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Self-reported health and health behaviours of women students in an English and an American University: an explorative study

Although late teens and early twenties are generally perceived as healthy times of life, young adults are affected by serious health and safety concerns, including substance abuse, sexual health issues, road traffic accidents and suicides (Kleinert, 2007). During these years, young people are becoming independent of their parents and making life-changing decisions about their careers. Increasing numbers enter higher education, with participation rates approaching 50% in both the United States of America (USA) (National Center for Education Statistics) and United Kingdom (UK) (Department for Business, Innovation and Skills). Many students, however, face financial pressures and concerns about succeeding in a competitive job market, and struggle to follow health-enhancing behaviours, (such as engaging in physical activity, maintaining a nutritious diet, and choosing not to smoke), that affect their risk of chronic conditions in adulthood. Values and lifestyles established at this time may set future patterns, and the adoption of poor health behaviours has the potential to shorten lives (Harris et al, 2006).

The transition to adulthood is likely to present similar challenges to young people in most societies, but reactions may vary depending on local cultural norms and institutional structures. Although complicated by differing contextual factors, international comparative studies have the potential to enable societies to learn from each other (Feacham et al., 2002; Quan and Smith, 2005). We conducted an explorative study to compare the self-reported health and health-related behaviours of university students in the USA and England. We present our methods and results, and discuss our findings with reference to systemic factors in each country.

Methods

Data on self-reported health and health behaviours were collected in a university in Southern England and a private liberal arts college in the mid-Atlantic region of USA. Both institutions are close to the capital cities, and ranked in the top quintile in national league tables. Ethical approval for the study was obtained in each location.

The American College Health Association's National College Health Assessment (ACHA – NCHA) was used to gather information on student health behaviours (ACHA, 2005; ACHA, 2009). The survey instrument, which includes some 300 items in eight domains (demographic; campus safety; alcohol, tobacco and drugs; sexual behaviour; weight, nutrition and exercise; mental and physical health; impediments to academic performance), is administered regularly to large samples of students in USA. The findings provide national benchmarks and are used to assist institutions understand the health needs of their students and to monitor healthy living within campus communities (ACHA, 2009). The agreement of ACHA for use of the NCHA was obtained. It has not previously been applied widely outside the USA, or ever in the UK. Participants in the USA completed the entire instrument, but a reduced version was used in England. Slight wording changes were required in the English version, for example: the word 'university' was used in place of 'school.'

One large first year class in England, and classes across all years in the American university (where class sizes are routinely smaller) were visited by researchers to invite recruitment. Completion of the survey is through shading the chosen option response on hard copy. Completed questionnaires were placed in an envelope by the classroom door. The ACHA read responses electronically to create the USA database. Data were manually entered into an SPSS spreadsheet (SPSS Statistics for Windows, Version 17.0. Chicago: SPSS Inc.) in England. The two data sets were merged for comparative analysis in England. Responses of students in England and the USA were compared using appropriate statistical tests.

Results

Response rate

Total responses were 149 in England and 79 in USA. Since the samples contained only a small number of men (11 in England, 14 in USA), the analysis focussed on women. Responses from students aged over 24 years (59 in England, 6 in USA) were removed because more mature students may have different life experiences, values and behaviours than younger ones. Students who had not given their age were also omitted (2 in England, 1 in USA). The sample for analysis was therefore 77 (57%) women from England, 58 (43%) from USA.

Characteristics of the sample

All English respondents were in their first year at University, compared to 8 (13.8%) in USA (where 23 were sophomores / second year, 12 were juniors / third year, 15 were seniors / fourth year, or postgraduates). The mean (SD) age of the samples was similar: England 20.19 (1.63) vs. USA 20.16 (1.25) years, (Student t test, p=0.87). Most students in the English sample were white (n=61, 79.2%) or Asian (n=9, 11.7%). Of the 58 students in the USA, 52 (89.7% were white); the rest were African Americans (n=3), Latino (2) and Asian (1).

Self-reported health

Regarding general health, the most frequent response in England was 'good' compared to 'very good' in USA. Higher proportions of students in USA than England reported above average stress in the previous 12 months. American students also reported feeling tired significantly more often than their English counterparts (Table 1 below).

Reporting above average stress was significantly associated with the number of days reported in the last month that students smoked and consumed alcohol (Spearman's rank correlation, n=133; rho= .181, p=.037 and rho = .180, p=.038 respectively).

Table 1: Self-reported health

Women students <25 years		England, N=77		USA, N=58		Significant difference p
		n	%	n	%	
General health *(4 missing USA)*	Excellent	11	14.3	8	14.8	MWU: 0.137
	Very good	23	29.9	24	44.4	
	Good	33	42.9	18	33.3	
	Fair	9	11.7	4	7.4	
	Poor	1	1.3	0	0	
Overall stress in last 12 months *(1 missing England)*	None	3	3.9	0	0	MWU: 0.10
	Below average	9	11.8	1	1.7	
	Average	30	39.5	25	43.1	
	Above average	28	36.8	28	48.3	
	Tremendous	6	7.9	4	6.9	
		Mean	**SD**	**Mean**	**SD**	
Sleep, in last 7 days *(2 missing England)*	Number of days felt tired, dragged out, or sleepy during the day	3.39	2.09	4.56	1.96	T test: 0.001

MWU: Mann Whitney U test

Self-reported health-related behaviours

Compared to the USA sample, a higher proportion of students in England were current smokers (36.8% vs. 15.5%). The English students also participated less in organised sport, and reported less exercise and eating significantly fewer fruit and vegetables. Higher proportions of American students reported drinking alcohol in the last month (79.3% vs. 67.8%), but there was a non-significant tendency for more 'binge' drinking to be reported amongst the English sample (mean of 1.5 vs. 1.0 times in the last 2 weeks). There was no difference in reported mean number of sexual partners between the groups (Table 2 below).

Table 2: Self-reported health-related behaviours

Women students <25 years		England			USA			Significant difference p
		N	n	%	N	n	%	
Smoking, current	Yes	76	28	36.8	58	9	15.5	X^2: 0.006
Alcohol, last 30 days	None	76	26	34.2	58	12	20.7	X^2: 0.085
Organised sports, last 12 months	Participated: Yes	72	5	6.9	58	19	33.3	X^2:< 0.0005
Sexual activity, last 12 months	Partners: None	70	18	25.7	58	14	24.6	X^2: 0.882
			Median	IQR		Median	IQR	
Alcohol, last 30 days	Number of days	76	1.5	0 – 7.5	58	4	1.5 – 9	MWU: 0.041
Alcohol, > 5 drinks, last 2 weeks	Number of times	77	1	0 – 4	58	2	2 – 3.25	MWU: 0.136
Moderate intensity exercise, last 7 days	Number of days	76	1	0 – 3	58	3	0 – 5	MWU: 0.004
Sexual activity, last 12 months	Number of partners	70	1	0 - 2	58	1	0.5 – 2.5	MWU: 0.490
Fruit and vegetables	Servings per day	76	1.5	1.5 - 3.5	58	3.5	1.5 – 3.5	MWU: 0.037

X^2 Chi Square test; MWU Mann Whitney U test

Across both countries, reporting a larger number of days having smoked in the last 30 days was associated with reporting more sexual partners in the last 12 months (n=127; rho=0.432, p<0.0005). The number of days alcohol was consumed in the last 30 days was also positively associated with the number of days the respondent had smoked in the last 30 days (n=134; rho=0.351, p<.0005) and with the number of sexual partners in the last 12 months (n=127; rho=0 .414, p<.0005). The number of days of moderate exercise in the previous week was positively associated with daily fruit and vegetable consumption (n=133; rho =0.399, p<0.0005).

Self-perceived weight and weight control behaviours

There was no difference between countries in mean BMI (calculated from self-reported height and weight), but over 30% respondents in England did not provide information on their weight (England, n=53, mean 22.8, SD 3.65; USA, n= 55, mean 22.9, SD 4.69, t test p=0.5, where BMI< 25 is generally considered normal for women). Within the whole sample, there was a non-significant trend for more English students to consider themselves overweight (39.2% vs. 24.1%), and to declare they were trying to do something about their weight. Just over half of students in both countries said they had exercised to lose weight in the last 30 days; dieting was slightly less common (Table 3 below).

Table 3: Self-perceived weight and weight control behaviours

Women students <25 years		England, N=77		USA, N=58		Significant difference p
		n	%	n	%	
Self-perceived weight *(1 missing England)*	Slightly underweight	8	10.5	7	12.1	MWU: 0.10
	About right	39	51.3	37	63.8	
	Slightly overweight	25	32.9	14	24.1	
	Very overweight	4	5.3	0	0	
Trying to do something about weight *(1 missing England; 1 missing USA)*	Nothing	11	14.5	6	10.5	MWU: 0.157
	Stay same	10	13.2	19	33.3	
	Lose weight	54	71.1	31	54.4	
	Gain weight	1	1.3	1	1.8	
Exercised to lose weight in last 30 days: YES		40	52.6	30	51.7	X^2: 0.917
Dieted to lose weight in last 30 days: YES		35	47.3	25	43.9	X^2: 0.695

MWU: Mann Whitney U test

Preventive care

About one third of students in both countries reported undertaking a breast self examination in the last month, but significantly more students in USA than England reported a dental or gynaecological examination in the last year. More American students also reported regular use of sunscreen (Table 4 below).

Table 4: Preventive care

Women students <25 years	England			USA			Significant difference p
	N	n	%	N	n	%	
Dental examination in last 12 months: YES *vs.* No / Don't know	76	43	56.6	56	45	80.4	X^2: 0.004
Breast self examination in last 30 days: YES *vs.* No / Don't know	77	25	32.5	57	19	33.3	X^2: 0.916
Gynaecological examination in last 12 months: YES *vs.* No / Don't know	75	12	16.0	57	33	57.9	X^2: <0.0005
Use sunscreen regularly: YES *vs.* No / Don't know	76	38	50.0	58	36	62.1	X^2: 0.164

X^2: Chi square test

Discussion

This small exploratory study suggests differences exist in self-perceived health and health-related behaviours between women students in an English and an American university. Whilst American students reported higher stress and feeling more tired than their English counterparts, they also tended to report better health and also to have healthier lifestyles (less smoking, more sport and exercise and higher fruit and vegetable consumption), and reported more access to preventive services. Also more English students perceived they had an overweight problem.

Concerns about the health of students in higher education are growing in both USA and England. Increasing numbers of American students are reporting psychological problems to student counselling services (Hunt et al., 2010; Sieben, 2011); in UK, 29% students are reported to have clinical levels of psychological distress (Hungerson et al., 2005). Higher stress reported by American students in this study, compared to those in England, may reflect differences in academic practices between the two countries, particularly the continual pressure to maximise their Grade Point Average. By contrast, all the English respondents were in their first year, and final examinations, which heavily influence degree class, may have seemed remote. Alternatively the differences may result from cultural variations in perceptions and norms about what constitutes stress and fatigue.

Excess alcohol is of increasing concern in both the UK (Seldon, 2013) and USA (Hungerson et al., 2005). Consistent with other British evidence, responses from the English sample showed regular drinking activity, and that 'binge' drinking is common (Craigs et al., 2011). Legislation in the USA prohibits consumption of alcohol under age 21, but drinking in the USA sample was not confined to over 21s and tended to be more frequent than amongst the English students.

Participation in organised sport and exercise was higher amongst the American students, possibly reflecting the more formal focus on physical activity at college level there. Inter-varsity competition has high visibility, and sporting abilities and interests are instrumental in student recruitment; many institutions offer substantial bursaries to students who will become members of sports teams. Colleges employ professional coaches who run rigorous athletic programmes throughout the academic year that incorporate advice about diet, sleep, and other factors that may contribute to team performance. By contrast, sporting activities in British universities receive less recognition and are most often student-run.

Higher consumption of fruit and vegetables reported by American students may result from higher prioritisation of health and wellbeing within college residential policies. Many meals for students are pre-paid and communally provided. Catering is nutritionally balanced, incorporates a wide range of healthy options, and encourages healthy eating through

provision of nutritional information and other means, such as portion control. Such policies are integral to the marketing of the college to parents and students. In contrast, most respondents in England were likely to be self-catering (in halls of residence or rented accommodation) making eating healthily less convenient and more costly. Consistent with less physical activity and less fruit and vegetable consumption, there was a tendency for more English students to describe themselves as overweight, and state they were trying to do something about their weight.

More than twice as many students in England as in America stated they were current smokers (36.8% vs. 15.5% in America). The proportion of smokers in England exceeded the national average (28% of adults aged 20 – 24 years) (Public Health England), but was slightly lower in USA than national figures (17.3% of adults aged 18 – 24 years) (Centers for Disease Control and Prevention). Smoking is often considered a form of appetite control in women (Cawley et al., 2004), but no association was found between self perceptions of weight (either over or under-weight vs. about right) and being a current smoker. As other research has shown, clustered behavioural patterns were apparent, with significant associations observed between health promoting behaviours (fruit and vegetable consumption and exercise) amongst health conscious individuals, and between health compromising behaviours (smoking, alcohol and sexual activity) in high risk individuals (Laska et al., 2009).

Other reasons for better health-related behaviours amongst American students, compared to their English counterparts, may lie in differences in the health care systems. Whilst providers in the British National Health Service (NHS) historically concentrate more on treating illness ('sickness service'), many American health care organisations take a proactive approach that emphasises health maintenance and prevention, and an annual check- up ('well care') is a tradition. Early identification of behavioural, emotional and medical risks amongst adolescents, and age-appropriate education and counselling, are considered important (American Academy of Pediatricians, 2007; Hagan et al., 2008). Access to routine promotional care may account for the higher rates of gynaecological and dental examinations reported in the American sample, and better sun protection practices, than among the English students. In contrast, the 10 year strategy for improvement in child health embodied in the NHS National Service Framework for Children, Young People and Maternity Services focusses on antenatal care and immunizations (Department of Health, 2004), and teenagers rarely receive health promotion advice (Walker and Townsend, 1999). An experimental health promotion intervention for teenagers in general practice indicated possible value from regular health promotion visits (Walker et al., 2002), and several calls for more attention to adolescent health have been made recently (British Medical Association, 2003; Royal College of Pediatricians and Child Health, 2003; Viner and Barker, 2005). In recognition of the poor state of mental health services for children and young people, the Health Minister has announced a new task force to address this issue (BBC news, 20th August 2014).

Limitations

The study has several limitations, including reliance on self-report, a small number of respondents and convenience (rather than systematic) sampling. The students were drawn from programmes incorporating a health education element, and students from other disciplines may have answered differently. Although the two universities in the study are both considered in the top 20% in each country, the socio demographic background of the students may differ. All English universities are in the public sector, whilst the American institution was private liberal arts college, and a sample of students from a public sector university in the USA might have different health behaviours. Also responses from students in higher education may not be representative of all young people in the respective countries. For example, the students in the samples were predominantly white, and African Americans, who have higher rates of overweight and obesity (Schwartz and Petersen, 2010) were under-represented. Although widely used to help colleges identify priority issues, the ACHA questionnaire it is not usually used as a research tool. However, American responses in this small study matched values in the national data

(current smokers 15.5% vs. 14.4%; no alcohol in last 30 days 20.7% vs. 17.0%; no sexual activity in last 12 months 24.6% vs. 29.3%; dieted to lose weight in last 30 days 43.9% vs. 42.1%; gynaecological (dental) exam in last 12 months 57.9% (80.4%) vs. 58.5% (77.6%)) (ACHA, 2014).

Conclusions

College students are at a vulnerable age, and this is often the time when habits form that will continue through the lifespan. The UK ranks above the US in international comparisons based on indicators such as life expectancy, cost and access to health services (Davis et al, 2014). However, the American students in this study generally reported healthier lifestyles than their English peers, and this may reflect differences in the perceived culture of health promotion in higher education between these two countries. Considerations such as pastoral care, promotion of healthy behaviours and encouragement of participation in sport receive higher priority in the marketing strategies of American colleges than in public sector English universities. The underlying reasons for this discrepancy could not be fully investigated in this study, and further research into this area may be warranted to help guide future health promotion activities on college campuses. Based on the results of this study, though, it appears that the UK education and health sectors might focus on ways to further encourage health-enhancing behaviours such as physical activity and healthy eating, while also addressing health risk behaviours such as binge drinking and smoking.

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