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Does resilience predict suicidality? A lifespan analysis

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Abstract

Objective

We examined the association between resilience and suicidality across the lifespan.

Method

Participants (n = 7485) from the Personality and Total Health (PATH) Through Life Project, a population sample from Canberra and Queanbeyan, Australia, were stratified into three age cohorts (20-24, 40-44, 60-64 years of age). Binary Logistic regression explored the association between resilience and suicidality.

Results

Across age cohorts, low resilience was associated with an increased risk for suicidality. However, this effect was subsequently made redundant in models that fully adjusted for other risk factors for suicidality amongst young and old adults.

Conclusions

Resilience is associated with suicidality across the lifespan, but only those in midlife continued to report increased likelihood of suicidality in fully-adjusted models.

KEYWORDS: Resilience; Suicidality; Lifespan; Age differences

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Defining resilience as a unitary construct has proved problematic; frequently definitions reflect quite different theoretical approaches. As Ahern, Kiehl, Sole and Byers (2006) describe, resilience can be operationalised as 1) a set of temporally stable set of individual traits (e.g. mastery, self-esteem) that allows the individual to successfully cope with changes in the environment and within the individual themselves; 2) a process that reflects the affective, cognitive and behavioural adaptations to coping with a stressful event; or 3) the successful outcome of such stressful transactions. Of particular relevance for process and outcome definitions, Burns and Anstey (2010) highlight the role of both genetic (e.g. 5-HT_{1A} functionality) and environmental resources (e.g. social support networks) in moderating individuals' capacity to cope with stressors, whilst (Gillespie, Chaboyer & Wallis, 2009) emphasise that resilience appears to be shaped by age and life experiences. Regardless of definition, resilience is associated with an internal locus of control, positive self-image and optimism (Cederblad, 1996; Werner, 1992). In contrast, low resilience has been associated with an increased incidence of suicidal behaviours (Roy, Sarchiapone & Carli, 2006, 2007), likelihood of psychiatric symptoms and development of disorders (Roy et al., 2007) and poor health status (Connor & Davidson, 2003).

“Suicidality” is an encompassing term constituting suicidal ideation (thinking about ending one's life), attempts (nonfatal self-injurious behaviour, some intent to die), plans (formulating a strategy of how to end one's life) and completed suicide (death by suicide) (Silverman, 2006). Currently, few studies have focused on resilience to suicidal

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behaviours, with only a handful (Heisel & Flett, 2008; Osman et al., 2004; Rutter, Freedenthal & Osman, 2008) examining the impact of resilience on suicidality. Previous work has focused on adolescent, young adult, university, geriatric and clinical populations (Heisel & Flett, 2008; Johnson, Gooding, Wood & Tarrrier, 2010; Osman et al., 2004; Roy et al., 2007; Rutter et al., 2008). Consequently, whether resilience is associated with suicidality risk in the general population has yet to be fully elucidated (Johnson, Wood, Gooding, Taylor & Tarrrier, 2011). The current study aims to examine the association between resilience and suicidality across the lifespan utilising a general population sample that involves three cohorts aged 28-32, 48-52 and 68-74. Analyses will be adjusted for a range of socio-demographic characteristics and known risk factors for suicidality risk.

METHOD

Participants And Study Design

Participants were drawn from the Personality and Total Health (PATH) Through Life Project (Anstey et al., 2011), a large, randomly selected community based sample from Canberra and Queanbeyan, Australia. The PATH sample comprises three cohorts initially aged between 20–24 years, 40-44 years, and 60–64 years at baseline. The first wave commenced in 1999, with those in the youngest cohort assessed first, followed yearly by the other two cohorts. The current study utilises data from all cohorts at wave 3, at which point a resilience measure was administered. The sample comprised 2404 participants in the youngest (28–32 years; 46.5% male) age cohort, 2530 in the middle (48–52 years; 47.5% male) age cohort and 2551 in the oldest age cohort (68–72 years;

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51.7% male). The study was approved by the Human Research Ethics Committee at the University of Adelaide (Code Number 11/69), and the Centre for Mental Health Research at the Australian National University (Protocol Number 2006/314).

Measures

All measures in the current study were self-reported by participants. Socio-demographic items comprised current partnered status (partnered/not partnered), employment (employed, not in the labour force), and highest qualification attained (school, certificate, diploma, degree). Medical health was determined by establishing the existence of several medical conditions (diabetes, arthritis, cancer, or heart trouble). Due to the low prevalence of medical conditions amongst the younger age cohorts, a single binary variable was computed to indicate whether participants had been diagnosed with one or more of the aforementioned conditions. One item from the Alcohol Use Disorders Identification Test (AUDIT) scale (Saunders, Aasland, Babor, De La Fuente & Grant, 1993) evaluated frequency of alcohol use while a single item queried whether the participant was a smoker (Jorm et al., 1999).

A range of psychological variables were assessed including mastery (Pearlin, Menaghan, Morton & Mullan, 1981), rumination (Nolen-Hoeksema & Morrow, 1991), positive and negative affect (PANAS; Watson & Clark, 1988), and life satisfaction (Diener, Emmons, Larsen & Griffin, 1985). Current and past life stressors were assessed using the brief life events questionnaire (Brugha & Cragg, 1990; Rodgers, 1996). A single item queried experiences of childhood adversity. Mental health symptoms were measured using the

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Goldberg Anxiety and Depression Scales (Goldberg, Bridges, Duncan-Jones & Grayson, 1988). Physical health activity status was measured using the Physical Health component score from the SF-12 Health questionnaire (Ware, Kosinski & Kellar, 1996). The Lubben Social Network Scale (Lubben et al., 2006) assessed social network size, whilst the Schuster Social Support Scale (Schuster, Kessler & Aseltine, 1990) measured quality of social interactions of friends, family and partner. Due to complexities of social relationships across the lifespan (i.e. younger adults less likely to have partners), this measure was summed and averaged to create an index of overall positive and negative support. Resilience was assessed with the original 25-item Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003). Previous factor analysis by Burns, Anstey and Windsor (2011) indicated items 2, 3 and 9 failed to load onto a uni-dimensional resilience factor and were therefore excluded from this analysis. To aid interpretation of Odds Ratios <1.0 , resilience scores were reversed so that high scores reflected lower levels of resilience. The Psychiatric Symptom Frequency Scale (Lindelow, Hardy & Rodgers, 1997) evaluated suicidality. The first two items inquired whether life was worth living and whether participants had thought that they were better off dead. Serious suicidality was assessed by asking “in the last year have you ever thought about taking your own life?” followed by the question “in the last year have you ever thought that taking your life was the only way out of your problems?”

Statistical Analyses

All statistical analyses were conducted using PASW 20 and were stratified by the three age-cohorts (young, midlife and older). Binary logistic regression was used to evaluate

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the association of demographic, health behaviours/conditions, psychological characteristics, social support, mental health and resilience with suicidal ideation. This was to ascertain whether lower levels of resilience were associated with the likelihood of suicidality.

Multiple cases had information missing within each cohort across all variables. Little's MCAR test (Little, 1988) determined that the data were not missing completely at random (MCAR) for the youngest ($\chi^2 = 1196.639$, $df = 689$, $p < .001$), midlife ($\chi^2 = 1455.216$, $df = 752$, $p < .001$) or oldest ($\chi^2 = 1621.000$, $df = 853$, $p < .001$) cohorts. We therefore imputed missing data ($m = 5$) using Multiple imputation (MI) (Rubin, 1978; Rubin, 1987). MI involves the production of multiple datasets of the original results, for which each missing value is replaced with two or more imputed values (Rubin, 1987). These values are predicted from the participant's other non-missing values, based on a conditional distribution (Newsom, Jones & Hofer, 2012).

RESULTS

Significant differences were observed between the three age cohorts for each of the variables used within the current study (Table 1). Response patterns to some variables were clearly disparate between cohorts such as being married and the existence of medical conditions was greatest in the oldest cohort; being employed and experiencing rumination in the youngest; and social network and life events (midlife). Prevalence statistics (Table 2) also demonstrate significant differences between cohorts for each item addressing suicidal ideation. Prevalence for the first three items was greater for the

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youngest cohort, with those at midlife increasing on the fourth item. For the oldest cohort, prevalence was low compared to the other cohorts across all four items.

Resilience And Suicidal Ideation Across The Life Span

Analyses investigating the association between resilience and suicidality were stratified by age cohort for four suicidality items (Tables 3-6). Across all suicidality items for the three age cohorts, lower levels of resilience was associated with suicidal ideation for all age cohorts.

Specifically, for the item “Life is hardly worth living” (Table 3), effects for low levels of resilience became non-significant for the oldest cohort with the inclusion of physical health and life conditions (Model 4). In contrast, the effect in the youngest cohort was accounted for when psychological constructs and mental health variables (Model 6) were introduced into the model. Association between low levels of resilience and suicidal ideation for those at midlife remained significant across all models. As such, those at midlife had higher odds of suicidal ideation, when resilience levels were low compared to the other two cohorts. With thoughts of feeling “better off dead” (Table 4), the effect of not being resilient became non-significant for both the youngest and midlife cohorts with the inclusion of psychological constructs and mental health (Model 6), and with the addition of social support (Model 5) for the oldest. With regards the item assessing serious suicidal ideation (“thought of taking own life”) (Table 5), effects became non-significant with the inclusion of psychological constructs and mental health (Model 6) for the youngest cohort and with the inclusion of physical health and life conditions (Model

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4) for the oldest cohort. However, the association between low levels of resilience and suicidal ideation remained significant for those at midlife when adjusting for all covariates. Similarly, as for the previous item, both midlife and younger cohorts became non-significant at the same model, with those at midlife having higher odds than the younger.

The second item examining serious suicidal ideation, “thought taking life only way out of problems” (Table 6), was significantly related to low levels of resilience among the youngest and midlife cohorts. Here it was observed that the youngest cohort had higher odds than those at midlife, in considering suicide. Effect of low levels of resilience on suicidality items for those in the oldest cohort became non-significant with the inclusion of psychological constructs and mental health (Model 6).

In view of the overall impact that low levels of resilience had on suicidality, we explored the extent to which resilience moderated the effects of risk factors for suicidality (i.e. demographic, health and psychological covariates). Results (not shown) revealed that resilience did not moderate the association between these risk factors and the suicidality items when adjusting for main effects.

DISCUSSION

Findings in the literature regarding the association between low levels of resilience and suicidality have differed, with variations in how resilience is explored within suicidal behaviours (i.e. an internal factor protecting against suicidality (Rutter et al., 2008); a

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regulator of suicidal ideation through aptitude, ability or access to resources (Osman et al., 2004); and as a factor that can mitigate or cushion the strength of the link between risk and suicidality (Johnson et al., 2011)). In the current study, resilience was defined as the individual's ability to access internal and external sources of support whilst using individual qualities to enable successful development despite adversity (Connor & Davidson, 2003; Windle, 2010). With the purpose of the current study being to assess the effect of low levels of resilience on suicide, multiple explanatory variables such as health behaviours, physical health and social support were included in the analysis. This was to promote an understanding of the impact these additional factors may have on the association between resilience and suicidality.

Previous research has largely drawn from clinical samples and there has been a lack of population-based research on this topic. This study employed a novel perspective to investigate the relative contribution of resilience on likelihood of suicidal ideation among three age cohorts from a community sample. Consistent with previous research linking increased likelihood of suicidal behaviours with low resilience (Roy et al., 2006, 2007), the present study demonstrated the association of lower levels of resilience with suicidality across three age cohorts aged between 28 to 72 years. For the oldest group of participants, resilience did not remain significantly associated with any of the suicidality items. Meanwhile, for the youngest cohort, resilience was significantly associated with the suicidality item "thought taking life only way out of problems." Low resilience remained a significant risk factor for items 1 ("life hardly worth living"), 3 ("thought of taking own life") and 4 ("thought taking life only way out of problems") for the midlife

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aged cohort. Of the four items, bar the final one, it was found that the midlife cohort had a higher likelihood of engaging in these behaviours, when resilience levels are low.

These results consistently showed that the covariates accounted for much of the effect of resilience. In other words, as other constructs are added in (i.e. social support), low levels of resilience and suicidal ideation were subsequently reduced, as observed in the younger and oldest cohorts. Nevertheless, a low level of resilience appeared a key attribute for the midlife cohort, persisting as a significant predictor for the majority of the models. Interestingly, a lower level of resilience for this cohort was observed in association with suicidal ideation across all six models, aside from item 2 (“feel better off dead”). Thus, in the current study population, this indicates that compared to the younger and oldest cohorts, the midlife group had a greater vulnerability to suicidal ideation when resilience levels are low. In light of this, further analysis into how resilience can be boosted so as to reduce suicidality, and moreover, how protective it is, could be beneficial in reducing vulnerability; particularly for those at midlife.

Strengths And Limitations

Strengths of this study include the large number of participants drawn randomly from the general community and the use of a resilience-specific measure. The age range of the participants allowed for comparisons between the three cohorts. With approximately equivalent numbers of both genders in each cohort, results from the current study are robust.

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A limitation of a cross sectional design prevents us from making causal inference about the possible direction between suicidal ideation and resilience. Due to data being drawn from a section of the Australian community, one should practise caution if generalising findings beyond this population. Other limitations include the retrospective and self-report nature of the questionnaires used in the current study.

Implications And Future Research

Individuals in the midlife group were found to be more vulnerable to suicidality when resilience levels were low. This is in keeping with previous research in this domain, where males (35 – 44 years) and females (16 – 24 years) were noted to be more vulnerable to suicidality (Johnston, Pirkis & Burgess, 2009). The Australian Bureau of Statistics (Afifi & Macmillan, 2011; Agani, Landau & Agani, 2010; Statistics, 2012), also noted suicide rates to be highest among middle aged males (40 – 44 years) in 2008, the same time point at which the sample in the current study participated in Wave 3. Interestingly, in the following year elderly males (28.2 per 100,000 population) had the highest suicide rate, while males 40 – 44 years were the highest group for suicide related deaths in 2010. Significantly, results of the present study concord with the aforementioned studies, where our findings contribute further to the understanding of vulnerability to suicide among those at midlife. Other explanations for significance found in the midlife cohort, could be due to their unadjusted effect being slightly larger compared to the other two cohorts. Further, the Global Financial Crisis occurring between 2007–2008 may have influenced resilience and suicidality levels, particularly for those at midlife where life changes already occur.

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The current study indicates that more research is needed to explore the relationship between resilience and suicidal behaviours, particularly for those aged in their 40s and 50s. With low resilience indicating vulnerability towards suicidal behaviours in this cohort, further exploration would be beneficial to ascertaining whether these results are generalisable to other population samples. It is the authors' intent to follow the current study with longitudinal analyses, further elucidating whether attenuated levels of resilience remain low as participant's age, and whether gender has an effect.

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Table 1. Descriptives of variables, stratified by age cohort

Variables	Range	Younger (28 – 32 years) n = 1978	Midlife (48 – 52 years) n = 2182	Older (68 – 72 years) n = 1973	Differences between age cohorts		
					χ^2	F	
Qualification				22.7	439.33*	-	60s >20s, 40s, 20s >40s
School (%)		13.7	15.8				
Certificate (%)		31.5	31.3	29.4			
Diploma (%)		10.2	11.0	11.3			
University (%)		44.4	40.8	36.6			
Current Smoker					204.30*	-	20s > 40s, 60s 40s > 60s

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Yes (%)		20.9	13.5	5.5			
No (%)		79.1	86.2	94.5			
Employed						-	20s > 40s, 60s 60s >40s
Yes (%)		90.2	91.6	16.4			
No (%)		9.8	8.2	83.6	3372.41*		
Partner Status					343.00*	-	60s >20s, 60s 40s > 60s
Married (%)		45.6	67.8	72.1			
Not Married (%)		54.3	32.2	27.9			
Medical health ²					2407.97*	-	40s >20s, 60s 60s >20s

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Yes (%)		2.3	10.5	26.0			
No (%)		30.1	25.2	5.9			
Alcohol Consumption ¹					331.545*	-	60s >20s, 40s 40s >20s
Occasional/light (%)		8.6	9.7	5.5			
Medium (%)		17.5	14.1	10.3			
Hazardous/harmful (%)		6.8	12.3	15.2			
Resilience (mean, sd)	22-97	46.05 (11.68)	45.93 (12.28)	44.39 (12.31)	-	11.06*	20s > 40s, 60s 40s > 60s
Childhood Adversity (mean, sd)	0-14	1.70 (2.21)	1.68 (2.29)	1.65 (2.18)	-	0.34	20s > 40s, 60s 40s > 60s

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Physical Health ³ (mean, sd)	12-66	52.08 (7.62)	50.27 (8.64)	46.99 (10.40)	-	162.89*	60s >20s, 40s 40s > 60s
Life Satisfaction (mean, sd)	5-35	26.14 (6.67)	25.06 (6.84)	26.45 (5.50)	-	27.38*	20s > 40s, 60s 60s >40s
Positive Affect (mean, sd)	10-50	33.58 (7.64)	32.97 (7.69)	32.39 (7.54)	-	11.94*	20s > 40s, 60s 40s > 60s
Negative Affect (mean, sd)	8-40	12.65 (5.16)	11.75 (4.75)	11.68 (4.72)	-	24.23*	60s >20s, 40s 20s >40s
Rumination (mean, sd)	0-30	8.53 (5.81)	7.14 (4.95)	5.37 (3.70)	-	204.36*	20s > 40s, 60s

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							40s > 60s
Social Network (mean, sd)	0-30	18.14 (5.08)	16.34 (5.43)	18.26 (5.28)	-	86.75*	40s >20s, 60s 20s >40s
Life Events (mean, sd)	0-16	1.26 (1.54)	1.37 (1.63)	0.80 (1.20)	-	86.27*	40s >20s, 60s 60s >20s
Anxiety (mean, sd)	0-9	3.72 (2.71)	3.27 (2.67)	2.13 (2.12)	-	206.96*	20s > 40s, 60s 40s > 60s
Depression (mean, sd)	0-9	2.63 (2.44)	2.22 (2.31)	1.62 (1.80)	-	104.07*	20s > 40s, 60s 40s > 60s
Mastery (mean, sd)	7-28	23.08	22.53	21.89	-	54.28*	60s

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		(3.54)	(3.76)	(3.44)			>20s, 40s 40s > 60s
Negative Support (mean, sd)	0-11	3.43 (1.61)	3.60 (1.72)	2.60 (1.60)	-	212.09*	20s > 40s, 60s 40s > 60s
Positive Support (mean, sd)	1-9	8.00 (1.10)	7.67 (1.33)	8.05 (1.08)	-	48.18*	40s >20s, 60s 60s >20s

¹Frequency of alcohol consumption

²Existence of several medical conditions (diabetes, arthritis, cancer or heart trouble).

³Measured using the SF12 PCS measure

AUDIT, Alcohol Use Disorders Identification Test; χ^2 , Chi-squared; F, F ratio.

* $p < 0.001$.

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Table 2. Twelve-month prevalence of suicidal ideation (positive responses to items) stratified by age cohort and gender.

Psychiatric Symptom Frequency Scale Item	Younger (28 – 32 years)			Midlife (48 – 52 years)			Older (68 – 72 years)			Difference between age cohorts		
	Total	Males	Females	Total	Males	Females	Total	Males	Females	χ^2	df	
(1) Life hardly worth living	12.1%	12.1%	12.2%	9.6%	9.1%	10.1%	5.9%	6.3%	5.6%	45.0	2	20s > 40s, 60s, 60s >40s
(2) Thought they were better	7.9%	8.3%	7.7%	6.9%	6.8%	7.1%	3.6%	3.7%	3.5%	34.7	2	60s >20s, 40s, 40s

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off dead												> 60s
(3) Though t of taking one's own life	6.4 %	7.2 %	5.7%	5.0 %	4.8 %	5.2%	1.8 %	2.1 %	1.6%	50.4 9*	2	40s >20 s, 60s 40s > 60s
(4) Taking one's life only way out of their proble ms	2.8 %	2.3 %	3.2%	3.2 %	3.0 %	3.3%	1.0 %	0.8 %	1.3%	23.0 9*	2	40s >20 s, 60s 60s >20 s

χ^2 , Chi-squared; *df*, degrees of freedom, * $p < 0.001$.

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Table 3. Pooled odds ratios and 95% confidence intervals for low levels of resilience among young, midlife and older adults for “In the last year, have you ever thought that your life was hardly worth living?”

Variables entered	Younger (28 – 32 years)		Midlife (48 – 52 years)		Older (68 – 72 years)	
	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI
Model 1 – Low Resilience	1.09***	1.07- 1.10	1.09***	1.07-1.10	1.04***	1.03- 1.06
Model 2 – Low Resilience	1.08***	1.07- 1.10	1.08***	1.07-1.10	1.04***	1.02- 1.06
Model 3 – Low Resilience	1.08***	1.06- 1.10	1.08***	1.07-1.10	1.04***	1.03- 1.06
Model 4 – Low Resilience	1.04***	1.03- 1.06	1.06***	1.05-1.08	1.02	1.00- 1.03
Model 5 – Low Resilience	1.04***	1.02- 1.06	1.06***	1.04-1.08	1.01	1.00- 1.03
Model 6 – Low Resilience	1.01	0.99- 1.03	1.02*	1.00-1.04	0.98	0.96- 1.00

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CI, confidence interval. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

N.B. Model 1 baseline model includes resilience. Model 2 = Model 1 with sociodemographic information. Model 3 = Models 1 and 2 with health behaviours. Model 4 = Models 1 -3 with physical health and life conditions. Model 5 = Models 1 – 4 with social support; and Model 6 = models 1 – 5 with psychological constructs and mental health.

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Table 4. Pooled odds ratios and 95% confidence intervals for low levels of resilience among young, midlife and older adults for “In the last year, have you ever thought that you really would be better off dead?”

Variables entered	Younger (28 – 32 years)		Midlife (48 – 52 years)		Older (68 – 72 years)	
	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI
Model 1 – Low Resilience	1.08***	1.06-1.09	1.09***	1.07-1.10	1.05***	1.03-1.08
Model 2 – Low Resilience	1.07***	1.06-1.09	1.08***	1.07-1.10	1.05***	1.03-1.08
Model 3 – Low Resilience	1.07***	1.06-1.09	1.08***	1.07-1.10	1.05***	1.03-1.08
Model 4 – Low Resilience	1.04***	1.02-1.06	1.06***	1.04-1.07	1.03***	1.00-1.05
Model 5 – Low Resilience	1.04***	1.02-1.06	1.06***	1.04-1.07	1.03	1.00-1.05
Model 6 – Low Resilience	1.01	0.99-1.04	1.02	0.99-1.04	1.00	0.97-1.02

CI, confidence interval. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NB. Model 1 baseline model includes resilience. Model 2 = Model 1 with sociodemographic information. Model 3 = Models 1 and 2 with health behaviours.

Model 4 = Models 1 -3 with physical health and life conditions. Model 5 = Models 1 – 4

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with social support; and Model 6 = models 1 – 5 with psychological constructs and mental health.

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Table 5. Pooled odds ratios and 95% confidence intervals for low levels of resilience among young, midlife and older adults for “In the last year have you ever thought about taking your own life?”

Variables entered	Younger (28 – 32 years)		Midlife (48 – 52 years)		Older (68 – 72 years)	
	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI
Model 1 – Low Resilience	1.07***	1.06-1.09	1.09***	1.07-1.10	1.05***	1.02-1.08
Model 2 – Low Resilience	1.07***	1.05-1.09	1.09***	1.07-1.10	1.05***	1.02-1.08
Model 3 – Low Resilience	1.07***	1.05-1.09	1.09***	1.07-1.10	1.05**	1.02-1.08
Model 4 – Low Resilience	1.04***	1.02-1.06	1.06***	1.05-1.09	1.03	1.00-1.07
Model 5 – Low Resilience	1.03***	1.01-1.06	1.07***	1.05-1.09	1.03	0.99-1.06
Model 6 – Low Resilience	1.01	0.99-1.04	1.03*	1.01-1.06	1.02	0.98-1.06

CI, confidence interval. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NB. Model 1 baseline model includes resilience. Model 2 = Model 1 with sociodemographic information. Model 3 = Models 1 and 2 with health behaviours.

Model 4 = Models 1 -3 with physical health and life conditions. Model 5 = Models 1 – 4

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with social support; and Model 6 = models 1 – 5 with psychological constructs and mental health.

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Table 6. Pooled odds ratios and 95% confidence intervals for low levels of resilience among young, midlife and older adults for “In the last year have you ever thought that taking your own life was the only way out of your problems?”

Variables entered	Younger (28 – 32 years)		Midlife (48 – 52 years)		Older (68 – 72 years)	
	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI
Model 1 – Low Resilience	1.11***	1.08-1.14	1.10***	1.07-1.12	1.08***	1.03-1.12
Model 2 – Low Resilience	1.11***	1.08-1.13	1.09***	1.07-1.12	1.08***	1.04-1.13
Model 3 – Low Resilience	1.11***	1.08-1.13	1.09***	1.07-1.12	1.08***	1.04-1.13
Model 4 – Low Resilience	1.08***	1.05-1.11	1.07***	1.04-1.09	1.05*	1.05-1.00
Model 5 – Low Resilience	1.08***	1.05-1.11	1.06***	1.04-1.09	1.04*	0.99-1.09
Model 6 – Low Resilience	1.06**	1.02-1.10	1.03*	1.00-1.07	1.00	0.94-1.07

CI, confidence interval * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

NB. Model 1 baseline model includes resilience. Model 2 = Model 1 with sociodemographic information. Model 3 = Models 1 and 2 with health behaviours.

Model 4 = Models 1 -3 with physical health and life conditions. Model 5 = Models 1 – 4

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with social support; and Model 6 = models 1 – 5 with psychological constructs and mental health.