Process and psychological findings of a behavioural change program for adherence in young people with perinatally acquired HIV infection (PaHIV)

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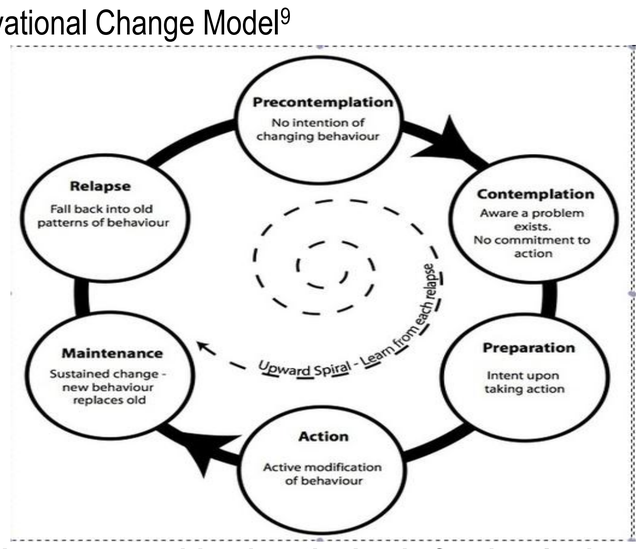
Background

Evidence suggests that when antiretroviral (ART) adherence is not established in childhood it reflects a range of self-management difficulties which impede intervention from the multidisciplinary team (MDT) to establish adherence in later adolescence[1]. At this service, approximately 20% of the transitioning cohort fell into this pattern which significantly raises the risk of death due to end stage HIV, despite a potentially treatable virus[2].

Consultation with young people who had a history of adherence problems suggested the potential importance of financial incentive (FI). This fits Behaviour Change theory which requires identification of concrete rewards/reinforcement for changing contingencies[3]. In the UK such financial incentives (FIs) have been widely used in adolescent populations; from the Educational Maintenance Allowance to improving uptake of Chlamydia screening[4,5]. **Emerging evidence suggests FIs improve medication adherence in some populations[6]. Motivational Interviewing (MI) also has established credentials in this area, though study results are thus far equivocal[7,8].**

Figure 1: Motivational Change Model[9]



These strategies were combined as the basis for developing an 'Incentive Scheme' (IS): a structured program of motivational interviewing support, clear short-term medical goals involving viral load (VL) endpoints and (relatively small) financial incentives for reaching the goals (see Figure 2). It was proposed that the scheme might improve engagement of the young people with their healthcare professionals particularly regarding the development of adherence behaviours. Where such improved adherence could be established over a protracted period, it should become relatively easier to perpetuate[9]. The findings from piloting this novel service are reviewed here from a psychological perspective.

Methods

Young people (16-24y) with PaHIV, low CD4 count and a history of significant adherence problems were eligible for the service. The Incentive Scheme involved MI at 2 weekly follow up until a drop and then a VL<50 was achieved. The MI was performed by a nurse and a psychologist who work in the 900 clinic providing continuity of care. Receiving Financial Incentives was contingent on reaching each goal in the series *and* attending for MI. Further goals involved sustaining a VL<50 for increasing periods of time and having further MI sessions to help maintain progress (see Figure 2).

Figure 2. Incentive scheme FI schedule:.

	Week 2	Week 4	Week 8	3 months	6 months	1 year
Goal	Drop in VL	Drop in VL	Drop or VL < 50	VL<50 for 1 month	VL<50 for 3 months	VL<50 for 6 months
FI	£25	£25	£25 or £50	£25	£25	£50

An MI pro-forma recorded importance, confidence, adherence and stage of change (see Figure 1) at each visit. This encouraged an ongoing focus on benefits versus constraints of making/sustaining behaviour change as well as a discussion of specific barriers to adherence and identification of potential solutions in line with MI theory[10, 11]. Outcome was measured (VL and CD4 count) at exit from IS. The maximum total FI available was £200/patient and the minimum time to achieve it would be 1 year.

If someone on the scheme stopped treatment they would have further MI input to elicit, clarify, and attempt to resolve ambivalence[11] and they would have to pass their previous farthest IS goal to receive further FI.

Results

A total of 11 young people enrolled, 1 declined. Of these 8 were female, 8 black african, median age 19 years (range 16-23 yrs). Previous ART regimens median 3 (range 2-9). **Of these 9/11 reached VL<50 and 5/11 sustained to the IS endpoint (6 months VL<50)**. The process took much longer than the original goal of one year for most completers due to the nautre of the cohort, adhoc attendance and practical issues. Most participants stopped and re-started treatment at least once on the IS and in line with MI theory these experiences were used to further refine change strategies where possible.

Figure 3. Comparison of participants completing the IS with non-completers

	n	months on IS	MI sessions	months VL<50	CD4 change
Completers	5	18.2 (13-20)	11.4 (10-13)	10.2 (6-13)	194 (31-356)
Non-completers	6	7.8 (3-13)	3.8 (2-7)	1.3 (0-3)	23 (-10-57)

There was a significant relationship between the number of MI sessions and success/failure of IS (p=.001), months of VL<50 (p=.001) and CD4 increment (p=.026). These data and qualitative interviews suggest that the mediating factor in success is engagement via reward, rather than reward for adherence directly. Increased clinic attendance was achieved through the structure of participating in the scheme for the majority of patients (compared to 1 year previous to IS). This mirrors Leeman et al's finding that individuals with HIV will be more likely to attend and engage in interventions when they develop strong relationships with intervener/[12].

Four out of the remining 6 participants achieved VL<50 for some time while on the IS which offers some medical benefits. One particpant transfered care and was not able to continue with the scheme. Two of the 6 have since achieved undetectable viral loads (for varying periods) using PEG and DOT, highlighting an alternative strategy for patients who struggle most with self-management. Detailed medical outcome data can be found in Poster 85.

Conclusion

Following this novel intervention, 46% of a highly challenging cohort achieved sustained virological suppression as a result of making behavioural changes. The financial rewards appeared to encourage attendance and engagement. This in turn allowed intervention to identify emotional and logistical solutions to adherence difficulties for a significant number of this vulnerable group. Further tailoring in line with behaviour change theory is required and further directions to explore include offering smaller and more frequent financial incentives for MI attendance and/or shorter VL supression goals. These would make useful research questions for a larger study population. The service will continue to be offered to eligible patients at this clinic.

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