A non-randomised controlled study to assess the effectiveness of a new proactive multidisciplinary care intervention for older people living with frailty

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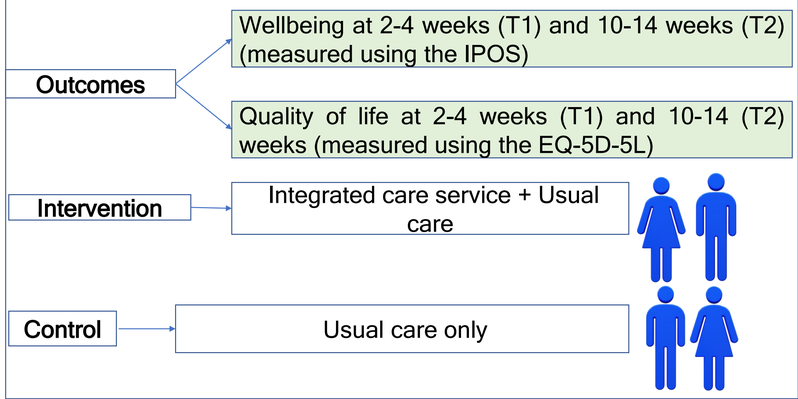
INTRODUCTION AND AIM

- In 2018, the Jean Bishop Integrated Care Centre in Hull was established to provide integrated, anticipatory, multidisciplinary care for older people living with frailty.
- This study aimed to determine whether this new, proactive, multidisciplinary care service is effective in improving the overall well-being and quality of life of older people living with severe frailty.

METHODS

- **Study Design**: A community-based non-randomized controlled trial
- **Population**: People registered with a General Practitioner in Hull, age 65 years and above, identified to be at risk of severe frailty (electronic Frailty Index score > 0.36)



- **Data analysis:** Descriptive statistics were used to characterise and compare the intervention and control groups (the control group was eligible but had not accessed the new service), with t-test, Chi-Square, or Mann-Whitney U tests (as appropriate) to test differences at each time point. Generalised linear modelling, with propensity score matching, was used for further group comparisons. Data analysed using STATA v17.
- **Ethics Approval:** NHS Research Ethics Committee 18/YH/0470 and IRAS – 250981
- **Trial registration:** The trial was registered at the International Standard Randomised Controlled Trial Number (ISRCTN) registry (registration date: 01/08/2022, registration number: ISRCTN10613839)

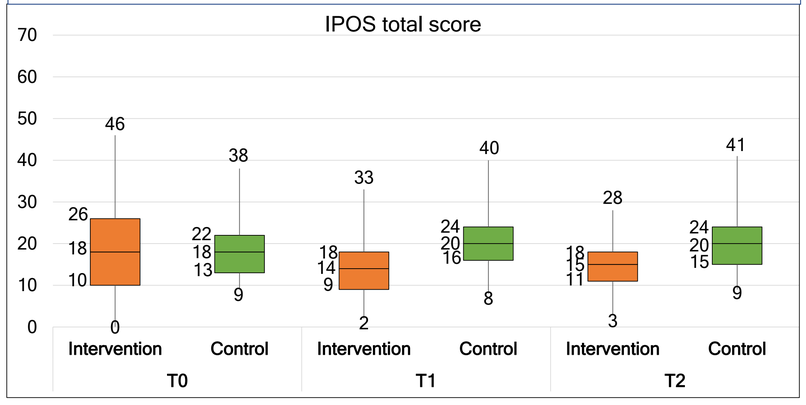
RESULTS

Table 1: Primary outcome: wellbeing at 2-4 weeks

	Intervention group (N=199)	Control group (N=54)	p-value [a]
Difference in total IPOS score between T0 & T1			
Median (IQR)	-5 (-11 to 0)	2 (-1 to 5)	**<0.001***
Mean ±SD	-5.3 ±8.2	1.8 ±4.9	**<0.001***
Min - max	-32 to 14	-8 to 17	
Missing (%)	35 (17.6)	0 (0.0)	
Difference in Physical IPOS score between T0 & T1			
Median (IQR)	-1 (-4 to 2)	-0.5 (-2 to 2)	**0.035***
Mean ±SD	-1.5 ±4.7	0 ±3.0	**0.040***
Min - max	-15 to 11	-8 to 7	
Missing (%)	32 (16.1)	0 (0.0)	
Difference in Psychological IPOS score between T0 & T1			
Median (IQR)	-1 (-4 to 1)	2 (0 to 3)	**<0.001***
Mean ±SD	-1.5 ±3.6	1.1 ±2.6	**<0.001***
Min - max	-11 to 7	-7 to 6	
Missing (%)	23 (11.6)	0 (0.0)	
Difference in Communication/practical IPOS score between T0 & T1			
Median (IQR)	-2 (-4 to 0)	1 (-1 to 2)	**<0.001***
Mean ±SD	-2.2 ±3.2	0.7 ±2.3	**<0.001***
Missing (%)	23 (11.6)	8 (14.8)	

a: p-value of: t-test for comparing means & SDs, and Mann-Whitney test for comparing medians &IQRs
*significance level at 0.05; NB: negative IPOS score values represent an improvement

Figure 1: Trajectories of change in IPOS total scores for both intervention and control groups



- At 2-4 weeks and 10-14 weeks, the mean total IPOS score reduced (representing improved wellbeing) in the intervention group, but increased (worsened) in the control group. Similarly, for the IPOS subscales at 2-4 weeks, scores improved for intervention group but improved less or worsened for control group: physical IPOS score (-1 *versus* -0.5, p=0.035), psychological IPOS score (-1 *versus* 2, p<0.001), and communication/practical IPOS score (-2 *versus* 1, p<0.001).

Table 2: Secondary outcome: quality of life at 2-4 weeks

	Intervention (N=199)	Control (N=54)	P-value [a]
Difference in EQ5D index values between T0 & T1			
Median (IQR)	0.12 (-0.01 - 0.30)	0.0 (-0.07 - 0.09)	**<0.001***
Mean ±SD	0.14 ± 0.25	0.01 ± 0.18	**<0.001***
Min - max	-0.69 - 0.82	-0.52 - 0.41	
Missing (%)	23 (11.6)	0 (0.0)	
Difference in EQ5D Health today score between T0 & T1			
Median (IQR)	0 (-15 to 15)	0 (-5 to 10)	0.420
Missing (%)	21 (10.6)	0 (0.0)	

a: p-value of: t-test for comparing means & SDs, and Mann-Whitney test for comparing medians &IQRs
*significance level at 0.05
*negative IPOS score values represent an improvement

RESEARCH IMPLICATIONS

- Selection of relevant outcome measures as well as careful timing of measurement of primary and secondary outcomes is important in evaluations of interventions in advanced illness.

CLINICAL IMPLICATIONS

- There is a need to consider the wider use of this model of care among this population as well as define the implementation strategies that can help to ensure wider adoption and sustainability of the new service.

CONCLUSION

- The new, proactive, multidisciplinary care service improved the overall well-being and quality of life of older people living with frailty at 2-4 weeks and the improvement was sustained at 10-14 weeks

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Abbreviations: IPOS: Integrated palliative care outcome scale

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