Final Place of Care: Determinants of Patients with Advanced Cancer Receiving Integrated Home-based Palliative Care

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Background

Many people prefer to die at home and meeting preferences for home death has been perceived as an indicator of quality palliative care.(1) However, home death may not be suitable for everyone due to sociocultural beliefs or circumstances.(2) Families' support is vital for realizing goal-concordant care.(3) In recognition of the diversity of preferences and situations, a care model integrating home-based palliative care with hospital specialist palliative care, and inpatient hospice care aims to support preferences for home death, while facilitating seamless transitions among care settings when needed.(4) Identifying factors associated with receiving end-of-life care at the different settings within the model, and not simply the place of death could provide insights for model enhancement to improve the likelihood of meeting preferences.

Aims

Primary aim: To identify factors associated with the final place of care (defined as ≥1 week duration) of patients with advanced cancer receiving home-based palliative care within an integrated care model. **Secondary aim:** To examine goal-concordance & congruence between patients' & families' preferences.

Methods

Study design: Retrospective cohort study

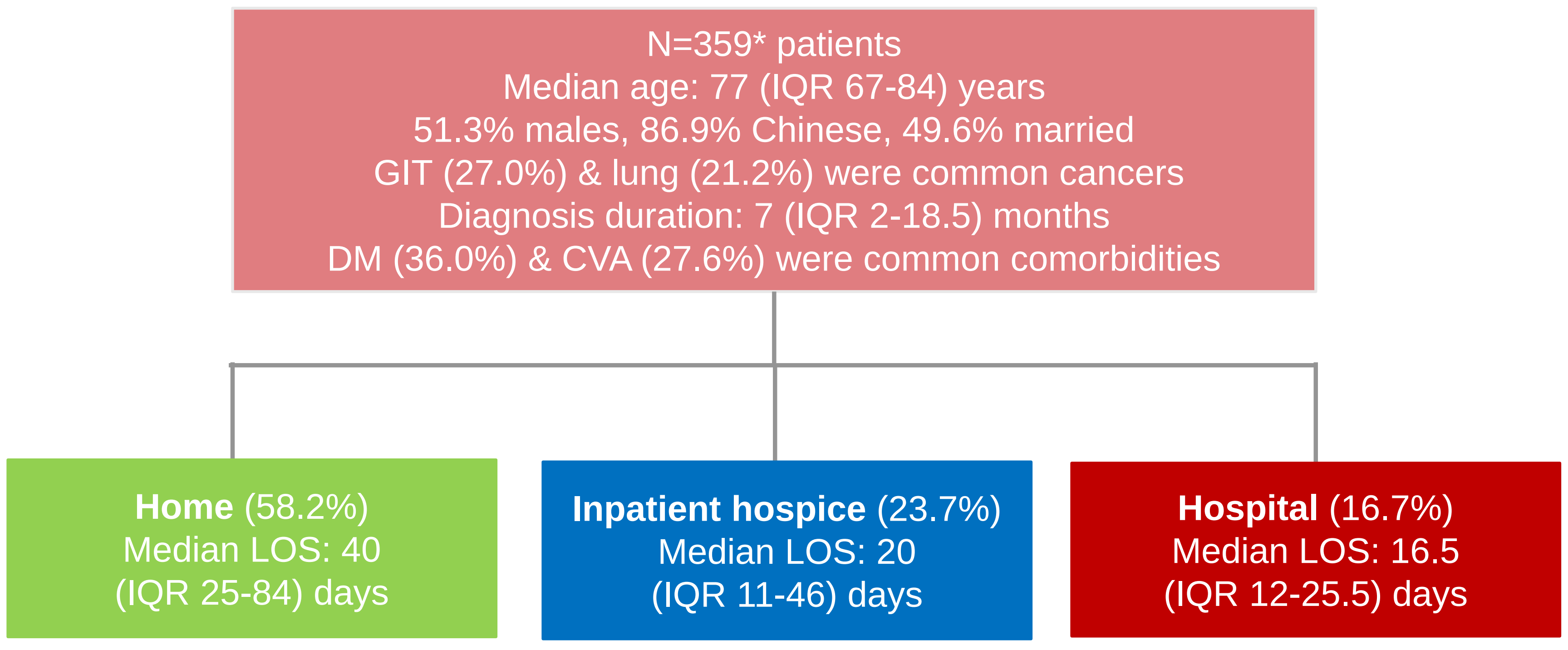
Inclusion: Adults with advanced cancer, enrolled in a home-based palliative care service & deceased during the period of 2016 -2018 were conveniently sampled. **Exclusion:** <2 weeks' enrollment duration or ≤1 week spent at the final place of care.

Data source: Routine clinical documentation from the service's electronic medical records

Independent variables: Patient & family caregiver sociodemographic, cancer type, comorbidities, function (PPSv2) & symptom severity (ESASr) 2 weeks before death/admission to the final place of care, place of care & death preferences, healthcare utilization. **Dependent variable:** Final place of care (home, inpatient hospice, or hospital).

Analysis: Bivariate analysis using Kruskal-Wallis & Chi-square tests with post-hoc analysis done & p-value adjusted to control for Type 1 error in multiple comparisons. Except for variables with multicollinearity, statistically significant & clinically relevant variables were shortlisted for multivariate analysis using multinomial logistic regression. K measure of agreement determined goal-concordance & congruence.

Results


N=359* patients
Median age: 77 (IQR 67-84) years
51.3% males, 86.9% Chinese, 49.6% married
GIT (27.0%) & lung (21.2%) were common cancers
Diagnosis duration: 7 (IQR 2-18.5) months
DM (36.0%) & CVA (27.6%) were common comorbidities

Home (58.2%)
Median LOS: 40
(IQR 25-84) days

Inpatient hospice (23.7%)
Median LOS: 20
(IQR 11-46) days

Hospital (16.7%)
Median LOS: 16.5
(IQR 12-25.5) days

*1.4% of patients' final place of care was in the nursing home.

Figure 1. Flowchart of the final place of care of patients and their background characteristics

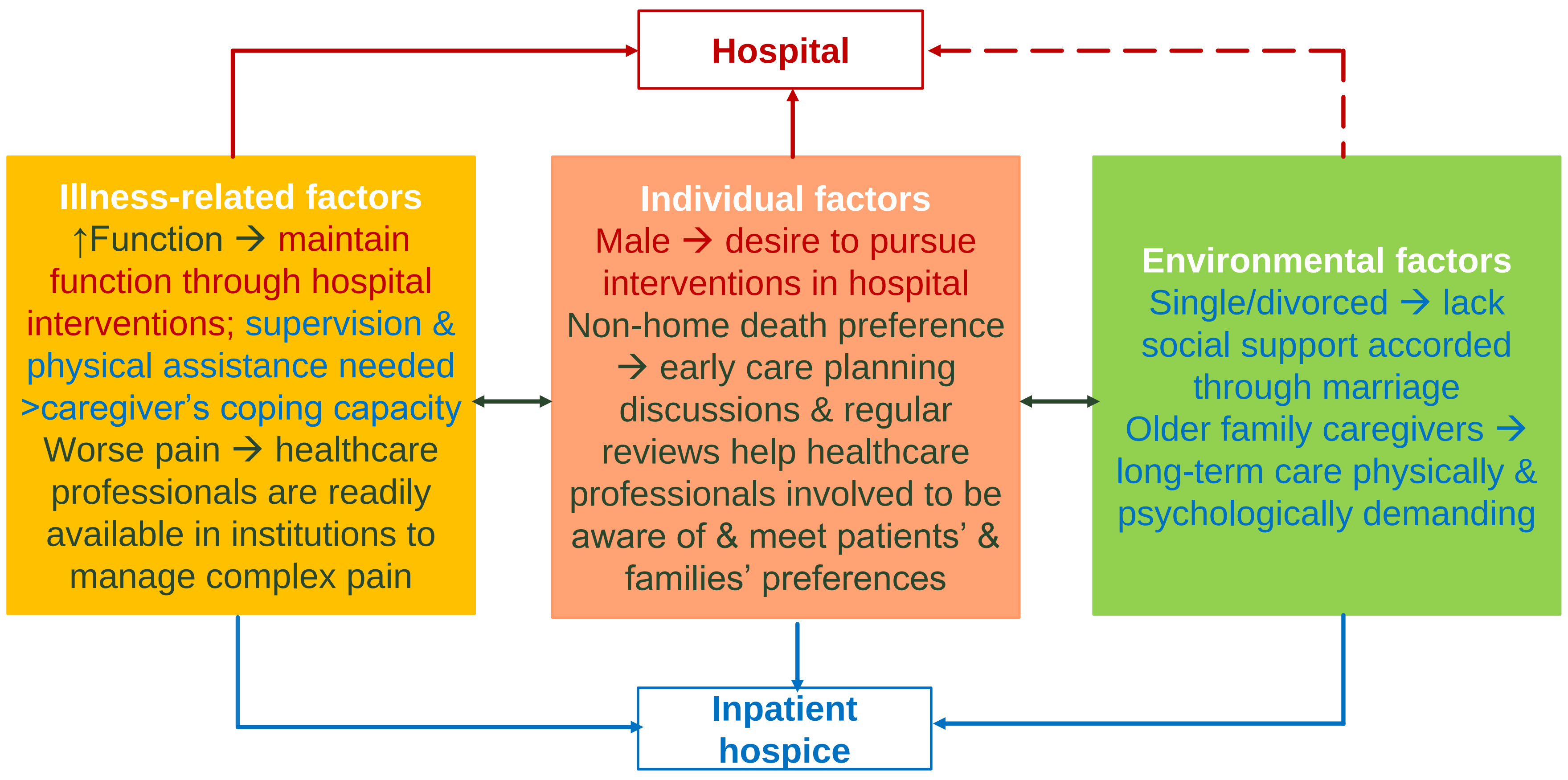
Table 1. Multivariate analysis of factors associated with the final place of care using multinomial logistic regression

	Inpatient hospice		Hospital	
Variables	**Adjusted odds ratio (95% CI)**	**P-value**	**Adjusted odds ratio (95% CI)**	**P-value**
Gender				
Female	1.38 (0.52-3.63)		1	
Male	1	0.518	3.16 (1.01-9.90)	0.048
Marital status				
Married/widowed	1		1	
Single/divorced	5.52 (1.10-27.78)	0.038	5.00 (0.92-27.03)	0.063
Family caregiver age				
<55 years	1		1.30 (0.43-3.91)	
≥55 years	3.05 (1.06-8.78)	0.038	1	0.638
PPSv2				
<40%	1		1	
≥40%	9.10 (3.34-24.82)	<0.0001	8.64 (2.87-26.00)	<0.0001
ESASr Pain				
<2	1		1	
≥2	3.61 (1.33-9.79)	0.012	3.45 (1.16-10.27)	0.026
Patient's PPOD				
Home	1		1	
Non-home	23.76 (5.37-105.08)	<0.0001	9.77 (2.07-46.25)	0.004

Reference category: Home. CI, confidence interval; PPSv2, Palliative performance scale v2 is a valid and reliable tool ranging from 0% (death) to 100% (normal function) for assessing the functional status of palliative care patients; ESASr, Edmonton symptom assessment system revised is a psychometrically tested tool for measuring symptom severity on a scale of 0 (no symptom) to 10 (worst); PPOD, Preferred place of death.

Goal-concordance with patients' preferences was fair (72.6%, K = 0.39 for place of death preference) to moderate (76.7%, K = 0.54 for place of care preference), while goal-concordance with families' preferences were substantial (89.9%, K = 0.79; 86.3%, K = 0.67 for place of care & death preferences respectively). Congruence between patients' & families' preferences were moderate (81.4%, K = 0.59; 80.4%, K = 0.55 for place of care & death preferences, respectively).

Discussion


Hospital

Illness-related factors
↑Function → maintain function through hospital interventions; supervision & physical assistance needed >caregiver's coping capacity
Worse pain → healthcare professionals are readily available in institutions to manage complex pain

Individual factors
Male → desire to pursue interventions in hospital
Non-home death preference → early care planning discussions & regular reviews help healthcare professionals involved to be aware of & meet patients' & families' preferences

Environmental factors
Single/divorced → lack social support accorded through marriage
Older family caregivers → long-term care physically & psychologically demanding

Inpatient hospice

Figure 2. Predictors of the final place of care of patients with advanced cancer receiving home-based palliative care within an integrated care model

The integrated care model ensures care continuity even amidst healthcare setting transitions, potentially accounting for the substantial level of concurrence with families' preferences. However, the sub-optimal level of concordance with patients' preferences has policy & practice implications.

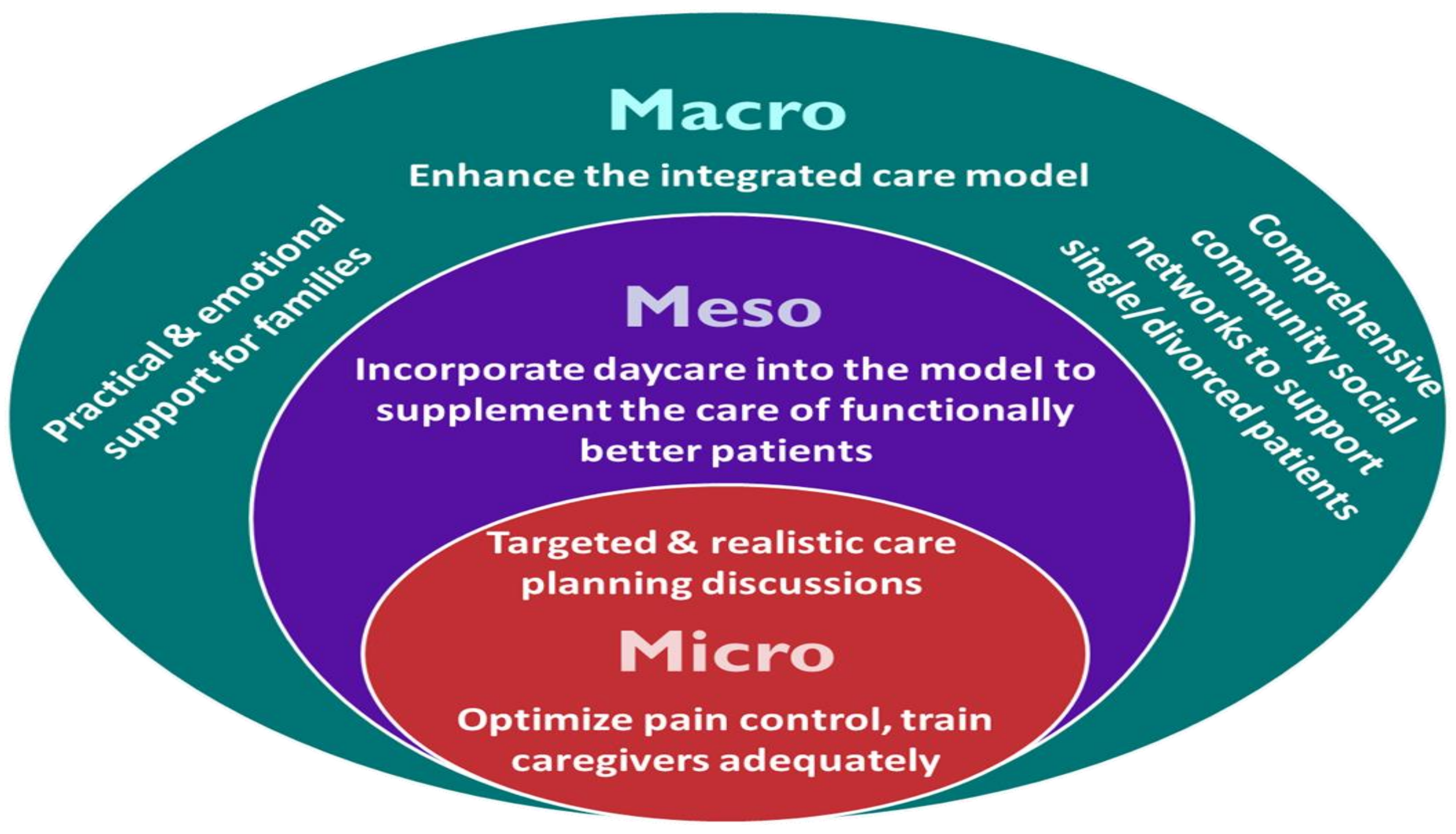


Figure 3. Implications at the macro, meso and micro levels

Limitations

Causal relationships could not be established from associations. Outcomes are subject to selection bias as not all patients & families discussed care preferences. Occasional inferences regarding preferences had to be made due to ambiguity in documentation. Some potential predictors such as service intensity were not examined, potentially affecting the validity. Generalizability is limited to places with similar sociocultural & healthcare environment. Outcomes also cannot be extrapolated to patients with non-cancer conditions, warranting future studies.

Conclusion

Sub-optimal concordance with patients' preferences entails macro, meso & micro-level interventions to meet patients' preferences for the final place of care.

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References

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