Table S1. *Class Enumeration Fit Statistics for Latent Class Analysis of Male Eating Disorder Symptom Patterns in the Growing Up Today Study*

| Classes | Free parameters | LL | BIC | Likelihood Ratio $\chi^2$ Goodness-of-Fit Test (df) | $\chi^2$ *p* | Bayes Factor | cmP | LMR-LRT *p* |
|---|---|---|---|---|---|---|---|---|
| Ages 13-15 | | | | | | | | |
| 1 | 7 | -6098.67 | 12264.20 | 210.12(61) | 0.00 | <1 | 0.00 | -- |
| 2 | 15 | -5439.35 | **11021.98** | 54.93(55) | **0.48** | <10 | **1.00** | **.00** |
| 3 | 23 | -5408.83 | 11037.37 | 13.06(48) | **1.00** | **>10** | 0.00 | **.00** |
| 4 | 31 | -5405.34 | 11106.80 | 6.40(40) | **1.00** | **>10** | 0.00 | **.01** |
| 5 | 39 | -5404.12 | 11180.78 | 4.03(32) | **1.00** | -- | 0.00 | 1.00 |
| Ages 16-18 | | | | | | | | |
| 1 | 7 | -5324.04 | 10711.82 | 358.78(59) | 0.00 | <1 | 0.00 | -- |
| 2 | 15 | -4943.25 | **10023.05** | 82.35(54) | 0.01 | <10 | **0.91** | **.00** |
| 3 | 23 | -4909.09 | 10027.57 | 37.63(48) | **0.86** | **>10** | 0.09 | **.00** |
| 4 | 31 | -4902.25 | 10086.74 | 24.36(40) | **0.98** | **>10** | 0.00 | .45 |
| 5 | 39 | -4895.60 | 10146.26 | 11.44(32) | **1.00** | -- | 0.00 | .51 |
| Ages 19-22 | | | | | | | | |
| 1 | 7 | -6441.72 | 12946.11 | 174.97(63) | 0.00 | <1 | 0.00 | -- |
| 2 | 15 | -6011.26 | **12156.83** | 95.13(55) | 0.00 | **>10** | **1.00** | **.00** |
| 3 | 23 | -5980.75 | 12167.45 | 59.00(48) | 0.00 | **>10** | 0.00 | **.04** |
| 4 | 31 | -5961.13 | 12199.85 | 19.72(40) | 0.00 | **>10** | 0.00 | .30 |
| 5 | 39 | -5953.56 | 12256.34 | 12.74(32) | **1.00** | -- | 0.00 | 1.00 |
| Ages 23-26 | | | | | | | | |
| 1 | 7 | -2368.60 | 4796.14 | 127.73(64) | 0.00 | <1 | 0.00 | -- |
| 2 | 15 | -2321.19 | **4768.68** | 33.21(56) | **0.99** | **>10** | **1.00** | **.00** |
| 3 | 23 | -2310.74 | 4815.15 | 12.369(48) | **0.31** | **>10** | 0.00 | **.00** |
| 4 | 31 | -2306.82 | 4874.68 | 4.53(40) | **1.00** | **>10** | 0.00 | .21 |
| 5 | 39 | -2305.05 | 4938.49 | 0.96(32) | **1.00** | -- | 0.00 | 1.00 |

Note: Indicators of good model fit are in bold. BIC = Bayesian Information Criterion; cmP = Correct Model Probability; LL= Log-Likelihood; LMR-LRT= Lo-Mendell-Rubin Likelihood Ratio Test.

**SUPPLEMENT 1**

**Class Enumeration**

Due to the longitudinal design of the Growing Up Today Study (GUTS), participants contributed observations for the ages they were when they completed each questionnaire from 1999-2007. Observations were grouped into four periods: 13-15 years old, 16-18 years old, 19-22 years old, and 23-26 years old. Participants were included if they reported at least one observation of the latent variable indicators and the covariate during any of the age periods. One- to 5-class models were estimated in each age period to identify patterns of body image concerns and eating disorder behaviors. Missing data on the body image and eating disorder behavior indicator variables were accounted for using full information maximum likelihood in Mplus version 7.3. Latent class analysis (LCA) models at each age period adjusted for current weight status and accounted for repeated measures within individuals and sibling clusters in GUTS. The final class solutions at each age period were selected (1) based on substantive and clinical relevance[1,2]; (2) embodiment of homogeneity (i.e., strong characterization of a group based on item response) and separation (i.e., item response distinguishes at least one pair of subgroups)[3]; and (3) guided by recommended LCA fit statistics, including the log-likelihood (LL) value, the Bayesian Information Criterion (BIC), the model $\chi^2$ goodness-of-fit test, and the Lo-Mendell-Rubin likelihood ration test (LMR-LRT)[4,5]. Following the recommendations of Masyn (2013), BIC values were used to calculate the Bayes Factor (BF) and correct model probability (cmP). Greater LL values, lower BIC values, non-significant $\chi^2$ goodness-of-fit statistics, significant LMR-LRT values, BF values > 10, and cmP values closer to 1 indicate better model fit [5-8]. Because it was an open question as to whether classes would vary by age, longitudinal

measurement invariance (i.e., the requirement that class structures are statistically equivalent across age periods) was not a requirement of the analysis.[4,5]

The class enumeration fit statistics (displayed in Table S1) did not consistently support one latent class solution over the others at each age period. However, previous research strongly discourages using fit statistics alone to determine LCA model solutions[1,2,4]. Thus, we considered LCA solutions that were substantively and clinically relevant based on prior eating disorder literature (e.g., similarity to established eating disorders, consistency with empirical and theoretical work on eating disorders in males), exhibited good homogeneity and separation of response patterns, and received some support from the fit statistics. Using these criteria, we selected the four-class LCA solution at each age period.

References


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