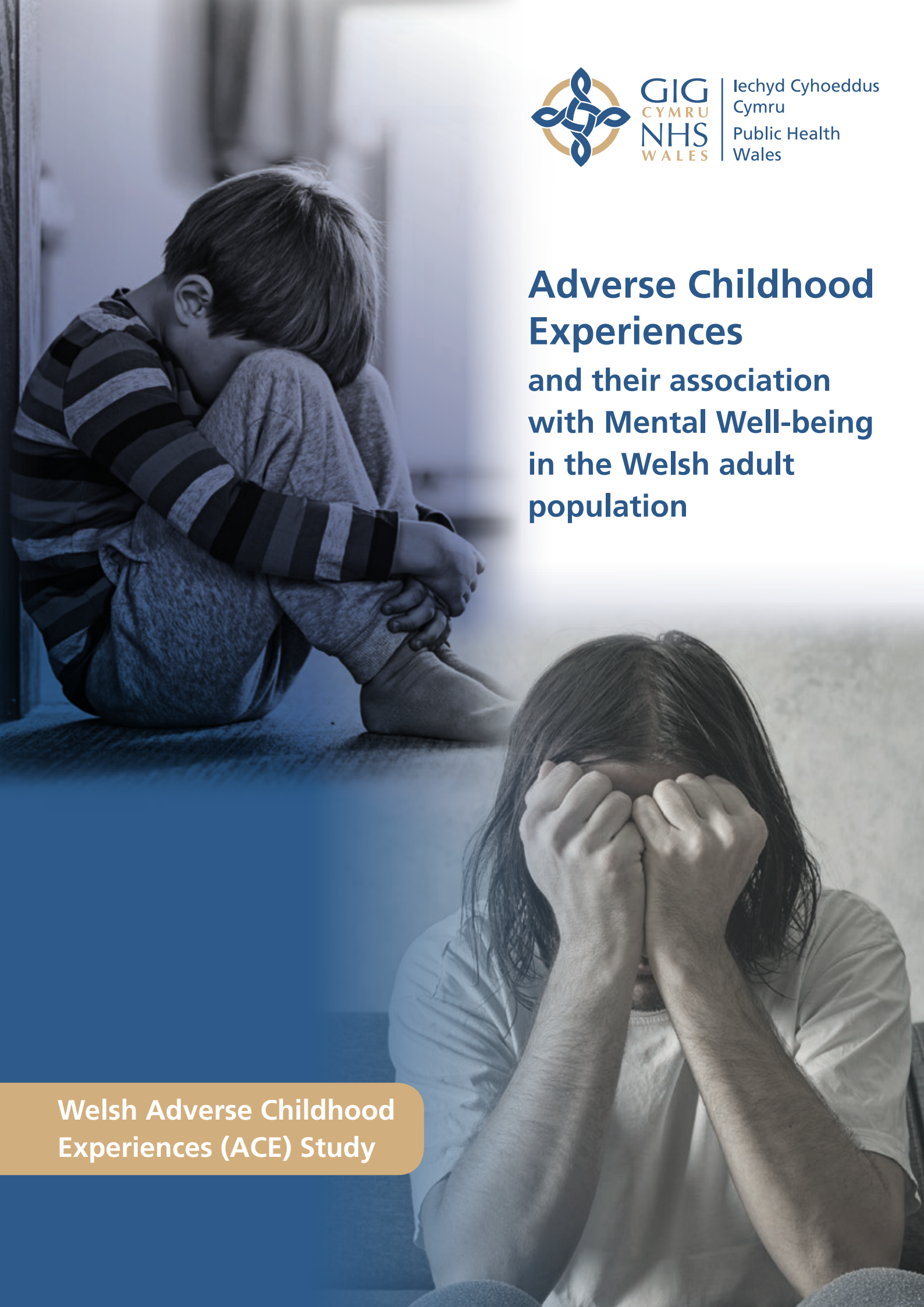

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Iechyd Cyhoeddus Cymru
Public Health Wales

Adverse Childhood Experiences

and their association with Mental Well-being in the Welsh adult population

Welsh Adverse Childhood Experiences (ACE) Study

Preface

This is one in a series of reports examining the prevalence of Adverse Childhood Experiences (ACEs) in the Welsh adult population and their impact on health and well-being across the life course. The series will include reports on:

- The prevalence of Adverse Childhood Experiences and their association with health-harming behaviours in the Welsh adult population.
- The impact of Adverse Childhood Experiences on chronic ill health, use of health and social care services and premature mortality in Welsh adults.
- The impact of Adverse Childhood Experiences on mental well-being in Welsh adults.

Over 2,000 adults aged 18-69 years participated in the ACE Study for Wales, providing anonymous information on their exposure to ACEs before the age of 18 years and their health and lifestyles as adults. The study achieved a compliance rate of 49.1% and the sample was designed to be representative of the general population in Wales. Data were collected in participants' places of residence using an established questionnaire incorporating the short ACE tool developed by the US Centers for Disease Control and Prevention and based on work by Felitti et al (1998) [1].

ISBN 978-1-910768-30-3

Welsh Adverse Childhood Experiences (ACE) Study

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Adverse Childhood Experiences
and their association with
Mental Well-being
in the Welsh adult population

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Adverse Childhood Experiences and Adult Mental Well-Being in Wales

Adverse Childhood Experiences (ACEs) have harmful impacts on health and well-being across the life course. The Welsh ACE Study measured exposure to nine ACEs in the Welsh population and their effect on mental well-being in adulthood.

47% of adults in Wales suffered at least one ACE during their childhood and 14% suffered 4 or more.

How many adults in Wales have been exposed to each ACE?

CHILD MALTREATMENT

Verbal abuse 23%

Physical abuse 17%

Sexual abuse 10%

CHILDHOOD HOUSEHOLD INCLUDED

Parental separation 20%

Domestic violence 16%

Mental illness 14%

Alcohol abuse 14%

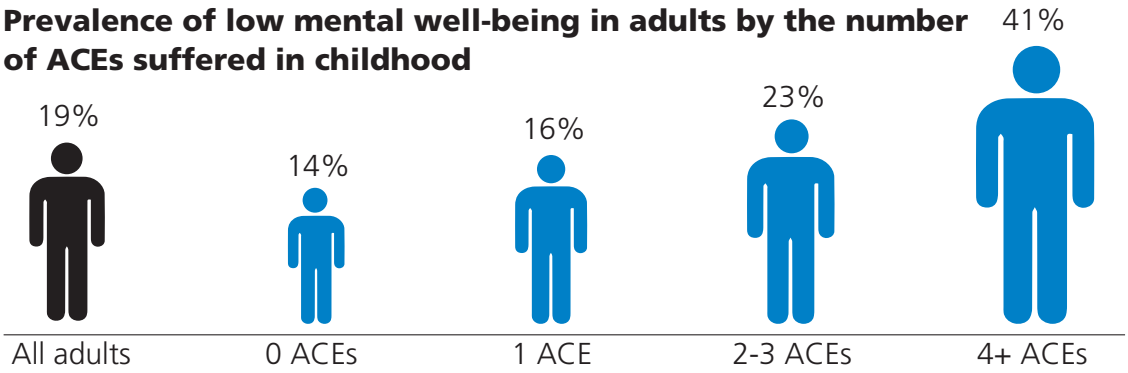
Drug use 5%

Incarceration 5%

The prevalence of low mental well-being in adults increased with the number of ACEs suffered in childhood

Mental well-being was measured using the Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS) which includes seven questions to assess mental wellbeing over the last two weeks. Scores for these questions are combined to provide an overall mental well-being score ranging from 7 to 35. Individuals scoring below 20 were categorised as having low mental well-being.*

Prevalence of low mental well-being in adults by the number of ACEs suffered in childhood



**Low mental well-being was classified as >1 standard deviation below the mean overall mental well-being SWEMWBS score of all respondents (mean = 24.47, SD = 4.57, low <20).*

Adults with 4+ ACEs were five times[$] more likely to have low mental well-being than those with no ACEs

Over the past two weeks, compared to people with no ACEs, those with 4+ ACEs were also:

- **3** **times more likely** to have never or rarely felt relaxed
- **3** **times more likely** to have never or rarely felt close to other people
- **4** **times more likely** to have never or rarely been thinking clearly
- **5** **times more likely** to have never or rarely to have dealt with problems well
- **5** **times more likely** to have never or rarely been able to make up their own mind about things
- **6** **times more likely** to have never or rarely felt optimistic about the future
- **6** **times more likely** to have never or rarely felt useful

Preventing ACEs in future generations could reduce levels of:

Low mental well-being by 27%

Not feeling optimistic about the future by 43%

Not feeling useful by 48%

Not feeling relaxed by 38%

Not dealing with problems well by 31%

Not thinking clearly by 34%

Not feeling close to other people by 25%

Not being able to make their mind up about things by 26%

The national survey of Adverse Childhood Experiences in Wales interviewed approximately 2000 people (aged 18-69 years) from across Wales at their homes in 2015. Of those eligible to participate, just under half agreed to take part and we are grateful to all those who freely gave their time.

$ After taking demographic factors (age, sex, ethnicity and residential deprivation) into account

Introduction

An increasing body of international evidence is identifying the substantial negative impacts that adverse experiences during childhood have on an individual's physical and mental health [1-4]. These childhood experiences are termed Adverse Childhood Experiences (ACEs). They include child maltreatment (such as physical, sexual and verbal abuse) and wider experiences of household dysfunction (such as growing up in a household affected by domestic violence, parental separation, substance misuse, mental illness or criminal behaviour).

Chronic exposure to ACEs can affect neurological, immunological and hormonal system development. As a result, individuals exposed to such experiences during childhood may develop problems with emotional regulation, cognitive response, attachment, memory and learning that can continue into and throughout adult life [5]. Adults previously exposed to ACEs have been shown to be more likely to struggle with social situations, have difficulties building relationships and become detached from society [6]. Evidence indicates that they may also adopt health-harming behaviours (e.g. smoking, high calorie diets and alcohol and drug use) in part as mechanisms to cope with a history of ACEs [3, 4, 7].

Existing studies have highlighted associations between childhood adversity and adult mental health disorders. For example, studies in the United States have identified relationships between ACEs and personality disorders in adulthood, such as schizophrenic, antisocial behaviour and narcissistic personality disorders [8]. In addition, children who experience the most ACEs are at greater risk of mental health conditions such as depression, anxiety, hallucinations, panic attacks and suicide attempts [9-11].

Although this provides a sound evidence base for the links between adversity in childhood and mental health outcomes, the majority of existing studies focus on individual mental illnesses rather than the overall wider spectrum of mental well-being. Recent research in England has highlighted strong relationships between exposure to ACEs and low mental well-being in adults [12]. No such work has previously been undertaken in Wales. However, the importance of mental well-being and the role of poor mental well-being in developing physical diseases, unhealthy lifestyles and in drivers of health inequalities is acknowledged in the Public Health Outcomes Framework for Wales (PHOF) [13]. Within the PHOF, measures of both child and adult mental well-being have been adopted as key indicators of the nations' health and as mechanisms to assess the impact of health improving policy measures such as the Well-being of Future Generations Act in Wales [14]. Using data from the Welsh ACE survey [4], this report examines the associations between a history of ACEs and poor adult mental well-being, looking at mental well-being and provides estimates for the potential impact of eradicating ACEs on the mental well-being of the Welsh population.

ACE survey for Wales

In 2015, Public Health Wales in collaboration with Liverpool John Moores University undertook the first ACE study for Wales. The survey used a face-to-face interview methodology with a representative sample of adults aged 18-69 years, resident across Wales. Interviews were undertaken at individuals' place of residence. A total of 14,893 households were visited and out of 4,127 eligible people approached, 2,028 agreed to participate and provided the necessary information on the ACEs they experienced during childhood [2] and details of their current demographics, physical and mental health. Initial analysis of the study focussed on how health-harming behaviours are linked with experiencing ACEs during childhood; the results of which were published in January 2016 in **Adverse Childhood Experiences and their impact on health-harming behaviours in the Welsh adult population [4].** Full details of the general study methodology and analytical techniques can be found in this previous report, while details of those aspects relating to mental well-being are given below.

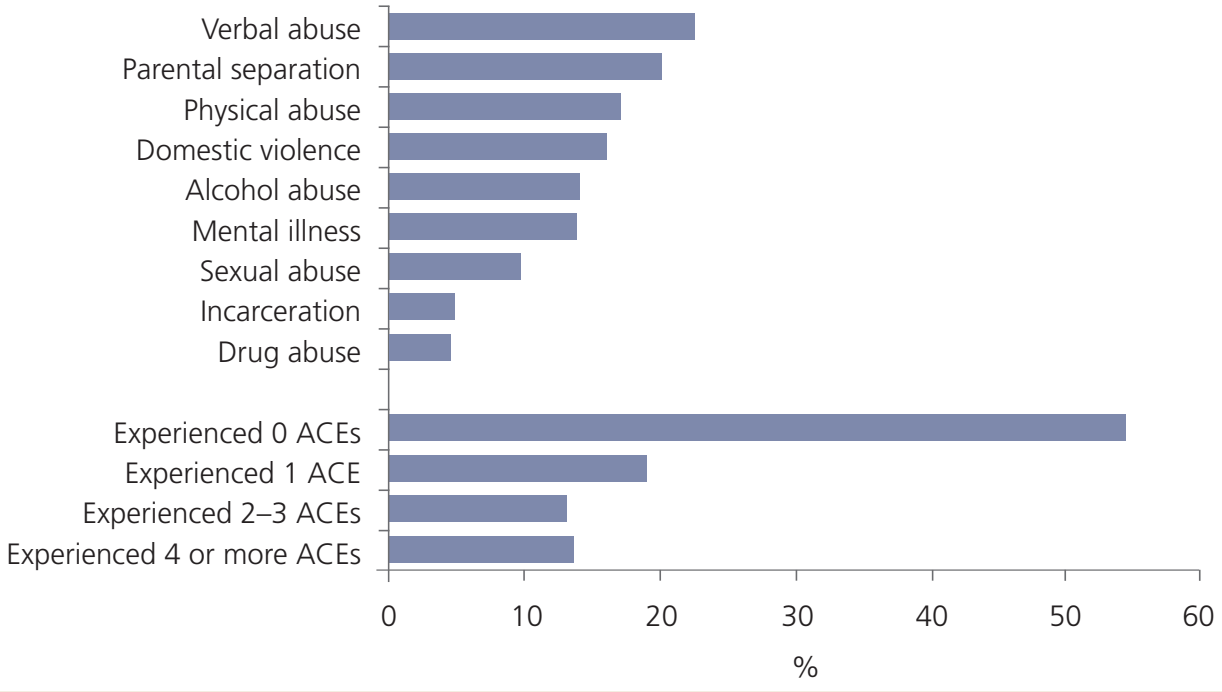
Levels of ACEs in the Welsh Population

Just under half of all individuals surveyed had experienced at least one ACE before the age of 18 years (46.5%) and 13.6% of all respondents had experienced four or more ACEs[1]. The prevalence of individual ACEs ranged from 4.6% of respondents reporting living with a drug-using household member during their childhood, to 22.8% experiencing verbal abuse as a child (see Figure 1).

How we measured mental well-being in the Welsh ACE survey

Mental well-being covers a spectrum of aspects of how individuals feel and interact with others. Within the Welsh ACE survey, mental well-being was measured using the Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS)[2]. SWEMWBS is an internationally validated self-completion tool[3]. The questions asked individuals about how often over the past two weeks they have been: (1) feeling optimistic about the future; (2) feeling useful; (3) feeling relaxed; (4) dealing with problems well; (5) thinking clearly; (6) feeling close to other people; (7) able to make up their mind about things. Responses to all these questions were scored from 1 (none of the time) to 5 (all of the time) and an overall mental well-being score was calculated. Scores ranged from 7 (lowest possible mental well-being) to 35 (highest possible mental well-being). Low mental well-being was classified as all individuals who had an overall score of less than 20. This was calculated using methods previously used in existing research as >1 standard deviation below the mean overall mental well-being SWEMWBS score of all respondents (mean = 24.47, SD = 4.57, low <20) [12].

Figure 1: Prevalence of the number of ACEs and individual ACEs experienced in Wales



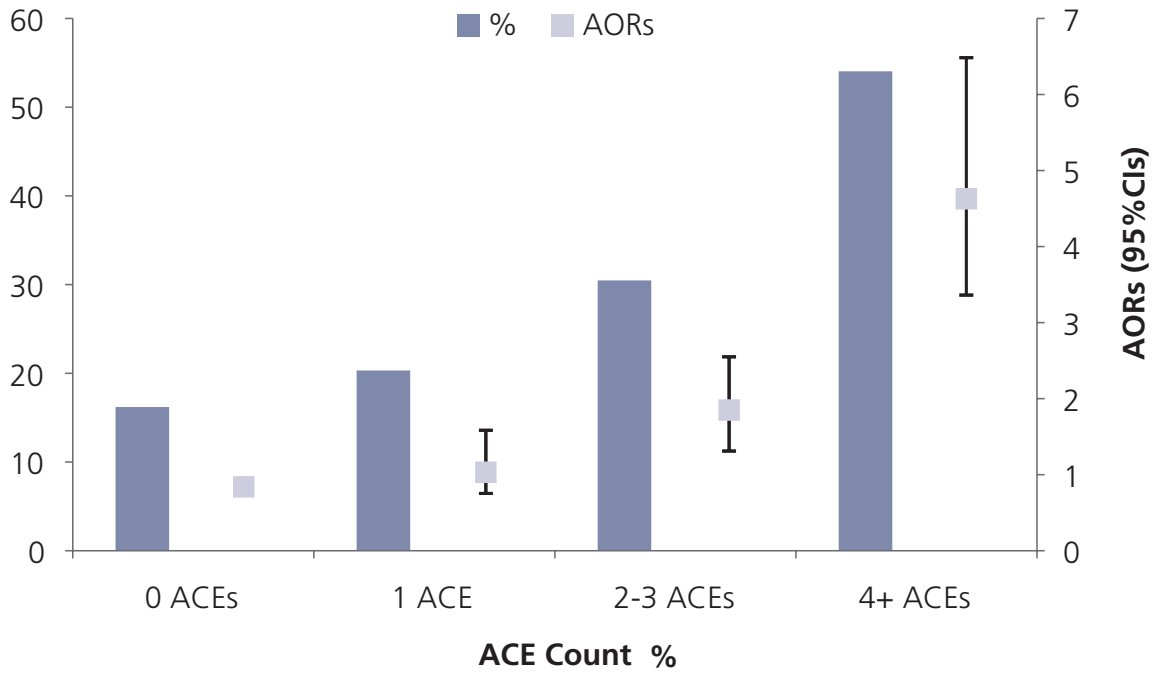
1 Each category of ACE, e.g. child physical abuse or growing up in house with domestic violence, counts as one ACE.

2 Warwick-Edinburgh Mental Well-being Scale (WEMWBS) © NHS Health Scotland, University of Warwick and University of Edinburgh, 2006, all rights reserved

3 More information on SWEMWBS can be found at the following web page: http://www2.warwick.ac.uk/fac/med/research/platform/wemwbs/

Low overall mental well-being[4]

Figure 2: Prevalence and adjusted odds ratio (AOR) for low mental well-being by ACE count[a]



a p<0.001. AORs (adjusted odds ratios) have been adjusted for age, sex, deprivation and ethnicity. 0 ACEs is used as the reference category. 95%CIs= 95% Confidence Intervals

Within the Welsh ACE survey, one fifth of respondents were classified as having a low mental well-being[4] (19.4%). The prevalence of low mental well-being increased with ACE count, rising from 14.2% of those reporting no ACEs to 41.1% of those with four or more ACEs (see Appendix 1, Table ii). After adjustment for socio-demographics, the relationship between ACE count and low mental well-being remained with those experiencing four or more ACEs being 4.7 times more likely to have a low mental well-being than those with no ACEs (see Figure 2).

Other demographics

After accounting for confounding demographic and other factors (e.g. ACE count) individuals living within the most deprived areas in Wales were also more likely to experience low mental well-being compared to those who resided in more affluent areas.

4 Consistent with other studies, low mental well-being was classified as >1 standard deviation below the mean overall mental well-being SWEMWBS score of all respondents (mean = 24.47, SD = 4.57, low <20) [12].

Individual components of well-being and their association with ACEs

Individuals were classified as having low individual well-being component scores when reporting either a score of 1 (never) or 2 (rarely) for how often they had experienced each positive well-being factor in the last two weeks.

The proportion of individuals reporting low measures[5] for the individual components of SWEMWBS ranged from 3.3% (not being able to make up their mind about things) to 11.4% (not feeling relaxed). As outlined in Table 1, the prevalence of individuals reporting low measures of each of the components increased with the number of ACEs experienced. For example, 4.7% of individuals who had experienced no ACEs reported not having felt useful over the past two weeks, increasing to 21.7% of individuals who had experienced four or more ACEs (see Table 1 and Appendix 1 Table ii).

Table 1: Prevalence of the individual components of the Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS)

Individual components of SWEMWBS	Prevalence (%)		
	Overall	Individuals who experienced 0 ACEs	Individuals who experienced 4+ ACEs
Never or rarely feeling optimistic about the future	8.9	5.3	20.6
Never or rarely feeling useful	8.8	4.7	21.7
Never or rarely feeling relaxed	11.4	7.1	19.0
Never or rarely dealing with problems well	7.1	4.8	20.2
Never or rarely thinking clearly	4.9	3.3	10.7
Never or rarely feeling close to other people	7.3	5.6	14.2
Never or rarely being able to make up their mind about things	3.3	2.5	9.1

5 Low measures were defined as cases where respondents selected never or rarely over the last 2 weeks.

After controlling for socio-demographic factors such as age, sex, ethnicity and residential deprivation (using binary logistic regression methods), the strong associations between ACE count and all individual components of mental well-being remained. The odds of reporting a low measure for each individual component of SWEMWBS increased with ACE count (see Appendix 1 Table iii). Thus, compared to respondents who experienced no ACEs, individuals who had experienced four or more ACEs were (over the last two weeks):

- 3 times more likely to have never/rarely felt relaxed
- 3 times more likely to have never/rarely felt close to other people
- 4 times more likely to have never/rarely been thinking clearly
- 5 times more likely to never/rarely have dealt with problems well
- 5 times more likely to have never/rarely been able to make up their own mind about things
- 6 times more likely to have never/rarely felt optimistic about the future
- 6 times more likely to have never/rarely felt useful.

Other demographics

Never or rarely feeling optimistic about the future was significantly more likely to be reported amongst individuals from the most deprived areas in Wales compared to the least deprived (11.4%, most deprived; 5.5%, least deprived; see Appendix 1, Table i). Individuals in the most deprived areas were also significantly more likely to report never or rarely feeling relaxed at 11.6% compared to 5.2% in the least deprived areas, and were more likely to never or rarely feel like they have been thinking clearly (5.7%, most deprived; 3.0%, least deprived; see Appendix 1, Table i). Males were significantly more likely than females to have reported never or rarely feeling relaxed (13.6%, males; 9.1%, females) and never or rarely feeling close to other people (9.1%, males; 5.5%, females; see Appendix 1, Table i). The only significant association between age and the individual components of well-being was seen for individuals aged 50-59 year olds, who were more likely to report never or rarely feeling optimistic compared to all other age groups. No significant relationships were reported between individual components of SWEMWBS and ethnicity.

Estimated impact of reducing exposure to ACEs on mental well-being

After adjusting the figures to match national population demographics (aged 18-69 years), results suggest that if no individuals in this age range in Wales were exposed to ACEs as children, then the prevalence of low mental well-being in adults could be as much as 27% lower. This would be equivalent to approximately 108,275 fewer individuals (aged 18-69 years) living in Wales with a low mental well-being (see Appendix 1, Table iv for more details).

Results also suggest the prevalence of low measures of the individual components of SWEMWBS could also be substantially reduced by reducing exposure to ACEs (see Table 2 and Appendix 1, Table iv). Estimated potential changes in prevalence ranged from a 24.7% reduction in those who never or rarely feel close to other people to 47.5% less individuals never or rarely feeling useful (see Table 2).

Table 2: Modelled impact of preventing ACEs at national population levels on the components of the Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS)

SWEMWBS	% change in prevalence	Potential number of individuals (18-69 years) with improved outcomes
Overall low mental well-being	27.0	108,275
Never or rarely feeling optimistic about the future	43.3	66,598
Never or rarely feeling useful	47.5	83,729
Never or rarely feeling relaxed	37.8	91,908
Never or rarely dealing with problems well	31.4	44,045
Never or rarely thinking clearly	34.2	33,518
Never or rarely feeling close to other people	24.7	36,227
Never or rarely being able to make up their mind about things	26.1	17,435

Preventing ACEs to improve mental well-being in Wales

Results from the Welsh ACE survey identify both the potential harms to mental well-being of experiencing childhood adversity, and the substantial gains possible if targeted action is taken to prevent ACEs.

This report is not intended to provide a comprehensive review of activities being undertaken in Wales either to reduce ACEs or improve mental well-being. Critically however, the **Together for Mental Health – a Strategy for Mental Health and Well-being in Wales** [15] sets out the policy framework for tackling low mental well-being which is committed to person-centred holistic care, engaging in all aspects of a person's life. This includes:

- the promotion of mental well-being and, where possible, preventing mental health problems developing as a main theme;
- joint-working across sectors to address the range of factors in people's lives which can affect mental health and well-being.

Also, the Together for Children and Young People programme is a multi-agency service improvement programme which was established to consider ways to reshape, remodel and refocus the emotional and mental health services provided for children and young people in Wales, in line with principles of prudent healthcare.

The strategy acknowledges that tackling problems such as poverty and drug and alcohol misuse are important, as well as making sure people have strong communities, healthy schools, good workplaces and strong relationships. In Wales, early years and anti-poverty programmes such as Communities First and Flying Start aim, amongst other things, to increase people's life skills and understanding of good mental health. Such early life interventions have been shown to help reduce child abuse, depression and substance use, and indicate improved outcomes for both parents and children [16-18]. United in Improving Health in Wales [19] also provides a platform for exploitation of assets from not just within the health system, but also resources from within other sectors such as schools, workplaces, housing, police and fire services. Understanding the impact of ACEs is a crucial element of accomplishing the goals of United in Improving Health in Wales which has adopted improving outcomes in the early years as a priority.

More broadly, the Well-being of Future Generations (Wales) Act (2015) [14] aims to ensure that the health and well-being of future generations in Wales is secured. This ground-breaking piece of legislation provides an opportunity for the reduction of ACEs across Wales by achieving its goals of placing the needs of new and subsequent generations at the centre of all public policy in order to build a healthier, happier, more equal and sustainable Wales. The goal of 'a happier Wales' includes the creation of a society where an individuals' physical and mental well-being are maximised.

International support

As well as tackling ACEs in Wales to prevent poor mental well-being, the promotion of mental well-being has become a global priority. In 2013, the World Health Organization developed the Mental Health Action Plan 2013-2020 [20]. The Plan highlights the key goal of promoting mental well-being throughout the life course by:

- strengthening effective leadership for mental health;
- providing comprehensive and integrated mental health and social care services in community-based settings;
- implementing strategies for promotion and prevention in mental health;
- strengthening information systems, evidence and research for mental health.

Research has also been carried out to examine links between Mental Health and ACEs through the World Mental Health Survey. This highlights, at an international level, the relationships between childhood adversities and mental disorders [11]. Moreover, the recently developed Sustainable Development Goals include measures to improve both physical and mental health on a global basis as well as targets specifically focusing on reducing the abuse of children [21].

Research

This report has provided the platform for identifying the scale and impact of ACEs in Wales on mental well-being. Further research using the Secure Anonymised Information Linkage (SAIL) databank in Wales is currently being undertaken to examine the association between ACEs, healthcare utilisation and educational outcomes during childhood. This cohort study will allow individuals to be followed over time and improve our understanding of how exposure to ACEs at different points in childhood may impact mental health and well-being, educational attainment and health service use across the life course. New research initiatives such as 'HealthWise Wales'[6] should create even greater opportunities to understand and address ACEs in the future.

Conclusion

This report is primarily aimed at describing the association between ACEs and mental well-being in the adult population in Wales. The Welsh ACE survey identified that the prevalence of low mental well-being in adults is strongly related to the number of ACEs individuals reported experiencing as children. This relationship remained the same even after accounting for socio-demographic factors. Further, exposure to ACEs was not only a significant factor in predicting overall mental well being but also strongly related to each individual element in the mental well-being (SWEMWBS) scale. ACEs could be responsible for almost a third (27%) of adults reporting a low mental well-being score within this research. In other words, eradicating ACEs in Wales could potentially reduce the number of individuals who report low mental well-being by just over 100,000.

Mental well-being has become a priority on both international and national fronts. Wales is well positioned to prevent ACEs from occurring, by ensuring families are well equipped to deal with the stresses of everyday life, especially during pregnancy and early parenthood. None of this can be achieved without working collaboratively across health, education, social services and criminal justice services. Strategies in Wales such as Together for Mental Health and policies such as the Well-being of Future Generations (Wales) Act 2015 provide the platform for such activity and collaborative initiatives such as United in Improving Health provide the opportunity for the coordination of assets and resources to collectively work to prevent ACEs in the future.

6 Healthwise Wales is a Health and Care Research Wales initiative for a Welsh National Population cohort study, which will engage with the population of Wales and encourage them to become actively involved in research to improve health and well-being, and provide a platform for research, policy and service development and evaluation. For more information, see http://www.healthwisewales.gov.wales/

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Appendix 1 Data Tables

Table i: Bivariate relationship between participant demographics and mental well-being[a]

		Mental well-being (over the last 2 weeks)							
		SWEMWBS < 20	I've been feeling optimistic about the future (never/rarely)	I've been feeling useful (never/rarely)	I've been feeling relaxed (never/rarely)	I've been dealing with problems well (never/rarely)	I've been thinking clearly (never/rarely)	I've been feeling close to other people (never/rarely)	I've been able to make up my mind about things (never/rarely)
Prevalence	%	19.42	8.9	8.8	11.39	7.11	4.94	7.27	3.31
	n (total sample size)	1843	1843	1843	1843	1843	1843	1843	1843
Age Years, %	18-29	18.85	9.42	9.60	10.30	9.42	5.24	6.81	3.49
	30-39	20.48	4.82	8.84	15.66	7.63	5.22	5.62	1.61
	40-49	20.49	9.48	7.65	12.23	7.65	5.50	6.73	3.06
	50-59	18.24	10.03	7.29	11.25	4.56	4.56	9.73	3.34
	60-69	19.73	9.31	9.86	9.59	4.93	4.11	7.40	4.39
	x^2	0.854	6.041	2.444	6.59	10.757	1.008	4.281	3.697
	p	0.931	0.196	0.655	0.159	0.029	0.909	0.369	0.449
Sex, %	Male	19.81	8.41	7.45	13.63	6.50	5.01	9.07	2.45
	Female	19.03	9.4	10.18	9.07	7.74	4.87	5.54	4.20
	x^2	0.180	0.556	4.257	9.489	1.085	0.019	8.527	4.428
	p	0.672	0.456	0.039	0.002	0.298	0.891	0.003	0.035
Deprivation Quintile, %	1 (least deprived)	14.64	5.46	7.94	5.21	5.46	2.98	4.96	3.23
	2	22.22	9.69	8.26	15.10	6.27	2.85	5.98	3.99
	3	20.49	8.47	8.74	12.02	8.74	6.56	8.74	3.28
	4	19.26	9.92	8.50	13.88	7.08	6.80	8.50	3.12
	5 (most deprived)	21.08	11.35	10.54	11.62	8.11	5.68	8.38	2.97
	x^2 trend	8.57	9.429	1.937	22.359	4.078	11.641	6.687	0.688
	p	0.073	0.051	0.747	<0.001	0.396	0.020	0.153	0.953
Ethnicity, %	White[b]	19.70	8.88	8.89	11.62	7.18	4.5	7.35	3.42
	Other[c]	10.77	7.69	4.62	3.08	4.62	4.62	3.08	1.54
	x^2	3.533	5.54	2.484	4.663	1.897	1.813	1.871	0.894
	p	0.171	0.063	0.289	0.097	0.387	0.404	0.392	0.639

Abbreviations: SWEMWBS Short Warwick-Edinburgh Mental Well-being Scale

[a] Bivariate relationships should be treated with caution as, for instance, demographic (e.g. Age, sex, ethnicity) differences between deprivation quintiles are not accounted for at this stage.

[b] Including White British, White Irish, White Gypsy or Irish Traveller, White Other

[c] Including Indian, Pakistani, Bangladeshi, Chinese, Other Asian and Other Ethnicities

Table ii: Bivariate association between mental well-being and ACE Count

Outcome	All		ACE Count, %				X^2_{trend}	P
	%	N	0	1	2-3	4+		
Mental well-being (over the last 2 weeks)								
SWEMWBS < 20	19.42	1843	14.23	15.88	23.27	41.12	84.178	<0.001
I've been feeling optimistic about the future (never/rarely)	8.9	1843	5.27	8.82	11.84	20.55	58.279	<0.001
I've been feeling useful (never/rarely)	8.8	1843	4.68	6.76	15.10	21.74	83.764	<0.001
I've been feeling relaxed (never/rarely)	11.39	1843	7.06	12.06	20.41	18.97	48.026	<0.001
I've been dealing with problems well (never/rarely)	7.11	1843	4.78	3.82	7.76	20.16	56.354	<0.001
I've been thinking clearly (never/rarely)	4.94	1843	3.28	4.41	6.53	10.67	23.467	<0.001
I've been feeling close to other people (never/rarely)	7.27	1843	5.57	5.59	9.39	14.23	21.984	<0.001
I've been able to make up my mind about things (never/rarely)	3.31	1843	2.49	2.06	2.45	9.09	17.581	<0.001

Abbreviation: ACE adverse childhood experience; SWEMWBS Short Warwick-Edinburgh Mental Well-being Scale

Table iii: Adjusted Odds Ratios (AOR) for mental well-being in ACE count groups

Outcome	n	ACE Count (reference category 0 ACEs)						Demographic factors			
		P	1	P	2 to 3	P	4+	P	Ethnicity	Age	Sex	WIMD
			AOR (95% CI)		AOR (95% CI)		AOR (95% CI)					
Mental well-being (over the last 2 weeks)												
SWEMWBS < 20	1843	<0.001	1.104 (0.781-1.562)	0.574	1.863 (1.310-2.651)	<0.001	4.674 (3.389-6.446)	<0.001	0.071	0.737	0.484	0.033
I've been feeling optimistic about the future (never/rarely)	1843	<0.001	1.889 (1.176-3.035)	0.009	2.508 (1.535-4.097)	<0.001	5.808 (3.760-8.971)	<0.001	0.853	0.014	0.595	0.043
I've been feeling useful (never/rarely)	1843	<0.001	1.530 (0.909-2.574)	0.109	3.803 (2.384-6.068)	<0.001	6.062 (3.913-9.391)	<0.001	0.236	0.284	0.068	0.839
I've been feeling relaxed (never/rarely)	1843	<0.001	1.737 (1.147-2.630)	0.009	3.455 (2.299-5.191)	<0.001	3.439 (2.264-5.224)	<0.001	0.072	0.755	0.002	<0.001
I've been dealing with problems well (never/rarely)	1843	<0.001	0.804 (0.427-1.513)	0.498	1.752 (1.001-3.066)	0.050	5.180 (3.332-8.054)	<0.001	0.299	0.202	0.493	0.203
I've been thinking clearly (never/rarely)	1843	<0.001	1.482 (0.785-2.796)	0.225	2.183 (1.165-4.089)	0.015	4.192 (2.403-7.312)	<0.001	0.917	0.989	0.754	0.009
I've been feeling close to other people (never/rarely)	1843	<0.001	1.091 (0.634-1.879)	0.753	1.829 (1.083-3.089)	0.024	3.435 (2.153-5.481)	<0.001	0.224	0.086	0.006	0.083
I've been able to make up my mind about things (never/rarely)	1843	<0.001	0.851 (0.363-1.996)	0.711	1.048 (0.423-2.597)	0.920	4.516 (2.457-8.300)	<0.001	0.319	0.195	0.069	0.914

Abbreviation: ACE adverse childhood experience; SWEMWBS Short Warwick-Edinburgh Mental Well-being Scale; WIMD Welsh Index of Multiple Deprivation

Table iv: Modelled impact of preventing ACEs at sample and national population levels on mental well-being

Outcome	Sample						Adjusted to national population					
	Current prevalence		Estimates with 0 ACEs		% change	Number saved	Current prevalence		Estimates with 0 ACEs		% change	Number saved
	%	n	%	n			%	n	%	n		
Mental well-being (over the last 2 weeks)												
SWEMWBS < 20	19.42	358	14.23	143	- 26.73	344	19.64	400802	14.34	292527	- 27.02	108275
I've been feeling optimistic about the future (never/rarely)	8.90	164	5.27	53	- 40.79	159	7.54	153887	4.28	87289	- 43.28	66598
I've been feeling useful (never/rarely)	8.80	162	4.68	47	- 46.82	157	8.63	176199	4.53	92470	- 47.52	83729
I've been feeling relaxed (never/rarely)	11.39	210	7.06	71	- 38.02	203	11.92	243326	7.42	151418	- 37.77	91908
I've been dealing with problems well (never/rarely)	7.11	131	4.78	48	- 32.77	126	6.86	140081	4.71	96036	- 31.44	44045
I've been thinking clearly (never/rarely)	4.94	91	3.28	33	- 33.60	88	4.8	97954	3.16	64436	- 34.22	33518
I've been feeling close to other people (never/rarely)	7.27	134	5.57	56	- 23.38	128	7.18	146413	5.4	110186	- 24.74	36227
I've been able to make up my mind about things (never/rarely)	3.31	61	2.49	25	- 24.77	59	3.28	66838	2.42	49403	- 26.09	17435

Abbreviation: ACE adverse childhood experience; SWEMWBS Short Warwick-Edinburgh Mental Well-being Scale

About us

Public Health Wales exists to protect and improve health and wellbeing and reduce health inequalities for people in Wales.

We are part of the NHS and report to the Minister for Health and Social Services in the Welsh Government.

Our vision is for a healthier, happier and fairer Wales. We work locally, nationally and, with partners, across communities in the following areas:

Health protection – providing information and advice and taking action to protect people from communicable disease and environmental hazards.

Primary, community and integrated care – strengthening its public health impact through policy, commissioning, planning and service delivery.

Microbiology – providing a network of microbiology services which support the diagnosis and management of infectious diseases.

Safeguarding – providing expertise and strategic advice to help safeguard children and vulnerable adults.

Screening – providing screening programmes which assist the early detection, prevention and treatment of disease.

Health intelligence – providing public health data analysis, evidence finding and knowledge management.

NHS quality improvement and patient safety – providing the NHS with information, advice and support to improve patient outcomes.

Policy, research and international development – influencing policy, supporting research and contributing to international health development.

Health improvement – working across agencies and providing population services to improve health and reduce health inequalities.

Further information

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