The association between a priori and a posterior dietary patterns with perceived stress in women of childbearing age

Karim Khaled, Orouba Almilaji, Mareike Köppen, Vanora Hundley, Fotini Tsofliou
Faculty of Health and Social Sciences, Bournemouth University, Bournemouth,
United Kingdom

Introduction

- More than half of women in developed countries are overweight or obese.
- Studies show that 20-25% of women in the UK enter pregnancy as obese.
- Healthy diet patterns such as the Mediterranean diet (MD) are linked with lower adiposity among women of childbearing age.
- Evidence indicates that maternal diet in the UK is poor and stress increases the consumption of saturated-fat, sweets, and energy-dense foods.
- Limited evidence on dietary patterns and stress among women of childbearing age.
- This study aimed to investigate the association.

Methods

- Online survey
- Sample: female university students
- Dietary assessment was done via a validated 100-food item food frequency questionnaire and perceived stress via the Perceived Stress Scale (PSS).
- The dietary data were compared to the *a priori* defined Mediterranean Diet Score (MDS) and scored according to eight components (vegetables, legumes, fruit and nuts, cereals, fish, dairy products, meat and meat products, and the ratio of unsaturated to saturated fat).
- Factor analysis was also applied on 11 food components (g/d) to reveal the latent major dietary patterns (DP).
- Negative binomial regression was used to examine the association between stress and the diet patterns, controlling for the socioeconomic factors, physical activity, marital status, BMI, and waist.

Results

- One hundred twenty-three students (mean age 27.7 (SD 7.3)) participated.
- Participants had medium (n=49) or low MD adherence (n=48), with fewer participants having high adherence (n=26).
- Stress was not significantly associated with MD adherence, but was positively associated with sweets intake (p=0.03).
- The scree plot of Factor analysis showed that the number of factors generated by the analysis is three.

- Using minimum loading cut-off of 0.4, factor analysis revealed three latent diet patterns; the first (DP-1) contained: cereals, sweets and potatoes (comfort foods), DP-2 consisted: eggs, fish and meat (high protein) and DP-3 consisted of: vegetables, fruits, nuts, and legumes (vegan).
- Results showed a significant positive association between stress and DP-1 (p<0.01).
- No association was found between other diet patterns and any other psychosocial and physical variables.

Conclusion

- Future well designed randomised controlled trials are needed to investigate further the relationship between perceived stress and dietary patterns in women of childbearing age.

Mediterranean diet score...	Low (0-3)		Medium (4-5)		High (6-8)		P*
	Mean	SD	Mean	SD	Mean	SD	
BMI	26.4	5.4	25.5	5.4	26.7	6.5	0.809
WC/HT	0.32	0.21	0.35	0.2	0.35	0.24	0.509
Stress score	26.8	7.5	25.5	6.0	26.7	7.3	0.972
Physical Activity (MET-h/d)	3605	5201	5788	10050	3606	3721	0.126
Cereals (g/d)	332.5	215.9	316.4	183.5	323.0	135.2	0.839
Legumes (g/d)	52.3	75.0	100.3	57.0	104.0	55.4	<0.01*
Vegetables (g/d)	381.0	230.7	754.8	316.3	870.7	253.9	<0.01*
Fruits and Nuts (g/d)	299.3	307.3	444.7	347.2	685.1	398.0	<0.01*
Meat (g/d)	162.1	122.3	143.7	98.7	13.5	109.8	0.415
Fish (g/d)	31.0	41.1	48.8	40.2	78.9	62.8	<0.01*
Dairy products (g/d)	519.7	318.0	403.4	626.1	268.6	137.4	<0.01*
MUFA+PUFA:SFA	1.5	0.7	1.8	0.6	2.2	0.5	<0.01*