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Are Intervention-Design Characteristics More Predictive than Baseline Participant Characteristics on Participant Attendance to a Paediatric, Community Weight Management Programme?

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BACKGROUND: Approximately 50% of participants complete a paediatric weight management programme, yet the predictors of attendance and dropout are inconsistent. This study investigates subject and intervention-design characteristics associated with attendance at a group based, family weight management programme. SETTING AND SUBJECTS: Secondary data analysis of 2948 subjects (Age 10.4 \pm 2.8 years, BMI 26.0 \pm 5.7kg/m2, Standardised BMI (BMI SDS) 2.48 \pm 0.87, White 70.3%) from 244 MoreLife (UK) programmes. Subjects attend weekly for 10-12 weeks, sessions last 2-3 hours. Sessions include lifestyle guidance and physical activity. METHOD: Subject characteristics (demographics, psychological (body satisfaction & self-esteem) and sedentary behaviour) were gathered at first contact and BMI SDS was noted weekly. Intervention-design characteristics were recorded (year, length (weeks), group size, age segregation and day of session). Attendance was calculated as total number of sessions attended (%). Multivariate linear regression examined predictors of attendance and multiple imputation countered missing data. RESULTS: Average attendance was 59.4% \pm 29.3%. Baseline subject characteristics were 'poor' predictors of attendance. Intervention year, group size and day of session significantly predicted attendance (Tables 1 & 2). Yet, the most predictive marker of attendance was a change in BMI SDS during the programme (B = -0.38, 95% CI = -0.43 - -0.33). CONCLUSION: A reduction in BMI was seen to predict greater attendance. However, baseline subject characteristics were weakly associated with attendance, refuting past findings. Dominant intervention characteristics (large groups, weekend sessions and recent delivery) predicted lower attendance. Future programmes may be better informed.

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| | B value | SE B | 95% Confidence Interval | |
|-----------------------------------|---------|------|----------------------------|-------|
| | | | Lower | Upper |
| Constant | .726 | .052 | .624 | .828 |
| Length of Intervention | 021 | .012 | 045 | .002 |
| Year of Intervention | 030*** | .005 | 039 | 020 |
| Intervention Group Size | 041*** | .011 | 063 | 019 |
| Intervention Age Groups | 004 | .011 | 025 | .017 |
| Day of Intervention | 052*** | .012 | 077 | 028 |
| Gender | .000 | .011 | 021 | .021 |
| Age (Years) | .004* | .002 | .000 | .008 |
| IMD Score | 001** | .000 | 002 | .000 |
| White Ethnicity | 008 | .014 | 036 | .021 |
| Pre-Existing Medical Condition | 009 | .020 | 049 | .030 |
| BMI SDS | 014* | .006 | 026 | 001 |
| Self-Esteem | .003 | .005 | 007 | .014 |
| Sedentary Behaviour | 005 | .004 | 013 | .003 |
| Body Satisfaction | .000 | .000 | 001 | .001 |
| Change in BMI SDS | 377*** | .025 | 427 | 328 |

Note: ΔR² = 0.092. *p≤.05, **p ≤.01, ***p ≤.001

Fig. 1: Predictors of Attendance - Imputed Data

| | B value | SE B | 95% Confidence Interval | |
|-----------------------------------|---------|------|----------------------------|-------|
| | | | Lower | Upper |
| Constant | .721 | .078 | .569 | .873 |
| Length of Intervention | 049* | .021 | 090 | 007 |
| Year of Intervention | 021* | .008 | 037 | 005 |
| Intervention Group Size | 049* | .020 | 089 | 009 |
| Intervention Age Groups | 032 | .021 | 074 | .010 |
| Day of Intervention | 055* | .024 | 102 | 008 |
| Gender | .003 | .018 | 032 | .038 |
| Age (Years) | .004 | .003 | 002 | .011 |
| IMD Score | 001 | .001 | 002 | .001 |
| White Ethnicity | .018 | .019 | 019 | .055 |
| Pre-Existing Medical Condition | 024 | .037 | 096 | .048 |
| BMI SDS | 029** | .010 | 050 | 009 |
| Self-Esteem | .009 | .008 | 006 | .024 |
| Sedentary Behaviour | .001 | .005 | 009 | .010 |
| Body Satisfaction | .001 | .000 | .000 | .002 |
| Change in BMI SDS | 350*** | .039 | 427 | 273 |

Note: ∆R² = 0.095. *p≤.05, **p ≤.01, ***p ≤.001

Fig. 2: Predictors of Attendance - Complete Case Data - Purpose of Sensitivity Analysis