widowed women, l- Total number of manic episodes is higher in widowed women,
m- Sexual functionality is lower in single women, n- Participation in social activities is lower in married women, o- Initiative taking and using potential is lower in married women,
SD: Standard deviation

DISCUSSION

Age of disease onset was found similar between groups. This finding supports finding of Kawa et al. but not Kennedy et al. whom found an earlier age of onset in men (4,5). This may suggest that disease has neurodevelopmental mechanisms similar to gender. Presence of a triggering life event was found higher in women than men. This finding might have been due to encountering more traumatic life events by women or being more affected than men from events experienced. This issue should be further and in-depth investigated according to characteristic of the life event.

Married cases were found more among women and singles were found more among men. When women having significantly higher scores at in-house relations sub-scale and functionality scale were evaluated together, women with BPD might have been affected from disease less than men about marrying and maintaining marriage. Effect of disease on marriage or role of cultural factors on marriage status of patients from both gender are not known. We evaluated this relationship with regard to the effect of marital status on other variables as well. In a study which role of gender on married and single patients with BPD, it was found that age of onset is earlier in single men and married women experience less depressive episodes (21). We found that onset of disease is earlier in single cases of both gender and there is no correlation between number of depressive episodes and marital status. Number of total and manic episodes was found higher in widows of both genders. It was found that number of hospitalizations was higher in male widows, feeling of stigmatization was lower and relations with friends were higher in married men and social withdrawal was found lower in single men. Participation at social activities was found lower in married women and sexual functionality was found lower in single women. It can be proposed by these findings that social support of marriage may have a protective role for both genders for early onset of disease and total number of episodes. Marriage seems to affect social activities positively in

men but negatively in women. This might have been due to determining roles of various cultural factors of genders on family institution.

Higher proportion of unemployment in women than men was supported by lower functionality scores in business life. This finding is not consistent with findings of Miquel et al. (1) who found that occupational functionality is similar between genders. This condition may be related with involvement of women predominantly with homework and family and involvement of men predominantly with financial issues.

We found that mania was more prevalent as the first episode in men than women similar to Miquel et al. (1). Moreover, total number of episodes and types of these episodes were found similar. This finding does not support the notion of "manic episodes are more frequent in women and depressive episodes are more frequent in men" (22). When current different findings were evaluated together, it can be suggested that biological mechanism which determines type and course of onset of disease and episode types is not affected by gender. Further biological findings are needed in order to reach definite judgments.

Mean duration of hospitalizations at episodes were found similar in both genders. This finding does not support the finding of Kessing (11) who found longer duration of hospitalization in women. This finding may suggest that biological and psychosocial factors affecting treatment response and recovery processes do not differ between genders.

Severity of manic symptoms did not significantly differ between genders. This finding is consistent with the literature (1,4). When YMRS items were examined separately, "sexual interest" score was found higher in men. Finding higher scores and behaviors of "sexual functionality" at item assessing libido in BPSD in men is consistent with this finding. High levels of sexual desire in men are not affected by age but decreases by age in women. Moreover, sexual functionality level of men was not affected by marital status but was lower in single women than married and widowed women. This finding may be due to longer maintenance and being less affected by social factors of sexuality in men but culturally inappropriateness of sexual activity of women.

Men scored higher than women at "participation in social activities" item of BPSD. This finding does not support the finding of Miquel et al. (1) who found similar social functionality at both genders. This may be due to lower level of participation of women in social activities in our society.

It was found that item 4 scores of YMRS which assessed insomnia in women were linearly correlated with age, total number of episodes, total number of manic episodes and total number of hospitalizations. Similarly, it was reported in the literature that severity of mania and depression increase by decreasing amount of sleep (23,24). It can be said that this finding was predictable when both negative effects of psychiatric disorders on sleep architecture and contribution of impairment sleep architecture on psychopathological condition.

A linear correlation was found between age of onset of disease and initial age of treatment and decreases mental functionality in men. The reason of decreased mental functionality which seemed to be related with men is not clear. Generally, cognitive impairment is observed at all types of episodes including euthymic episodes in patients with BPD (25). However, there is not sufficient data which indicate cognitive impairment differs between genders. It can be proposed that it is not clear to what extent mental activity we assessed reflect changes in cognitive activity and factors such as active participation at social or occupational lives which may require higher level of utilization of mental capacities and functions might have affected these findings. For this reason, this subject needs to be further evaluated in detail.

There are gender-specific differences among BPD patients at manic episode in domains such as socio-demographic characteristics, clinical symptoms, disease severity and functionality. Some of them might have been due to biological and others might have been due to cultural factors. Evaluating patients at manic episode by considering gender-specific differences may increase patient compliance. Most important limitations of this study are inadequate information obtained due to being

at manic episode and relatively narrower sample size. It can be said that further studies without these limitations may contribute to better understanding of gender-specific factors.

CONCLUSION

In this study which compared socio-demographic and clinical characteristics of patients at manic episode of BPD, main findings of differences between genders were as follows:

1- Functionality scores evaluating marriage rates and in-house relations were found higher in women.
2- Employment rates and occupational functionality scores were found higher in men.
3- Presence of a premorbid life event was found more frequent in women.
4- Libido, increase in sexual desire assessed by item 3 of YMRS and sexual activity scores were found higher in men. Sexual desire decreases by age in women but does not change in men.
5- There is a correlation between age of onset and decreased mental functionality in men.
6- Marriage is related with participation in social activities and initiative-taking and using potential sub-scores in women and lower stigmatization sub-scores in men.

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