Supplementary material

Methods

Health economics evaluation methods

This pilot study tested the methods for a subsequent, policy-relevant, cost-effectiveness analysis (CEA) of FIT and TAU, compared to TAU. This future economic evaluation will be undertaken alongside the definitive RCT and will establish the resources required to provide the FIT intervention, estimate intervention costs, and conduct a full CEA. The economic evaluation will be based on within-trial data collection, and undertaken against a primary perspective of the NHS/Social Care, with participant and broader societal perspectives considered in sensitivity analyses. A Health Economics Analysis Plan (HEAP) was developed and agreed prior to database lock.

The resources required to deliver the FIT intervention were assessed via participant-level case-records, and discussion with the intervention developers and providers. ALNs' time was documented in terms of per-participant contact and non-contact time. Training and supervision resources were also documented. Nationally recognised UK unit costs for health and social care services[1] were applied to this resource use data. The mean cost per participant of the intervention was estimated.

A self-report bespoke resource use questionnaire was developed in collaboration with the study's PPI group, informed by the Database of Instruments for Resource Use Measurement (DIRUM)[2] and the core items for a standardised resource use measure.[3]

In accordance with the 'position statement' of NICE at the time of analysis, an 'approved' cross-walk algorithm was used to map EQ-5D-5L responses to the EQ-5D-3L health state utility value set to estimate participant-level QALY weights.[4]

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Qualitative study

Decliner and participant interviews

Short telephone interviews were planned with patients who were eligible but declined to take part to identify their reasons for this. However, no patient consented to an interview.

After the final trial visit, participants who agreed to be contacted were interviewed by telephone to inform understanding of acceptability and feasibility of trial methods (target of control: n=8, intervention: n=12). Informed consent was obtained either in writing or by audio recording of verbal consent. The interviews focussed on study materials, motivation for taking part, understanding and experience of randomisation and, additionally, for intervention participants, their engagement with FIT.

ALNs

All ALNs participating in the study were invited to take part in two 60-minute virtual focus groups. Informed consent was obtained either in writing or by audio recording of verbal consent. The objectives of these discussions were to assess the acceptability and utility of FIT training, manual and supervision; to identify barriers and facilitators to FIT delivery; and to identify methods to improve delivery and implementation within the NHS.

Qualitative analysis

Telephone interviews were recorded and transcribed verbatim and uploaded to NVivo 12 (Lumivero, Denver, Colorado, USA) software for organisation and analysis. Data was analysed using thematic analysis adopting Braun and Clarke's six-phase process[5] to identify patterns of meaning within the data sources

Study oversight

The study sponsor organisation was University Hospitals Plymouth NHS Trust. Day to day trial management was administered through the UKCRC-registered Peninsula Clinical Trials Unit (PenCTU) at the University of Plymouth. PenCTU conducted central and site monitoring

in accordance with a risk-based monitoring plan and the study sponsor was able to audit trial conduct as deemed appropriate.

The Trial Management Group (TMG) met monthly to monitor the progress of the trial, and to address any issues that arose. The Trial Steering Committee (TSC), with an independent chair, clinician, statistician and two patient members, met twice a year to oversee the conduct of the trial, to monitor safety and ethical issues, including any participant drop-outs and overall data completeness. A Data Monitoring Committee was not considered necessary for this pilot trial but will be convened for a definitive trial.

Data management and confidentiality

Research teams at all sites ensured that participants' anonymity was maintained on all documents. Data were collected and stored in accordance with Data Protection legislation which includes the UK Data Protection Act 2018 and the General Data Protection Regulation, 2018. Each participant was allocated a unique study number and was identified in all study-related documentation by their study number and initials.

A web-based application developed by PenCTU was used for trial management and for recording participant data. This consisted of a bespoke system for screening, randomisation and management of participants integrated with an electronic case report form (eCRF) built in REDCap Cloud. Anonymised data will be available upon request to the chief investigator or sponsor.

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Supplementary results

Supplementary Table 1: Acceptability and adherence to the FIT intervention (26 participants randomised to FIT+TAU)

FIT Session	Attended session, N (% of participants randomised to FIT)	Attended session within specified timeframe N (% of participants randomised to FIT)
1 (in-patient)	22 (84.6%)	21 (80.8%)
2 (telephone)	12 (46.2%)	7 (26.9%)
3 (telephone)	10 (38.5%)	1 (3.8%)
4 (telephone)	7 (26.9%)	1 (3.8%)
5 (telephone)	5 (19.2%)	1 (3.8%)
6 (telephone)	3 (11.5%)	0 (0.0%)
7 (telephone)	3 (11.5%)	1 (3.8%)
8 (telephone)	2 (7.7%)	0 (0.0%)
9 (telephone)	1 (3.8%)	0 (0.0%)

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Supplementary table 2: Summary statistics for the proposed primary and secondary outcome measures by allocated group for in participants who completed all visits

	N		TAU (N=10)	N	TAU + FIT (N=6)
Alcohol in grams per week					
Baseline	10	Range	(560.0, 3584.0)	6	(264.8, 2544.0)
		Median [IQR]	1094.0 [726.2, 1898.4]		1680.0 [672.0, 2100.0]
Day 28	10	Range	(0, 1120.0)	6	(0, 872.0)
		Median [IQR]	0 [0, 36.0]		0 [0, 0]
Day 90	10	Range	(0, 1416.0)	6	(0 , 320.0)
		Median [IQR]	0 [0, 0]		0 [0, 0]
Day 180	10	Range	(0, 1415.2)	6	(0, 480.0)
		Median [IQR]	0 [0, 51.0]		4.0 [0, 149.0]
SADQ score					
Baseline	10	Range	(9.0, 59.0)	5*	(17.0, 57.0)
		Median [IQR]	29.5 [15.2, 41.2]		23.0 [23.0, 35.0]
Day 28	3*	Range	(30.0, 54.0)	1*	(14.0, 14.0)
		Median [IQR]	39.0 [34.5, 46.5]		14.0 [14.0, 14.0]
Day 90	3*	Range	(36.0, 54.0)	2*	(17.0, 54.0)
		Median [IQR]	51.0 [43.5, 52.5]		35.5 [26.2, 44.8]
Day 180	3*	Range	(45.0, 50.0)	2*	(15.0, 39.0)
		Median [IQR]	49.0 [47.0, 49.5]		27.0 [21.0, 33.0]
WEMWBS score					
Baseline	10	Range	(17.0, 64.0)	6	(18.0, 53.0)
		Median [IQR]	34.5 [22.2, 46.8]		33.0 [28.8;36.5]
Day 28	10	Range	(16.0, 70.0)	6	(29.0, 53.0)
		Median [IQR]	41.0 [27.0, 54.2]		45.0 [37.2, 49.8]
Day 90	10	Range	(16.0, 68.0)	6	(15.0, 68.0)
		Median [IQR]	35.0 [24.2, 62.8]		43.0 [38.0, 46.5]
Day 180	10	Range	(22.0, 69.0)	6	(27.0, 69.0)
		Median [IQR]	42.5 [30.2, 54.2]		49.0 [34.0, 62.5]

**Participants who reported no alcohol consumption within the previous 28 days did not complete SADQ; N refers to number of participants for whom SADQ was calculated.*

Urine alcohol metabolites

Ethyl glucuronide and ethyl sulphate data are summarised in Table 3. Six out of 18 (33.3%) had ethyl glucuronide below the detectable limit of 50 µg/L (4 in FIT+TAU), while 12 were within range (4 in FIT+TAU). For ethyl sulphate, 8/18 (44.4%) had levels below the detectable limit of 50 µg/L (5 in FIT+TAU), while 12 (66.7%) were within range (3 in FIT+TAU). One participant in the TAU group had ethyl glucuronide greater than the maximum detectable limit of 100000 µg/L.

Supplementary Table 3: Urine alcohol metabolites

Measure	TAU			FIT + TAU		
	N	Median (IQR)	Range	N	Median (IQR)	Range
Ethyl Glucuronide (µg/L)	10	665.5 (80, 28200)	[50, 100000]	8	71 (50, 11172)	[50, 65800]
Ethyl Sulphate (µg/L)	10	270.5 (50, 9875)	[50, 18050]	8	50 (50, 2849)	[50, 21950]

Supplementary table 4. Number of serious adverse events

	TAU (N=28)	**FIT + TAU (N=26)**	**Total (N=54)**
Number of hospitalisations	16 (7)	18 (10)	34 (17)
Resulted in death	4 (4)	1 (1)	5 (5)
Significant/important medical event (ED attendance)	15 (3)	21 (8)	36 (11)
Total	**35 (14)**	**40 (19)**	**75 (33)**

Number of unique participants shown in brackets

Supplementary table 5. Serious adverse events by system organ classification.

System Organ Classification (SOC}	Number of SAEs	Number of SAEs (TAU)	Number of SAEs (FIT + TAU)
Gastrointestinal disorders	23	13	10
Psychiatric disorders	21	12	9
Injury, Poisoning and procedural complications	10	6	4
Hepatobiliary disorders	8	5	3
Nervous system disorders	6	1	5
Vascular disorders	2	1	1
Cardiac disorders	1	0	1
Investigations	1	0	1
Metabolism and nutrition disorders	1	0	1
Neoplasms benign, malignant disorders	1	0	1
Respiratory, thoracic, and mediastinal disorders	1	0	1

Supplementary table 6. FIT fidelity assessments by domain and global score from 11 assessments. Maximum score 4 for each domain. 0 = absent; 2 = satisfactory; 4 = consistently applied

Domain	Median score	Range
Positive Expectancies	2	2 - 3
Collaborates	3	2 - 4
Empathic Reflections	2	1 - 3
Structured Session	2	2 - 4
Creates Opportunities	2	1 - 3
Individual Tailored Support	2	2 - 3
Refines Quality	2	0 - 3
Amplifies Motivational Impact	2	1 - 3
Develops Skills	2	0 - 3
Global Score	**2**	**1 - 3**

Supplementary table 7. Completeness of health economic outcomes

Outcome		TAU (n = 28)		FIT + TAU (n = 26)	
	Time point	Attended visit	Number completed	Attended visit	Number completed
Resource use questionnaire	Baseline	28 (100.0%)	28 100%)	26 (100.0%)	26 (100%)
	90 (±7) days	14 (50.0%)	11 (39.3%)	14 (53.4%)	13 (50%)
	180 (±14) days	12 (42.9%)	12 (42.9%)	10 (38.5%)	9 (34.6%)
EQ-5D-5L	Baseline	28 (100.0%)	28 (100%)	26 (100.0%)	26 (100%)
	28 (±7) days	21 (75.0%)	22 (78.6%)	19 (73.1%)	17 (65.4%)
	90 (±7) days	14 (50.0%)	11 (39.3%)	14 (53.4%)	14 (53.8%)
	180 (±14) days	12 (42.9%)	12 (42.9%)	10 (38.5%)	9 (34.6%)

Supplementary table 8. Mean cost of FIT intervention per participant (£, 2022), averaged across n=26 (based on data from n=16)

Time delivering intervention	**Therapist job type (Jones et al, 2022)**	**Hourly rate**	**Mean per participant (mins)**		**Mean cost per participant**
Contact time	Alcohol Liaison Nurse (ALN) (p.24)	£60	164.86		£164.86
Non-contact time	Alcohol Liaison Nurse (p.24)	£60	88.21		£88.21
Training	**Therapist job type (Jones et al, 2022)**	**Hourly rate**	**Time per ALN (hrs)**	**Number of ALNs**	
Receiving training	Alcohol Liaison Nurse (p.24)	£60	7.5	10	£173.08
			Time per training session (hrs)	**Number of training sessions**	
Training provider	Community-Based Scientific and Professional Staff Band 8c (p.59)	£106	3.75	10	£152.88
Supervision	**Therapist job type (Jones et al, 2022)**	**Hourly rate**	**Time per ALN (hrs)**	**Number of ALNs**	
Receiving supervision	Alcohol Liaison Nurse (p.24)	£60	0.5	6	£6.92
Supervision provider	Community-Based Scientific and Professional Staff Band 8c (p.59)	£106	1.5	6	£36.69
Manual	**Number of colour pages**	**Cost /page**		**No. of manuals**	
Manual printing	53	£0.10		10	£2.04
Patient records	**Number of pages per patient**				
Printing	26	£0.04			£1.04
Mean cost of intervention per participant					***£625.72***

Supplementary Table 9. Health state utility values and QALYs by trial arm

Outcome	**Time point**		**TAU (n = 28)**			**FIT + TAU (n = 26)**	
		n	**Mean (SD)**	**Range**	**n**	**Mean (SD)**	**Range**
EQ-5D-5L	Baseline	28	0.504 (0.305)	-0.103, 1	26	0.399 (0.316)	-0.115, 1
	28 (±7) days	22	0.532 (0.337)	0.035, 1	17	0.453 (0.402)	-0.244, 1
	90 (±7) days	11	0.564 (0.364)	-0.034, 1	14	0.516 (0.345)	-0.337, 1
	180 (±14) days	12	0.678 (0.251	0.169, 1	9	0.401 (0.352)	-0.016, 1
QALYs	Baseline to 180 days	7	0.256 (0.129)	0.107, 0.439	4	0.265 (0.135)	0.110, 0.416

References

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