

## 论著·循证医学

## 晚期癌症患者预立医疗照护计划参与行为影响因素的系统综述

傅艺玲, 吴 茜, 罗晓庆, 吴艾泓, 夏雪兰, 郑 敏

重庆医科大学附属第二医院呼吸与危重症医学科, 重庆 400010

**[摘要]** **目的**·系统整合晚期癌症患者预立医疗照护计划 (advance care planning, ACP) 参与行为的相关影响因素。**方法**·系统检索中国知网、万方、中国生物医学文献数据库 (Sinomed)、PubMed、Cochrane Library、Embase、CINAHL、PsycINFO 等数据库从建库至 2022 年 12 月有关晚期癌症患者 ACP 参与行为影响因素的中英文文献。由 2 名研究者对最终纳入的文献进行文献质量评价、内容提取和汇总, 将定量研究与定性研究分别提取数据后进行整合, 得到晚期癌症患者 ACP 参与行为的最终影响因素。并借助理论域框架, 将其逐级映射至能力、机会、动机-行为 (capability, opportunity, motivation-behavior, COM-B) 模型。**结果**·共纳入 21 项研究, 整合归纳出 27 个影响因素, 涉及 9 个理论域。映射至 COM-B 模型中的因素包括能力因素 9 个 (ACP 知识、文化程度、准确了解预后知识、知晓疾病诊断时间、先前经历、主观预期寿命、年龄、肿瘤部位、疾病症状负担)、机会因素 13 个 (性别、婚姻状况、种族/民族、宗教信仰、未成年子女、家庭经济收入、居住地点、房屋居住类型、家庭支持、社会支持、医患关系、文化适应、是否设立临终关怀服务中心) 和动机因素 5 个 (ACP 态度、ACP 信念、ACP 动机、焦虑抑郁、死亡态度)。其中, 医患关系、宗教信仰、ACP 态度、文化程度、婚姻状况、家庭支持、ACP 知识、准确了解预后知识、年龄、居住地点、死亡态度、先前经历、种族/民族是对患者 ACP 参与行为影响较多的因素。**结论**·基于 COM-B 模型可全面归纳总结晚期癌症患者 ACP 参与行为的影响因素。未来研究可以上述因素为切入点, 基于 COM-B 模型设计连续化、多方面的综合性干预措施, 促进晚期癌症患者 ACP 参与行为实践。

**[关键词]** 预立医疗照护计划; 癌症; 晚期; COM-B 模型; 影响因素; 系统综述

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## Factors influencing advance care planning engagement behavior in patients with advanced cancer: a systematic review

FU Yiling, WU Qian, LUO Xiaoqing, WU Aihong, XIA Xuelan, ZHENG Min

Department of Respiratory and Critical Care Medicine, The Second Affiliated Hospital of Chongqing Medical University, Chongqing 400010, China

**[Abstract]** **Objective**·To systematically integrate relevant influencing factors of advanced cancer patients' engagement behavior in advance care planning (ACP). **Methods**·The systematic search of Chinese and English literature on factors influencing ACP engagement behavior in advanced cancer patients from inception to December 2022 in China National Knowledge Infrastructure (CNKI), Wanfang, China Biomedical Literature Database (Sinomed), PubMed, Cochrane Library, Embase, CINAHL, and PsycINFO was conducted. After the literature quality evaluation, content extraction and summary were conducted by two researchers, and the data of quantitative research and qualitative research were extracted and integrated respectively. The final influencing factors of ACP engagement behavior of advanced cancer patients were obtained. With the help of the theoretical domain, they were mapped to the capability, opportunity, motivation-behavior (COM-B) model step by step. **Results**·A total of 21 studies were included and 27 factors were summarized, including 9 theoretical domains. Mapping to the COM-B model included 9 capability factors (knowledge of ACP, education level, accurate knowledge of prognosis, knowledge of the time of disease diagnosis, prior experience, subjective life expectancy, age, cancer site, and disease symptom burden), 13 opportunity factors (gender, marital status, race/ethnicity, religious belief, dependent children, family economic condition, place of living, housing type, family support, social support, doctor-patient relationship, acculturation, and whether or not to establish a hospice service center) and 5 motivational factors (ACP attitude, ACP belief, ACP motivation, anxiety and depression, and death attitude). Among them, doctor-patient relationship, religious belief, ACP attitude, educational level, marital status, family support, knowledge of ACP, accurate knowledge

[作者简介] 傅艺玲 (1999—), 女, 护士, 硕士生; 电子信箱: 1715757154@qq.com。

[通信作者] 郑 敏 (1979—), 电子信箱: 1287285766@qq.com。

[Corresponding Author] ZHENG Min, E-mail: 1287285766@qq.com。

of prognosis, age, place of living, attitude toward death, prior experience, and race/ethnicity were more influential factors on ACP engagement behavior. **Conclusion** Based on the COM-B model, the influencing factors of ACP engagement behavior in advanced cancer patients can be comprehensively summarized. Future studies can use the above factors as an entry point to design continuous, multifaceted, and comprehensive interventions based on the COM-B model to promote the practice of ACP engagement behavior in advanced cancer patients.

**[Key words]** advance care planning; cancer; advanced; COM-B model; influencing factor; systematic review

目前,我国癌症的发病及死亡率已居全球首位,且多数患者在确诊时已是晚期<sup>[1]</sup>。近年来,随着人们自主意识的提高,患者对安宁疗护和“优逝”的照护需求日益增加<sup>[2]</sup>。癌症患者参与终末期医疗照护亟需重视。预立医疗照护计划(advance care planning, ACP)指患者及家属与医护人员沟通未来医疗决策的健康行为过程,旨在满足患者的临终照护意愿,改善其健康结局<sup>[3]</sup>。而我国ACP研究多集中于态度层面,缺乏反映行为层面影响因素的研究,限制了ACP的进一步实施与推广<sup>[4]</sup>。患者ACP参与行为受多方面因素的影响<sup>[5]</sup>,基于健康相关行为理论来确定患者ACP参与行为的影响因素有助于对患者采取针对性干预措施<sup>[6]</sup>,具有重要的临床价值。

能力、机会、动机-行动(capability, opportunity, motivation-behavior, COM-B)模型和理论域框架(theoretical domains framework, TDF)是由MICHIE等<sup>[7]</sup>提出的行为改变理论模型。以COM-B和TDF为理论基础,可全面了解个体健康行为的影响因素<sup>[8]</sup>。诸多研究已验证了COM-B模型和TDF用于治疗决策<sup>[9]</sup>、服药依从性<sup>[10]</sup>等健康相关行为研究的科学性和有效性。然而,鲜有研究基于COM-B模型和TDF对ACP参与行为进行多维度的系统剖析。本研究以晚期癌症患者为对象,通过COM-B模型和TDF系统分析患者ACP行为的影响因素,从而为早期精准干预患者ACP参与行为提

供理论依据和实践指导。

## 1 资料与方法

### 1.1 问题制定

该整合性综述预期解决的研究问题为:晚期癌症患者ACP参与行为的影响因素有哪些?

### 1.2 文献检索策略

计算机全面检索中国知网、万方、中国生物医学文献数据库(Sinomed)、PubMed、Cochrane Library、Embase、CINAHL、PsycINFO等数据库中关于晚期癌症患者ACP参与行为影响因素的中英文文献。采用主题词和关键词、自由词相结合的检索方式,不同数据库的检索策略稍有不同,并同时追溯纳入文献的参考文献和相关系统评价纳入的文献以查全。检索期限为从各数据库建库至2022年12月。中文检索词包括:“预立医疗照护计划/预立医疗指示/预设医疗指示/预先医疗指示/生前预嘱”“晚期/终末期”“肿瘤/癌症/瘤/瘤”;英文检索词包括:“advance care planning/advance directs/living wills/medical power of attorney”“terminal/advance/end-stage/end-of-life”“neoplasms/cancer/tumor/oncology/malignancy”。以PubMed为例,检索策略如表1所示。

表1 PubMed 检索策略

Tab 1 Searching strategy for searching in PubMed

Step	Strategy
#1	"advance care planning" [MeSH Terms]
#2	"advance care planning" [Title/Abstract] OR "advance directives" [Title/Abstract] OR "living wills" [Title/Abstract] OR "medical power of attorney" [Title/Abstract]
#3	#1 OR #2
#4	"terminal" [Title/Abstract] OR "advanced" [Title/Abstract] OR "end-stage" [Title/Abstract] OR "end-of-life" [Title/Abstract]
#5	"neoplasms" [MeSH Terms]
#6	"neoplasms" [Title/Abstract] OR "cancer"[Title/Abstract] OR "tumor" [Title/Abstract] OR "oncology" [Title/Abstract] OR "malignancy" [Title/Abstract]
#7	#5 OR #6
#8	#4 AND #7
#9	#3 AND #8

### 1.3 文献纳入与排除标准

**1.3.1 纳入标准** ①研究对象为年龄 $\geq 18$ 岁的晚期癌症患者<sup>[11]</sup>。②量性研究、质性研究和混合性研究均可。③ACP参与行为包括设立医疗代理决策者、澄清生活质量价值观和签署医疗意愿文件。量性研究的结局指标为晚期癌症患者ACP参与行为的影响因素。质性研究感兴趣的现象为晚期癌症患者参与ACP的感受、经历和影响因素等。④语言为中文或英文的文献。

**1.3.2 排除标准** ①非晚期癌症患者ACP参与行为影响因素的研究。②研究对象 $< 5$ 人的质性研究。③无法提取影响因素的文献。④无法获取全文或数据提取不全的文献。⑤缺乏有效数据的研究(综述文献、会议摘要和个案报道等)。⑥重复发表文献。

### 1.4 文献质量评价

所有纳入研究的质量使用标准化的QualSyst工具进行评估<sup>[12]</sup>。QualSyst由2个独立的手动评分系统组成,一个用于定性研究,另一个用于定量研究。每项研究都根据共识分配了最终分数。使用汇总分数来提供总体质量衡量,其中得分 $> 80\%$ 被判定为“优”, $71\% \sim 80\%$ 被判定为“良好”, $51\% \sim 70\%$ 被判定为“合格”, $< 51\%$ 被判定为“有限”。由2名研究人员独立进行文献质量的评价,评价过程中若存在意见分歧,则通过互相讨论或咨询第3名研究人员予以解决。

### 1.5 文献筛选和资料提取

采用EndNote X9文献管理软件剔除重复后,由2名经过培训的研究者严格按照纳入和排除标准进行筛选。通过阅读题目和摘要进行初筛,再阅读全文进行二次筛选。筛选过程中如遇分歧,通过双方讨论或咨询第3名研究者进行判断,最终确定符合标准的文献。采用预先制订的资料提取表进行资料提取,资料提取内容包括论文标题、作者信息、发表年份、研究地点、研究类型、资料收集方法、研究目的、样本量、研究对象等基本信息和各项研究结果所得影响因素。

### 1.6 策略整合方法

TDF由心理学理论中行为改变关键结构整合而成<sup>[13]</sup>,概括了所有涉及影响行为因素的14个理论

域,目前均已被广泛用于行为改变的变量归类中,且每一个理论域都与COM-B模型某一部分相关联。本研究以COM-B和TDF作为编码框架,采用内容分析法<sup>[14]</sup>进行文本分析。具体编码过程为:研究小组根据TDF的原始定义讨论初拟其应用于晚期癌症患者ACP参与行为的内涵;然后由2名研究者对前4篇论文(2篇中文、2篇英文)进行独立预编码,将影响晚期癌症患者ACP参与行为的文本段作为“编码点”;再次召开研究小组会议审查讨论预编码的结果差异,并确定TDF在晚期癌症患者ACP参与行为中的内涵及正式的编码规范;最后,2名研究者分别精读每篇纳入文献,摘录相关编码点。编码结束后,再通过研究小组会议讨论合并相似编码点,提炼主题形成影响因素,并根据TDF的内涵映射至COM-B模型。编码过程中如存在意见分歧,则通过互相讨论或咨询第3名研究人员予以解决。

## 2 结果

### 2.1 文献检索结果及纳入文献基本特征

初始检索得到3 106篇相关文献。通过去重、阅读标题和摘要,进一步阅读全文后,最终纳入21篇,其中中文文献7篇<sup>[15-21]</sup>,英文文献14篇<sup>[22-35]</sup>,样本量共6 886例。文献筛选流程及结果见图1。

纳入文献发表时间集中在2005—2022年,2018年及以后发表的文献占66.7%(14篇)。量性研究共17项,其中包括11项横断面研究<sup>[15-18,20-21,24-25,29-31]</sup>,5项队列研究<sup>[27-28,32-34]</sup>,1项纵向研究<sup>[35]</sup>;质性研究共3项<sup>[19,22,26]</sup>;混合性研究共1项<sup>[23]</sup>。纳入文献的基本特征见表2。

### 2.2 文献质量评价

10项研究<sup>[15-18,22,25,27,30-31,34]</sup>文献质量评价为“优”,7项研究<sup>[19,23-24,28-29,32,35]</sup>为“良好”,4项研究<sup>[20-21,26,33]</sup>为“合格”。具体结果见表2。

### 2.3 COM-B模型应用于晚期癌症患者ACP参与行为的内涵

TDF可将COM-B模型的具体应用划分得更加详细。根据理论域的原始概念,本研究通过预编码和研究小组讨论,确定TDF应用于晚期癌症患者ACP参与行为的内涵。具体内容见表3。

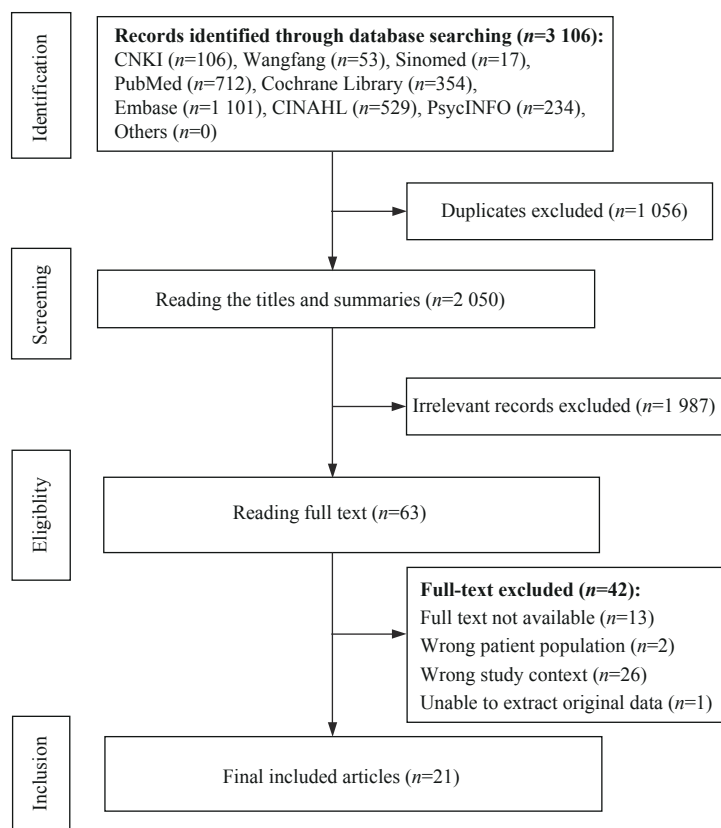


图1 文献筛选流程

Fig 1 Process of study selection

表2 纳入文献的基本特征

Tab 2 Characteristics of the included literature

Author	Year	Area	Design	Research method	Sample size	Influencing factor	Quality rating
QU X L, et al <sup>[19]</sup>	2020	Beijing, China	Qualitative study	Phenomenological study	17	I : ①②	80%
BAR-SELA G, et al <sup>[23]</sup>	2021	Israel	Mixed studies	Phenomenological study Questionnaire investigation	109	I : ①②⑧⑨⑩ ⑪ II : ⑥⑦	QN: 73% QL: 80%
WANG Y X, et al <sup>[20]</sup>	2019	Hefei, China	Cross-sectional study	Questionnaire investigation	520	I : ⑧⑨ II : ④⑤⑥⑦⑫ ⑭⑮	64%
WANG L, et al <sup>[18]</sup>	2021	Xi'an, China	Cross-sectional study	Questionnaire investigation	72	II : ③⑤⑭⑯⑰ III : ⑬	91%
YAN C X, et al <sup>[16]</sup>	2022	Tianjin, China	Cross-sectional study	Questionnaire investigation	206	I : ① III : ②④⑭	86%
CHEN Y Z, et al <sup>[15]</sup>	2022	Guangzhou, China	Cross-sectional study	Questionnaire investigation	120	III : ③④⑪⑲	86%
TANG S T, et al <sup>[30]</sup>	2014	Taiwan, China	Cross-sectional study	Questionnaire investigation	2 450	III : ⑭⑳㉑	86%
WONG S Y, et al <sup>[32]</sup>	2012	Hong Kong, China	Cohort study	Questionnaire investigation	191	III : ㉒ IV : ⑩	77%
HOU X T, et al <sup>[24]</sup>	2021	Beijing, China	Cross-sectional study	Questionnaire investigation	264	III : ⑤⑥⑫⑬	73%



Continued Tab

Author	Year	Area	Design	Research method	Sample size	Influencing factor	Quality rating
KIERNER K A, et al <sup>[33]</sup>	2010	Austria	Cohort study	Questionnaire investigation	108	II : ②	64%
RODENBACH R A, et al <sup>[25]</sup>	2021	America	Cross-sectional study	Questionnaire investigation	672	III : ①⑨	86%
GARRIDO M M, et al <sup>[31]</sup>	2014	America	Cross-sectional study	Questionnaire investigation	606	III : ③	82%
NILSSON M E, et al <sup>[34]</sup>	2009	America	Cohort study	Questionnaire investigation	668	III : ②④	86%
TRUE G, et al <sup>[35]</sup>	2005	America	Longitudinal study	Questionnaire investigation	68	III : ④②③	73%
YOO S H, et al <sup>[27]</sup>	2020	South Korea	Cohort study	Questionnaire investigation	150	I : ⑤ IV : ②⑩	86%
BROWN A J, et al <sup>[29]</sup>	2016	America	Cross-sectional study	Questionnaire investigation	110	III : ③⑥①⑨②⑥	77%
ZHU M L, et al <sup>[21]</sup>	2019	Zunyi, China	Cross-sectional study	Questionnaire investigation	90	II : ③①⑥	59%
WANG Y L <sup>[17]</sup>	2021	Shandong, China	Cross-sectional study	Questionnaire investigation	145	III : ①③④①⑨	91%
SHEN M J, et al <sup>[28]</sup>	2018	America	Cohort study	Questionnaire investigation	279	III : ②⑩	77%
SHEN M J, et al <sup>[26]</sup>	2020	America	Qualitative study	Phenomenological study	20	I : ④⑩①①⑧②③	55%
JIA Z M, et al <sup>[22]</sup>	2022	America	Qualitative study	Phenomenological study	21	I : ②①②⑦	90%

**Note:** I . Descriptive analysis. II . Univariate analysis. III . Multifactorial analysis. IV . No statistical significance. ①knowledge of ACP; ②ACP attitude; ③ education level; ④ religious belief; ⑤ place of living; ⑥ age; ⑦ cancer site; ⑧ ACP belief; ⑨ ACP motivation; ⑩ family support; ⑪ doctor-patient relationship; ⑫ gender; ⑬ family economic condition; ⑭ marital status; ⑮ housing type; ⑯ prior experience; ⑰ knowledge of the time of disease diagnosis; ⑱ social support; ⑲ death attitude; ⑳ accurate knowledge of prognosis; ㉑ whether or not to establish a hospice service center; ㉒ anxiety and depression; ㉓ race/ethnicity; ㉔ dependent children; ㉕ subjective life expectancy; ㉖ disease symptom burden; ㉗ acculturation. QN—quantitative part; QL—qualitative part.

2.4 基于COM-B模型分析晚期癌症患者ACP参与行为影响因素的结果

2.4.1 定性研究 meta 整合结果 对纳入文献<sup>[19,22-23,26]</sup>进行分析后,将相似结果整理归纳成14个影响因素类别,并借助TDF映射至COM-B模型。具体结果详见表4。

2.4.2 定量研究 meta 分析结果

(1) 能力类型因素 包括5个。①文化程度:4项研究<sup>[15,18,21,29]</sup>表明文化程度是患者参与ACP的影响因素,且文化程度越高,ACP参与度越高( $P<0.05$ )。②先前经历:2项研究<sup>[18,21]</sup>表明先前经历是患者参与ACP的影响因素。有过丧亲经历、住院经历的患者较无相关经历者ACP参与度更高( $P<0.05$ )。③准确了解预后知识:4项研究<sup>[27-28,30,32]</sup>表明

准确了解预后知识是患者ACP参与度的影响因素。患者对疾病预后知识了解度越高,其ACP参与度越高( $P<0.05$ )。④年龄:4项研究<sup>[18,23-24,29]</sup>对年龄进行评估,表明年龄是患者参与ACP的影响因素,且年龄越大,其ACP参与度越高( $P<0.05$ )。⑤肿瘤部位:2项研究<sup>[20,23]</sup>探讨了肿瘤部位与患者ACP参与度之间的关联。结果显示,相较于发现时已经处于晚期且生存期较短的腹部肿瘤患者(例如胰腺癌),在诊断时处于早期、疾病病程较长的胸部肿瘤患者(例如肺癌)对疾病认知更清晰,其ACP参与度更高( $P<0.05$ )。

(2) 机会类型因素 包括6个。①性别:2项研究<sup>[20,24]</sup>评估了患者ACP参与度与性别的关系。结果显示性别可能是患者参与ACP的影响因素,女性患

表3 COM-B模型应用于晚期癌症患者ACP参与行为的内涵

Tab 3 Connotation of the COM-B model in the ACP engagement behavior of advanced cancer patients

COM-B component	TDF	Original definition	Application of TDF to the connotation of ACP engagement behavior in patients with advanced cancer
Capability			
Psychological capability	Knowledge	An awareness of the existence of something	Understanding and being familiar with ACP-related knowledge
	Memory, attention and decision processes	The ability to retain information, selectively focus on aspects of the environment and choose between two or more alternatives	Ability to remember, focus, and select ACP
	Behavioural regulation	Anything aiming at managing or changing objectively observed or measured actions	Using healthy behaviors to manage emotions and pursue goals
Physical capability	Skills	An ability or proficiency acquired through practice	Acquiring the ability or skill to engage in ACP through practice, including physiological and cognitive skills
Opportunity			
Social opportunity	Social influences	Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviors	The process of social activities that enable individuals to change their cognition and behavior about ACP
Physical opportunity	Environmental context and resources	Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behavior	Personal conditions and environments that influence ACP engagement
Motivation			
Reflective motivation	Beliefs about capabilities	Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use	Believing that individuals have enough knowledge about ACP and can participate in ACP discussions
	Goals	Mental representations of outcomes or end states that an individual wants to achieve	The psychological outcomes that individuals want to achieve
	Intentions	A conscious decision to perform a behavior or a resolve to act in a certain way	Identifying the skills that are needed to engage in ACP
Automatic motivation	Beliefs about consequences	Acceptance of the truth, reality, or validity about outcomes of a behavior in a given situation	The degree to which the individuals accept the facts or believe that ACP's involvement in the behavior will lead to specific results
	Social/professional role and identity	A coherent set of behaviors and displayed personal qualities of an individual in a social or work setting	Self-perception based on social or professional identity
	Optimism	The confidence that things will happen for the best or that desired goals will be attained	Confidence that the desired goal will be achieved
	Reinforcement	Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus	Promoting and strengthening support for ACP participation
	Emotion	A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event	A mental state or emotional response that is determined by an individual's environment

者ACP参与度更高 ( $P<0.05$ )。②婚姻状况：5项研究<sup>[16-18,20,30]</sup>探究了婚姻状况与患者ACP参与度的关系。相较于已婚者，未婚者的ACP参与度更高 ( $P<0.05$ )。③家庭经济收入：2项研究<sup>[17,24]</sup>结果显示家庭经济收入可能是患者ACP参与度的影响因素。与家庭经济状况较差的患者相比，家庭经济状况较好的患者对ACP的认知程度更高，其ACP参与度更高

( $P<0.05$ )。④种族/民族：3项研究<sup>[26,31,35]</sup>结果显示种族/民族可能是患者ACP参与度的影响因素。患者ACP参与度因种族/民族而有较大差异，相较于非裔美国人和拉美裔，白色人种的ACP参与度更高 ( $P<0.05$ )。⑤居住地点：3项研究<sup>[18,20,24]</sup>显示居住地点可能是患者ACP参与度的影响因素。与居住在城市

表4 定性研究影响因素的整合结果

Tab 4 Integration results of qualitative study of influencing factors

COM-B	TDF	Influencing factor	Specific description
Capability			
Psychological capability	Knowledge	Knowledge of ACP	→Getting more information about ACP can help patients to understand its significance <sup>[23]</sup> →Patients do not know, do not understand or misunderstand the related concepts of ACP <sup>[19]</sup>
		Education level	→Cultural education can help patients engage in discussion APC <sup>[26]</sup>
	Behavioural regulation	Prior experience	→Patients with disease experience are more likely to discuss ACP <sup>[23]</sup>
Physical capability	Skills	Cancer site	→Lung cancer patients are more likely to complete advanced directives/Durable Power of Attorney (DPOA) than brain cancer patients <sup>[23]</sup>
Opportunity			
Social opportunity	Social influences	Race/ethnicity	→Hispanic patients prefer a family-centered, physician-informed approach to discussing ACP with consideration and incorporation of their religious medical beliefs about end-of-life care <sup>[26]</sup>
		Religious belief	→Overly optimistic religious beliefs will affect patients' discussion about ACP <sup>[26]</sup>
		Family support	→Patients hope to have open communication with family members <sup>[23]</sup> →Involving family in conversations about end-of-life care can help Latinos to communicate <sup>[26]</sup> →No close relatives agree to take responsibility for preventing patients from engaging in ACP <sup>[23]</sup> →No close relatives can be trusted for preventing patients from engaging in ACP <sup>[23]</sup>
		Doctor-patient relationship	→Patients prefer for the trusted doctors to initiate ACP conversations <sup>[22-23, 26]</sup> →Patients hope to have open communication with physician <sup>[23]</sup> →Patients' preconceived notions of clinicians' professional responsibility may hinder public discussion of future health care goals and values <sup>[22]</sup>
		Social support	→Providing culturally counseling services and educational materials can help patients learn how to communicate information about ACP <sup>[26]</sup>
		Acculturation	→A key regulator of how patients view ACP is their cultural adaptation to local norms of care, behavior, and communication <sup>[22]</sup>
Physical opportunity	Environmental context and resources	Place of living	→Living in rural areas has a positive impact on patients' willingness to participate in ACP <sup>[22]</sup>
Motivation			
Reflective motivation	Intentions	ACP attitude	→Uncertainty about the timing of patients' engagement in ACP <sup>[19, 23]</sup> →Patients believe that engagement in ACP increases negative emotions <sup>[19]</sup> →Patients question whether ACP itself can be carried out smoothly <sup>[19]</sup> →Patients' belief in an uncertain future may hinder public discussion of future health care goals and values <sup>[22]</sup>
			→Patients hope to make the best medical decisions and avoid unnecessary medical measures <sup>[23]</sup>
	Goals	ACP belief	→Having the opportunity to discuss disease information openly with families and doctors will increase patients' willingness to engage in ACP <sup>[23]</sup>
	Beliefs about capabilities	ACP motivation	

( $P<0.05$ )。⑥宗教信仰：5项研究<sup>[15-16, 20, 26, 35]</sup>评估了患者ACP参与度与宗教信仰之间的关系。3项研究<sup>[15, 26, 35]</sup>表明宗教信仰可能是患者ACP参与度的阻碍因素。相较于无宗教信仰的患者，有宗教信仰的患者ACP参与度更低（ $P<0.05$ ）。

（3）动机类型因素 仅1个，即死亡态度。4项研究<sup>[15, 17, 25, 29]</sup>表明死亡态度可能是患者参与ACP的影响因素。患者的死亡恐惧和死亡焦虑与其ACP参与度呈负相关，死亡接受态度与其ACP参与度呈正相关（均 $P<0.05$ ）。

2.4.3 定量研究描述性分析结果 本研究发现有多

个影响因素只有单篇文献报道，无法进行合并分析，故对其进行描述性分析。从10项研究<sup>[15-16, 18, 20, 27, 29-30, 32-34]</sup>中共提炼出14个影响晚期癌症患者ACP参与行为的相关因素，并借助TDF映射至COM-B模型，具体结果详见表5。

2.4.4 量性研究和质性研究的整合结果 将量性与质性研究结果整合，共提取出27个影响因素。根据其促进或阻碍作用对其进行分类，并借助TDF逐级映射至COM-B模型。结果涉及9个理论域，覆盖能力、机会、动机三大组分（表6）。

表5 定量研究描述性分析结果

Tab 5 Descriptive analysis results of quantitative study

COM-B	TDF	Influencing factor	Specific description
Capability			
Psychological capability	Knowledge	Knowledge of ACP	→The percentage of patients willing to engage in ACP increased after understanding the concept, process, and importance of advance directive <sup>[16]</sup>
	Behavioural regulation	Knowledge of the time of disease diagnosis	→Patients who know about the diagnosis of the disease for longer are more likely to engage in ACP <sup>[18]</sup>
		Subjective life expectancy	→Patients who are expected to live only a few months are less likely to prefer aggressive treatment <sup>[27]</sup>
Physical capability	Skills	Disease symptom burden	→The greater the burden of symptoms, the less likely patients are to sign advance directives or health care powers of attorney <sup>[29]</sup>
Opportunity			
Social opportunity	Social influences	Family support	→Family members not objecting is an important factor in discussing ACP <sup>[32]</sup>
		Social support	→Patients with higher social support are more willing to engage in ACP <sup>[18]</sup>
		Doctor-patient relationship	→Poor doctor-patient relationship leads to low acceptance of ACP <sup>[15]</sup>
		Dependent children	→Patients with dependent children are more likely to prefer aggressive treatment and less likely to engage in ACP <sup>[34]</sup>
Physical opportunity	Environmental context and resources	Housing type	→Patients without private housing are more willing to engage in ACP <sup>[20]</sup>
		Hospice service center	→Whether or not to establish a hospice service center is a factor influencing whether or not patients choose to participate in ACP <sup>[30]</sup>
Motivation			
Reflective motivation	Intentions	ACP attitude	→The sense of life meaning is the main factor influencing patients' attitude towards ACP <sup>[16]</sup>
	Goals	ACP belief	→Patients want to ensure a comfortable end-of-life and avoid pain <sup>[20]</sup>
	Beliefs about capabilities	ACP motivation	→The reason that hinders patients from engaging in ACP is that patients think that their relatives can make decisions for them or that their wishes may change in the future <sup>[20]</sup>
Automatic motivation	Emotion	Anxiety and depression	→Patients who participated in ACP had significantly higher anxiety and depression scores than those who did not participate in ACP <sup>[33]</sup>

2.5 晚期癌症患者 ACP 参与行为影响因素涉及的 COM-B 模型组分

本研究所纳入的 21 篇研究中，有 11 篇研究<sup>[15-20, 22-24, 29-30]</sup>的影响因素涉及 2 个及以上的分组。提示晚期癌症患者 ACP 参与行为影响因素可能存在多源性和交叉性。但仍有高达 10 篇的研究<sup>[21, 25-28, 31-35]</sup>仅关注到单一组分的因素，提示后续研究要重视从多方面探索晚期癌症患者 ACP 参与行为影响因素。

2.6 晚期癌症患者 ACP 参与行为具体影响因素频次排序

对得到的 78 个编码点根据具体的影响因素频次

进行排序。排名前 13 位的分别为医患关系（6 次）、宗教信仰（6 次）、ACP 态度（6 次）、文化程度（5 次）、婚姻状况（5 次）、家庭支持（5 次）、ACP 知识（4 次）、准确了解预后知识（4 次）、年龄（4 次）、居住地点（4）、死亡态度（4 次）、先前经历（3 次）、种族/民族（3 次）。提示以上高频次影响因素对晚期癌症患者 ACP 参与行为的影响较大，后期研究可针对这些因素进行精准干预。排名后 3 位的焦虑抑郁（1 次）、未成年子女（1 次）和疾病症状负担（1 次）也是影响患者 ACP 参与行为过程中极为重要的因素<sup>[27, 31-32]</sup>，但在纳入的我国研究中并未发现，提示我国现有研究在相关影响因素方面还有待进一步挖掘。



表 6 晚期癌症患者 ACP 参与行为影响因素 COM-B 模型编码结果汇总

Tab 6 Factors influencing ACP engagement behavior of advanced cancer patients coded according to COM-B model

COM-B		TDF	Facilitator	Barrier
Capability				
Psychological capability	Knowledge		Knowledge of ACP <sup>[16,23]</sup> Education level <sup>[15,18,21,29]</sup> Accurate knowledge of prognosis <sup>[27-28,30,32]</sup>	Knowledge of ACP <sup>[19]</sup>
	Behavioural regulation		Knowledge of the time of disease diagnosis <sup>[18]</sup> Prior experience <sup>[18,21,23]</sup>	Subjective life expectancy <sup>[27]</sup>
Physical capability	Skills		Age <sup>[23-24,29-30]</sup> Cancer site <sup>[20,23]</sup>	Disease symptom burden <sup>[29]</sup>
Opportunity				
Social opportunity	Social influences		Marital status <sup>[16-18,20,30]</sup> Race/ethnicity <sup>[26,31]</sup> Family support <sup>[23,26,32]</sup> Doctor-patient relationship <sup>[22-23,26]</sup> Religious belief <sup>[416,20]</sup> Gender <sup>[20,24]</sup> Social support <sup>[18,26]</sup> Dependent children <sup>[34]</sup> Acculturation <sup>[22]</sup>	Marital status <sup>[30]</sup> Race/ethnicity <sup>[35]</sup> Family support <sup>[23]</sup> Doctor-patient relationship <sup>[15,22]</sup> Religious belief <sup>[15,26,35]</sup>
Physical opportunity	Environmental context and resources		Family economic condition <sup>[17,24]</sup> Place of living <sup>[20]</sup> Housing type <sup>[20]</sup>	Hospice service center <sup>[30]</sup> Place of living <sup>[18,24]</sup>
Motivation				
Reflective motivation	Intentions		—	ACP attitude <sup>[16,19,22-23]</sup>
	Goals		ACP belief <sup>[20,23]</sup>	—
	Beliefs about capabilities		ACP motivation <sup>[23]</sup>	ACP motivation <sup>[20]</sup>
Automatic motivation	Emotion		Anxiety and depression <sup>[33]</sup>	Death attitude <sup>[15,17,25,29]</sup>

3 讨论

3.1 COM-B 模型为晚期癌症患者 ACP 参与行为提供了一种全面系统的分析方法

目前，我国大部分晚期癌症患者对 ACP 的态度积极但参与行为不理想，这可能与晚期癌症患者参与 ACP 的能力、机会、动机紧密相关。要促进 ACP 行为改变，全面了解晚期癌症患者 ACP 参与行为的影响因素是前提。COM-B 模型作为理解和支持行为改变的关键理论框架，涵盖了行为改变理论所涉及的影响行为和行为改变的主要因素，可提供与行为机制相互关联的干预指导，具有包容性强、覆盖面广的特点。本研究以 COM-B 模型为指导，采用内容分析法对晚期癌症患者 ACP 参与行为的影响进行编码分类和归纳，结果显示晚期癌症患者 ACP 参与行为影响因素覆盖了 COM-B 模型的能力、机会、动机三大组分。

机会组分归纳到的影响因素最多。根据影响因素的聚类提炼出 13 个三级节点，分别为性别、婚姻状

况、家庭经济收入、居住地点、住房类型、家庭支持、社会支持、种族/民族、宗教信仰、医患关系、未成年子女、文化适应和是否设立临终关怀服务中心。其中，房屋居住类型、未成年子女、文化适应和是否设立临终关怀服务中心等影响因素的研究报道较少。多数研究没有基于相关行为改变理论进行影响因素的系统剖析，导致数据资料具有片面性。要实现长期的行为改变，需采取全面、全程、连续的方法。结果提示未来研究应重视在理论指导下通过跨学科跨领域的合作对行为影响因素深入挖掘。

能力组分归纳到的影响因素较多。其中，心理能力组分提炼出 6 个三级节点，包括 ACP 知识、文化程度、准确了解疾病预后知识、知晓疾病诊断时间、主观预期寿命和先前经历。身体能力组分提炼出 3 个二级节点，分别为年龄、肿瘤部位、疾病症状负担。当心理准备和身体准备比较充分<sup>[36-37]</sup>，患者可以按照自己的节奏制定有意义的医疗照护计划。

动机组分归纳到的影响因素最少，根据影响因素的聚类提炼出 5 个三级节点，分别为 ACP 态度、ACP

信念、ACP 动机、死亡态度和焦虑抑郁。根据行为改变理论,个体的动机维度是强化和维持行为的重要方面<sup>[38]</sup>。然而我国针对 ACP 态度、ACP 信念、ACP 动机和焦虑抑郁等心理因素的研究较少,提示我国在患者心理领域的相关探究还有所欠缺,未来可以对此进行更多的探讨。

### 3.2 晚期癌症患者 ACP 参与行为的影响因素

通过对编码点进行频率排序发现,对 ACP 参与行为影响最多的单因素是医患关系。此外,宗教信仰、文化程度、婚姻状况、家庭支持、ACP 知识、准确了解预后知识、先前经历、年龄、居住地点、ACP 态度、死亡态度等也是常见的影响因素。ACP 知识对 ACP 参与行为的影响是最直接的,也是最容易识别和干预的影响因素,可通过教育、培训或提供咨询服务进行干预<sup>[39]</sup>。死亡态度也是 ACP 参与行为的重要影响因素。当个体暴露于与其固有观念不一致的文化环境时会产生心理上的不适感,可能会因认知冲突效应而出现偏见式信息处理行为<sup>[40]</sup>。碍于传统文化的敏感性,且长期处于死亡恐惧和焦虑的患者,常通过维护自身的文化世界观进行心理防护、抵御死亡恐惧<sup>[41]</sup>,无法从科学角度正确认识 ACP 的实施益处,进一步限制了 ACP 参与行为实践。结果提示未来研究需要更加关注晚期癌症患者死亡态度的干预。另外,已婚、家庭支持和医患关系良好、先前有过临终经历等促进因素已得到了非常广泛的关注,而宗教信仰、文化程度低下、不了解预后知识、居住在农村、对未来的不确定等是常见的阻碍因素。后续的研究可着眼于促进因素和阻碍因素,进一步丰富基于 COM-B 模型的综合性干预策略。

### 3.3 影响晚期癌症患者 ACP 参与行为的因素具有多源性和交叉性

本研究所纳入的文献中,多数涉及了 2 个及以上的组分的影响因素,其中最多的一项研究涉及能力、机会、动机 3 个组分。由此可见,晚期癌症患者 ACP 参与行为的影响因素具有多源性。另外,晚期癌症患者 ACP 参与行为的影响因素还存在一定的交叉性。又如一项横断面研究<sup>[20]</sup>中指出,晚期癌症患者 ACP 参与行为受到年龄、宗教信仰、ACP 动机的影响,分别属于能力、机会及动机组分,但三者之间存在强

度较高的相互影响。家庭支持和医患关系属于 ACP 参与行为的机会因素,正向的家庭支持和医患关系可通过增强患者的动机间接地影响患者 ACP 参与行为的产生。但另有研究结果<sup>[23]</sup>显示,不提高家庭支持和改善医患关系,仅增强患者的 ACP 动机不足以改善 ACP 参与行为。并且,针对某单个方面的干预措施效果比较有限<sup>[5]</sup>,提示在今后研究中应积极探索综合性、全面性的干预方案。

本研究的局限性:①受语言限制,本研究只纳入了中、英文研究,研究结果全面性受限。②仅纳入主题为晚期癌症患者 ACP 参与行为的文献,未来的研究可进一步扩大研究主题范围。③TDF 只能协助筛选出影响因素,无法呈现变量间的因果关系。本研究基于 COM-B 和 TDF 筛选出的影响因素仅用于晚期癌症患者群体,研究结果的适用性和可推广性还需进一步完善。

综上所述,本研究基于 COM-B 模型对晚期癌症患者 ACP 参与行为影响因素进行归纳,发现其覆盖了能力、机会、动机三大组分,包括医患关系、宗教信仰、死亡态度等 27 个具体影响因素,各因素间具有多源性和交叉性。目前缺乏相关临床试验验证各影响因素和晚期癌症患者 ACP 参与行为之间的因果关系。后续可基于 COM-B 模型开展模型构建及实证研究,深入挖掘我国晚期癌症患者 ACP 参与行为的关键影响因素,为设计本土化的 ACP 干预方案提供参考。

#### 利益冲突声明/Conflict of Interests

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#### 作者贡献/Authors' Contributions

傅艺玲和吴茜负责论文撰写,傅艺玲和吴艾泓负责数据提取和整理,夏雪兰负责论文修改,罗晓庆和郑敏提出研究构想和论文审阅。所有作者均阅读并同意最终稿件的提交。

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[本文编辑] 包 玲

## 学术快讯

### 上海交通大学基础医学院童雪梅团队揭示转酮醇酶调控线粒体代谢稳态的机制并提出治疗代谢相关脂肪性肝病的核酸疗法

2024年3月27日,上海交通大学基础医学院生化与分子细胞生物学系童雪梅教授课题组和刘俊岭教授课题组等合作在 *Cell Metabolism* 杂志在线发表题目为 *Transketolase promotes MAFLD by limiting inosine-induced mitochondrial activity* 的研究论文,揭示了高胰岛素血症促进肝脏转酮醇酶(transketolase, TKT)表达,通过改变核苷代谢稳态抑制肝细胞线粒体活性,加速饮食诱发的代谢相关脂肪性肝病(metabolic dysfunction-associated fatty liver disease, MAFLD),并发现以肝细胞 TKT 为靶点的 N-乙酰半乳糖胺(N-acetylgalactosamine, GalNAc)-小干扰RNA(small interfering RNA, siRNA)偶联物可改善脂肪性肝炎和肝纤维化。

研究者通过蛋白质组、代谢组和脂质组等多组学分析发现,与健康对照相比,MAFLD患者肝脏TKT高表达,磷脂酰胆碱(phosphatidylcholine, PC)水平降低。还发现高脂饮食诱发的高胰岛素血症通过胰岛素受体和转录因子CEBP(cAMP response element binding protein),促进肝脏TKT表达;敲除 *Tkt* 导致核苷分解受阻,积累的次黄嘌呤核苷通过自分泌途径激活蛋白激酶A(protein kinase A, PKA)-CREB-PC轴,增强肝细胞线粒体功能,减缓高脂饮食诱导的MAFLD。基于此,研究者设计合成靶向肝脏TKT的GalNAc-siRNA偶联物,并在小鼠模型中成功验证其对MAFLD尤其是肝纤维化有减缓效果。