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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