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Healthy Attendance?

The Impact of Cultural Engagement and Sports Participation on Health and Satisfaction with Life in Scotland

Arts and Culture

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HEALTHY ATTENDANCE?
THE IMPACT OF CULTURAL ENGAGEMENT AND SPORTS PARTICIPATION ON HEALTH AND SATISFACTION WITH LIFE IN SCOTLAND

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2013

The views expressed in this report are those of the researcher and do not necessarily represent those of the Scottish Government or Scottish Ministers.

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1 EXECUTIVE SUMMARY

1.1 There is a substantial body of evidence on the health benefits of individual and group engagement in cultural activities in particular health settings like hospitals (Ruiz, 2004). More recently, evidence has grown on the impact of general cultural engagement on health and life satisfaction at a population level (O'Neill, 2010). Much of this research stems from Scandinavian epidemiological studies based on secondary analysis of population surveys (eg Cuypers et al, 2011).

1.2 A positive association between participation in sport and self-assessed health and life satisfaction has also been found in previous research based on the Taking Part survey in England (CASE, 2010a).

1.3 In Scotland, questions on participation in culture and sport have been included in the Scottish Household Survey since 2007. Questions on life satisfaction and self-assessed health were added in 2009. This means that, for the first time at a population level, data is available to statistically explore the relationship between taking part in cultural and sporting activities, attending cultural places and key quality of life measures in Scotland. This report presents the findings of the analysis of this relationship.

1.4 The main technique used in this study is regression analysis. In particular, logistic regression was used which helps identify factors that contribute to a result and also to give an indication of the relative strength of these factors. The study examined the relationship between the dependent variables of health and satisfaction with life and the independent variables of participation in culture and sport in isolation, but also accounted for other factors that might explain varying levels of life satisfaction and self-assessed health.

1.5 The key findings of the analysis are:

- There is consistent evidence that people who participate in culture and sport or attend cultural places or events are more likely to report that their health is good[1] and they are satisfied with their life than those who do not participate.

- This finding remains true even when other factors such as age, economic status; income; area deprivation, education qualification, disability/or long standing illness and smoking are accounted for.

- In other words, after controlling for relevant factors, participation in culture and sport are independently and significantly associated with good health and high life satisfaction.

- Overall, those who attended a cultural place or event were almost 60% more likely to report good health compared to those who did not attend.

[1] Throughout the report reference to 'good health' means those who self-reported their health as very good or good.

- The association between cultural attendance and good health was also found for individual cultural places. For example, those who visited a library were almost 20% more likely to report good health than those who had not visited a library in the previous 12 months. Those who visited a museum were also 20% more likely to report good health than those who did not.[2] Those who visited the theatre were almost 25% more likely to report good health than those who did not in the previous 12 months.

- Overall, those who participated in a creative or cultural activity were 38% more likely to report good health compared to those who did not participate in any cultural activity in the previous 12 months.

- For example, those who participated in dance were 62% more likely to report good health than those who did not participate in dance. Those who read for pleasure in the previous 12 months were 33% more likely to report good health than those who did not read for pleasure.

- Those who participated in sport were nearly twice as likely to report good health than those who did not participate in sport in the previous 4 weeks.

1.6 While evidence of the benefits of participating in culture and sport has been growing in the international research literature, this is the first population level evidence for Scotland on the association between taking part in culture and sport and self-assessed health and life satisfaction.

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[2] Full results for individual activities including significance levels are reported in Table 1 in Chapter 4.

2 INTRODUCTION

2.1 The Scottish Government is committed to promoting and supporting sport and cultural activities because it recognises and values the potential benefits that sport and culture bring, not only to individuals but to our communities. Evidence suggests that cultural engagement impacts positively on our general wellbeing and helps to reinforce our resilience in difficult times. Cultural participation is known to bring benefits in learning and education and there is evidence from international studies of an association with good health and satisfaction with life.

2.2 Participation in sport is a key route for many of maintaining physical activity levels. The evidence base for the physical and mental health benefits of physical activity is now extensive and guidelines on the recommended amount and type of activity for all age groups were issued by the four UK Chief Medical Officers in 2011.

2.3 The Scottish Household Survey is the primary source of statistical data on cultural attendance and sporting participation in Scotland and it is the only source of data on attendance and participation at local authority level. Questions on cultural attendance and sporting participation were introduced in the SHS for the first time in 2007. The SHS is the data source for the relevant National Indicator on culture introduced in Scotland's National Performance Framework in 2011: *Increase Cultural Engagement*.

2.4 The Scottish Household Survey indicates that levels of cultural engagement in Scotland are high, with 87% of adults either attending a cultural place or participating in a cultural activity in 2011, up from 85% in 2010. Three quarters of adults reported participating in sport, including walking, at least once in the previous four weeks in 2011. When walking was excluded, just over half of adults (54%) had undertaken at least one of the remaining sports activities in the last four weeks.

2.5 Beneath these headline figures for adult participation in culture and sport, there is considerable variation in participation by different groups. Clear patterns in particular are evident for varying participation by age, gender, household income and area deprivation (Scottish Government, 2012).

2.6 Participation in both cultural and sporting activities generally declines with age. Sports participation and cultural engagement levels are highest in the highest household income groups in Scotland and decline to be lowest in the lowest household income groups. Similarly, adult participation in cultural and sporting activities varies by area deprivation, with participation increasing as area deprivation decreases. Details on these varying participation levels are reported in the annual Scottish Household Survey Chapter on Culture and Sport.

3 Method

Data

3.1 The data selected for this study comes from the Scottish Household Survey (SHS) 2011. The SHS is a continuous survey based on a sample of the general population in private residences in Scotland.

3.2 The aim of the survey is to provide representative information about the composition, characteristics and behaviours of Scottish households, both at national and local authority level. The survey covers a wide range of topics to allow links to be made between different policy areas. Key functions of the SHS are:

- To enable the disaggregation of information both geographically and in terms of population sub-groups (such as families with children or the elderly);
- To examine the relationships between social variables within households and support cross-analysis on a range of issues;
- To discover early detection of national trends;
- To allow detailed follow-up surveys of sub-samples from the main survey sample, if required.

3.3 The SHS sample is selected from the small user Postcode Address File (PAF) for Scotland, expanded to take account of addresses which might only be listed once but actually contain multiple dwellings, such as tenement blocks and multi-storey flats. Due to the sampling methods based on the PAF for Scotland the sample does not completely cover the population because accommodation in hospitals, prisons, military bases, larger student halls etc. are excluded from the sampling frame.

3.4 The data used in this report is from the 2010/2011 fieldwork of the SHS. A total of 14,358 households were interviewed (response rate of 68.7%). The suite of questions on culture was asked of approximately 75% of the total sample, giving a sample size of 9683 (adults only).

3.5 Appropriate weighting was carried out before the analysis was conducted. Details on weighting are in the Technical Annex.

Dependent Variables

3.6 The two dependent variables in the analysis are self-assessed health and life satisfaction.

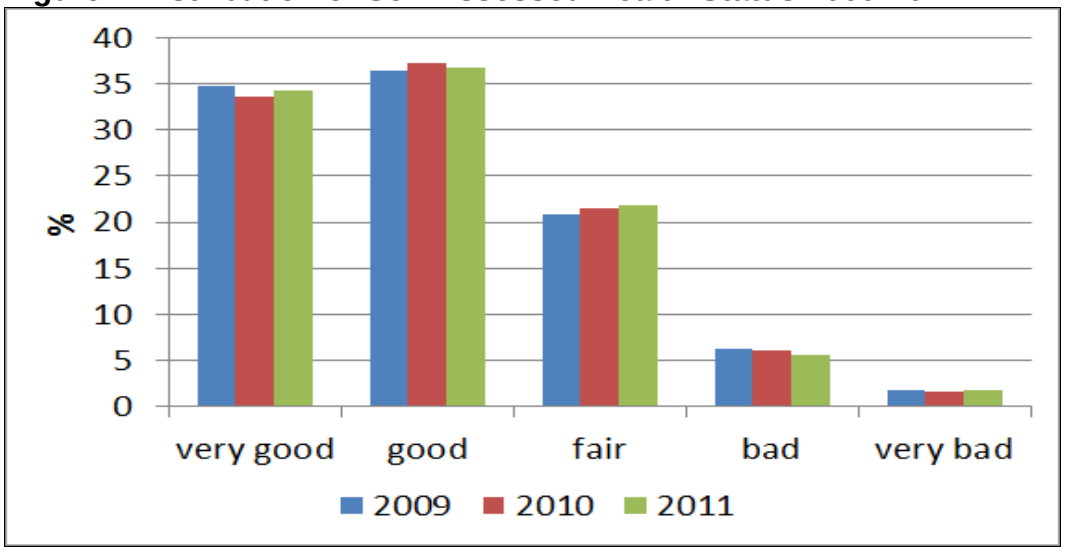
3.7 Self-assessed health is asked in the SHS by a standard well-tested question:

> How is your health in general? Would you say it is very good, good, fair, bad or very bad?

3.8 Self-assessed health is a useful measure of how individuals regard their own overall health status. It is strongly related to the presence of chronic and acute disease, as well as being a good predictor of hospital admission and mortality.[i]

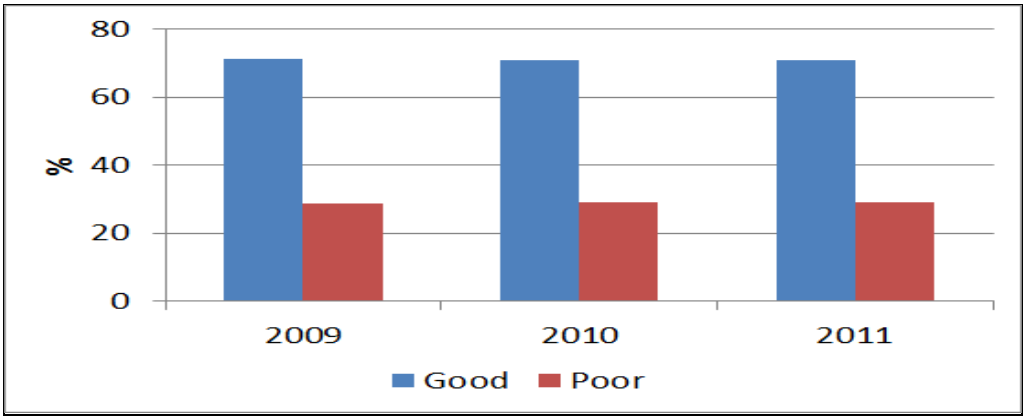
3.9 Figure 1 shows the distribution of health status among respondents for the last three survey years. As there was relatively small numbers of respondents in the three categories of fair, bad or very bad for each of the years (28.7%, 29.2% and 29.0% collectively) the responses were dichotomized into a good health category consisting of responses 'very good/good' and a poor health category consisting of responses 'fair/poor/very poor' for use in the logistic regression analysis.

Figure 1 Distribution of Self-Assessed Health Status 2009-2011



3.10 Figure 2 shows the results using the dichotomised self-rated health variable. This dichotomised health rated variable is the dependent (outcome) variable used in the correlation and regression models. These results show that the majority of respondents view their health as good for each of the years. The proportion of those stating good health has remained stable since 2009.

Figure 2: Distribution of Self Assessed Health Dichotomised Variable



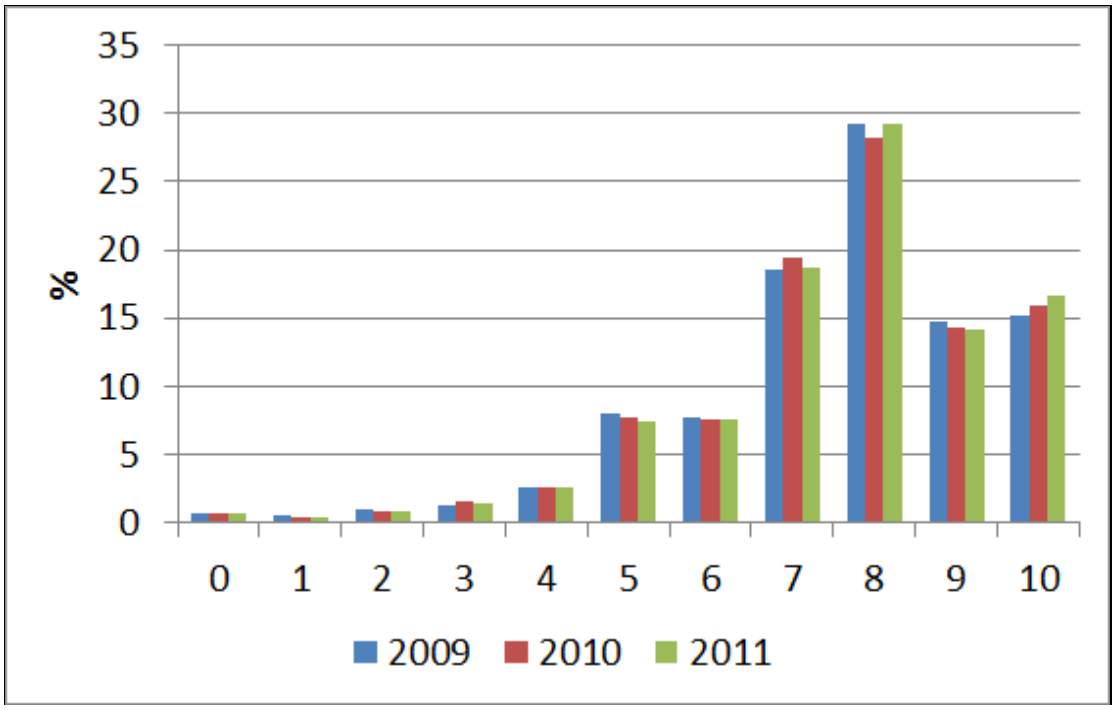
3.11 In 2009, the following question on life satisfaction was introduced in to the SHS:

> All things considered, how satisfied are you with your life as a whole nowadays?
> (on a scale where 0 means extremely dissatisfied and 10 means extremely satisfied)

3.12 It should be noted that the concept of life satisfaction, or happiness, refers to a cognitive sense of satisfaction with life, and does not simply refer to an absence of negative experiences.

3.13 Figure 3 shows the distribution of life satisfaction among the respondents for each of the survey years.

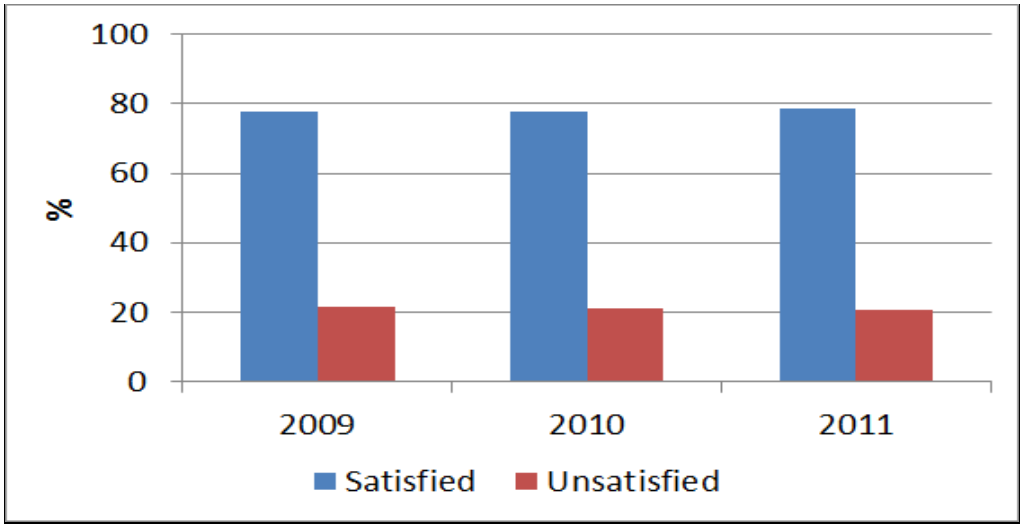
Figure 3 Distribution of Life Satisfaction 2009 - 2011



3.14 As there was relatively small numbers of respondents in the lower end of the categories for each of the surveys the responses were dichotomized into a '0-6' group representing low satisfaction and a '7-10' group representing high satisfaction for use in the logistic regression analysis.

3.15 Figure 4 shows the results using the dichotomised satisfaction with life variable. This dichotomised life satisfaction variable is the dependent (outcome) variable used in the correlation and regression models. These results show that the majority of respondents (nearly 80%) report high life satisfaction; a proportion which has remained stable over the years.

Figure 4: Distribution of Life Satisfaction Dichotomised Variable



Independent Variables

Cultural Engagement

3.16 The Scottish Household Survey asks respondents two key questions on culture, one on attendance at cultural places or events and one on participation in cultural and creative activities.

3.17 Attendance at a cultural event or place of culture is defined as those people who attend at least one type of cultural place in the previous year. There are a number of different types of cultural events and places of culture listed on a showcard shown to respondents. Examples include cinemas, libraries and live music events. The complete list of cultural places or events is in the Technical Annex.

3.18 Similarly, participation in any cultural activity is defined as taking part in at least one activity in the previous year. Examples of cultural activities include reading for pleasure, dancing and crafts. The complete list of cultural and creative activities is listed in the Technical Annex.

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3.19 Cultural engagement measures the percentage of adults who have either participated in or attended a cultural place or event during the last 12 months. This information is used to inform progress on the Scottish Government's National Indicator *41*: "Increase cultural engagement".

3.20 The most recent data on cultural engagement in Scotland shows that in 2011:

- Almost nine out of ten (87%) of adults have engaged in at least one cultural activity/place/event in the previous 12 months. This includes 76% of adults attending a cultural event or place and 73% of adults participating in a cultural activity.

- The most popular cultural place to visit is the cinema with around 54% of adults visiting, while 31% of adults have attended a live music event.

- The most popular culture activity participated in is reading for pleasure, which 67% of respondents reported doing.

Participation in Sport

3.21 A broad definition of sport is used in the SHS question which includes activities such as recreational walking for more than 30 minutes. Respondents are asked if they have done any of the sports activities listed on a showcard in the previous four weeks. The full list of activities is in the Technical Annex.

3.22 The most recent data on participation in sports in Scotland shows that in 2011:

- 75% of adults stated they had participated in at least one of the activities in the list during the previous four weeks (including walking)

- When walking was excluded, just over half of adults (54%) had undertaken at least one of the remaining sports activities in the last four weeks.

- Participation was highest among those aged 16 to 44 (84%), declining steadily to only 42% of those aged 75 and over participating in any of the activities in the past four weeks.

Control Variables

3.23 The first step in selecting control variables was to consider what factors could predict ratings of health and life satisfaction other than participation in culture and sport. This stage is important as the regression analysis will tell us whether the relationship between culture and health/satisfaction with life is significant once all the other variables in the regression model have been accounted for. This analysis helps to reduce the likelihood of any significant relationship between culture and sport participation and health or satisfaction with life being due to some underlying factor that has not been accounted for.

3.24 Based on previous research (eg Scottish Government 2008; Cuypers, 2011; ONS, 2012) a number of variables were included in the analysis as control variables. These control variables include age, economic status; income; area deprivation, education qualification, disability/or long standing illness and smoking are accounted for. The variables of life satisfaction and self-assessed health were also used as independent variables for each other given the link between a person's health and their overall satisfaction with life.

3.25 Details on the control variables are included in the Technical Annex.

Analysis

3.26 The main type of analysis used in this study is regression analysis. The general purpose of regression analysis is to understand the relationship between several independent or predictor variables and a dependent (outcome) variable.

3.27 The type of regression used in this study was logistic regression which is used to identify factors that contribute to a result and also to give an indication of the relative strength of these factors. Logistic regression works on a binary output - for example the dependent variable of self-assessed health rated as poor or good (0 or 1).

3.28 The independent variables were also dichotomised where possible, or kept as categorical variables comparing the influence of each category level with a reference level. This helps to determine the odds ratio of each variable.
The odds ratio is a measure of the likelihood of an event happening to one group compared to another group. In this study we are interested in how much more likely someone is to rate their health as good or their life as satisfactory if they take part in culture or sport. Odds rations describe the strength of association between two binary variable values.

3.29 Using this technique, the study examines the relationship between dependent and independent variables in isolation, but also accounts for other factors that may explain variation in health and life satisfaction. In other words, we are able to say that any relationship found is not due to other factors accounted for, such as age, economic status; income; area deprivation, education qualification, disability/or long standing illness or smoking.

3.30 The models created using the above rationale were:

- the relationship between participating in sport and good health
- the relationship between participating in a cultural activity and good health
- the relationship between attending a cultural place or event and good health
- the relationship between participating in sport and high life satisfaction
- the relationship between participating in a cultural activity and high life satisfaction
- the relationship between attending a cultural place or event and high life satisfaction
- the relationship between individual cultural activities and good health
- the relationship between individual cultural activities and high life satisfaction

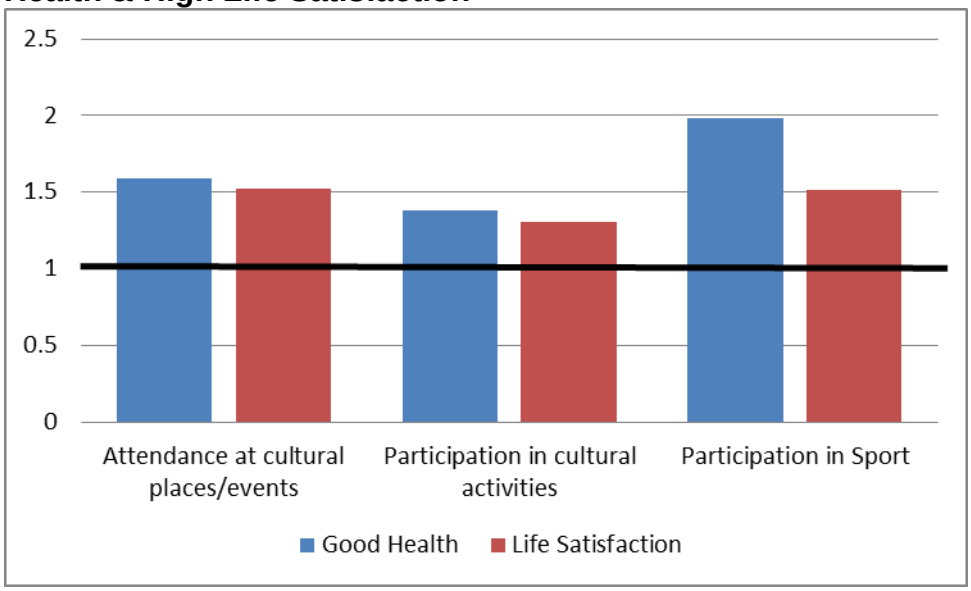
4 Findings

Overall Participation in Culture and Sport

4.1 The analysis found that, after controlling for other factors including socio-economic factors, participation in culture and sport are independently and significantly associated with good health and high life satisfaction.

4.2 Figure 5, below, depicts the relationship between participation and health and life satisfaction. To explain the odds ratio graph, the line across the ratio at 1 would indicate an equal chance of the outcome (good health and high life satisfaction) regardless of whether the respondent participated in culture and sport or not. If the columns rise above this line, this is evidence of a higher likelihood that the outcome of good health and high life satisfaction is achieved in those who participate compared to those who do not participate.

Figure 5 Relationship between Participation in Culture & Sport and Good Health & High Life Satisfaction



4.3 The analysis of the relationship between the dependent variables [health and satisfaction with life] and independent variables [participation in cultural activities; attendance at cultural places or events; participation in sport] after taking into account other factors such as age, area deprivation, highest education qualification, household economic status, annual income of random adult, disability/illness and smoking, found the following significant results:

- Those who attended a cultural place or event were over 59% more likely (odds ratio 1.592) to have reported good health compared to those who did not attend any cultural place or event in the last 12 months.

- Those who participated in cultural activities were nearly 38% more likely (odds ratio 1.378) to have reported good health than those who did not participate in any cultural activity in the last 12 months.

- Those who participated in cultural activities were 30% more likely (odds ratio 1.304) to have reported they were satisfied with their lives, compared to those who did not participate in any cultural activity in the last 12 months.

- Those who attended a cultural place or event over one and a half times more likely (odds ratio 1.523) to have reported high life satisfaction, compared to those who did not attend any cultural place or event in the last 12 months.

- Those who participated in sport were nearly twice more likely (odds ratio 1.987) to have rated their health as good compared to those who did not participate in sport in the last 4 weeks.

- Those who participated in sport were over one and a half times more likely (odds ratio 1.517) to have reported high life satisfaction, compared to those who did not participate in sport in the last 4 weeks.

Participation in Specific Cultural Activities

4.4 Further analysis was carried out to identify any association between participation in individual cultural activities and health and life satisfaction.

4.5 Table 1 presents the full results of the analysis of associations (accounting for control factors). Participation in some individual creative and cultural activities – eg performing with an audience and crafts – was associated with good health. Reading for pleasure and dance participation were significantly associated with good health. Dancing has the strongest association with self-assessed health. Those who participated in dancing were 62% more likely (odds ratio 1.62) to report good health than those who did not participate in dance in the previous 12 months.

4.6 A wider range of individual cultural participation activities, including dance, playing/writing music and photography, were found to have an association with high life satisfaction, though the relationships were not statistically significant at the 5% level (Table 1).

4.7 Attendance at individual cultural places and events was also found to be associated with both good health and high life satisfaction.

4.8 Significant associations were found between health and attendance at cinema, art exhibitions, craft exhibitions, street art and theatre.

4.9 There is also a relationship between attendance at individual cultural places and high life satisfaction, with significant associations found for attendance at museums, cinema, historical places and ballet/dance. So, for example:

- those who visited a museum were 37% more likely (odds ratio 1.37) to report high life satisfaction that those who did not visit;
- those who visited the cinema were 44% more likely (odds ratio 1.435) to report high life satisfaction that those who did not visit;
- those who visited a historical or archaeological place were over 50% more likely (odds ratio 1.52) to report high life satisfaction that those who did not visit;
- those who attended a ballet or dance performance were over twice as likely to report high life satisfaction (odds ratio 2.249) that those who did not. (Table 1)

Table1 Associations between individual cultural activities and good self-assessed health and high life satisfaction

	Self-rated Health				Satisfaction with life			
Variable	OR	CI		P-value	OR	CI		P-value
Participation								
Dance	1.62	1.27	2.07	0.000	1.20	0.88	1.63	0.245
Played/written music	0.74	0.56	0.97	0.031	1.20	0.83	1.75	0.336
Perform with audience	1.53	0.94	2.47	0.086	1.33	0.69	2.57	0.401
Art/sculpture	0.99	0.73	1.35	0.972	1.25	0.84	1.85	0.266
Photography	0.94	0.67	1.31	0.706	1.29	0.82	2.04	0.269
Film/video	0.70	0.38	1.28	0.242	0.67	0.34	1.33	0.253
Computer artwork/animation	0.80	0.57	1.12	0.188	1.12	0.72	1.76	0.613
Crafts	1.10	0.85	1.42	0.489	0.86	0.62	1.18	0.336
Read for pleasure	1.33	1.11	1.59	0.002	1.21	0.97	1.50	0.085
Creative writing	1.20	0.74	1.95	0.469	0.62	0.37	1.02	0.061
Other culture	0.97	0.53	1.80	0.930	1.23	0.52	2.91	0.634
Attendance								
Cinema	1.26	1.04	1.53	0.021	1.44	1.13	1.83	0.004
Exhibit/ collection of art	1.31	1.01	1.69	0.045	0.98	0.70	1.38	0.922
Craft exhibition	1.34	1.01	1.79	0.045	1.10	0.74	1.62	0.649
Books/writing event	1.14	0.75	1.72	0.540	0.86	0.51	1.45	0.571
Street art	1.32	0.97	1.78	0.077	0.96	0.66	1.41	0.846
Cultural festival	1.27	0.88	1.82	0.202	1.50	0.89	2.53	0.128
Play/theatrical performance	1.24	1.01	1.52	0.039	1.25	0.95	1.63	0.110
Opera/classical performance	0.71	0.50	1.02	0.063	1.25	0.71	2.19	0.440
Live music event	1.22	1.00	1.50	0.054	1.24	0.95	1.62	0.110
Ballet/dance	0.82	0.55	1.22	0.325	2.25	1.09	4.65	0.029
Library	1.19	0.98	1.44	0.080	1.17	0.92	1.50	0.197
Archive/record office	1.11	0.63	1.97	0.714	0.61	0.32	1.14	0.121
Museum	1.20	0.99	1.47	0.070	1.37	1.05	1.79	0.020
Gallery	1.04	0.82	1.33	0.750	0.95	0.69	1.30	0.734
Historical/archaeological place	1.22	0.97	1.54	0.094	1.52	1.09	2.11	0.013

Discussion

4.10 The findings presented above show that overall participation in culture and sport, and participation in certain individual cultural activities, is associated with good self-assessed health and high life satisfaction, even after accounting for other known relevant factors. This is the first time this analysis has been carried out at a population level in Scotland. The findings are consistent with a growing body of population level studies on the impact of engagement in culture on key quality of life

measures. For example, the association between cultural attendance and health has also been found in studies in Sweden (Bygren, 2009); Norway (Cuypers, 2011) and Finland (Hyppa, 2006).

4.11 Being cross-sectional, this study cannot determine causal relationships. Further longitudinal and experimental design studies would be required to explore causality. Further cross-sectional research could also be carried out on the effect of frequency of participation in culture and sport on quality of life measures. The Understanding Society longitudinal study has a robust sample size in Scotland and includes measures of engagement in culture and sport and measures of health and life satisfaction. Further research could be carried out using longitudinal data from Understanding Society to explore the direction of causality.

4.12 Longitudinal research in other countries has found some evidence that points to a causal relationship between engagement in culture and health (eg Bygren, 2009). Studies have also found that this effect is transient, suggesting continual engagement in culture is required to produce positive effects (Johansson et al, 2001).

4.12 The findings of this study add weight to the argument that national exercises designed to measure overall wellbeing should include measures of the extent to which the population take part in culture and sport. The ONS Measuring National Wellbeing programme added measures on culture and sport participation in its recent review. Scotland's National Performance Framework – Scotland Performs – added two new relevant National Indicators in its 2011 refresh - Increase Cultural Engagement and Increase Physical Activity.

4.13 These developments, and this research, support a holistic understanding of quality of life that acknowledges that wellbeing, as well as being related to major factors like employment, health and age, is also associated with participation in culture and sport.

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6. Technical Annex

A) Description of outcome and control variables in the models

A1) Existing SHS variables used in the models

Outcome variables		
Shs variable name	Description	Response
Genhlth	Self-rated health	(1) very good (2) good (3) fair (4) bad (5) very bad
Lifesat	Life satisfaction	(1) extremely unsatisfied (2) (3) (4) (5) (6) (7) (8) (9) (10) extremely satisfied
Control variables		
Ha5	Age	(1) 15-19 (2) 20-24 (3) 25-29 (4) 30-34 (5) 35-39 (6) 40-44
		(7) 45-49 (8) 50-54 (9) 55-59 (10) 60-64 (11) 65-69 (12) 70-74 (13) 75-79 (14) 80+
Md09quin	Area deprivation quintile	(1) 1st (most deprived) (2) 2nd

		(3) 3rd
		(4) 4th
		(5) 5th (least deprived)
Hedqual8	Highest education qualification	(1) o' level, standard grade or equivalent (2) higher, a level or equivalent (3) hnc/hnd or equivalent (4) degree, professional qualification (5) other qualification (6) no qualification (7) qualification not known
Hihecon	Household economic status	(1) self-employed (2) employed full time (3) employed part time (4) looking after the home or family (5) permanently retired from work (6) unemployed and seeking work (7) at school
		(8) in further/higher education (9) government work/ training scheme (10) permanently sick or disabled (11) unable to work due to short-term illness or injury (12) pre-school/not yet at school (13) other (specify)
Ragrband	Banded annual gross income	(1) £5,200 and up to £10,399 (20 £10,400 and up to £15,599 (3) £15,600 and up to £20,799 (4) £20,800 and up to £25,999 (5) £26,000 and up to £31,199 (6) £31,200 and up to £36,399 (7) £36,400 and up to £51,999 (8) £52,000 and above
Rg5	Disability or long standing illness	(1) long standing illness (2) disability (3) both (4) none
Rg19	Smoke	(1) yes (2) no

A2) Derived SHS variables used in the model

Derived variable	Derived variable name	Original variable	New response categories
Hlthcat	Good health	Genhlth Fair/bad/very bad Good/ very good	 (0) no (1) yes
Lifecat	Satisfied with life	Lifesat ≤ 6 >6	 (0) no (1) yes
Rg5cat	No disability or illness	Rg5 Illness/ disability/ both None	 (0) no (1) yes
Ha5cat	Banded age recoded	Ha5	(1) 16-24 (2) 25-34 (3) 35-44 (4) 45-54 (5) 55-64 (6) 65-74 (70 75+

B) Description of cultural and physical activities variables in the models

B1)List of cultural and physical activities variables

Cultural participation	
CULT1AA	Dance
CULT1AB	Played instrument/written music
CULT1AC	Performance with audience
CULT1AD	Art/sculpture
CULT1AE	Photography
CULT1AF	Film/video
CULT1AG	Computer artworks/animation
CULT1AH	Crafts
CULT1AI	Read for pleasure
CULT1AJ	Creative writing
CULT1AK	Other culture
CULT1AL	None participated in
Cultural attendance	
CULT2AA	Cinema
CULT2AB	Exhibition/ collection of art
CULT2AC	Craft exhibition
CULT2AD	Books or writing event
CULT2AE	Street arts
CULT2AF	Culturally specific festival
CULT2AG	Play/ theatrical performance
CULT2AH	Opera/ classical music performance
CULT2AI	Live music event
CULT2AJ	Ballet/ dance
CULT2AK	Library
CULT2AL	Archive/ records office
CULT2AM	Museum
CULT2AN	Gallery
CULT2AO	Historical/ archaeological place
CULT2AP	Visited none
Sport participation	
SPR3A	Walking (at least 30 minutes for recreational purposes)
SPR3B	Swimming
SPR3C	Football
SPR3D	Cycling (at least 30 minutes for recreational, health, training or competition purposes)
SPR3E	Keep fit /aerobics
SPR3F	Multigym use / weight training

SPR3G	Golf
SPR3H	Running / jogging
SPR3I	Snooker / billiards / pool
SPR3J	Dancing
SPR3K	Bowls
SPR3L	Other - please specify (eg angling, badminton, judo, horse-riding, skiing, sailing, yoga)
SPR3M	None of these

C) Description of the analysis

We have used SAS to analyse the SHS 2011 data. For all of our models the analysis involved a number of stages:

1) Creating the derived variables

↓

2) Checking the frequencies for the derived variables

↓

3) Excluding the 'missing' and 'don't know' responses from the analysis

↓

4) Running crosstab to make sure the associations between variables of interest are significant

↓

5) Selecting the significantly associated variables for further analysis

↓

6) Checking collinearity between selected variables

↓

7)Running binary logistic regression using the selected variables

↓

8) Analysing the findings

D) Output from the models

D1) Model 1 - the relationship between participating in sports in the last four weeks and reporting good health

Outcome variable: Good Health unweighted sample size: 4578	Weighted		
	Odds Ratio	95% Wald Confidence Limits	
Age: (ref = 16-24)			
25-34	0.867	0.6	1.251
35-44	0.556	0.389	0.795
45-54	0.486	0.339	0.695
55-64	0.474	0.324	0.694
65-74	0.569	0.352	0.92
75 +	0.504	0.301	0.843
Deprivation (ref = most deprived)			
2nd	1.166	0.899	1.513
3rd	1.104	0.848	1.439
4th	1.295	0.976	1.719
5th Least deprived quintile	1.406	1.042	1.897
Highest Education Qualification (ref = O level/standard grade or equivalent)			
Higher, A level or equivalent	1.515	1.131	2.03
HNC/HND or equivalent	0.972	0.697	1.357
Degree, Professional Qualification	1.246	0.944	1.645
Other qualification	1.369	0.904	2.072
No qualifications	1.077	0.817	1.419
Qualifications not known	1.236	0.369	4.141
Economic Status (ref = Employed full time)			
Employed part time	0.965	0.676	1.377
In further/higher education	0.367	0.198	0.68
Looking after the home or family	0.639	0.396	1.029
Other	1.441	0.217	9.589
Permanently retired from work	0.821	0.581	1.16
Permanently sick or disabled	0.295	0.183	0.478
Self employed	1.005	0.686	1.472
Unable to work because of short-term illness or injury	0.631	0.219	1.821
Unemployed and seeking work	0.666	0.431	1.03
Annual gross income (ref = < £5,200)			
£5,200 and up to £10,399	0.991	0.753	1.303

£10,400 and up to £15,599	1.36	1.014	1.824
£15,600 and up to £20,799	1.311	0.942	1.825
£20,800 and up to £25,999	1.421	0.958	2.109
£26,000 and up to £31,199	1.87	1.12	3.122
£31,200 and up to £36,399	3.199	1.733	5.906
£36,400 and up to £51,999	1.429	0.869	2.352
£52,000 and above	1.622	0.901	2.92
satisfied with life	2.263	1.764	2.903
Non smoker	1.182	0.968	1.443
No disabilities or illness's	7.634	6.321	9.22
Participates in sport	1.987	1.634	2.416

D2) Model 2 - the relationship between participating in a cultural activity in the last 12 months and reporting good health

Outcome variable: Good Health unweighted sample size: 4578	Weighted		
	Odds Ratio	95% Wald Confidence Limits	
Age: (ref = 16-24)			
25-34	0.835	0.578	1.205
35-44	0.539	0.377	0.77
45-54	0.447	0.312	0.639
55-64	0.414	0.283	0.606
65-74	0.489	0.304	0.787
75 +	0.393	0.237	0.651
Deprivation (ref = most deprived)			
2nd	1.139	0.88	1.476
3rd	1.115	0.856	1.451
4th	1.339	1.01	1.774
5th Least deprived quintile	1.405	1.043	1.893
Highest Education Qualification (ref = O level/standard grade or equivalent)			
Higher, A level or equivalent	1.493	1.116	1.998
HNC/HND or equivalent	0.965	0.691	1.346
Degree, Professional Qualification	1.209	0.915	1.598
Other qualification	1.334	0.888	2.005
No qualifications	1.045	0.794	1.374
Qualifications not known	1.021	0.3	3.478

Economic Status (ref = Employed full time)			
Employed part time	0.989	0.693	1.41
In further/higher education	0.356	0.191	0.661
Looking after the home or family	0.662	0.411	1.067
Other	1.343	0.214	8.439
Permanently retired from work	0.801	0.57	1.127
Permanently sick or disabled	0.269	0.167	0.433
Self employed	0.988	0.675	1.446
Unable to work because of short-term illness or injury	0.705	0.244	2.04
Unemployed and seeking work	0.682	0.441	1.054
Annual gross income (ref = < £5,200)			
£5,200 and up to £10,399	1.021	0.777	1.343
£10,400 and up to £15,599	1.332	0.995	1.784
£15,600 and up to £20,799	1.349	0.97	1.877
£20,800 and up to £25,999	1.394	0.94	2.065
£26,000 and up to £31,199	1.975	1.188	3.283
£31,200 and up to £36,399	3.269	1.778	6.008
£36,400 and up to £51,999	1.486	0.902	2.448
£52,000 and above	1.65	0.917	2.968
satisfied with life	2.349	1.835	3.007
Non smoker	1.235	1.012	1.506
No disabilities or illness's	8.12	6.735	9.789
Participates in cultural activity	1.378	1.133	1.676

D3) Model 3 - the relationship between attending a cultural place or event in the last 12 months and reporting good health

Outcome variable: Good Health unweighted sample size: 4578	Weighted		
	Odds Ratio	95% Wald Confidence Limits	
Age: (ref = 16-24)			
25-34	0.839	0.581	1.21
35-44	0.552	0.387	0.788
45-54	0.473	0.331	0.677
55-64	0.452	0.309	0.662
65-74	0.522	0.324	0.842

75 +	0.441	0.265	0.734
Deprivation (ref = most deprived)			
2nd	1.142	0.881	1.479
3rd	1.121	0.86	1.46
4th	1.312	0.99	1.741
5th Least deprived quintile	1.391	1.032	1.875
Highest Education Qualification (ref = O level/standard grade or equivalent)			
Higher, A level or equivalent	1.506	1.125	2.015
HNC/HND or equivalent	0.953	0.683	1.329
Degree, Professional Qualification	1.192	0.902	1.575
Other qualification	1.38	0.916	2.077
No qualifications	1.101	0.835	1.453
Qualifications not known	1.119	0.321	3.897
Economic Status (ref = Employed full time)			
Employed part time	0.993	0.696	1.415
In further/higher education	0.365	0.196	0.679
Looking after the home or family	0.66	0.409	1.064
Other	1.335	0.231	7.725
Permanently retired from work	0.819	0.581	1.155
Permanently sick or disabled	0.271	0.168	0.436
Self employed	1.008	0.688	1.478
Unable to work because of short-term illness or injury	0.761	0.267	2.173
Unemployed and seeking work	0.702	0.455	1.083
Annual gross income (ref = < £5,200)			
£5,200 and up to £10,399	1.021	0.777	1.343
£10,400 and up to £15,599	1.354	1.011	1.814
£15,600 and up to £20,799	1.354	0.974	1.884
£20,800 and up to £25,999	1.383	0.934	2.048
£26,000 and up to £31,199	1.978	1.189	3.292
£31,200 and up to £36,399	3.264	1.774	6.003
£36,400 and up to £51,999	1.492	0.908	2.451
£52,000 and above	1.67	0.927	3.008
satisfied with life	2.306	1.8	2.956
Non smoker	1.205	0.987	1.471
No disabilities or illness's	7.992	6.627	9.638
Attends cultural place or event	1.592	1.299	1.951

D4) Model 4 - the relationship between participating in sport in the last 4 weeks and reporting high life satisfaction

Outcome variable: Satisfaction with life unweighted sample size: 4578	Weighted		
	Odds Ratio	95% Wald Confidence Limits	
Age: (ref = 16-24)			
25-34	1.077	0.707	1.641
35-44	0.585	0.392	0.872
45-54	0.669	0.443	1.009
55-64	0.817	0.52	1.282
65-74	0.752	0.416	1.36
75 +	1.003	0.52	1.935
Deprivation (ref= 1st most deprived)			
2nd	0.925	0.696	1.23
3rd	1.42	1.032	1.952
4th	1.219	0.866	1.717
5th Least deprived quintile	1.167	0.808	1.686
Highest Education Qualification (ref = O level/standard grade or equivalent)			
Higher, A level or equivalent	1.242	0.877	1.758
HNC/HND or equivalent	0.841	0.569	1.244
Degree, Professional Qualification	1.198	0.836	1.716
Other qualification	0.983	0.6	1.612
No qualifications	0.987	0.717	1.361
Qualifications not known	1.467	0.298	7.222
Economic Status (ref = Employed full time)			
Employed part time	0.654	0.444	0.963
In further/higher education	0.397	0.202	0.781
Looking after the home or family	0.658	0.39	1.112
Other	0.376	0.075	1.873
Permanently retired from work	1.268	0.804	2
Permanently sick or disabled	0.451	0.294	0.692
Self employed	1.651	0.933	2.922
Unable to work because of short-term illness or injury	0.351	0.13	0.949
Unemployed and seeking work	0.408	0.263	0.634
Annual gross income (ref = < £5,200)			
£5,200 and up to £10,399	0.906	0.668	1.23
£10,400 and up to £15,599	1.093	0.781	1.528
£15,600 and up to £20,799	1.278	0.847	1.927
£20,800 and up to £25,999	2.038	1.168	3.556

£26,000 and up to £31,199	2.871	1.279	6.447
£31,200 and up to £36,399	1.673	0.806	3.474
£36,400 and up to £51,999	2.297	1.074	4.912
£52,000 and above	1.321	0.628	2.781
Good health	2.333	1.813	3
Non smoker	1.991	1.597	2.483
No disabilities or illness's	1.656	1.258	2.179
Participates in sport	1.517	1.194	1.926

D5) Model 5 - the relationship between participating in a cultural activity in the last 12 months and reporting high life satisfaction

Outcome variable: Satisfaction with life unweighted sample size: 4578	Weighted		
	Odds Ratio	95% Wald Confidence Limits	
Age: (ref = 16-24)			
25-34	1.06	0.696	1.614
35-44	0.576	0.386	0.858
45-54	0.645	0.427	0.973
55-64	0.749	0.479	1.173
65-74	0.69	0.382	1.244
75 +	0.867	0.453	1.662
Deprivation (ref = 1st most deprived)			
2nd	0.906	0.682	1.205
3rd	1.418	1.031	1.951
4th	1.246	0.886	1.753
5th Least deprived quintile	1.147	0.794	1.658
Higest Education Qualification (ref = O level/standard grade or equivalent)			
Higher, A level or equivalent	1.231	0.869	1.744
HNC/HND or equivalent	0.824	0.557	1.219
Degree, Professional Qualification	1.164	0.811	1.671
Other qualification	0.965	0.59	1.576
No qualifications	0.995	0.721	1.371
Qualifications not known	1.325	0.27	6.495
Economic Status (ref = Employed full time)			
Employed part time	0.667	0.453	0.983
In further/higher education	0.39	0.198	0.767

Looking after the home or family	0.677	0.401	1.145
Other	0.366	0.075	1.795
Permanently retired from work	1.231	0.78	1.943
Permanently sick or disabled	0.424	0.277	0.648
Self employed	1.641	0.927	2.903
Unable to work because of short-term illness or injury	0.376	0.141	1.006
Unemployed and seeking work	0.411	0.264	0.638
Annual gross income (ref = < £5,200)			
£5,200 and up to £10,399	0.92	0.678	1.248
£10,400 and up to £15,599	1.063	0.76	1.485
£15,600 and up to £20,799	1.29	0.855	1.945
£20,800 and up to £25,999	1.993	1.143	3.475
£26,000 and up to £31,199	2.909	1.297	6.523
£31,200 and up to £36,399	1.678	0.809	3.483
£36,400 and up to £51,999	2.362	1.104	5.053
£52,000 and above	1.327	0.63	2.795
Good health	2.416	1.883	3.101
Non smoker	2.045	1.641	2.549
No disabilities or illness's	1.723	1.313	2.263
Participates in cultural activity	1.304	1.04	1.636

D6) Model 6 - the relationship between attending a cultural place or event in the last 12 months and reporting high life satisfaction

Outcome variable: Satisfaction with life unweighted sample size: 4578	Weighted		
	Odds Ratio	95% Wald Confidence Limits	
Age: (ref = 16-24)			
25-34	1.064	0.698	1.621
35-44	0.585	0.392	0.873
45-54	0.678	0.448	1.024
55-64	0.799	0.51	1.254
65-74	0.722	0.399	1.304
75 +	0.954	0.496	1.836
Deprivation (ref = 1st most deprived)			
2nd	0.909	0.684	1.209
3rd	1.438	1.045	1.979

4th	1.226	0.871	1.725
5th Least deprived quintile	1.148	0.794	1.659
Highest Education Qualification (ref = O level/standard grade or equivalent)			
Higher, A level or equivalent	1.223	0.864	1.732
HNC/HND or equivalent	0.812	0.549	1.201
Degree, Professional Qualification	1.144	0.797	1.642
Other qualification	1.009	0.616	1.653
No qualifications	1.043	0.755	1.441
Qualifications not known	1.473	0.297	7.295
Economic Status (ref = Employed full time)			
Employed part time	0.672	0.456	0.991
In further/higher education	0.4	0.202	0.789
Looking after the home or family	0.68	0.402	1.152
Other	0.368	0.077	1.747
Permanently retired from work	1.263	0.799	1.997
Permanently sick or disabled	0.428	0.28	0.656
Self employed	1.651	0.933	2.923
Unable to work because of short-term illness or injury	0.391	0.147	1.037
Unemployed and seeking work	0.422	0.272	0.656
Annual gross income (ref = < £5,200)			
£5,200 and up to £10,399	0.92	0.678	1.25
£10,400 and up to £15,599	1.084	0.775	1.516
£15,600 and up to £20,799	1.296	0.859	1.954
£20,800 and up to £25,999	1.99	1.141	3.47
£26,000 and up to £31,199	2.895	1.291	6.492
£31,200 and up to £36,399	1.669	0.805	3.462
£36,400 and up to £51,999	2.371	1.109	5.071
£52,000 and above	1.336	0.634	2.815
Good health	2.356	1.833	3.027
Non smoker	1.996	1.6	2.49
No disabilities or illness's	1.706	1.299	2.241
Attends cultural place or event	1.523	1.2	1.932

D7) Model 7 - the relationship between individual culture activities participated in during the last 12 months and reporting good health (significant at 5%)

Outcome variable: good health	Dance			Read for pleasure		
	Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits	
Age: (ref = 16-24)						
25-34	0.844	0.584	1.219	0.815	0.564	1.176
35-44	0.564	0.395	0.807	0.519	0.363	0.742
45-54	0.468	0.327	0.67	0.43	0.3	0.616
55-64	0.436	0.298	0.638	0.399	0.272	0.583
65-74	0.513	0.319	0.827	0.459	0.285	0.74
75 +	0.417	0.252	0.693	0.369	0.223	0.612
Deprivation (ref = 1st most deprived)						
2nd	1.166	0.899	1.51	1.137	0.878	1.473
3rd	1.11	0.852	1.446	1.115	0.856	1.451
4th	1.366	1.03	1.813	1.329	1.002	1.761
5th least deprived quintile	1.448	1.075	1.952	1.404	1.042	1.891
Highest Education Qualification (ref = O level/standard grade or equivalent)						
Higher, a level or equivalent	1.519	1.135	2.033	1.475	1.102	1.974
HNC/HND or equivalent	0.976	0.7	1.361	0.96	0.688	1.34
Degree, professional qual	1.238	0.938	1.633	1.191	0.9	1.576
Other qualification	1.348	0.897	2.025	1.306	0.87	1.962
No qualifications	1.025	0.78	1.347	1.033	0.786	1.357
Qualifications not known	0.988	0.289	3.376	1.013	0.3	3.42
Economic Status (ref = Employed full time)						
Employed part time	0.971	0.68	1.387	0.983	0.69	1.402
In further/higher education	0.361	0.195	0.671	0.351	0.189	0.651
Looking after the home or family	0.655	0.406	1.057	0.645	0.4	1.038
Other	1.408	0.223	8.909	1.352	0.217	8.41
Permanently retired from work	0.823	0.585	1.159	0.815	0.58	1.146
Permanently sick or disabled	0.278	0.172	0.448	0.271	0.169	0.435
Self employed	1.002	0.684	1.467	0.991	0.677	1.451

Unable to work because of short-term illness or injury	0.737	0.254	2.142	0.691	0.238	2.006
Unemployed and seeking work	0.697	0.451	1.077	0.683	0.442	1.055
Annual gross income (ref = < £5,200)						
£5,200 and up to £10,399	1.002	0.762	1.317	1.023	0.778	1.345
£10,400 and up to £15,599	1.324	0.989	1.773	1.34	1.001	1.794
£15,600 and up to £20,799	1.341	0.964	1.865	1.353	0.973	1.882
£20,800 and up to £25,999	1.405	0.947	2.083	1.407	0.949	2.086
£26,000 and up to £31,199	1.961	1.18	3.261	1.981	1.192	3.293
£31,200 and up to £36,399	3.347	1.818	6.161	3.317	1.802	6.104
£36,400 and up to £51,999	1.5	0.911	2.471	1.489	0.905	2.452
£52,000 and above	1.657	0.92	2.983	1.666	0.925	3.001
Satisfied with life	2.349	1.834	3.007	2.36	1.845	3.021
Non smoker	1.235	1.013	1.507	1.241	1.018	1.513
No disabilities or illness's	8.037	6.666	9.689	8.082	6.705	9.741
Cultural activity/place	1.621	1.268	2.071	1.328	1.109	1.59

D8) Model 8 - the relationship between individual culture activities attended during the last 12 months and reporting good health (significant at 5%)

Outcome variable: good health	Cinema			Exhibit/art collection			Craft exhibit			Play/theatrical perf		
	Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits	
Age: (ref = 16-24)												
25-34	0.843	0.584	1.218	0.841	0.583	1.214	0.835	0.579	1.205	0.826	0.573	1.193
35-44	0.558	0.39	0.798	0.54	0.378	0.771	0.537	0.376	0.767	0.534	0.374	0.762
45-54	0.481	0.335	0.692	0.448	0.314	0.641	0.447	0.312	0.639	0.443	0.31	0.634
55-64	0.463	0.314	0.683	0.413	0.283	0.603	0.413	0.283	0.604	0.416	0.284	0.608
65-74	0.539	0.332	0.873	0.481	0.299	0.773	0.486	0.302	0.781	0.477	0.297	0.768
75 +	0.442	0.264	0.74	0.387	0.234	0.641	0.389	0.235	0.644	0.381	0.23	0.631
Deprivation (ref = 1st most deprived)												
2nd	1.156	0.893	1.497	1.151	0.889	1.49	1.146	0.885	1.484	1.155	0.892	1.496
3rd	1.122	0.862	1.461	1.118	0.859	1.455	1.101	0.845	1.433	1.124	0.864	1.463
4th	1.324	0.999	1.755	1.323	0.998	1.753	1.327	1.001	1.759	1.331	1.004	1.764
5th least deprived quintile	1.412	1.048	1.902	1.411	1.048	1.901	1.413	1.049	1.903	1.408	1.045	1.896
Highest Education Qualification (ref = O level/standard grade or equivalent)												
Higher, a level or equivalent	1.506	1.126	2.015	1.496	1.118	2.002	1.526	1.141	2.041	1.499	1.12	2.007
HNC/HND or equivalent	0.974	0.698	1.359	0.964	0.691	1.345	0.98	0.704	1.366	0.975	0.7	1.359

Degree, professional qual	1.236	0.936	1.632	1.208	0.912	1.6	1.229	0.93	1.623	1.232	0.932	1.627
Other qualification	1.343	0.894	2.018	1.321	0.88	1.984	1.321	0.88	1.984	1.321	0.88	1.983
No qualifications	1.039	0.79	1.366	1.018	0.775	1.337	1.02	0.776	1.34	1.018	0.775	1.338
Qualifications not known	1.038	0.307	3.509	0.984	0.29	3.336	0.971	0.286	3.303	1.011	0.298	3.425
Economic Status (ref = Employed full time)												
Employed part time	0.962	0.675	1.371	0.959	0.672	1.367	0.959	0.673	1.367	0.963	0.676	1.372
In further/higher education	0.363	0.195	0.677	0.338	0.181	0.63	0.353	0.19	0.656	0.362	0.195	0.674
Looking after the home or family	0.647	0.402	1.042	0.621	0.386	1	0.627	0.39	1.01	0.634	0.394	1.023
Other	1.415	0.223	8.982	1.346	0.211	8.578	1.346	0.211	8.593	1.33	0.214	8.284
Permanently retired from work	0.823	0.585	1.158	0.822	0.585	1.156	0.813	0.578	1.144	0.824	0.586	1.159
Permanently sick or disabled	0.272	0.169	0.437	0.271	0.169	0.435	0.27	0.168	0.433	0.27	0.168	0.434
Self employed	0.988	0.675	1.445	0.991	0.678	1.449	0.98	0.67	1.433	0.989	0.676	1.449
Unable to work because of short-term illness or injury	0.746	0.259	2.15	0.719	0.249	2.08	0.712	0.246	2.056	0.729	0.253	2.104
Unemployed and seeking work	0.697	0.452	1.077	0.665	0.43	1.027	0.675	0.438	1.042	0.687	0.445	1.06
Annual gross income (ref = < £5,200)												
£5,200 and up to £10,399	1.012	0.77	1.33	1.009	0.768	1.326	1.01	0.768	1.327	1.012	0.77	1.329

£10,400 and up to £15,599	1.331	0.994	1.782	1.33	0.993	1.78	1.33	0.994	1.781	1.335	0.997	1.788
£15,600 and up to £20,799	1.352	0.972	1.88	1.344	0.966	1.87	1.335	0.96	1.857	1.35	0.97	1.877
£20,800 and up to £25,999	1.387	0.936	2.054	1.387	0.936	2.055	1.403	0.947	2.079	1.404	0.948	2.079
£26,000 and up to £31,199	1.918	1.154	3.187	1.912	1.151	3.175	1.947	1.172	3.237	1.915	1.153	3.181
£31,200 and up to £36,399	3.307	1.796	6.088	3.27	1.776	6.019	3.303	1.794	6.081	3.287	1.785	6.052
£36,400 and up to £51,999	1.471	0.894	2.421	1.442	0.876	2.373	1.483	0.902	2.44	1.47	0.893	2.418
£52,000 and above	1.617	0.9	2.908	1.6	0.889	2.88	1.61	0.894	2.897	1.624	0.903	2.921
Satisfied with life	2.346	1.833	3.003	2.379	1.859	3.044	2.376	1.857	3.04	2.366	1.849	3.027
Non smoker	1.218	0.998	1.486	1.229	1.007	1.499	1.231	1.009	1.502	1.224	1.004	1.494
No disabilities or illness's	8.029	6.662	9.677	8.087	6.71	9.746	8.149	6.76	9.823	8.067	6.694	9.721
Cultural activity/place	1.259	1.036	1.529	1.305	1.006	1.693	1.343	1.006	1.792	1.238	1.011	1.516

D9) Model 9 - the relationship between individual culture activities attended during the last 12 months and reporting high life satisfaction (significant at 5%)

Outcome variable: satisfaction with life	Cinema			Ballet/dance			Museum			Historical place		
	Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits		Odds ratio	95% wald Confidence limits	
Age: (ref = 16-24)												
25-34	1.081	0.709	1.648	1.043	0.685	1.589	1.038	0.681	1.582	1.029	0.676	1.568
35-44	0.606	0.405	0.905	0.57	0.383	0.85	0.566	0.38	0.843	0.552	0.37	0.823
45-54	0.719	0.473	1.092	0.645	0.428	0.974	0.637	0.422	0.961	0.624	0.413	0.942
55-64	0.869	0.55	1.375	0.747	0.477	1.17	0.737	0.471	1.154	0.724	0.462	1.134
65-74	0.788	0.433	1.432	0.672	0.373	1.212	0.667	0.37	1.203	0.652	0.362	1.177
75 +	1.017	0.525	1.969	0.849	0.444	1.624	0.845	0.442	1.618	0.839	0.439	1.605
Deprivation (ref = 1st most deprived)												
2nd	0.918	0.69	1.22	0.913	0.687	1.213	0.92	0.692	1.223	0.91	0.685	1.209
3rd	1.425	1.036	1.961	1.432	1.042	1.97	1.445	1.05	1.988	1.414	1.028	1.945
4th	1.224	0.869	1.723	1.237	0.879	1.741	1.243	0.884	1.748	1.216	0.864	1.711
5th least deprived quintile	1.141	0.79	1.649	1.154	0.799	1.667	1.171	0.81	1.692	1.139	0.788	1.646
Highest education qualification (ref = O level/standard grade or equivalent)												
Higher, a level or equivalent	1.219	0.86	1.726	1.228	0.867	1.738	1.219	0.861	1.727	1.224	0.864	1.733
HNC/HND or equivalent	0.819	0.553	1.212	0.841	0.569	1.242	0.823	0.556	1.217	0.822	0.555	1.217
Degree, professional qualification	1.154	0.805	1.656	1.167	0.815	1.673	1.129	0.784	1.625	1.123	0.781	1.615
Other qualification	0.994	0.608	1.626	0.954	0.584	1.559	0.973	0.595	1.59	0.972	0.595	1.588

No qualifications	1.01	0.733	1.391	0.963	0.7	1.325	0.972	0.706	1.338	0.983	0.714	1.353
Qualifications not known	1.431	0.293	7	1.222	0.249	6.003	1.295	0.265	6.343	1.33	0.273	6.49
Economic status (ref = employed full time)												
Employed part time	0.652	0.443	0.961	0.663	0.45	0.976	0.662	0.449	0.976	0.661	0.448	0.974
In further/higher education	0.399	0.202	0.789	0.382	0.193	0.757	0.384	0.195	0.759	0.39	0.198	0.77
Looking after the home or family	0.68	0.402	1.151	0.656	0.388	1.108	0.658	0.389	1.112	0.644	0.381	1.087
Other	0.4	0.081	1.97	0.367	0.074	1.808	0.379	0.077	1.867	0.375	0.076	1.842
Permanently retired from work	1.271	0.807	2.004	1.263	0.801	1.99	1.258	0.798	1.985	1.252	0.794	1.974
Permanently sick or disabled	0.434	0.283	0.664	0.426	0.279	0.651	0.425	0.278	0.65	0.425	0.278	0.649
Self employed	1.64	0.927	2.903	1.639	0.926	2.9	1.629	0.92	2.881	1.626	0.919	2.878
Unable to work because of short-term illness or injury	0.404	0.152	1.076	0.378	0.141	1.014	0.365	0.136	0.981	0.383	0.144	1.022
Unemployed and seeking work	0.427	0.275	0.665	0.414	0.266	0.643	0.414	0.267	0.643	0.412	0.266	0.64
Annual gross income (ref = < £5,200)												
£5,200 and up to £10,399	0.915	0.674	1.242	0.908	0.669	1.233	0.91	0.671	1.235	0.91	0.671	1.235
£10,400 and up to £15,599	1.075	0.769	1.504	1.062	0.76	1.485	1.068	0.764	1.492	1.065	0.762	1.488
£15,600 and up to £20,799	1.289	0.855	1.945	1.289	0.855	1.945	1.283	0.851	1.934	1.267	0.841	1.908
£20,800 and up to £25,999	1.965	1.126	3.426	2.004	1.149	3.494	1.997	1.145	3.483	2.001	1.147	3.49
£26,000 and up to £31,199	2.808	1.252	6.299	2.892	1.288	6.49	2.828	1.261	6.34	2.818	1.257	6.319
£31,200 and up to £36,399	1.697	0.817	3.522	1.7	0.819	3.53	1.633	0.787	3.389	1.586	0.764	3.291
£36,400 and up to £51,999	2.314	1.082	4.95	2.398	1.121	5.132	2.307	1.08	4.929	2.335	1.092	4.991
£52,000 and above	1.295	0.615	2.726	1.267	0.602	2.667	1.26	0.598	2.655	1.239	0.588	2.611

Good health	2.407	1.875	3.089	2.463	1.92	3.159	2.427	1.892	3.114	2.429	1.893	3.115
Non smoker	1.998	1.602	2.493	2.045	1.642	2.548	2.042	1.639	2.545	2.028	1.627	2.528
No disabilities or illness's	1.699	1.294	2.232	1.691	1.289	2.219	1.711	1.304	2.246	1.716	1.307	2.252
Cultural activity/place	1.435	1.125	1.831	2.249	1.087	4.651	1.373	1.052	1.791	1.516	1.09	2.107

Social Research series
ISSN 2045-6964
ISBN 978-1-78256-790-5
web only publication

www.scotland.gov.uk/socialresearch

APS Group Scotland
DPPAS14556 (08/13)

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