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Social Health Status and Anthropometric Factors in Ardebilian Women, Iran

[1]N. Abbasgholizadeh, [1]A. Nemati, [1]A. Naghizadeh Baghi, [1]M.H. Dehgan,
[1]H. Sadeghi, [3]Hamideh Aghazadeh Pir and [2]M. Baraak
[1]Department of Basic Sciences, [2]Department of Pediatrics,
Faculty of Medicine, Ardebil University of Medical Sciences, Ardebil, Iran
[3]Department of Social Sciences, Ardebil Educational Board Organization, Ardebil, Iran

Abstract: Several studies confirmed by the relationship between socioeconomic factors and health status can be explained in part by differences in health-related behavior according to socioeconomic status. This study was done to assess the relation between social health and Anthropometric factors in Ardebilian women. One thousand eight hundred and seventy five adult women aged, 15-94 years were selected for study. The anthropometric measurements (height and weight) were taken by trained staff. Socio-demographic factors were assessed by using the WHO STEPS instrument. The educational level and some physical activity variables, adult employed/unemployed and sanitation behavior were evaluated with using questionnaire. Data were analyzed by independent t-test and chi-square in SPSS 13.0 statistical software package for Windows. This study was showed that there was different between anthropometric factors (height, weight and BMI) in two areas (urban and rural), significantly ($p<0.05$). Hygienic urban women were more than rural ones. Height, weight and BMI of hygienic women were more than non hygienic women, significantly ($p<0.05$). Marriage, disposal solid waste, sun lighted house, physical activity, literacy, job in urban women were more than rural women, but animal keeping were less than rural women, significantly ($p<0.05$). There was relationship between literacy and variables including disposal solid waste, sun light house, animal keep and physical activity, significantly ($p<0.05$). This study indicated that deficiency in hygienic behavior of women could decrease anthropometric factors and social health behavior.

Key words: Social health behavior, anthropometric factors, females, Ardebilian women, socioeconomic factors

INTRODUCTION

The effects of social determinants on health have been largely studied in women. There has also been a tendency to disregard historical context in studies of inequalities in health. Studies showed that the effects of social determinants on women's health, especially those associated with the radical changes in their lives in the past 50 years, such as increased opportunities for higher education and employment (Rostad *et al*., 2006). Health inequality within the population is a major public health concern (Acheson, 2000; Marmot, 2001). Previous studies confirmed with the relationship between socioeconomic factors and health status can be explained in part by differences in health-related behavior according to socioeconomic status (Shohaimi *et al*., 2003; Turrell *et al*., 2004). Generally, people with lower socioeconomic status have a higher likelihood of exposure to risk behaviors, such as smoking, excessive alcohol consumption, physical inactivity, poor diet and non-attendance of health check-ups, as well as psychological stress (Parks *et al*., 2003; Galobardes *et al*., 2001; Stahl *et al*., 2001; Duncan, 1993; Reijneveld, 1998). A number of studies have investigated the significantly relationship between socio-demographic and socio-economic factors and overweight (Martinez *et al*., 1999; Flegal *et al*., 1998; Lewis *et al*., 2000; La Rosa *et al*., 2003). Several studies aiming to determine overweight inducing factors, investigated the association of overweight with lifestyle behaviors such as, dietary habits and physical inactivity (Lahti *et al*., 2002; Fogelholm and Harjula, 2000; Prentice and Jebb, 1995; Hu *et al*., 2003; Jeffery and French, 1998; Jakes *et al*., 2003; Jebb and Moor, 1999). Although, BMI is an imprecise measurement of fatness (Prentice, 2001; Gray and Fujiok, 1991; Roubenoff *et al*., 1995), most studies investigating the association between overweight and the potential related factors, used BMI to define overweight. Furthermore, several authors have suggested

Corresponding Author: N. Abbasgholizadeh, Department of Basic Sciences, Faculty of Medicine, Ardebil University of Medical Sciences, Ardebil, Iran

the combination of BMI and waist circumference as a diagnostic tool for overweight and health risk (Zhu *et al*., 2004; Ardern *et al*., 2003). The main purposes of this study, was to investigate the actual status and pattern of physical activity, social health inequality and anthropometric factors in Ardebilian women. This study explores differences in Body Mass Index (BMI), height, weight and social health between women in different areas (urban/rural) of Ardebil province in Iran.

MATERIALS AND METHODS

In 2005, To assess the status of Social Health and Anthropometric Factors in Ardebilian women, with a descriptive cross-sectional study, 1875 adult women aged, 15-94 years were selected by the multi stage sampling method and their age, weight, height, body mass index were recorded. Then to evaluate of Marriage, literacy level, employment, physical activity, occupation and Sanitation behavior of subjectives a questionnaire were used. All subjects signed an informed consent statement before participating in the study. This large scale epidemiological study was supported by the Iranian Government. The most commonly used measures of social class in epidemiologic study are occupation and literacy. Participants were classified into illiteracy and literacy level including, primary, secondary school and university levels. The anthropometric factors were taken by trained staff, using standardized procedures. All measurements were taken with participants wearing minimal clothing. Body height was measured using a Stadiometer to the nearest 0.1 cm. Body weight was recorded with a digital weighing scale to the nearest 0.2 kg and BMI was evaluated from height and weight . Data were analyzed by independent t-test and chi-square in SPSS 13.0 statistical software package for Windows.

RESULTS

This study describes a study carried out in the Ardebil province objective of associating the presence of the sanitary action, located in the urban, rural and the social health population. This study was showed that there was significantly differeces between anthropometric factors (height, weight and BMI) in two areas (urban and rural) ($p<0.05$) (Table 1). Hygienic urban women were more than rural ones. Height, weight and BMI of hygienic women were significantly more than non hygienic ($p<0.05$) (Table 1). Marriage, sanitation disposal solid waste, sun lighted house, physical activity, high literacy level, occupational percent in urban women were more than rural, but animal keeping were less than rural women,

Table1: The mean of height, weight and BMI between two different groups

Area	Urban	N	Rural	N
Anthropometric factors	(x ± SD)		(x ± SD)	
Height(cm)*	157.7± 7.5	983	155.2 ± 9.5	995
Weight(Kg)*	66.6± 12.9	983	62.1± 12.1	995
BMI(Kg m^{-2})*	26.8± 4.9	983	25.9± 5.6	995
Solid waste	Hygienic	N	Non Hygienic	N
Anthropometric factors	(x ± SD)		(x ± SD)	
Height(cm)*	157.3 ± 7.9	1354	154.7± 9.9	624
Weight(Kg)*	65.8 ± 12.9	1354	61.5± 11.4	624
BMI(Kg m^{-2})*	26.6± 5.1	1354	25.9± 5.7	624
Animal keep	Animal	N	Non animal	N
Anthropometric factors	(x ± SD)		(x ± SD)	
Height(cm)*	155.3±9.1	785	157.2±8.3	1193
Weight(Kg)*	62.8 ± 12.1	785	65.4± 12.8	1193
BMI(Kg m^{-2})	26.1± 5.2	785	26.6± 5.3	1193
Physical activity	Active	N	Non active	N
anthropometric factors	(x ± SD)		(x ± SD)	
Height(cm)	157.2± 8.1	292	156.2± 8.8	1602
Weight(Kg)*	67.5 ± 13	292	63.8± 12.4	1602
BMI(Kg m^{-2})*	27.3± 5.1	292	26.2± 5.2	1602

Statistical analysis with independent t-test, * Different is significant at the 0.05 level(2-tailed)

Table 2: The frequency of variables in areas

	Urban	Rural
Marriage*		
married	904(92%)	884(88.8%)
Non- married	79(8%)	111(11.2%)
Solid waste*		
Hygienic	929(94.5%)	425(42.7%)
Non Hygienic	54(5.5%)	570(57.3%)
light house* Sun		
High	331(33.7%)	268(26.9%)
Moderate	577(58.7%)	604(60.7%)
Low	75(7.6%)	123(12.4%)
Animal keep*		
Yes	131(13.3%)	654(65.7%)
No	852(86.7%)	341(34.3%)
Physical activity*		
Yes	199(20.2%)	102(10.3%)
No	784(79.8%)	893(89.7%)
Literacy*		
Non	404(41.1%)	664(66.7%)
Primary	386(39.3%)	294(29.5%)
Secondary	140(14.2%)	30(3%)
College/University	53(5.4%)	7(0.8%)
Job*		
Housekeeper	891(90.6%)	920(92.5%)
Free	43(4.4%)	64(6.4%)
Governmental	49(5%)	11(1.1%)

Statistical analysis with Chi-square test * ($p<0.05$)

significantly ($p<0.05$) (Table 2). There was relationship between literacy and variables including sanitation disposal solid waste, sun lighted house, animal keeping and physical activity, significantly ($p<0.05$) (Table 3). This study indicated that there was significant relationship between non hygienic behaviors in women and low anthropometric factors. The majority of women reported their occupation as " householder "[urban 891(90.6%), rural 920 (92.5%)] (Table 2). The analysis showed that age, literacy level of the women, householder, social health

Table 3: The frequency of variables in different literacy level

Literacy variables	Non	Primary	Secondary	College/ university
Solid waste*				
Hygienic	642(60.1%)	498(73.2%)	158(92.9%)	56(93.3%)
Non Hygienic	426(39.9%)	182(26.8%)	12(7.1%)	4(6.7%)
light house* Sun				
High	293(27.4%)	216(31.8%)	57(33.5%)	33(55%)
Moderate	661(61.9%)	391(57.5%)	102(60%)	27(45%)
Low	114(10.7%)	73(10.7%)	11(6.5%)	0(0%)
Animal keep*				
Yes	559(52.3%)	203(29.9%)	19(11.2%)	4(6.7%)
No	509(47.7%)	477(70.1%)	151(88.8%)	56(93.3%)
Physical activity*				
Yes	139(13%)	109(16%)	36(21.2%)	17(38.3%)
No	929(87%)	571(84%)	134(78.8%)	43(71.7%)

Statistical analysis with Chi – square test * ($p<0.05$)

and regions were potential determinants of BMI for the women. For most of the social health variables, statistically significant differences were found between the urban region and the rural region (Table 2). The means of all anthropometric measurements including height, weight and body mass index in urban were higher than rural women.

DISCUSSION

This study provides insights into the relationship between social health and anthropometric parameters. Our results suggested that the heigh gap between urban and rural area of Ardebilian women. The results of present study, contrasts with Oguntona study in south-western Nigeria (Oguntona and Kuku, 1999) and similar to the studies of Kamadjeu about obesity of urban women in Cameron (Kamadjeu *et al*., 2006) and Belahsen study that showed the means of all anthropometric measurements were higher in urban than in rural women (Belahsen *et al*., 2004). Furthermore, there are differences in height by social health class in both the urban and rural part of Ardebil. Regional differences imply that there is an urban-rural gradient with taller individuals living in the urban area of Ardebil. In addition, the results suggest that BMI in urban women higher than their rural counterparts. Finally social health outcomes might be interest as well as in our study, found a positive relationship between householder social health and BMI. Nguyen showed that, urban population were more likely to be overweight than rural population, especially those from low level literacy did more householder and there was positive relationship between high level literacy and the Governmental Employed level (Nguyen *et al*., 2007). Our study is similar to study of Catapreta that showed the epidemiological study revealed an association between the absence of domestic solid waste collection and public health (Catapreta and Heller, 1999).

CONCLUSION

Our study showed that solid waste the sanitary disposal higher than in urbanite women compared with rural women. Meanwhile, further studies need to be carried out in the Ardebilian women settings to provide appropriate cut-off points and identify which anthropometric parameters has the highest predictive value in the identification of subjects at risk of hygienic related disorders. The results add knowledge to the association between social health status and anthropometric factors in Ardebilian women and could have implications for interventions. The urban/rural difference in height, weight, BMI and social health behavior needs special attention. Thus, it is clear that physical activity and inactivity were influenced by very different determinants. Although physical activity was most influenced by environmental factors, inactivity was much more influenced by socio-demographic factors.

REFERENCES

Acheson, D., 2000. Independent inquiry into inequalities in health. London: Stationary Office.

Ardern, C.I., P.T. Katzmarzyk, I. Janssen and R. Ross, 2003. Discrimination of health risk by combined body mass index and waist circumference, Obes. Res., 11: 135-142.

Belahsen, R., M. Mziwira and F. Fertat, 2004, Anthropometry of women of childbearing age in Morocco: Body composition and prevalence of overweight and obesity. Pub. Health Nutr. Jun., 7: 523-30.

Catapreta, C.A. and L. Heller, 1999. Association between household solid waste disposal and health, Belo Horizonte (MG), Brasil. Rev. Panam Salud Publica, 5: 88-96.

Duncan, C., K. Jones and G. Moon, 1993. Do places matter? A multi-level analysis of regional variations in health-related behaviour in Britain. Soc. Sci. Med., 37: 725-733.

Flegal, K.M., M.D. Carroll, R.J. Kuczmarski and C.L. Johnson, 1998. Overweight and obesity in the United States: Prevalence and trends, 1960-1994. Int. J. Obes. Relat. Metab. Disord., 22: 39-47.

Fogelholm, M. and K. Kukkonen-Harjula, 2000. Does physical activity prevent weight gain, a systematic review. Obes. Rev., 1: 95-111.

Galobardes, B., A. Morabia and M.S. Bernstein, 2001. Diet and socioeconomic position: Does the use of different indicators matter? Int. J. Epidemiol., 30: 334-340.

Gray, D.S. and K. Fujioka, 1991. Use of relative weight and Body Mass Index for the determination of adiposity. J. Clin. Epidemiol., 44: 545-550.

Hu, F.B., T.Y. Li, G.A. Colditz, W.C. Willett and J.E. Manson, 2003. Television watching and other sedentary behaviors in relation to risk of obesity and type 2 diabetes mellitus in women. Jama, 289: 1785-1791.

Jakes, R.W., N.E. Day, K.T. Khaw, R. Luben, S. Oakes, A. Welch, S. Bingham and N.J. Wareham, 2003. Television viewing and low participation in vigorous recreation are independently associated with obesity and markers of cardiovascular disease risk: EPIC-Norfolk population-based study. Eur. J. Clin. Nutr., 57: 1089-1096.

Jebb, S.A. and M.S. Moore, 1999. Contribution of a sedentary lifestyle and inactivity to the etiology of overweight and obesity: Current evidence and research issues. Med. Sci. Sports Exerc., 31: 534-541.

Jeffery, R.W. and S.A. French, 1998. Epidemic obesity in the United States: Are fast foods and television viewing contributing? Am. J. Pub. Health, 88: 277-280.

Kamadjeu, R.M., R. Edwards, J.S. Atanga, E.C. Kiawi, N. Unwin and J.C. Mbanya, 2006. Anthropometry measures and prevalence of obesity in the urban adult population of Cameroon: An update from the Cameroon Burden of Diabetes Baseline Survey. BMC. Pub. Health, 6: 228.

Lahti-Koski, M., P. Pietinen, M. Heliovaara and E. Vartiainen, 2002. Associations of body mass index and obesity with physical activity, food choices, alcohol intake and smoking in the 1982-1997. Am. J. Clin. Nutr., 75: 809-817.

La Rosa, E., P. Valensi, R. Cohen, K. Soufi, C. Robache, H. Le Clesiau, 2003. Socioeconomic determinism of obesity in the Seine-Saint-Denis area. Presse Med., 32: 55-60.

Lewis, C.E., D.R. Jacobs, H. McCreath, C.I. Kiefe, P.J. Schreiner, D.E. Smith and O.D. Williams, 2000. Weight gain continues in the 1990s: 10-year trends in weight and overweight from the CARDIA study. Coronary Artery Risk Development in Young Adults. Am. J. Epidemiol., 151: 1172-1181.

Martinez, J.A., J.M. Kearney, A. Kafatos, S. Paquet and M.A. Martinez-Gonzalez, 1999. Variables independently associated with self-reported obesity in the European Union. Pub. Health Nutr., 2: 125-133.

Marmot, M., 2001. Inequalities in health. N. Engl. J. Med., 345: 134-136.

Nguyen, M.D., S.A. Beresford and A. Drewnowski, 2007. Trends in overweight by socio-economic status in Vietnam: 1992-2002. National Institute of Nutrition of Vietnam, Hanoi, Vietnam. Pub. Health Nutr., 10: 115-21.

Oguntona, C.R. and O. Kuku, 1999. Anthropometric survey of the elderly in south-western Nigeria. Rev. Panam Salud Pub., 5: 88-96.

Parks, S.E., R.A. Housemann and R.C. Brownson, 2003. Differential correlates of physical activities in urban and rural adults of various socioeconomic backgrounds in the United States. J. Epidemiol. Community Health, 57: 29-35.

Prentice, A.M. and S.A. Jebb, 1995. Obesity in Britain: Gluttony or sloth?BMJ., 311: 437-439.

Prentice, A.M. and S.A. Jebb, 2001. Beyond body mass index. Obes. Rev., 2: 141-147.

Reijneveld, S.A., 1998. The impact of individual and area characteristics on urban socioeconomic differences in health and smoking. Int. J. Epidemiol., 27: 33-40.

Rostad, B., B. Schei and S. Krokstad, 2006. Socioeconomic factors and health in two generations of Norwegian women. Gen. Med., 3: 328-40.

Roubenoff, R., G.E. Dallal and P.W. Wilson, 1995. Predicting body fatness: The body mass index vs estimation by bioelectrical impedance. Am. J. Pub. Health, 85: 726-728.

Shohaimi, S., R. Luben, N. Wareham, N. Day, S. Bingham, A. Welch, S Oakes and K. Khaw, 2003. Residential area deprivation predicts smoking habit independently of individual education level and occupational social class. A cross sectional study in the Norfolk cohort of the European Investigation into Cancer. J. Epidemiol. Community Health, 57: 270-276.

Stahl, T., D. Rutten, D. Nutbeam, A. Bauman, L. Kannas, T. Abel, G. Luschen, D.J.A. Rodriquez, J. Vinck and J. van der Zee, 2001. The importance of the social environment for physically active lifestyle-results from an international study. Soc. Sci. Med., 52: 1-10.

Turrell, G., T. Blakely, C. Patterson and B. Oldenburg, 2004. A multilevel analysis of socioeconomic (small area) differences in household food purchasing behaviour. J. Epidemiol. Community Health, 58: 208-215.

Zhu, S., S. Heshka, Z. Wang, W. Shen, D.B. Allison, R. Ross and S.B. Heymsfield, 2004. Combination of BMI and Waist Circumference for Identifying Cardiovascular Risk Factors in Whites. Obesity Res., 12: 633-645.