

## Prevalence of body shape dissatisfaction and body weight dissatisfaction between female and male students

SHIRKO AHMADI<sup>1</sup>, ALI HEYRANI<sup>2</sup>, BAHRAM YOOSEFY<sup>2</sup>

<sup>1</sup> Physical Education Department, University of Campinas, BRAZIL

<sup>2</sup> Physical education department, University of Razi, IRAN

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### Abstract:

The objective of this study was to determine the magnitude of body weight dissatisfaction and body shape dissatisfaction between men and women. Participants were 369 (female: 204; male: 165) undergraduate student of Razi University. Age, height, weight, BMI, marital status, sport activity, economic status, Current and desired body weight and body mass index, Body weight dissatisfaction, Body shape dissatisfaction, Desired shape of parents' view, Desired shape of opposite sex view, Body weight/size importance and Weight loss attempts data were collected. Chi-squared ( $\chi^2$ ) tests were used to examine differences in proportions of categorical variables. Independent samples t-test, Paired t-test, Bonferroni post-hoc test and Multiple linear regression analysis was conducted in current study. There was a significant difference between women and men in BMI, Desired BMI, Body Weight Dissatisfaction and Body Shape Dissatisfaction ( $p < .001$ ). Also results of the Chi-square analysis revealed a non-significant association between gender and Body weight/size importance and gender and Weight loss attempts. Abs. val. body dissatisfaction had maximum effect on the Body Weight Dissatisfaction in both males and females. Among females, Body Weight Dissatisfaction was greater among those with higher levels of Abs. Val. Body Dissatisfaction and Desired shape of opposite sex view. Desired shape of parent's view was associated with lower Body Weight Dissatisfaction while Age, Economic status, Body Size Importance, Weight Loss Attempts, Current BMI, Marital status, Sport activity were unrelated to Body Weight Dissatisfaction. Generally, there was a satisfactory level of dissatisfaction with physical condition of both male and female students. It is noteworthy that the dissatisfaction between two sexes is different, meaning that because of the social-cultural criteria, women tend to be skinny and men to be muscular. Since present study has been carried out in the Islamic society of Iran, and in Islamic societies, the Hijab of women plays a significant role in the appearance of women. It is likely that the findings of this study are in contradiction with other related studies conducted in Western societies.

**Key words:** Body Shape Dissatisfaction, Body Weight Dissatisfaction, Gender Differences

### Introduction

Body image is defined as an individual mental representation about their own body. It represents an experience that person lives constantly, deriving from actions, perceptions and impulses. It carries jointly with body own identity, and related to physiological, psychological and social aspects (Leite et al., 2014). Shape of body or weight of body are important elements for body image (Ahmadi et al., 2013). According to the self-discrepancy theory, body shape dissatisfaction (BSD) results from the discrepancies between perceived current body shape and ideal body shape based on self-evaluation standards (Silverstein et al., 1986; Higgins, 1987; Canpolat et al., 2005). BSD has been found to be associated with adverse outcomes including eating disorders and depressive symptoms (Ackard et al., 2002; Jeanie et al., 2005; Johnson & Wardle, 2007). The associated anxiety and distress may lead to irrational weight-loss behaviors for achieving the desired body shape.

On the other hand, Body weight dissatisfaction and fear of fatness in early adolescence are important risk factors for disordered eating (Smolak et al., 1996; Barker & Galambos, 2003) and are considered to be significant health concerns among health professionals worldwide (French & Jeffery, 1994). Being thin is desired within Western societies, and many normal weight adolescents, especially girls, perceive themselves as overweight (Barker & Galambos, 2003; Ojala et al., 2007) and try to lose weight to achieve the socially endorsed ideal of a beautiful body (Strauss, 1999). Studies have shown variability in body size preference and in body image dissatisfaction among children and adolescents based on ethnicity, body mass index, gender, age, pubertal status, and family connectedness (Smolak et al., 1996; Altabe, 1998; Siegel et al., 1999). A positive association has been found between body mass index (BMI) and body image dissatisfaction among youth (Presnell et al., 2004). For both genders, the desire to change shape or weight is common (Bearman et al., 2006); however, gender differences in body dissatisfaction have been noted in early adolescence with girls being more dissatisfied

with their bodies than boys. (Collins, 1991; Siegel et al., 1999; Barker & Galambos, 2003; Ojala et al., 2007; Ahmadi et al., 2013).

Studies have demonstrated that body dissatisfaction has increased (McCreary & Sasse, 2000; Størvoll et al., 2005). In recent years, however, the emphasis on fitness has become more prevalent among other societies as well as Western cultures (Stice, 1994; Kennedy et al., 2004; Pike & Borovoy, 2004; Angelova & Utermohlen, 2013; Jackson et al., 2016). Messages in Western media regarding attractive and ideal body types may be a cause of body dissatisfaction (McCabe & Ricciardelli, 2006). Internalizing media messages can cause people to judge their body as unattractive. Individuals who compare themselves to attractive people represented in the media are prone to experience body dissatisfaction (Dittmar, 2005; Jones & Crawford, 2005), as well as discrepancies between perceived and ideal body image. Similar to other Asian cultures, obesity in Iran during the past few decades has been considered a signifier of good health and wealth, while thinness is associated with illness and poverty (Luo et al., 2005).

However, in recent years, thinness has become important in Iran as it has in other Asian cultures. In some study, the comparison between body image for Iranian women (living in Iran) and American women showed that both had lower body satisfaction than men, but Iranian women had greater body satisfaction than American women (Akiba, 1998). In another study, it was shown that body dissatisfaction and the desire to be thin were common in Iranian adolescent girls (Nobakht & Dezhkam, 2000). Other similar studies emphasize the increase of body dissatisfaction and related issues such as weight management behaviors (Rastmanesh et al., 2009; Garousi et al., 2016; Garrusi & Baneshi, 2017). The main purpose of this study is to determine the magnitude of body weight dissatisfaction (BWD) and body shape dissatisfaction (BSD) among Razi university students.

## Methodology

### *Participants*

A brief survey was administered at the largest university in the west of Iran- Razi University. Respondents were asked to provide demographic information, body size characteristics, body size importance, and weight loss attempts. Participants included 500 college students who were studying in 19 fields. Responses from 131 individuals were considered invalid, thus data are reported from 369 participants (female: 204; male: 165). The research protocol was approved by the Ethics Committee of the Department of Physical education, the Razi University. Participants were not required to sign written consent since they participated in the study anonymously and voluntarily.

### *Demographics*

Information was collected about age, gender, height, weight, BMI, marital status, sport activity and economic status. Respondents indicated their age in years. Due to limited sample size, sport activity was treated as a dichotomous variable (Active or non-Active). Economic status defined as a triplet variable (Fair, Moderate, Good or Excellent) (table 1).

### *Current and desired body weight and body mass index (BMI)*

Respondents self-reported their current height (centimeter), current body weight, and their "current ideal weight" (desired weight) in kg. A meta-analysis found that self-reported height and weight are good estimates of actual height and weight (Bowman & DeLucia, 1992). We calculated respondents' current body mass index ( $BMI = \text{weight [kg]} / \text{height [m]}^2$ ) using their self-reported height and weight. Respondents' desired weight was used along with their height to calculate a corresponding desired BMI. Standard BMI cut-offs were used to define underweight ( $18.5 \text{ kg/m}^2$ ), normal weight ( $18.5\text{--}24.9 \text{ kg/m}^2$ ), and overweight ( $\geq 25.0 \text{ kg/m}^2$ ) status (World Health Organization, 1998; Neighbors & Sobal, 2007).

### *Body weight dissatisfaction*

The discrepancy between current and desired body weight has previously been validated as a measure of body weight dissatisfaction (BWD) (Thompson & van Den Berg, 2002; Williamson et al., 1993). The discrepancy between current and desired BMI assesses BWD adjusted for height. Values greater than zero indicate a desire to weigh less, values less than zero indicate a desire to weigh more, and values equal to zero indicate no weight dissatisfaction. By taking the absolute value of BWD, we assess the overall magnitude of weight discrepancy accounting for the dissatisfaction experienced by both those who want to weigh more and those who want to weigh less (Neighbors & Sobal, 2007).

### *Body shape dissatisfaction*

Body shape dissatisfaction (BSD) was assessed using a figure rating scale (FRS) (Stunkard et al., 1983). The FRS consisted of nine gender-specific body silhouettes ranging from very thin (value=1) to very overweight (value=9). Respondents were asked to choose the figures that best represented their "current shape" and their "current ideal shape" (desired shape). Previous research has found good overall FRS validity (Stunkard et al., 1983) and test-retest reliability for selected ideal body figure in males ( $r=0.82$ ) and females ( $r=0.71$ ) (Thompson & Altabe, 1991). Magnitude of BSD was determined by calculating the discrepancy between the current and desired figures. Values greater than zero indicate current body shape is larger than the desired shape, less than zero indicate the current shape is smaller than the desired shape, and equal to zero indicate no BSD. By taking the absolute value of BSD, we assess the overall magnitude of shape discrepancy accounting for the

dissatisfaction experienced by both those who want to be thinner and those who want to be heavier (Neighbors & Sobal, 2007).

*Desired shape of parents' view*

Respondents were asked to choose the figures that best represented desired shape which they think their parents want for them. This variable was labeled "Desired shape of parents' view" for use in regression analyses.

*Desired shape of opposite sex view*

Respondents were asked to choose the figures that best represented desired shape which they think their opposite sex (male or female) want for them. This variable was labeled "Desired shape of opposite sex view" for use in regression analyses.

*Body weight/size importance*

Respondents were asked "How important is it to you to be a certain weight or clothing size?" on a five-point scale (not at all, not very, somewhat, very, or extremely).

*Weight loss attempts*

Respondents were asked to report if they had "attempted to lose weight in the past year." Affirmative responses were coded as one and negative responses were coded as zero.

**Table 1,** Distribution of participants based on age, gender, marital status, sport activity, height, weight, body mass index (BMI) and economic status.

Variable/Level	Frequency	%
Age (years)		
18-25	315	85.1
25-31	40	11.1
31-38	9	2.4
38-45	5	1.4
Gender		
Male	165	44.9
Female	204	55.1
Marital status		
Single	315	85.4
Married	54	14.6
Widow/Divorced	-	-
Sport activity		
Active	167	45.4
Non-active	202	54.6
height (cm)		
151-162	84	22.7
162-173	152	41.1
173-184	112	30.6
184-195	21	5.7
Weight (kg)		
42-59	159	43
59-76	163	44.3
76-93	43	11.6
93-110	4	1.1
BMI (kg/m <sup>2</sup> )		
< 18.5	37	10
18.5- 25	289	78.3
> 25	43	11.7
Economic status		
Fair	123	33.3
Moderate	161	43.5
Good or excellent	85	23.3

*Statistical analysis*

All statistical analysis was carried out with IBM SPSS Statistics 23.0. Chi-squared ( $\chi^2$ ) tests were used to examine differences in proportions of categorical variables. Independent samples t-tests were used to examine gender differences in continuous body weight and shape variables. Paired t-tests were used to assess whether body weight and shape dissatisfaction was evident within each gender and BMI category. Bonferroni post-hoc tests were used to test group differences. Multiple linear regression analysis was conducted separately by gender to examine predictors of the magnitude of body weight dissatisfaction. Given the multiple comparisons used in analyses, statistical significance was set at  $p < 0.05$  (Heirani & Ahmadi, 2012).

## Results

An independent-samples t-test was conducted to compare BMI, DBMI, BWD, BSD, BWSI and WLA in male and female participants (table 2). There was a significant difference in BMI ( $p = .001$ ) between females ( $M = 20.8$ ,  $SD = 2.2$ ) and males ( $M = 22.9$ ,  $SD = 2.1$ ); There was a significant difference in DBMI ( $p = .001$ ) between females ( $M = 21.3$ ,  $SD = 1.9$ ) and males ( $M = 24.4$ ,  $SD = 2.4$ ); There was a significant difference in BWD ( $p = .001$ ) between females ( $M = 2.2$ ,  $SD = .5$ ) and males ( $M = 2.9$ ,  $SD = 1.5$ ); There was a significant difference in BSD ( $p = .001$ ) between females ( $M = 10.2$ ,  $SD = .4$ ) and males ( $M = 13.4$ ,  $SD = 3.8$ ). There was not a significant difference ( $p = .6$ ) in the scores for females BWSI ( $M = 4.1$ ,  $SD = .9$ ) and males BWSI ( $M = 3.9$ ,  $SD = 1.1$ ), and also there was not a significant difference ( $p = .1$ ) in the scores for females WLA ( $M = .32$ ,  $SD = .5$ ) and males WLA ( $M = .25$ ,  $SD = .4$ ).

**Table 2**, compare males and females based on BMI, DBMI, BWD, BSD, BWSI and WLA.

	Female		Male		t	P
	M	SD	M	SD		
BMI	20.8	2.2	22.9	2.1	7.9	.001*
DBMI	21.3	1.9	24.4	2.4	13.7	.001*
BWD	2.2	.5	2.9	1.5	-3.5	.001*
BSD	10.2	.4	13.4	3.8	-3.3	.001*
BWSI	4.1	.9	3.9	1.1	.3	.6
WLA	.32	.5	.25	.4	-1.4	.1

\* $p < .001$

*BMI*: Body Mass Index; *DBMI*: Desired BMI; *BWD*: Body Weight Dissatisfaction; *BSD*: Body Shape Dissatisfaction; *BWSI*: Body Weight/Size Importance; *WLA*: Weight Loss Attempts

A chi-square test of independence was performed to examine the relation between males and females based on BMI, DBMI, BWD, BSD, BWSI and WLA (table 3). The results of the Chi-square analysis revealed a significant association between gender and BMI [ $\chi^2(1, N = 369) = 31.9, p < .001$ ], gender and DBMI [ $\chi^2(1, N = 369) = 62.9, p < .001$ ], gender and BWD [ $\chi^2(1, N = 369) = 15.9, p < .001$ ], gender and BSD [ $\chi^2(1, N = 369) = 8.3, p < .05$ ]. Also results of the Chi-square analysis revealed a non-significant association between gender and BWSI [ $\chi^2(1, N = 369) = 1.2, p = .87$ ] and gender and WLA [ $\chi^2(1, N = 369) = 2.2, p = .13$ ]

**Table 3**, the relation between males and females based on BMI, DBMI, BWD, BSD, BWSI and WLA.

Variable/Level	Female		Male		Total		$\chi^2$	P
	n	%	N	%	N	%		
<b>BMI</b>	204	55.1	165	44.9	369	100	31.9	.001**
<i>BMI &lt; 18.5</i>	29	78.4	8	21.6	37	100		
<i>18.5 &lt; BMI &lt; 25</i>	167	57.6	122	42.4	289	100		
<i>BMI &gt; 25</i>	8	18.6	35	81.4	43	100		
<b>DBMI</b>	204	55.1	165	44.9	369	100	62.9	.001**
<i>DBMI &lt; 18.5</i>	12	100	0	0	12	100		
<i>18.5 &lt; DBMI &lt; 25</i>	185	62.3	111	37.7	296	100		
<i>DBMI &gt; 25</i>	7	11.5	54	88.5	61	100		
<b>BWD</b>	204	55.1	165	44.9	369	100	15.9	.001**
<i>Desire to weight more</i>	99	46.5	113	53.3	212	100		
<i>Desire to stay the same weight</i>	44	71	18	29	62	100		
<i>Desire to weigh less</i>	61	64.2	34	35.8	95	100		
<b>BSD</b>	204	55.3	165	44.7	369	100	8.3	.01*
<i>Desire to shape larger</i>	60	45.5	72	54.5	132	100		
<i>Desire to stay the same shape</i>	82	59.4	56	40.6	138	100		
<i>Desire to shape smaller</i>	62	62.6	37	37.4	99	100		
<b>BWSI</b>	204	55.3	165	44.7	369	100	1.2	.87
<i>Not at all</i>	2	40	3	60	5	100		
<i>Not very</i>	11	61.1	7	38.9	18	100		
<i>Somewhat</i>	48	52.2	44	47.8	92	100		
<i>Very</i>	60	57.1	45	42.9	105	100		
<i>Extremely</i>	83	55.7	66	44.3	149	100		
<b>WLA</b>	204	55.3	165	44.7	369	100	2.2	.13
<i>Yes</i>	65	61.3	41	38.7	106	100		
<i>No</i>	139	52.9	124	47.1	263	100		

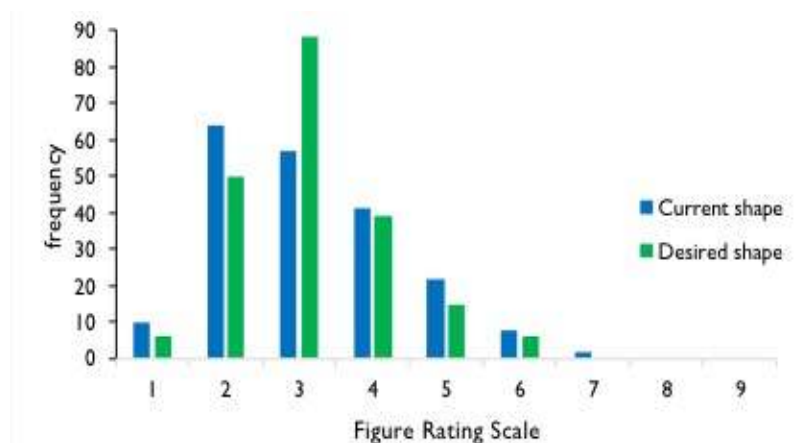
\*\*  $p < .001$     \*  $p < .05$

*BMI*: Body Mass Index; *DBMI*: Desired BMI; *BWD*: Body Weight Dissatisfaction; *BSD*: Body Shape Dissatisfaction; *BWSI*: Body Weight/Size Importance; *WLA*: Weight Loss Attempts

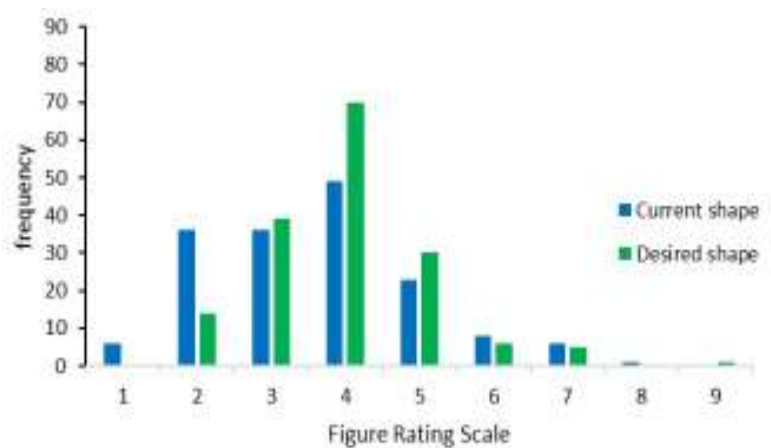
Table 4, is distribution of BSD between males and females' responses and its possible to find it more clear in figures 1 and 2.

**Table 4,** Current and desired body shape between males and females

	Female		Male	
	Current Shape	Desired Shape	Current Shape	Desired Shape
1	10	6	6	0
2	64	50	36	14
3	57	88	36	39
4	41	39	49	70
5	22	15	23	30
6	8	6	8	6
7	2	0	6	5
8	0	0	1	0
9	0	0	0	1



**Fig. 1,** Current and desired body shape for females



**Fig. 2,** Current and desired body shape for males

Multiple linear regression analyses were conducted separately by gender to examine predictors of the absolute magnitude of BWD [Abs. val. (Current BMI–desired BMI)] (Table 5). According to the *Beta*, role of each of the variables could be understandable. Abs. val. body dissatisfaction had the greatest effect on the BWD in both males and females ( $\beta = .3$ ,  $\beta = .42$ ), respectively. Among females, BWD was greater among those with higher levels of Abs. Val. Body Dissatisfaction and Desired shape of opposite sex view. Desired shape of parent's view was associated with lower BWD while Age, Economic status, Body Size Importance, Weight Loss Attempts, Current BMI, Marital status, Sport activity were unrelated to BWD. Among males, BWD was greater among those with higher Abs. Val. Body Dissatisfaction. Current BMI was associated with less BWD, while Age, Economic status, Body Size Importance, Weight Loss Attempts, Abs. val. Body Dissatisfaction, Current BMI, Desired shape of parent's view, Desired shape of opposite sex view and Marital status were unrelated to BWD in males. Regarding to the determination coefficients for the female and male, there is not a strong correlation between BWD and the variables which defined in current study. This relationship in the females (26%) was more than the males (13%).

**Table 5**, Multiple linear regression analysis predicting magnitude of body weight dissatisfaction <sup>a</sup>

	Female					Male				
	B	SE B	$\beta$	T	P	B	SE B	B	t	P
<b>Constant</b>	1.69	1.50		1.31	.26	1.2	2.33		2.66	.009
<b>Age</b>	-.02	.04	-.03	-.47	.63	-.03	.05	-.09	-.77	.44
<b>Economic status</b>	.005	.06	.005	.08	.93	-.07	.13	-.04	-.53	.59
<b>Body Size Importance</b>	.09	.10	.06	.92	.36	-.01	.18	.009	-.11	.91
<b>Weight Loss Attempts</b>	-.33	.24	-.09	1.37	.17	.2	.45	.11	1.91	.24
<b>Abs. val. Body Dissatisfaction</b>	.09	.01	.42	6.58	.000**	.36	.02	.3	4.02	.000**
<b>Current BMI</b>	-.05	.05	-.07	-.95	.34	-.21	.07	-.19	1.97	.05*
<b>Desired shape of parents view</b>	-.02	.01	-.19	2.41	.02*	-.23	.01	-.12	1.47	.14
<b>Desired shape of opposite sex view</b>	.04	.009	.35	4.32	.000**	.18	.01	.14	1.7	.09
<b>Marital status</b>	-.16	.3	-.03	-.53	.59	-.32	.64	-.1	-.9	.37
<b>Sport activity</b>	.16	.2	.05	.79	.43	.24	.35	.13	1.63	.1
	$R^2 = .29$ ; adjusted $R^2 = 0.26$					$R^2 = .18$ ; adjusted $R^2 = 0.13$				

\* $p \leq .05$  \*\*  $p < .0001$  <sup>a</sup> Body weight dissatisfaction=Absolute value (current BMI–desired BMI).

## Discussion

There was a significant difference between the current BMI and the DBMI in both men and women groups, that is, people are dissatisfied with their current BMI. Also, BMI between men and women is different due to gender differences in the distribution of adipose tissue. In addition, the favorable BMI between the two sexes is different because of differences in attitudes due to culture, society and surrounding people, as well as the different internal criteria of the two sexes, in women with a thin body and men in muscular and manhood. The results of this study showed that there is a significant difference in BWD between female and male students. This conclusion is consistent with the findings (Coker & Abraham, 2014; Coker et al., 2016). In fact, both women and men experienced physical dissatisfaction, but the type was different. Women tend to be sluggish and lose weight, and men want to have muscular body. It has been shown that men are eager to increase their weight and increase their muscle mass in order to prepare their body.

Also, there was a difference in BSD between women and men. This finding is based on the findings of Jose & Brown, (2008), Rivière & Douilliez, (2017) and Rivière et al. (2018). The importance of weight and body size was not significant different between men and women. There is cited various reasons, including socio-cultural differences between our studying society (Iranian students with Islamic culture) and the studied societies mentioned above (with western culture). This difference plays a significant role in determining the attitude of individuals towards the importance of appearances and bodies, and there is no universal agreement on the proper physical form, and the accepted form of culture varies from culture to culture (Eileen et al., 2017). Particularly, the manner of body covering of Iranian women with Western women is different. Therefore, unlike the previous results in this regard, the importance of weight and body size between Iranian girls and boys is not different.

There was not a significant difference between the efforts of both groups of men and women to achieve the desired goal. In fact, the type of action of these two sexes was different for achieving the desired goal. Men are more interested in sports and women in the diet to achieve a higher ideal (Dakanalis et al., 2013). To the brief, women had more efforts to control weight than men, but the notable differences in current study, may be due to socio-cultural relationships in our study population. According to a research conducted by Akiba (1998), on Iranian men, in such societies, more emphasis is placed on the cultivation of internal characteristics and traits, while considering the body as well as being culturally sluggish with illness and poverty, therefore The importance of the body in these people, especially women, is lower than that of Western societies.

## Conclusion

The result generally obtained from the above assumptions is that, due to the difference in BMI and DBMI, there is a satisfactory level of dissatisfaction with the physical condition of both groups of male and female students. It is noteworthy that the dissatisfaction between two sexes is different, meaning that because of the social-cultural criteria, women tend to be skinny and men to be muscular. Since present study has been carried out in the Islamic society of Iran, and in Islamic societies, the Hijab of women plays a significant role in

the appearance of women. It is likely that the findings of this study are in contradiction with other related studies conducted in Western societies.

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