The influence of personality on trajectories of distress, health and functioning in mild-to-moderately depressed adults with type 2 diabetes.

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Abstract: 219 words

Main text: 3,943 words (excl. Title, Tables, Figures & References)

Abstract

Identification of mental health risk is important for optimising diabetes care in type 2 diabetes mellitus (T2DM). Personality is linked to diabetes health and may assist detection of individuals with T2DM most at risk of chronic mental health difficulties. This study examined the moderator effect of personality factors on changes in psychological distress and functioning in adults with T2DM and mild-to-moderate depressive symptoms across a 12-month period. Data were obtained from participants in a randomised controlled trial of adults with T2DM. Participants completed measures of depression (Patient Health Questionnaire-9), anxiety (General Anxiety Disorder-7), general functioning (Work and Social Adjustment Scale), diabetes distress (Diabetes Distress Scale), and diabetes self-management (Self-Management Profile for Type 2 Diabetes) at baseline, 3-, 6- and 12-months. Glycaemic control (HbA1c) was measured at baseline, 6- and 12-months. Two hundred trial completers agreed to complete a personality inventory (Big Five Inventory). Low neuroticism was linked with reduced depression, anxiety, functional impairment and diabetes distress over the year. High extraversion was associated with decreased anxiety and functional impairment. High conscientiousness was linked to increased healthy eating. No personality trait moderated HbA1c levels. Personality screening may help identify mental health risk and guide medical carer approach in T2DM patients.

Keywords: Personality; diabetes; diabetes distress; depression; anxiety.

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Type 2 diabetes mellitus (T2DM) is a chronic and disabling illness predicted to affect almost 600 million individuals world-wide by 2035 (Nanayakkara et al., 2018). A large literature shows that psychological distress is common in T2DM and highly related to adverse diabetes behavioural and health outcomes (Deschênes, Burns, & Schmitz, 2018; Roy & Lloyd, 2012). Identification of characteristics that may predispose people with T2DM to experience a poorer mental health trajectory is important for optimising diabetes care and outcomes. Understanding potential risk factors may aid prevention and early treatment of psychological distress in T2DM.

Considerable evidence suggests that personality traits render some individuals more prone to mental illness than others (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Kotov, Gamez, Schmidt, & Watson, 2010). Within the Five Factor Model (FFM), neuroticism, extraversion and agreeableness have demonstrated particular relevance for psychological wellbeing (Diener & Seligman, 2002), and a profile of high neuroticism, low conscientiousness and low extraversion has been repeatedly linked to psychopathology (Kotov et al., 2010).

Personality has been associated with various behavioural and biological outcomes in T2DM. Research has linked lower conscientiousness (Skinner, Bruce, Davis, & Davis, 2014) and higher neuroticism (Novak et al., 2017) with poor diabetes self-care, and lower extraversion and conscientiousness and higher neuroticism with poorer glycemic control (Esmaeilinasab et al., 2016). Longitudinal studies have linked low conscientiousness to elevated risk of both onset of T2DM and diabetes mortality (Jokela et al., 2014). Researchers speculate that low conscientiousness and high neuroticism may increase vulnerability to poorer self-care and physical health by compromising coping and planning abilities, rendering individuals less able to tolerate and respond purposefully to stressful, frustrating,

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and unpredictable situations (Lahey, 2009). Conversely, high extraversion may facilitate better adaptation to the treatment demands of diabetes (Esmailinasab et al., 2016).

Less is known about the role of dispositional factors in psychological distress and general functioning in T2DM. Currently, there is some evidence linking the “Type D” personality (i.e., a tendency towards higher negative affect and social inhibition) to an increased risk of anxious and depressive symptoms in people with T2DM (Nefs et al., 2015). Studies show that the Type D personality can be represented by a combination of high neuroticism and low extraversion (Howard & Hughes, 2012), suggesting that these factors may be useful for identifying people with T2DM who are at risk of suffering psychological morbidity. To our knowledge, however, no research has directly examined the importance of the FFM for understanding trajectories of psychological distress and functional impairment in people with T2DM.

In addition to depression and anxiety, people with T2DM are at risk of experiencing a disease-specific form of psychological distress, called diabetes distress, which refers to a person’s emotional adjustment to diabetes (Fisher, Gonzalez, & Polonsky, 2014). Diabetes distress comprises four areas of concern: regimen distress (e.g., difficulty coping with medication and blood glucose monitoring); the emotional impact of diabetes (e.g., fear of serious health complications); interpersonal relationships (e.g., perceived lack of social support); and access to health care (e.g., not having a regular physician; Polonsky et al., 2005). Studies confirm that diabetes distress is related to, yet distinct from, psychiatric disorders like anxiety and depression (Fisher, Gonzalez, & Polonsky, 2014).

Diabetes distress appears central to emotional wellbeing in people living with T2DM. High levels of diabetes distress are more common (Lawrence Fisher et al., 2015) and more strongly related to biological (e.g., glycemic control; Hessler et al., 2014) and behavioural (e.g., self-management; Lawrence Fisher et al., 2013) outcomes in people with T2DM than

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depressive symptoms. Dispositional approaches to emotional regulation strategies appear to contribute to the development and severity of diabetes distress (Lawrence Fisher et al., 2018), thus the influence of various personality variables on the emotional adjustment to T2DM warrants further attention. If personality predictors of diabetes distress can be found, this information may be helpful in early identification and intervention.

The current study explored the impact of the FFM personality factors on mental and physical wellbeing trajectories in people with T2DM. Specifically, we used latent growth modelling to examine whether changes over time in key measures of psychological distress (anxiety, depression and diabetes distress), functional impairment and diabetes health were influenced by each of the five personality factors. Based on previous findings, we predicted that changes over time in these outcomes would be moderated by neuroticism, conscientiousness and extraversion, with patients low in neuroticism and high in conscientiousness and extraversion experiencing the greatest improvements.

Method

This study was an adjunct to the Springboard Trial; a large community-based randomised controlled trial (RCT) of an online public health intervention called *myCompass* to increase functioning and mental health in adults with T2DM. The full trial protocol is detailed elsewhere (Proudfoot et al., 2017). The Springboard Trial was approved by the UNSW Sydney Human Research Ethics Committee (HREC 15090) and registered with the Australia and New Zealand Clinical Trials Register (ACTRN12615000931572).

Study sample and procedures

Springboard Trial. Consent, screening, enrolment and assessment in the Springboard Trial occurred between September 2015 and November 2017. Eligible

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candidates (aged 18-75 years, screened positive for mild to moderate depression, reported access to an Internet-enabled device) provided baseline data and were randomised to receive either *myCompass*, a digital mental health intervention containing learning activities based on principles of cognitive behavioural therapy, or *Healthy Lifestyles*, a digital attention-control presenting health information on different topics but no therapeutic elements, for 12 weeks. Participants provided outcome measures at 3-, 6- and 12-months post-registration.

Present study. Data for the present study derive from previously recruited Springboard Trial participants. A priori power calculations indicated that a minimum of 156 participants was required to detect the medium effects observed in similar studies (Strickhouser, Zell, & Krizan, 2017). Therefore, between April and July 2018, we emailed invitations to the first 297 Springboard participants to complete the 12-month self-report assessment. We contacted only completers to avoid any disruption to the Springboard Trial protocol. The email provided information regarding the study purpose and invited participants to proceed to the study. Willing participants completed a survey including a personality inventory via Qualtrics survey software (Version 1.4.05). A \$15 grocery voucher was provided as recompense for time and participants received personalised feedback on their personality scores.

Measures

Anxiety symptoms. Anxiety symptoms were measured by the 7-item Generalised Anxiety Disorder Scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006); a well-validated, anxiety screening instrument used widely in primary care settings (Rutter & Brown, 2017). Total scores range from 0 to 21. Cut-off scores of 5, 10 and 15 are used to identify people with mild, moderate and moderately severe anxiety symptoms, respectively.

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Depressive symptoms. The 9-item Patient Health Questionnaire (PHQ-9) was used to measure depressive symptom frequency over the previous two weeks (Kroenke et al., 2001). The scale is well validated and used widely in primary care (Arroll et al., 2010). Total scores range from 0 to 27. Total scores ≥ 10 are considered a positive screen for Major Depressive Disorder (MDD), with cut-off scores of 5, 10 and 15 used to identify mild, moderate and moderately severe depressive symptoms, respectively.

Diabetes distress. Diabetes distress was measured using the 17-item Diabetes Distress Scale (DDS). The DDS yields a total score plus four subscale scores: emotional burden, physician-related distress, regimen-related distress, and interpersonal distress. Total DDS and subscale scores are calculated as the average across all scale/subscale items and range from 1 to 6, with higher scores indicating greater distress. A total or subscale score of >3 indicates clinically relevant distress (Polonsky et al., 2005).

Glycaemic control. Each participant nominated a treating doctor from whom we requested the most recent glycosylated haemoglobin measurement (HbA1c %). Results were used as an indicator of glycaemic control and were obtained by the treating doctor an average of 2.12 months ($SD=8.17$) prior to a participant's trial enrolment, and again around the time of the 6 month ($M=2.3$ days, $SD=55.13$ after 6 months survey completion) and 12-month ($M=11.90$ days, $SD=55.54$) follow-up questionnaires.

Work and social functioning. The Work and Social Adjustment Scale (WSAS) assessed general functioning across work, social leisure activities, private leisure activities, home management and personal relationships (Mundt, Marks, Shear, & Greist, 2002). Scores range between 0 to 40, with higher scores indicating greater functional impairment.

Self-management. The Self-Management Profile for Type 2 Diabetes (SMP-T2D; Peyrot et al., 2012) assessed level and perceived ease of performance of T2DM regimen behaviours. We noted a considerable overlap between DDS and SMP-T2D items relating to

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difficulties with self-care activities. To avoid undue participant burden, we included a reduced set of SMP-T2D items measuring self-care across the blood glucose monitoring, medication adherence, healthy eating and physical patient behavior domains. Domain scores describe the percentage spent engaging in a self-care behavior in the previous week. Higher scores indicate greater time spent on self-care.

Personality. Personality was measured using the Big Five Inventory (BFI), a 44-item multidimensional scale that assesses an individual according to the FFM: openness, conscientiousness, extraversion, agreeableness and neuroticism (John & Srivastava, 1999). The 44-items are short descriptive phrases that participants rate on a 5-point Likert-type scale ranging from *strongly disagree* to *strongly agree*. An example item for neuroticism is “I see myself as someone who gets nervous easily.”

Analyses

In the SpringboardD Trial, intention-to-treat analyses revealed that participants’ changes over time were not due to online program allocation (Clarke et al., 2019). Therefore, we collapsed the two groups across all outcome measures. To estimate change over time for the present study, latent growth models were computed for GAD-7, PHQ-9, DDS, SMP-T2D and HbA1c data using the SPSS v25 (IBM Inc, 2017) Mixed function, which employed an unstructured covariance matrix to allow for unequal variances and covariances of values. A random intercept was used at the individual level to account for intra-individual correlations on repeated measures. Moderator effects were computed by adding a Personality x Time interaction term for all BFI factors to each model. Significant interactions were interpreted by computing separate growth models for high and low BFI factor groups (one standard deviation above or below the mean) to determine if the effect held at a single level of the

moderator only, or at which level of the moderator the effect was strongest (this procedure reflects regression-based techniques in Hayes, 2013).

Results

Sample and Data Preparation

Of the 297 Springboard participants who were invited to participate in the present study, 200 (67%) were willing to complete the questionnaire. Participants included 110 women and 90 men with a mean age of 60 years ($SD=9.05$). For participants included in this sample, 58 practices returned their patient's HbA1c result at all three time points, while most practices submitted results twice ($n=73$). Forty-two practices submitted one HbA1c result and 27 did not submit any patient data at all. One person was excluded from analysis due to missing data on the BFI, leaving a final sample of $N=199$.

As part of the data preparation process, we tested all variables for normality. The SMP-T2D medication adherence subscale was highly left-skewed, which violated the underlying assumptions of the statistical tests we aimed to perform. For this reason, results presented below only include the blood glucose monitoring, healthy eating and physical activity domains of the SMP-T2D.

Table 1 presents descriptive statistics, ANOVA and Chi square test results comparing baseline characteristics for Springboard participants who were ($N=199$) and were not ($N=521$) included in the current study¹. Except for more regular blood glucose monitoring by completers of the BFI, there were no significant differences between the groups.

¹ Sample characteristics for the 780 Springboard Trial participants allocated to either an online intervention or an attention-matched control group showed no significant differences with regards to participants' age, gender, marital status, employment status, and education levels. A full breakdown of Springboard participants' demographic information split by intervention versus control groups can be found in Clarke and colleagues (2019).

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Table 1

Means, Standard Deviations and Between-Group Statistics on Key Variables

Variable	Personality Subsample (N=199)		Springboard Only (N=521)		<i>F</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Age	60	9.05	56.85	10.73	703.07	.439	2.21
Age at Dx	48.83	9.49	46.22	11.52	58.33	.500	.64
Neuroticism	3.19	.77	-	-	-	-	-
Extraversion	2.93	.73	-	-	-	-	-
Agreeableness	3.85	.59	-	-	-	-	-
Conscientiousness	3.72	.62	-	-	-	-	-
Openness	3.68	.63	-	-	-	-	-
PHQ-9	10.78	3.97	11.19	4.11	14.57	.627	.32
GAD-7	7.27	4.40	7.52	4.13	22.22	.387	.39
WSAS	12.39	7.79	13.14	7.86	42.77	.313	.55
DDS	2.49	.98	2.58	.96	52.95	.946	.61
SMP-BGL	3.71	2.83	3.18	2.70	14.22	.047	.31
SMP-EXR	3.46	2.34	3.61	2.36	2.37	.499	.13
SMP-EAT	3.44	2.06	3.44	2.01	31.40	.088	.47
HbA1c	58 (7.5)	17 (1.6)	58 (7.5)	17 (1.6)	77.47	.369	.73

Note. Statistics computed at baseline except personality traits, which were assessed after trial completion; Dx = diabetes diagnosis; PHQ-9 = Patient Health Questionnaire 9; GAD-7 = Generalized Anxiety Disorder scale; WSAS = Work and Social Adjustment Scale; DDS = Diabetes Distress Scale; SMP-BGL = Self-Management Profile Blood Glucose Monitoring; SMP-EXR = Self-Management Profile Exercise; SMP-EAT = Self-Management Profile Healthy Eating; HbA1c = glycosylated haemoglobin mmol/mol (%).

Table 2 presents correlations between key variables. Neuroticism was positively correlated with PHQ-9, GAD-7, WSAS and DDS scores, and negatively correlated with healthy eating. Extraversion negatively correlated with PHQ-9 and WSAS scores. Conscientiousness showed negative correlations with PHQ-9 and WSAS scores, and positive correlations with BGL monitoring, exercising and eating healthy. Agreeableness and openness were uncorrelated with study outcomes.

Growth model statistics are presented in Table 3. No main effects of time were observed. Individuals low in neuroticism showed a significant or marginally significant reduction across the 12-month period in PHQ-9 ($\beta = -.359$, $t = -6.242$, $p < .001$), GAD-7 ($\beta = -.193$, $t = -3.502$, $p = .001$), WSAS ($\beta = -.341$, $t = -3.420$, $p = .003$), DDS-Total ($\beta = -.037$, $t = -3.218$, $p = .003$), DDS-Emotional Burden ($\beta = -.043$, $t = -3.068$, $p = .003$), DDS-Physician Distress (β

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Table 2

Pearson Correlations Between Key Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Neuroticism	—	—	—	—	—	—	—	—	—	—	—	—
2. Extraversion	-.35**	—	—	—	—	—	—	—	—	—	—	—
3. Agreeableness	-.33**	.27**	—	—	—	—	—	—	—	—	—	—
4. Conscientiousness	-.21**	.16*	.20**	—	—	—	—	—	—	—	—	—
5. Openness	-.21**	.23**	.18*	.23**	—	—	—	—	—	—	—	—
6. PHQ-9	.36**	-.16*	-.14	.20**	-.02	—	—	—	—	—	—	—
7. GAD-7	.41**	-.01	-.03	.01	.01	.58**	—	—	—	—	—	—
8. WSAS	.23**	-.16*	-.13	-.16*	.01	.53**	.38**	—	—	—	—	—
9. DDS	.23**	-.08	.06	-.11	-.02	.51**	.42**	.43**	—	—	—	—
10. SMP-BGL	-.03	-.02	.02	.16*	.04	-.09	.01	.03	-.11	—	—	—
11. SMP-EXR	-.10	.12	-.06	.15*	.03	-.16*	-.10	-.19**	-.16*	.03	—	—
12. SMP-EAT	-.20**	.07	.09	.31**	.14	-.23**	-.11	-.14	-.33**	.26**	.03	—
13. HbA1c [†]	.18*	-.05	-.02	-.05	-.07	.26**	.11	.16	.41**	-.01	-.12	-.07

Note. All variables were assessed at baseline except personality traits, which were assessed after trial completion; PHQ-9 = Patient Health Questionnaire 9; GAD-7 = Generalized Anxiety Disorder scale; WSAS = Work and Social Adjustment Scale; DDS = Diabetes Distress Scale; SMP-BGL = Self-Management Profile Blood Glucose Monitoring; SMP-EXR = Self-Management Profile Exercise; SMP-EAT = Self-Management Profile Healthy Eating; HbA1c = glycosylated haemoglobin.

* $p < .05$, ** $p < .01$, $N = 199$, [†] $N = 137$

=-.026, $t=-1.996$, $p=.051$) and DDS-Regimen Distress ($\beta=-.044$, $t=-2.728$, $p=.008$) scores, whereas individuals high in neuroticism showed no change on any variable (all p -values $>.05$). More highly extraverted individuals showed reductions over time on GAD-7 ($\beta=-.221$, $t=-4.363$, $p<.001$) and WSAS ($\beta=-.339$, $t=-3.986$, $p<.001$) scores, but this pattern was not observed for low-extraversion individuals (p -values $>.05$). Individuals high in conscientiousness showed a significant increase over time in SMP-EAT scores ($\beta=.855$, $t=2.359$, $p=.020$), whereas low-conscientious individuals did not ($p>.05$). No effect of

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personality on HbA1c was observed. The observed pattern of results persisted after controlling for age and gender as covariates.

Table 3

Unstandardised Estimates of Main and Interaction Effects of Time (Baseline, 3, 6, & 12 Months)[†] and Personality Traits on Measures of Health and Functioning

	PHQ-9	GAD-7	WSAS	DDS	DDS-EBU	DDS-PRD	DDS-RRD	DDS-IPD	SMP-BGL	SMP-EXR	SMP-EAT	HbA1c [†]
Time	-.32	-.17	.24	-.08	-.11	-.11	-.07	-.01	-.10	.07	-.13	-.68
Time x N	.20***	.14***	.21**	.02**	.02**	.02**	.02**	.02	-.02	-.02	-.02	.20
Time x E	-.08	-.09*	-.15*	-.01	-.01	-.01	-.01	-.00	.02	.02	.03	.01
Time x A	-.03	-.01	-.05	.00	.01	.01	.00	.01	.01	-.03	.01	-.11
Time x C	-.02	-.04	-.12	.00	.01	.01	-.00	-.01	.01	.01	.04*	-.03
Time x O	-.04	.00	.02	-.00	-.00	-.00	-.00	-.01	.03	.01	.01	.15

Note. N = Neuroticism; E = Extraversion; A = Agreeableness; C = Conscientiousness; O = Openness; PHQ-9 = Patient Health Questionnaire 9; GAD-7 = Generalized Anxiety Disorder scale; WSAS = Work and Social Adjustment Scale; DDS = Diabetes Distress Scale; DDS-EBU = Diabetes Distress Scale Emotional Burden; DDS-PRD = Diabetes Distress Scale Physician-related Distress; DDS-RRD = Diabetes Distress Scale Regimen-related Distress; DDS-IPD = Diabetes Distress Scale Interpersonal Distress; SMP-BGL = Self-Management Profile Blood Glucose Monitoring; SMP-EXR = Self-Management Profile Exercise; SMP-EAT = Self-Management Profile Healthy Eating; HbA1c = glycosylated haemoglobin.

* $p < .05$, ** $p < .01$, *** $p < .001$

[†] HbA1c test results were not collected at 3 months

Discussion

We used data from a large RCT of adults with T2DM to examine if personality factors moderated trajectories of psychological and physical health over a 12-month period. We hypothesised that individuals low in neuroticism and high in conscientiousness and extraversion would show the greatest improvements in health and functioning.

Supporting our hypotheses, neuroticism moderated changes in mental health and functioning over the 12-month period. For individuals low in neuroticism, measures of

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depression, anxiety, functional impairment and diabetes distress decreased over the year, with scores remaining elevated for people high in neuroticism. In line with Kotov et al.'s (2010) meta-analytical findings, extraversion showed no significant relation to the progression of depressive symptoms but moderated anxiety and functional impairment with decreases over 12-months only significant for high-extraversion individuals. Though conscientiousness was correlated with depression, functional impairment and diabetes management, it only affected increases in healthy eating across the year for highly conscientious individuals. Interestingly, no aspect of personality impacted HbA1c.

Neuroticism moderated most components of diabetes distress, including physician distress, emotional burden of diabetes and regimen distress. Although neuroticism reliably predicts psychopathology (Lahey, 2009), to our knowledge this is the first study to link neuroticism with diabetes distress. People who score high in neuroticism frequently respond to challenges with a range of negative emotional responses (Carver & Connor-Smith, 2010). Our findings suggest that a tendency towards negative affectivity may be central to emotional adjustment in diabetes, with those higher in neuroticism at greatest risk of experiencing sustained distress over time.

Our data align with previous studies showing a link between the Type D personality – characterised by high neuroticism and low extraversion (Howard & Hughes, 2012) – and increased risk of anxiety and depressive symptoms (Nefs et al., 2015). Moreover, our findings suggest that this personality ‘profile’ may also predict sustained functional impairment and diabetes distress in people with T2DM. In contrast with predictors of psychological distress that only emerge following T2DM diagnosis (e.g., length of diagnosis or onset of diabetes complications), personality traits can be assessed at the time of diagnosis. Early identification of patients with high neuroticism and low extraversion may help clinicians offer timely and targeted intervention before the onset of psychological morbidity

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and functional impairment and/or before symptoms become more severe and resistant to change. Regarding medical carers, such patient information could help modify the “scare” or “shame” approach when attempting to encourage better diabetes management (Macdonald & Campbell, 2017). Caregivers might find it particularly challenging to engage individuals with high neuroticism due to their inherent emotional lability. Emotion-focused techniques may prove useful and increase the probability that other therapeutic goals can be attained long-term (for a systematic review on the modifiability of neuroticism through intervention, see Roberts et al., 2017).

Our data establish novel insights into the role of personality in the wellbeing of people with T2DM. Contrary to Nefs and colleagues (2015), healthy eating was not moderated by neuroticism and extraversion in our sample. Instead, conscientiousness exerted a positive influence. With this, our study extends our understanding of the protective effect of conscientiousness against diabetes-related complications found in previous studies (Skinner et al., 2014) by demonstrating a link between high conscientiousness and healthy eating. Previous research reported associations between openness and HbA1c levels in individuals diagnosed with T2DM (Čukić et al., 2015). These interplays did not materialise in the current study, possibly due to differences in sample populations or assessment tools and due to incomplete HbA1c data available to this research. However, in line with our study, previous studies of well-controlled individuals with T2DM (Nefs et al., 2015; Skinner et al., 2014) also found that personality was unrelated to glycemic control, indicating that changes in self-management behaviour over time may not be directly linked to changes in HbA1c levels when HbA1c is already fairly well maintained. We believe that our data may lay the foundation for further longitudinal research into the interplay between conscientiousness, self-care behaviour and glycemic control in T2DM.

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Some limitations of this study are worth noting. Our sample was a group of existing study volunteers, who may differ from non-volunteers in terms of motivation. Moreover, our sample comprised individuals with relatively mild levels of psychological distress at baseline. While most individuals with T2DM experience the mild psychological distress reported by our sample (Nanayakkara et al., 2018), our findings may not generalise to more severely distressed individuals. Another limitation of this study is that we assessed personality factors after the study was completed. While personality is conceptualised as a relatively stable construct and the intervention reported in this study did not show a treatment effect, it is generally advised to assess the FFM before *and* after an intervention period. Lastly, it is possible that other factors apart from age and gender influence health trajectories such as additional comorbidities, insulin use, and medical complications. Future studies may expand on the research presented in this article and consider other potential covariates to isolate the unique effects of personality.

In sum, we examined the impact of the FFM for mental and physical health of individuals with T2DM over 12-months. To our knowledge, this is the first study to utilise latent growth models to examine the moderator effect of personality on distress, functional impairment and diabetes health outcomes in one sample. Neuroticism appears especially linked to trajectories of psychopathology, diabetes distress and functional impairment in people with T2DM. Personality screening may provide an indicator of mental health risk in those with newly diagnosed T2DM and may assist with optimising diabetes care by facilitating access to timely and targeted support.

Conflicts of Interest

The authors declare to have no conflicts of interests in the production of this work.

Acknowledgements

The authors gratefully acknowledge the dedication and input of all study participants.

The authors also acknowledge the support of the National Health and Medical Research Council in funding this research trial (NHMRC Grant 1083116).

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