**Abstract title:** HbA1c and diabetes-specific quality of life changes following structured type 1 diabetes education: exploratory latent profile analysis in the DAFNE*plus* trial

**Abstract:**

**Aim:** Dose Adjustment For Normal Eating (DAFNE) is an evidence-based, 5-day, group programme supporting adults with type 1 diabetes (T1D) to develop their self-management skills, optimising their glycaemic management, health and quality of life (QoL). Despite proven effectiveness, DAFNE ‘graduates’ find it challenging to maintain real-world benefits. Thus, a recent cluster randomised controlled trial (cRCT) compared DAFNE to enhanced DAFNE, aka DAFNE*plus*. The aims of this secondary analysis were to determine whether: a) there are meaningful clusters of participants with shared characteristics; b) identified clusters respond differently to DAFNE and DAFNE*plus* at 12-month follow-up in terms of HbA1c and diabetes-specific QoL.

**Methods:** Latent profile analysis was conducted using: age; HbA1c; hypoglycaemia awareness; diabetes-specific quality of life (ADDQoL-15 Average Weighted Impact (AWI)), diabetes distress (PAID-20); diabetes-specific positive well-being (W-BQ28); fear of hypoglycaemia (HFS-II); and satisfaction with diabetes management (DME-Q). Model fit indices were used to select number of clusters and, in each cluster, multilevel linear regression models were used to estimate the effect of DAFNEplus (versus DAFNE) on HbA1c and diabetes-specific QoL.

**Results:** A total of N=363 participants were included in the analysis (n=147 (40%) randomised to DAFNEplus). The final model included two clusters which were differentiated by overall worse (cluster 1) versus better (cluster 2) clinical and psychological indicator variables. At 12 months, there was a significant adjusted mean difference between arms in diabetes-specific QoL (ADDQoL: 0.81 *p*=0.01), favouring DAFNE*plus* (Cluster 1 only), but not in HbA1c (Figure 1).

**Conclusion:** These findings suggest that adults with T1D eligible for the DAFNE*plus* cRCT fit broadly into two clusters, with one cluster experiencing significant added benefit following DAFNE*plus* (compared to DAFNE) for QoL at 12 months; but not HbA1c. Findings may inform DAFNE*plus* programme eligibility and rollout considerations to enable QoL benefits for those adults with T1D with greatest unmet needs.

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