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Prevalence and Health Attributes to Psychological Resilience: UK Adult Psychiatric Morbidity Survey, 2007

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Abstract: Very few studies, including assessing pain and urinary incontinence, have looked into the relationship of with chronic health conditions and psychological resilience. Therefore, it was aimed to examine the prevalence and health attributes to psychological resilience in a country-wide setting in recent years. Data were retrieved from Adult Psychiatric Morbidity Survey in England, 2007 (n=7,403). Analysed were performed by adjusting for age, sex, deprivation level, marital status, education and survey deign. People who reported having any of the listed health conditions tended to have poor psychological resilience. Statistical significance was reached in people who had anxiety (OR 1.16, 95%CI 1.01-1.32, P=0.038), ear problem (OR 1.24, 95%CI 1.06-1.45, P=0.009), asthma (OR 1.18, 95%CI 1.00-1.39, P=0.047), bladder problem (OR 1.53, 95%CI 1.24-1.89, P<0.001), arthritis (OR 1.49, 95%CI 1.28-1.73, P<0.001), taking any medication (OR 1.26 , 95%CI 1.10-1.45, P=0.001) and taking any injection (OR 1.36, 95%CI 1.00-1.85, P=0.053). Moreover, people with migraine, dementia, anxiety, cataract, high blood pressure, bronchitis, asthma, allergy, stomachache, bowel problem, bladder problem, arthritis, bone problem, infectious disease, skin problem, taking any medication, taking any injection and even taking any counseling tended to be unhappy. Future intervention research targeting patients with chronic illnesses to optimise psychological resilience would be suggested.

Keywords: psychological resilience, happiness, health, chronic disease, medication

1. Introduction

Psychological resilience theory and research could have started since the 1980s.[1] It was aimed to study how human beings could adapt to stress and living environments on day-to-day activities. Mostly, such psychological research have put an emphasis on stressors arising from life events.[2] In other words, people across age groups with anxiety, depression and even self-efficacy could have been more focused. Literature in this area has been increased since the 2000s by looking at personal characteristics and personalities.[3] The first empirical study examining the theory of "resilient individuals bounce back from stressful experiences quickly and effectively" was published in 2004.[4] According to the researchers, the experience of positive emotions contributed, in part, to participants' abilities to achieve efficient emotion regulation, demonstrated by accelerated cardiovascular recovery from negative emotional arousal and by finding positive meaning in negative circumstances. Negative emotions could have been accumulated and impacted on life, and consequently, people with advancing age tend to be unhappy and lose resilience ability, compared to people in other age groups.[5] Very few studies, including assessing pain and urinary incontinence, have looked into the relationship with chronic health conditions.[6-8] Following this context, therefore, it was aimed to examine the prevalence and health attributes to psychological resilience in a country-wide setting in recent years.

2. Results and Discussion

Table 1 presents characteristics of participants by psychological resilience status. In general, there were significant differences across age, deprivation level and marital status. There were also some differences across body mass index (BMI) and drinking status. However, there were no difference across sex groups and smoking status. **Table 2** shows associations between self-reported health conditions and attitude toward the future. People who reported having any of the listed health conditions tended to have a negative view for the future. Statistical significance was reached in people who had anxiety (OR 1.16, 95%CI 1.01-1.32, P=0.038), ear problem (OR 1.24, 95%CI 1.06-1.45, P=0.009), asthma (OR 1.18, 95%CI 1.00-1.39, P=0.047), bladder problem (OR 1.53, 95%CI 1.24-1.89, P<0.001), arthritis (OR 1.49, 95%CI 1.28-1.73, P<0.001), taking any medication (OR 1.26 , 95%CI 1.10-1.45, P=0.001) and taking any injection (OR 1.36, 95%CI 1.00-1.85, P=0.053).

Table 1. Characteristics of participants by psychological resilience

	Negative toward the future (N=1813, 25.2%)	**Positive toward the future (N=5387, 74.8%)**	**P value**
Sex			0.086
Male	816 (26.2%)	2300 (73.8%)	
Female	997 (24.4%)	3087 (75.6%)	
Age			<0.001
16-34y	311 (19.5%)	1285 (80.5%)	

35-54y	573 (22.8%)	1936 (77.2%)	
55-74y	609 (27.4%)	1614 (72.6%)	
75y+	320 (36.7%)	552 (63.3%)	
Index of multiple deprivation			0.004
0.59->8.35 (least)	341 (24.5%)	1050 (75.5%)	
8.35->13.72	392 (24.2%)	1218 (75.7%)	
13.72->21.16	316 (22.3%)	1104 (77.8%)	
21.16->34.21	371 (27.8%)	966 (72.3%)	
34.21->86.36 (most)	393 (27.3%)	1049 (72.8%)	
Marital status			<0.001
Married	834 (24.2%)	2614 (75.8%)	
Cohabiting	118 (19.4%)	489 (80.6%)	
Single	325 (23.2%)	1077 (76.8%)	
Widowed	312 (35.5%)	566 (64.5%)	
Divorced	178 (27.4%)	472 (72.6%)	
Separated	46 (21.4%)	169 (78.6%)	
BMI			0.046
<18.5	50 (32.7%)	103 (67.3%)	
18.5-24.9	718 (23.8%)	2297 (76.2%)	
25-29.9	613 (25.2%)	1820 (74.8%)	
30+	328 (26.1%)	927 (73.9%)	
Sub-regions			0.001
North east	101 (24.2%)	316 (75.8%)	
North west	304 (28.3%)	769 (71.7%)	
Yorkshire & the humber	177 (23.1%)	590 (76.9%)	
East midlands	193 (28.9%)	476 (71.2%)	
West midlands	200 (25.8%)	574 (74.2%)	
East of England	197 (23.5%)	642 (76.5%)	
London	218 (28.6%)	545 (71.4%)	
South west	154 (21.2%)	573 (78.8%)	
South east	269 (23.0%)	902 (77.0%)	
Smoking status			0.110

Current	436 (26.5%)	1209 (73.5%)	
Past	797 (25.6%)	2319 (74.4%)	
Never	579 (23.8%)	1858 (76.2%)	
Alcohol			<0.001
Current drinker	1394 (24.2%)	4361 (75.8%)	
Non drinker	418 (29.0%)	1025 (71.0%)	

Table 2. Associations between health conditions and psychological resilience.

	Negative toward the future (N=1813, 25.2%)	**Positive toward the future (N=5387, 74.8%)**	**P value**	**OR (95%CI)***	**P value**
Cancer			<0.001		
Yes	135 (33.4%)	269 (66.6%)		1.20 (0.93-1.54)	0.165
No	1676 (24.7%)	5117 (75.3%)		1.00	
Diabetes			<0.001		
Yes	139 (34.4%)	265 (65.6%)		1.22 (0.95-1.56)	0.113
No	1672 (24.6%)	5121 (75.4%)		1.00	
Epilepsy					
Yes	36 (34.6%)	68 (65.4%)	0.025	1.51 (0.93-2.45)	0.097
No	1775 (25.0%)	5318 (75.0%)		1.00	
Migraine			0.436		
Yes	398 (25.9%)	1137 (74.1%)		1.12 (0.97-1.29)	0.119
No	1413 (25.0%)	4249 (75.0%)		1.00	
Dementia			0.835		
Yes	2 (28.6%)	5 (71.4%)		1.31 (0.24-7.03)	0.754
No	1809 (25.2%)	5381 (74.8%)		1.00	
Anxiety			0.008		
Yes	463 (27.6%)	1214 (72.4%)		1.16 (1.01-1.32)	**0.038**
No	1348 (24.4%)	4172 (75.6%)		1.00	
Cataract			0.068		
Yes	453 (26.9%)	1234 (73.2%)		0.98 (0.85-1.12)	0.738
No	1358 (24.7%)	4152 (75.4%)		1.00	
Ear problem			<0.001		

Yes	289 (32.9%)	590 (67.1%)		1.24 (1.06-1.45)	**0.009**
No	1522 (24.1%)	4796 (75.9%)		1.00	
Stroke			0.001		
Yes	62 (36.1%)	110 (64.0%)		1.19 (0.84-1.68)	0.336
No	1749 (24.9%)	5276 (75.1%)		1.00	
Angina			<0.001		
Yes	144 (34.0%)	279 (66.0%)		1.16 (0.93-1.45)	0.185
No	1667 (24.6%)	5107 (75.4%)		1.00	
High blood pressure			<0.001		
Yes	510 (28.7%)	1270 (71.4%)		1.05 (0.91-1.20)	0.517
No	1301 (24.0%)	4116 (76.0%)		1.00	
Bronchitis			<0.001		
Yes	149 (32.1%)	315 (67.9%)		1.19 (0.95-1.49)	0.132
No	1662 (24.7%)	5071 (75.3%)		1.00	
Asthma			0.036		
Yes	257 (28.0%)	662 (72.0%)		1.18 (1.00-1.39)	**0.047**
No	1554 (24.8%)	4724 (75.3%)		1.00	
Allergy			0.134		
Yes	255 (23.4%)	837 (76.7%)		0.98 (0.82-1.17)	0.827
No	1556 (25.5%)	4549 (74.5%)		1.00	
Stomachache			0.004		
Yes	240 (29.3%)	580 (70.7%)		1.17 (0.97-1.40)	0.096
No	1571 (24.6%)	4806 (75.4%)		1.00	
Liver problem			0.014		
Yes	43 (34.7%)	81 (65.3%)		1.28 (0.86-1.92)	0.223
No	1768 (25.0%)	5305 (75.0%)		1.00	
Bowel problem			0.001		
Yes	206 (30.3%)	475 (69.8%)		1.16 (0.96-1.41)	0.118
No	1605 (24.6%)	4911 (75.4%)		1.00	
Bladder problem			<0.001		
Yes	170 (38.1%)	276 (61.9%)		1.53 (1.24-1.89)	**<0.001**
No	1641 (24.3%)	5110 (75.7%)		1.00	

Arthritis			<0.001		
Yes	462 (34.4%)	882 (65.6%)		1.49 (1.28-1.73)	**<0.001**
No	1349 (23.1%)	4504 (77.0%)		1.00	
Bone problem			0.028		
Yes	684 (26.7%)	1880 (73.3%)		1.11 (0.97-1.27)	0.125
No	1127 (24.3%)	3506 (75.7%)		1.00	
Infectious disease			0.659		
Yes	43 (23.8%)	138 (76.2%)		1.04 (0.68-1.58)	0.853
No	1768 (25.2%)	5248 (74.8%)		1.00	
Skin problem			0.096		
Yes	265 (23.2%)	877 (76.8%)		0.88 (0.74-1.04)	0.125
No	1546 (25.5%)	4509 (74.5%)		1.00	
Any medication			0.001		
Yes	1063 (29.7%)	2520 (70.3%)		1.26 (1.10-1.45)	**0.001**
No	750 (20.7%)	2866 (79.3%)		1.00	
Any injection			0.002		
Yes	84 (33.3%)	168 (66.7%)		1.36 (1.00-1.85)	**0.053**
No	1729 (24.9%)	5219 (75.1%)		1.00	
Any counseling			0.087		
Yes	61 (30.4%)	140 (69.7%)		1.30 (0.91-1.85)	0.144
No	1752 (25.0%)	5247 (75.0%)		1.00	
*Adjusted for age, sex, deprivation levels, education, marital status and survey weighing.					

2.1. Health attributes to subjective happiness

I n **Table 3**, associations between self-reported health conditions and subjective happiness are indicated. Similar to those between health conditions and psychological resilience, people who reported any of the list health conditions tended to be unhappy. Statistical significance was found in people with migraine, dementia, anxiety, cataract, high blood pressure, bronchitis, asthma, allergy, stomachache, bowel problem, bladder problem, arthritis, bone problem, infectious disease, skin problem, taking any medication, taking any injection and even taking any counseling.

Table 3. Associations between health conditions and subjective happiness.

	Not happy	**Happy (N=6702,**	**P value**	**OR (95%CI)**	**P value**

	(N=697, 9.4%)	**90.6%)**			
Cancer			0.007		
Yes	55 (13.2%)	363 (86.8%)		1.33 (0.93-1.91)	0.114
No	641 (9.2%)	6337 (90.8%)		1.00	
Diabetes			0.026		
Yes	53 (12.5%)	372 (87.5%)		1.31 (0.92-1.82)	0.108
No	643 (9.2%)	6328 (90.8%)		1.00	
Epilepsy			0.021		
Yes	17 (15.9%)	90 (84.1%)		1.42 (0.80-2.54)	0.231
No	679 (9.3%)	6610 (90.7%)		1.00	
Migraine			<0.001		
Yes	218 (13.9%)	1350 (86.1%)		1.86 (1.52-2.27)	**<0.001**
No	478 (8.2%)	5350 (91.8%)		1.00	
Dementia			0.001		
Yes	3 (50.0%)	3 (50.0%)		9.52 (1.93-46.96)	**0.006**
No	693 (9.4%)	6697 (90.6%)		1.00	
Anxiety			<0.001		
Yes	397 (23.2%)	1317 (76.8%)		5.60 (4.61-6.79)	**<0.001**
No	299 (5.3%)	5383 (94.7%)		1.00	
Cataract			0.005		
Yes	195 (11.1%)	1557 (88.9%)		1.26 (1.03-1.55)	**0.025**
No	501 (8.9%)	5143 (91.1%)		1.00	
Ear problem			0.005		
Yes	109 (12.0%)	801 (88.0%)		1.21 (0.93-1.58)	0.149
No	587 (9.1%)	5899 (91.0%)		1.00	
Stroke			0.002		
Yes	29 (15.9%)	153 (84.1%)		1.48 (0.91-2.40)	0.112
No	667 (9.3%)	6547 (90.8%)		1.00	
Angina			0.068		
Yes	53 (11.9%)	394 (88.1%)		1.20 (0.86-1.69)	0.288
No	643 (9.3%)	6306 (90.8%)		1.00	
High blood pressure			<0.001		

Yes	215 (11.6%)	1645 (88.4%)		1.39 (1.12-1.73)	**0.003**
No	481 (8.7%)	5055 (91.3%)		1.00	
Bronchitis			<0.001		
Yes	76 (15.9%)	403 (84.1%)		1.49 (1.13-1.97)	**0.005**
No	620 (9.0%)	6297 (91.0%)		1.00	
Asthma			0.001		
Yes	130 (13.7%)	816 (86.3%)		1.58 (1.23-2.02)	**<0.001**
No	566 (8.8%)	5884 (91.2%)		1.00	
Allergy			0.006		
Yes	129 (11.6%)	979 (88.4%)		1.32 (1-04.1-68)	**0.024**
No	567 (9.7%)	5721 (91.0%)		1.00	
Stomachache			<0.001		
Yes	132 (15.6%)	714 (84.4%)		1.85 (1.47-2.33)	**<0.001**
No	564 (8.6%)	5986 (91.4%)		1.00	
Liver problem			<0.001		
Yes	26 (20.5%)	101 (79.5%)		2.18 (1.33-3.58)	0.002
No	670 (9.2%)	6599 (90.8%)		1.00	
Bowel problem			<0.001		
Yes	117 (16.7%)	583 (83.3%)		1.97 (1.52-2.56)	**<0.001**
No	579 (8.7%)	6117 (91.4%)		1.00	
Bladder problem			<0.001		
Yes	87 (18.7%)	379 (81.3%)		2.04 (1.54-2.69)	**<0.001**
No	609 (8.8%)	6321 (91.2%)		1.00	
Arthritis			<0.001		
Yes	216 (15.2%)	1207 (84.8%)		1.85 (1.48-2.30)	**<0.001**
No	480 (8.0%)	5493 (92.0%)		1.00	
Bone problem			0.001		
Yes	338 (12.9%)	2292 (87.2%)		1.75 (1.47-2.08)	**<0.001**
No	358 (7.5%)	4408 (92.5%)		1.00	
Infectious disease			0.005		
Yes	29 (15.3%)	160 (84.7%)		2.13 (1.33-3.42)	**0.002**
No	667 (9.3%)	6540 (90.8%)		1.00	

Skin problem			0.003		
Yes	137 (11.8%)	1029 (88.3%)		1.31 (1.05-1.63)	**0.016**
No	559 (9.0%)	5671 (91.0%)		1.00	
Any medication			<0.001		
Yes	515 (13.8%)	3219 (86.2%)		3.10 (2.47-3.88)	**<0.001**
No	182 (5.0%)	3482 (95.0%)		1.00	
Any injection			0.002		
Yes	39 (14.9%)	223 (85.1%)		1.70 (1.13-2.56)	**0.011**
No	658 (9.2%)	6479 (90.8%)		1.00	
Any counseling			<0.001		
Yes	78 (38.6%)	124 (61.4%)		6.07 (4.13-8.94)	**<0.001**
No	619 (8.6%)	6578 (91.4%)		1.00	
*Adjusted for age, sex, deprivation levels, education, marital status and survey weighing.					

2.2. Strengths and limitations

This cross-sectional and population-based study has a number of strengths. First, it is with a large human study sample across England in the recent year, 2007. Second, study variables on people with any possible common chronic disease were included in the dataset. Third, this is the first study examining the prevalence and health attributes of psychological resilience. However, there are also a few limitations worthy of being noted. First, psychological resilience itself is a concept but has no standardised indicators for statistical analysis purpose. Second, this study is only cross-sectional in nature and no specific time duration on both health conditions and psychological resilience were available. In particular, previous studies have explained how psychological resilience predicts depressive symptoms among spouses of persons with Alzheimer disease over time (n=105) and how that could be related to quality of life in patients after lung transplantation (n=42) or survivors of lower extremity bone tumors (n=28).[9-11] More research into this area in the near future should be encouraged.

3. Experimental Section

3.1. Study sample

Data was retrieved from Adult Psychiatric Morbidity Survey (APMS) in England, 2007 (n=7,403). As described elsewhere,[12] APMS was a country-wide, population-based, cross-sectional study that was conducted between October 01, 2006 and December 31, 2007 (details via: http://www.hscic.gov.uk/pubs/psychiatricmorbidity07). Informed consent was obtained from all participants. Only adults aged 16 and over were included (age range: 16-95) in the survey, and a cluster sampling method was used in order to study the prevalence of psychiatric disorders across England as the primary aim of the survey.

3.2. Statistical analysis

There were 2 research steps employed in this study. First, associations between common chronic diseases (including cancer, diabetes, epilepsy, migraine, dementia, depression, cataracts, stroke, angina, chronic bronchitis, asthma, allergy, stomach problem, liver problem, bowel problem, bladder problem, arthritis, muscle problem, infection and skin problem) and attitude toward the future (To what extent do you agree with the following statement. Over the next 3-5 years I expect to have many more positive than negative experiences.) were examined. Study outcomes were grouped into 2 categories, namely agree and disagree. In the second step, associations between the same chronic diseases and subjective happiness (Taking all things together, how would you say you are these days - would you say you're very happy, fairly happy, or not too happy these days?) were assessed. Again, study outcomes were also grouped into 2 categories, namely happy and unhappy. Covariates including age, sex, BMI, education, deprivation level, marital status [13] and survey design were adjusted. Effects of chronic diseases on psychological resilience and subjective happiness were reported in odds ratios (OR) from survey-weighted logistic regression models and 95% confidence intervals (CI), with $P<0.05$ considered statistically significant. Statistical software STATA version 13.0 (STATA, College Station, Texas, USA) was used to perform all the statistical analyses. Since this study is only a secondary data analysis by extracting data from the UK Data Archive website, no further ethics approval was required.

4. Conclusions

Psychological resilience has been a critical part in support of achieving sustainability for humans and environments. In the present study, it was observed that people with anxiety, ear problem, asthma, bladder problem, arthritis, taking any medication and taking any injection had a negative view for the future. Subjective happiness was also found to be linked to other health conditions including migraine, dementia, anxiety, cataract, high blood pressure, bronchitis, asthma, allergy, stomachache, bowel problem, bladder problem, arthritis, bone problem, infectious disease and skin problem. Hope and mindfulness have been explored to be effective to optimise psychological resilience.[14,15] However, there could still be different psychological processes underlie resilience across the lifespan after health problems.[16] Future intervention research targeting patients with chronic illnesses would be suggested.

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Conflict of Interest

The author declares no conflict of interest.

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