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Predicting outcomes from engagement with specific components of an internet-based physical activity intervention with financial incentives: process analysis of a cluster randomized controlled trial

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Multimedia Appendix 5. Univariable and multivariable Cox regression analyses defining nonusage attrition as occurring at the first lapse from use of 1 month or longer

Defining non-usage attrition as occurring at the first lapse from use of one month (30 days) or longer, the median usage (i.e. the time by which 50% of participants' usage had lapsed) was 121 days for use of the physical activity monitoring system to record daily activity (n=211/422) and 46 days for use of the website (n=209/418). Non-usage attrition of the physical activity monitoring system to record daily activity occurred for 55% of participants (n=232/422), and website non-usage attrition occurred for 82% of participants (n=344/418).

Univariable and multivariable Cox regression analyses are presented in tables 6.1 and 6.2 below. The multivariable analysis for use of the physical activity monitoring system to record daily activity showed that having higher levels of identified regulation at baseline (hazard ratio [HR]=0.77, 95% CI: 0.66, 0.89) reduced the risk of attrition. In contrast, having a higher perception of the safety of the workplace environment for physical activity at baseline (HR=1.09, 95% CI: 1.02, 1.17) was associated with a higher risk of attrition. The multivariable analysis for website use showed that being older (HR=0.93, 95% CI: 0.87, 1.00), or having higher levels of physical activity self-efficacy at baseline (HR=0.89, 95% CI: 0.79, 0.99) reduced the risk of attrition. In contrast, having a higher perception of the safety of the workplace environment for physical activity at baseline (HR=1.07, 95% CI: 1.02, 1.12) was associated with a higher risk of attrition. Formal tests and visual inspection of plots showed no evidence for violation of the proportional-hazards assumption for the multivariable models.

Table 5.1. Univariable and multivariable Cox regression showing association of non-usage attrition risk for recording daily activity via the physical activity monitoring system with baseline socio-demographic, psychosocial and environmental variables, and physical activity

OUTCOME	Univariable analysis			Multivariable analysis ^a		
	n	Hazard ratio (95% CI)	P value	n	Hazard ratio (95% CI)	P value
Socio-demographic variables						
Age (decades)	421	0.93 (0.83, 1.04)	.21			
Gender (Female vs Male)	422	0.92 (0.55, 1.54)	.75			
BMI (kg/m ²)	406	1.01 (0.98, 1.03)	.63			
Income (>£20k vs ≤£20k)	411	1.22 (0.82, 1.81)	.32			
Some higher education (Yes vs No)	412	1.03 (0.59, 1.81)	.91			
Married/co-habiting (Yes vs No)	412	0.82 (0.59, 1.15)	.25			
SF-8: Mental Component Score	415	0.99 (0.98, 1.00)	.08			
SF-8: Physical Component Score	415	0.99 (0.98, 1.01)	.40			
EQ5D: Health State	367	1.00 (0.99, 1.01)	.82			
EQ5D: Weighted Health Index	368	1.05 (0.42, 2.60)	.92			
WEMWBS: Mental wellbeing scale	413	0.99 (0.97, 1.00)	.06			
Mediator variables						
Physical activity self-efficacy	410	0.87 (0.74, 1.02)	.09			
Intentions	405	1.03 (0.99, 1.08)	.12			
Outcome expectations	389	1.00 (0.79, 1.26)	.97			
Financial motivation	409	0.96 (0.87, 1.06)	.42			
Planning	386	0.89 (0.76, 1.03)	.12			
Social norms	389	0.94 (0.88, 1.00)	.04			
Identified regulation	409	0.75 (0.68, 0.91)	.001	409	0.77 (0.66, 0.89)	<.001
Integrated regulation	409	0.85 (0.74, 0.97)	.02			
Intrinsic motivation	408	0.87 (0.74, 1.01)	.06			
Habit	407	0.93 (0.85, 1.03)	.15			
Workplace norms	409	1.15 (0.99, 1.33)	.07			
Recovery self-efficacy	408	0.86 (0.72, 1.03)	.11			
Maintenance self-efficacy	408	0.88 (0.79, 0.98)	.02			
Outcome satisfaction	377	1.03 (0.86, 1.24)	.74			
Environmental variables						
WE: Attractiveness	409	1.09 (0.99, 1.19)	.08			
WE: Safety	410	1.08 (1.01, 1.16)	.03	409	1.09 (1.02, 1.17)	.01
WE: Accessibility	410	1.04 (0.97, 1.13)	.29			
WE: Availability	410	0.96 (0.91, 1.00)	.06			
Physical activity						
Pedometer steps/day	388	1.00 (1.00, 1.00)	.15			

NB. Time variable = number of days until first one month (30 day) lapse from recording daily activity via physical activity monitoring system; Event variable = 1 (non-usage attrition occurred) or 0 (non-usage attrition did not occur).

^aUnivariable analyses were conducted on all predictor variables and those with $P < .05$ were included in a multivariable model with backwards elimination of the predictor with the highest P value until all included predictors had $P < .05$.

Table 5.2. Univariable and multivariable Cox regression showing association of website non-usage attrition risk with baseline socio-demographics, psychosocial and environmental variables, and physical activity

OUTCOME	Univariable analysis			Multivariable analysis ^a		
	n	Hazard ratio (95% CI)	P value	n	Hazard ratio (95% CI)	P value
<i>Socio-demographics</i>						
Age (decades)	417	0.92 (0.86, 0.99)	.02	404	0.93 (0.87, 1.00)	.04
Gender (Female vs Male)	418	1.06 (0.83, 1.34)	.65			
BMI (kg/m ²)	403	0.98 (0.97, 1.00)	.08			
Income (>£20k vs ≤£20k)	407	1.22 (0.86, 1.73)	.27			
Some higher education (Yes vs No)	408	0.88 (0.59, 1.31)	.53			
Married/co-habiting (Yes vs No)	408	0.92 (0.70, 1.21)	.55			
SF-8: Mental Component Score	411	0.99 (0.98, 1.00)	.09			
SF-8: Physical Component Score	411	1.01 (1.00, 1.03)	.15			
EQ5D: Health State	366	1.00 (1.00, 1.01)	.52			
EQ5D: Weighted Health Index	367	1.23 (0.45, 3.33)	.69			
WEMWBS: Mental wellbeing scale	409	1.00 (0.99, 1.01)	.67			
<i>Mediator variables</i>						
Physical activity self-efficacy	406	0.91 (0.82, 1.00)	.04	404	0.89 (0.79, 0.99)	.04
Intentions	401	1.03 (0.98, 1.08)	.24			
Outcome expectations	388	1.05 (0.80, 1.37)	.74			
Financial motivation	405	0.96 (0.89, 1.03)	.24			
Planning	382	0.83 (0.71, 0.98)	.02			
Social norms	384	0.95 (0.88, 1.02)	.13			
Identified regulation	405	0.94 (0.81, 1.08)	.38			
Integrated regulation	405	0.95 (0.83, 1.08)	.43			
Intrinsic motivation	404	0.96 (0.86, 1.06)	.43			
Habit	403	0.98 (0.95, 1.01)	.26			
Workplace norms	405	0.99 (0.85, 1.16)	.92			
Recovery self-efficacy	404	0.88 (0.75, 1.03)	.11			
Maintenance self-efficacy	404	0.92 (0.82, 1.04)	.20			
Outcome satisfaction	372	0.89 (0.71, 1.12)	.32			
<i>Environmental variables</i>						
WE: Attractiveness	405	1.05 (0.98, 1.12)	.16			
WE: Safety	405	1.06 (1.01, 1.11)	.01	404	1.07 (1.02, 1.12)	.005
WE: Accessibility	406	1.00 (0.95, 1.06)	.98			
WE: Availability	406	0.97 (0.93, 1.02)	.28			
<i>Physical activity</i>						
Pedometer steps/day	383	1.00 (1.00, 1.00)	.42			

NB. Time variable = number of days until first one month (30 day) lapse from logging onto the website; Event variable = 1 (non-usage attrition occurred) or 0 (non-usage attrition did not occur).

^aUnivariable analyses were conducted on all predictor variables and those with $P < .05$ were included in a multivariable model with backwards elimination of the predictor with the highest P value until all included predictors had $P < .05$.