Supplementary materials to: Daydreaming and grandiose delusions: development of the Qualities of Daydreaming Scale

Behavioural and Cognitive Psychotherapy

Contents

[Final version of the Qualities of Daydreaming Scale (QuOD) 4](#_Toc158633001)

[Methods 5](#_Toc158633002)

[Study design and participants 5](#_Toc158633003)

[Assessment Measures 5](#_Toc158633004)

[Statistical analysis 6](#_Toc158633005)

[Results 7](#_Toc158633006)

[Table S1: Original item pool for QuOD. 8](#_Toc158633007)

[Table S2: Socio-demographic data and clinical data for all participants recruited. 9](#_Toc158633008)

[Table S3: Factor loading after EFA for The Qualities of Daydreaming Scale (QuOD), combined clinical and non-clinical group (n=2268). 10](#_Toc158633009)

[Table S4: Model comparison to determine measurement invariance between clinical and non-clinical groups for the Qualities of Daydreaming Scale (QuOD), n=2269. 11](#_Toc158633010)

[Table S5: Frequencies of endorsement at all levels for the Qualities of Daydreaming Scale (QuOD) items in the clinical group with and without grandiose delusions. 12](#_Toc158633011)

[Table S6: Frequencies of endorsement at all levels for the Qualities of Daydreaming Scale (QuOD) items in the non-clinical group with high versus low grandiosity. 13](#_Toc158633012)

[Table S7: Mean number of items endorsed on each subscale of the Qualities of Daydreaming Scale (QuOD) across different groups. 14](#_Toc158633013)

[Table S8: Mean factor scores and standard deviations for each subscale of the Qualities of Daydreaming Scale (QuOD) across clinical and non-clinical groups. 15](#_Toc158633014)

[Table S9: P-values for pairwise Wilcoxon post-hoc tests testing for significant differences between groups on each subscale of the Qualities of Daydreaming Scale (QuOD) 15](#_Toc158633015)

[References 16](#_Toc158633016)

## Final version of the Qualities of Daydreaming Scale (QuOD)

This questionnaire asks about your experience of daydreaming. Please indicate to what extent you agree/disagree with each of the following statements:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Do not agree | Agree a little | Agree moderately | Agree very much | Agree totally |
| 1 | My daydreams usually provide me with pleasant thoughts | 0 | 1 | 2 | 3 | 4 |
| 2 | My daydreams are often stimulating and rewarding | 0 | 1 | 2 | 3 | 4 |
| 3 | My daydreams offer me useful clues to tricky situations I face | 0 | 1 | 2 | 3 | 4 |
| 4 | My daydreams often leave me with a warm, happy feeling. | 0 | 1 | 2 | 3 | 4 |
| 5 | I daydream about what I would like to see happen in the future. | 0 | 1 | 2 | 3 | 4 |
| 6 | I find my daydreams are worthwhile and interesting to me. | 0 | 1 | 2 | 3 | 4 |
| 7 | Many of my daydreams have a realistic intensity. | 0 | 1 | 2 | 3 | 4 |
| 8 | Many of my daydreams are often just as lively as a good movie. | 0 | 1 | 2 | 3 | 4 |
| 9 | I often confuse my daydreams with real memories. | 0 | 1 | 2 | 3 | 4 |
| 10 | As an adult I (still) occasionally live in a make-believe world. | 0 | 1 | 2 | 3 | 4 |
| 11 | As an adult I spend a substantial part of my total waking day imagining. | 0 | 1 | 2 | 3 | 4 |

**Scoring**

Add together all 11 items to obtain the total daydreaming score.

Subscale scores may be obtained by adding together the following items:

* Pleasantness - items 1, 2, 3, 4, 5, 6
* Realism – items 7, 8, 9
* Frequency – items 10, 11

## Methods

### Study design and participants

Recruitment for the clinical cohort was supported by the National Institute for Health and Care Research (NIHR) Clinical Research Network (CRN). Participants were recruited by CRN clinical studies officers (CSOs) embedded in the clinical teams of 39 Mental Health NHS providers across England and Wales. CSOs approached potential participants meeting the inclusion criteria, assessed capacity to consent, gained informed consent, and supported participants to complete the questionnaires. Support was provided either face-to-face or via video or telephone contact.

Facebook adverts used to recruit the non-clinical participants were entitled ‘Experience of Feeling Exceptional’ and stated that questionnaires were about ‘experiences of feeling exceptional, special, or extraordinary’ that could include ‘special abilities, identity, power, or knowledge.’ Adverts and information sheets emphasised however that participants did not need to have had these experiences to participate.

Qualtrics is an online survey software that is accessible via desktop or mobile phone browser. Study procedures were in line with professional guidelines for online studies (British Psychological Society, 2021).

### Assessment Measures

Specific Psychotic Experiences Questionnaire – Grandiosity Subscale (SPEQ-G)

The items from the SPEQ-G are given below:

*Please read each statement and circle the option which best describes how much you agree with each statement, based on your thoughts and feelings over the last month:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Not at all | Somewhat | A great deal | Completely |
| 1. I am, or am destined to be, someone very important. | 0 | 1 | 2 | 3 |
| 2. Everyone is going to know about me because of my greatness. | 0 | 1 | 2 | 3 |
| 3. I am a very special or unusual person. | 0 | 1 | 2 | 3 |
| 4. I am much more unique than anyone else. | 0 | 1 | 2 | 3 |
| 5. I have special abilities that others do not. | 0 | 1 | 2 | 3 |
| 6. Everything I do is great. | 0 | 1 | 2 | 3 |
| 7. I have many great ideas. | 0 | 1 | 2 | 3 |
| 8. I have a special mission. | 0 | 1 | 2 | 3 |

#### Item pool development for the Qualities of Daydreaming Scale

To develop the QuOD the literature and associated measures on daydreaming, fantasising, and imaginal processes was reviewed including: The Future Oriented Repetitive Thought Scale (FoRT; Miranda et al., 2017); The Inventory of Childhood Imaginings (ICMI; Wilson & Barber, 1981); The Creative Experiences Questionnaire (CEQ; Merckelbach et al., 2001); Imaginal Processes Inventory-short form(Huba et al., 1982); Response to Positive Affect Questionnaire (RPA; Feldman et al., 2008); and the Maladaptive Daydreaming Scale (MDS;Somer et al., 2016).

The existing literature on daydreaming reports a three-factor structure for the type of daydreaming: ‘positive constructive’, ‘guilty-dysphoric’, and ‘poor attentional control’ daydreams (Mcmillan et al., 2013; Singer, 1975). Items that related to the first subtype were of particular interest, as we anticipated that daydreaming with positive or meaningful content would be most pertinent to grandiose delusions. Items were selected that captured the frequency of daydreaming, and that assessed how perceptually realistic or vivid the daydreams were, as it was anticipated that this might be a key factor in how plausible a daydream may feel to an individual.

Items were chosen to focus on current (as opposed to childhood) experiences because we were interested in the extent to which current daydreaming behaviour might be associated with grandiosity. Items that might confound with psychotic experience were excluded (for example the CEQ item “I have the feeling I can often predict things that are bound to happen in the future”). Once items for the initial item-pool had been identified, minor adaptations to wording were made to ensure consistency between items. Specifically, we used the word ‘daydreaming’ (rather than an alternative such as fantasizing) throughout (for example the CEQ item, ‘many of my fantasies have a realistic intensity’ was amended to ‘many of my daydreams have a realistic intensity’).

### Statistical analysis

#### Assessing the feasibility of factor recovery based on the observed dataset

As noted in the main paper, prior to factor analysis, Bartlett’s Test of Sphericity (Bartlett, 1954) and the Kaiser-Meyer Olkin Measure of Sampling Adequacy (KMO; Kaiser, 1974) were used to check for the feasibility of factor recovery based on the observed dataset. Bartlett’s test evaluates the null hypothesis that the correlation matrix is the identity matrix (i.e. variables are unrelated and hence unsuitable for factor analysis) - a significant value indicates that factor analysis may be suitable. KMO assesses the adequacy of the sample size for factor analysis, with values >0.8 indicating adequate sampling (Shrestha, 2021).

#### Parallel analysis

Parallel analysis based on polychoric correlations (assuming ordinal data) was used to identify the number of factors to retain. Retention of factors was based on comparisons between the eigenvalues of the observed data and random data(Ruscio & Roche, 2012).

#### Exploratory and Confirmatory Factor Analysis

Exploratory factor analysis was conducted using polychoric correlations, oblique rotation, and using the maximum likelihood estimator. Confirmatory factor analysis used the weighted least square mean and variance adjusted estimator (wlsmv). These specifications were selected as data were assumed to be categorical in nature(Brown, 2006).

#### Criteria for discarding poor-fitting items in exploratory factor analysis

Poor-fit criteria included weak factor loading (<0.3), low communalities (<0.3), cross-loading (<0.2) onto multiple factors, and poor theoretical fit with factors(Boateng et al., 2018). Prior to EFA, items were removed if there was multicollinearity between items (correlation coefficient of >0.9). Items were also removed from the final item bank if there was consensus agreement between clinical psychologists that items were very similar in meaning.

#### Assessing the goodness of fit of the measurement model

To judge the fit of the measurement model we used the comparative fit index (CFI), the Tucker-Lewis index (TLI), the standardised root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Thresholds were: for acceptable fit - CFI and TLI >0.9 (Kline, 2005)and SRMR and RMSEA <0.08 (Hu & Bentler, 1999; MacCallum et al., 1996) ; for good fit - CFI and TLI >0.95, SRMR<0.08, and RMSEA <0.06(Hu & Bentler, 1999).

#### Assessing measurement invariance

We assessed measurement invariance using the following consecutive steps recommended for categorical data(Svetina & Rutkowski, 2020; Wu & Estabrook, 2016): i) configural invariance test (equivalent specification of factor invariance); ii) threshold invariance tests (invariant thresholds); iii) metric invariance tests (invariant thresholds and factor loadings); and iv) strong/scalar invariance test (invariant thresholds, factors loadings, and intercepts). At the scalar invariance level, the item factor loadings, item thresholds, and item intercepts are constrained in tandem, but the factor means are allowed to vary. Measurement invariance achieved at the scalar level indicates that the factor scores are not influenced by group differences on the items and that latent mean differences capture all observed mean differences in the shared variance of the items (Putnick et al., 2016). Thus, factor scores between groups are comparable only if the scalar invariant condition is met. To determine whether MI has been achieved at a specific level, changes in CFI (ΔCFI), RMSEA (ΔRMSEA), and SRMR (ΔSRMR) between model fit at that level and the preceding one are considered.

We adopted those thresholds recommended by Svetina & Rutkowski (2017) (ΔRMSEA=0.05 at metric level, and ΔRMSEA=0.01 and ΔCFI=-0.002 at scalar level) as these were developed for categorical data, with more than 1 factor, and for uneven sample sizes between groups. It is noted however that these criteria were developed specifically for when making a large number of group comparisons (10 to 20 groups) whereas we only have two groups (clinical and non-clinical). As such the thresholds are likely to be overly conservative and will be considered with some flexibility.

#### Testing the psychometric properties of the measures

When assessing internal consistency of the measures, we used ordinal alpha, assuming that the data were ordinal in nature(Zumbo et al., 2007).

#### Testing associations between daydreaming proneness and grandiosity

As noted in the main paper, pairwise associations between daydreaming proneness and measures of grandiosity were assessed using Pearson’s correlations. To conduct these calculations, we used factor scores for latent variables and raw scores for time thinking about the belief and delusion conviction. In the structural equation modelling, stepwise backward elimination was used to remove non-significant predictors. Predictors with negative coefficients (against the expected direction of effect and direction demonstrated in the correlation) were further removed to address possible suppressor effects (Smith et al., 1992).

#### Missing data

Only participants with complete data were included in the analysis.

## Results

In the clinical group, a total of 802 participants were recruited. Three withdrew consent and one was removed during data cleaning, leaving 798 participants. In the non-clinical group, a total of 6935 responses were recorded with 4518 remaining after data cleaning. Participants were included in the measure development analyses if they had complete item-pool data for the QuOD (n=770 from the clinical cohort, and n=3767 from the non-clinical group).

#### Item removal during EFA

As described in the main paper, one item, Q14 was removed prior to EFA as it was highly correlated with another item Q12. Subsequently, following criteria for item removal, exploratory factor analysis led to the removal of three further items. Q5 *“I am never bored because I start daydreaming when things get boring”* and Q15 “*When I picture something good happening to me, I get so caught up in the moment that I don’t pay attention to other things”* were removed as they did not fit the factor definitions of the factor they loaded onto. Q1 *“Many of my friends and/or relatives do not know that I have such detailed daydreams”* was also removed as its focus on other peoples’ awareness was less in keeping with the participant experience as the focus of the factor.

### Table S1: Original item pool for QuOD.

|  |  |
| --- | --- |
| **Item** | **Item content** |
| Q1 | Many of my friends and/or relatives do not know that I have such detailed daydreams. |
| Q2 | Many of my daydreams have a realistic intensity. |
| Q3 | Many of my daydreams are often just as lively as a good movie. |
| Q4 | I often confuse my daydreams with real memories. |
| Q5 | I am never bored because I start daydreaming when things get boring. |
| Q6 | As an adult I (still) occasionally live in a make-believe world. |
| Q7 | As an adult I spend a substantial part of my total waking day imagining. |
| Q8 | My daydreams usually provide me with pleasant thoughts |
| Q9 | My daydreams are often stimulating and rewarding |
| Q10 | My daydreams offer me useful clues to tricky situations I face |
| Q11 | My daydreams often leave me with a warm, happy feeling. |
| Q12 | I daydream about what I would like to see happen in the future. |
| Q13 | I find my daydreams are worthwhile and interesting to me. |
| Q14 | I daydream about the things that I want happening to me in the future. |
| Q15 | When I picture something good happening to me, I get so caught up in the moment that I don’t pay attention to other things. |

*Items 1-5 were adapted from the Creative Experiences Questionnaire* (Merckelbach et al., 2001)*, 6-7 from the Inventory of Childhood Memories and Imaginings* (Wilson & Barber, 1981)*, 8-13 from the Imaginal Process Inventory - Short Form* (Huba et al., 1982)*, and 14-15 from the Future-Oriented Repetitive Thought scale* (Miranda et al., 2017)*.*

### Table S2: Socio-demographic data and clinical data for all participants recruited.

|  |  |  |
| --- | --- | --- |
|  | **Non-clinical group (n=4518)** | **Clinical group** **(n=798)** |
| **Age** Mean (SD)  |  | 44.34 (19.08) | 43.35 (13.83) |
| **Gender**n (%) | FemaleMaleNon-binaryOther/Prefer not to say | 2848 (63.04)1539 (34.06)94 (2.08)37 (0.82) | 313 (39.27)475 (59.52)5 (0.63)5 (0.63) |
| **Ethnicity** n (%) | White (any)Black (any)Asian (any)Multiple Ethnic Group/Other Prefer not to say  | 4004 (88.62)37 (0.82)152 (3.36)253 (5.60)72 (1.59) | 614 (76.94)76 (9.52)52 (6.52)55 (6.89)1 (0.13) |
| **Marital status**n(%) | SingleCohabitingMarried/civil partnershipSeparated/divorcedWidowedPrefer not to say | 1717 (38.00)556 (12.31)1666 (36.87)367 (8.12)131 (2.90)81 (1.79) | 544 (68.17)36 (4.51)111 (13.91)92 (11.53)15 (1.88)0 |
| **Employment** n(%) | Employed FTEmployed PTHousewife/husbandRetiredStudentSelf-employedUnemployedVoluntary work (option in study 3 only)Prefer not to say | 1175 (26.00)570 (12.62)76 (1.68)888 (19.65)947 (20.96)434 (9.61)350 (7.75)-78 (1.73) | 76 (9.55)56 (7.04)10 (1.26)68 (8.54)35 (4.40)17 (2.14)485 (60.93)49 (6.16)0 |
| **SPEQ-G total**   Mean (SD) Range  |  | 4.72 (4.37)0-24 | 6.26 (6.29)0-24 |
| **Hours per day spent thinking about the grandiose belief (where present)** n (%) | 0-4 hours5-8 hours9-12 hours13-16 hours17-20 hours21-24 hoursPrefer not to sayNot applicable (no grandiose belief) | 1504 (33.3)157 (3.5) 58 (1.3)26 (0.6)16 (0.4)27 (0.6)02730 (60.4) | 174 (21.8)69 (8.6)36 (4.5)18 (2.3)16 (2.0)57 (7.1)5 (0.6)424 (53.1) |
| **Grandiose belief conviction, where a grandiose belief was present (0-100%)** Mean (SD) Range |  | 64.5 (29.0)0-100% | 67.2 (31.6)0-100% |
| **History of mental health difficulties?**  n (%) | YesNoPrefer not to say | 2273 (50.31)2140 (47.37)105 (2.32) |  |
| **If yes are these ongoing?**  n (%) | YesNoPrefer not to say | 1474 (64.85)745 (32.78)54 (2.38) |  |
| **Diagnosis**  n (%) | SchizophreniaSchizoaffective disorderDelusional disorderBrief psychotic disorderPsychotic disorder NOSBipolar affective disorderPsychotic depressionOther | - | 279 (34.96)125 (15.66)18 (2.26)14 (1.75)157 (19.67)192 (24.06)8 (1.00)3 (0.38) |
| **MH service recruited from** n (%) | Inpatient unitForensic inpatientEIP serviceAdult CMHTForensic adult CMHTOther | - | 156 (19.55)27 (3.39)141 (17.67)434 (54.39)5 (0.63)35 (4.39) |

Table 1 in the main paper shows the socio-demographic and clinical data for the participants who provided complete QuOD data and hence were included in the measure development analyses. This table shows the equivalent information for *all* participants (including those who did not provide complete QuOD data).

### Table S3: Factor loading after EFA for The Qualities of Daydreaming Scale (QuOD), combined clinical and non-clinical group (n=2268).

|  |  |  |
| --- | --- | --- |
| **Item** | **Item content** | **Factor Loadings** |
|  |  | **Pleasantness**  | **Realism**  | **Frequency** |
| Q8 | My daydreams usually provide me with pleasant thoughts | 0.90 |  |  |
| Q9 | My daydreams are often stimulating and rewarding | 0.87 |  |  |
| Q10 | My daydreams offer me useful clues to tricky situations I face | 0.55 |  |  |
| Q11 | My daydreams often leave me with a warm, happy feeling. | 0.93 |  |  |
| Q12 | I daydream about what I would like to see happen in the future. | 0.65 |  |  |
| Q13 | I find my daydreams are worthwhile and interesting to me. | 0.82 |  |  |
| Q2 | Many of my daydreams have a realistic intensity. |  | 0.96 |  |
| Q3 | Many of my daydreams are often just as lively as a good movie. |  | 0.62 |  |
| Q4 | I often confuse my daydreams with real memories. |  | 0.45 | 0.50 |
| Q6 | As an adult I (still) occasionally live in a make-believe world. |  |  | 0.82 |
| Q7 | As an adult I spend a substantial part of my total waking day imagining. |  |  | 0.68 |

### Table S4: Model comparison to determine measurement invariance between clinical and non-clinical groups for the Qualities of Daydreaming Scale (QuOD), n=2269.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Models** | **Model Comparison** | **K** | **χ2** | **DF** | **RMSEA** | **SRMR** | **CFI** |
| Configural | - | 116 | 735.959 | 82 | 0.084 | 0.036 | 0.987 |
| Weak - Threshold  | Threshold vs Configural | 138 | 812.591 | 104 | 0.078Δ=-0.006 | 0.036Δ=0 | 0.986Δ=-0.001 |
| Weak - Metric  | Metric vs Threshold | 141 | 812.779 | 112 | 0.074Δ=-0.004 | 0.036Δ=0 | 0.986Δ=0 |
| Strong - Scalar  | Scalar vs Metric | 133 | 880.996 | 120 | 0.075Δ=+0.001 | 0.037Δ=0.001 | 0.985Δ=-0.001 |

*K=number of model parameters; fit indices given are all scaled scores.*

### Table S5: Frequencies of endorsement at all levels for the Qualities of Daydreaming Scale (QuOD) items in the clinical group with and without grandiose delusions.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Frequencies of endorsement of items at each response level; n (%)** |
| **Factor** | **Item** | **Item content**  | **Clinical group with grandiose delusions (n=360)** | **Clinical group without grandiose delusions (n=406)** |
| **0** | **1** | **2** | **3** | **4** | **0** | **1** | **2** | **3** | **4** |
| Pleasantness | Q8 | My daydreams usually provide me with pleasant thoughts | 108(30.00) | 75 (20.83) | 77 (21.39) | 46 (12.78) | 54 (15.00) | 173(42.61) | 90(22.17) | 78(19.21) | 34(8.37) | 31(7.64) |
| Q9 | My daydreams are often stimulating and rewarding | 112(31.11) | 74 (20.56) | 72 (20.00) | 42 (11.67) | 60 (16.67) | 223(54.93) | 76(18.72) | 59(14.53) | 28(6.90) | 20(4.93) |
| Q10 | My daydreams offer me useful clues to tricky situations I face | 118(32.78) | 55 (15.28) | 63 (17.50) | 55 (15.28) | 69 (19.17) | 234(57.64) | 75 (18.47) | 56(13.79) | 21(5.17) | 20(4.93) |
| Q11 | My daydreams often leave me with a warm, happy feeling. | 99(27.50) | 79 (21.94) | 75 (20.83) | 45 (12.50) | 62 (17.22) | 208(51.23) | 95 (23.40) | 50(12.32) | 27(6.65) | 26(6.40) |
| Q12 | I daydream about what I would like to see happen in the future. | 74 (20.56) | 49 (13.61) | 68 (18.89) | 67 (18.61) | 102 (28.33) | 137(33.74) | 95 (23.40) | 74(18.23) | 48(11.82) | 52(12.81) |
| Q13 | I find my daydreams are worthwhile and interesting to me. | 75 (20.83) | 55 (15.28) | 70 (19.44) | 65 (18.06) | 95 (26.39) | 161 (39.66) | 98 (24.14) | 57 (14.04) | 45(11.08) | 45(11.08) |
| Realism | Q2 | Many of my daydreams have a realistic intensity. | 100 (27.78) | 51 (14.17) | 51 (14.17) | 59 (16.39) | 99 (27.50) | 184(45.32) | 58 (14.29) | 55 (13.55) | 47 (11.58) | 62 (15.27) |
| Q3 | Many of my daydreams are often just as lively as a good movie. | 116 (32.22) | 46 (12.78) | 51 (14.17) | 55 (15.28) | 92 (25.56) | 216 (53.20) | 49 (12.07) | 50 (12.32) | 39 (9.61) | 52 (12.81) |
| Q4 | I often confuse my daydreams with real memories. | 159(44.17) | 74 (20.56) | 35 (9.72) | 34 (9.44) | 58 (16.11) | 260 (64.04) | 51 (12.56) | 35 (8.62) | 24 (5.91) | 36 (8.87) |
| Frequency | Q6 | As an adult I (still) occasionally live in a make-believe world. | 146 (40.56) | 61 (16.94) | 55 (15.28) | 39 (10.83) | 59 (16.39) | 249 (61.33) | 56 (13.79) | 43 (10.59) | 27 (6.65) | 31 (7.64) |
| Q7 | As an adult I spend a substantial part of my total waking day imagining. | 130 (36.11) | 66 (18.33) | 61 (16.94) | 58 (16.11) | 45 (12.50) | 223 (54.93) | 74 (18.23) | 59 (14.53) | 25 (6.16) | 25 (6.16) |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

### Table S6: Frequencies of endorsement at all levels for the Qualities of Daydreaming Scale (QuOD) items in the non-clinical group with high versus low grandiosity.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Frequencies of endorsement of items at each response level; n (%)** |
| **Factor** | **Item** | **Item content**  | **Non-clinical group with high grandiosity (n=1374)** | **Non-clinical group with low grandiosity (n=2393)** |
| **0** | **1** | **2** | **3** | **4** | **0** | **1** | **2** | **3** | **4** |
| Pleasantness | Q8 | My daydreams usually provide me with pleasant thoughts | 312 (22.71) | 389 (28.31) | 272 (19.80) | 255 (18.56) | 146 (10.63) | 636 (26.58) | 844 (35.27) | 498 (20.81) | 309 (12.91) | 106 (4.43) |
| Q9 | My daydreams are often stimulating and rewarding | 385 (28.02) | 346 (25.18) | 295 (21.47) | 202 (14.70) | 146 (10.63) | 863 (36.06) | 864 (36.11) | 407 (17.01) | 183 (7.65) | 76 (3.18) |
| Q10 | My daydreams offer me useful clues to tricky situations I face | 511 (37.19) | 331 (24.09) | 249 (18.12) | 179 (13.03) | 104 (7.57) | 1228 (51.32) | 657 (27.46) | 332 (13.87) | 139 (5.81) | 37 (1.55) |
| Q11 | My daydreams often leave me with a warm, happy feeling. | 366 (26.64) | 455 (33.11) | 277 (20.16) | 185 (13.46) | 91 (6.62) | 797 (33.31) | 951 (39.74) | 420 (17.55) | 173 (7.23) | 52 (2.17) |
| Q12 | I daydream about what I would like to see happen in the future. | 254 (18.49) | 308 (22.42) | 273 (19.87) | 324 (23.58) | 215 (15.65) | 544 (22.73) | 809 (33.81) | 505 (21.10) | 404 (16.88) | 131 (5.47) |
| Q13 | I find my daydreams are worthwhile and interesting to me. | 268 (19.51) | 387 (28.17) | 290 (21.11) | 262 (19.07) | 167 (12.15) | 623 (26.03) | 908 (37.94) | 506 (21.15) | 257 (10.74) | 99 (4.14) |
| Realism | Q2 | Many of my daydreams have a realistic intensity. | 418 (30.42) | 276 (20.09) | 236 (17.18) | 246 (17.90) | 198 (14.41) | 1029 (43.00) | 566 (23.65) | 397 (16.59) | 255 (10.66) | 146 (6.10) |
| Q3 | Many of my daydreams are often just as lively as a good movie. | 541 (39.37) | 252 (18.34) | 181 (13.17) | 199 (14.48) | 201 (14.63) | 1267 (52.95) | 470 (19.64) | 298 (12.45) | 219 (9.15) | 139 (5.81) |
| Q4 | I often confuse my daydreams with real memories. | 942 (68.56) | 209 (15.21) | 102 (7.42) | 56 (4.08) | 65 (4.73) | 1858 (77.64) | 334 (13.96) | 110 (4.60) | 64 (2.67) | 27 (1.13) |
| Frequency | Q6 | As an adult I (still) occasionally live in a make-believe world. | 573 (41.70) | 376 (27.37) | 195 (14.19) | 126 (9.17) | 104 (7.57) | 1163 (48.60) | 729 (30.46) | 287 (11.99) | 127 (5.31) | 87 (3.64) |
| Q7 | As an adult I spend a substantial part of my total waking day imagining. | 495 (36.03) | 401 (29.18) | 234 (17.03) | (144 10.48) | 100 (7.28) | 1102 (46.05) | 747 (31.22) | 331 (13.83) | 152 (6.35) | 61 (2.55) |

### Table S7: Mean number of items endorsed on each subscale of the Qualities of Daydreaming Scale (QuOD) across different groups.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | **Mean (SD) number of items endorsed** |
|  |
| QuOD subscale | Clinical group with grandiose delusions (n=360) | Clinical group without grandiose delusions(n=406) | Non-clinical group with high grandiosity (n=1374) | Non-clinical group with low grandiosity (n=2393) |
| Pleasantness (out of 6 items) | 3.30 (2.36) | 1.90 (2.13) | 2.86 (2.32) | 1.94 (2.11) |
| Realism (out of 3 items) | 1.48 (1.16) | 0.99 (1.16) | 1.08 (1.09) | 0.69 (0.97) |
| Frequency (out of 2 items) | 0.88 (0.88) | 0.52 (0.77) | 0.66 (0.82) | 0.44 (0.71) |
| Total (out of 11 items) | 5.66 (3.73) | 3.40 (3.42) | 4.60 (3.63) | 3.06 (3.21) |

### Table S8: Mean factor scores and standard deviations for each subscale of the Qualities of Daydreaming Scale (QuOD) across clinical and non-clinical groups.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Daydreaming Factor** | **Group** | **Factor mean**  | **Standard Deviation** | **Significantly different grouping\*** |
| Pleasant | Clinical grandiose delusions  | 0.37 | 0.96 | 1 |
| Non-clinical high grandiosity | 0.22 | 0.84 | 2 |
| Non-clinical low grandiosity  | -0.11 | 0.73 | 3 |
| Clinical without grandiose delusions | -0.23 | 0.87 | 4 |
| Frequency | Clinical grandiose delusions | 0.38 | 0.79 | 1 |
| Non-clinical high grandiosity | 0.20 | 0.68 | 2 |
| Non-clinical low grandiosity  | -0.09 | 0.62 | 3 |
| Clinical without grandiose delusions  | -0.14 | 0.73 | 3 |
| Realism | Clinical grandiose delusions  | 0.47 | 0.87 | 1 |
| Non-clinical high grandiosity  | 0.22 | 0.76 | 2 |
| Clinical without grandiose delusions  | -0.06 | 0.85 | 3 |
| Non-clinical low grandiosity | -0.11 | 0.69 | 3 |
| Higher order  | Clinical grandiose delusions  | 0.40 | 0.72 | 1 |
| Non-clinical high grandiosity | 0.22 | 0.63 | 2 |
| Non-clinical low grandiosity  | -0.11 | 0.57 | 3 |
| Clinical without grandiose delusions | -0.14 | 0.67 | 3 |

\* For each daydreaming factor, we have arranged the group in order from highest factor mean to lowest. In the “significantly different grouping” column, groups with the same number allocation have factor means that are not significantly different from one another. For example, for the pleasant daydreaming factor, all groups are significantly different from all other groups. For the other factors however, the non-clinical low grandiosity group and clinical without grandiose delusions groups are not significantly different from each other. The p-values for each pairwise comparison are given in Table S9.

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### Table S9: P-values for pairwise Wilcoxon post-hoc tests testing for significant differences between groups on each subscale of the Qualities of Daydreaming Scale (QuOD)

|  |  |  |
| --- | --- | --- |
| **Daydreaming factor** |  | **Group** |
| **Group** | Clinical with grandiose delusions | Clinical without grandiose delusions | Non-clinical high grandiosity |
| Pleasantness | Clinical without grandiose delusions | *<0.0001* | - | - |
| Non-clinical high grandiosity | *0.0025* | *<0.0001* | - |
| Non-clinical low grandiosity | *<0.0001* | *0.00079* | *<0.0001* |
| Frequency | Clinical without grandiose delusions | *<0.0001* | - | *-* |
| Non-clinical high grandiosity | *0.00014* | *<0.0001* | *-* |
| Non-clinical low grandiosity | *<0.0001* | 0.060 | *<0.0001* |
| Realism | Clinical without grandiose delusions | *<0.0001* | - | *-* |
| Non-clinical high grandiosity | *<0.0001* | *<0.0001* | *-* |
| Non-clinical low grandiosity | *<0.0001* | 0.52 | *<0.0001* |
| Higher Order | Clinical without grandiose delusions | *<0.0001* | - | *-* |
| Non-clinical high grandiosity | *<0.0001* | *<0.0001* | *-* |
| Non-clinical low grandiosity | *<0.0001* | 0.24 | *<0.0001* |

*NB: p-values indicating significant differences are given in italics.*

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