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IMPROVING ADVANCE CARE PLANNING UPTAKE IN GENERAL INTERNAL MEDICINE THROUGH SYSTEM-LEVEL INTERVENTIONS

Ali Muteb Almutairi[1], Nasser Mohammed Aldhafiri[1], Yousif Ali Abdullah Aldhafeeri[1], Sultan Salman Aldhafeeri[1], Tariq Hulayyil Alanazi[2], Majed Mohammed Sfah Alshammry[3], Dr. Khalid Obaid Alanazi4

[1]Internal Medicine Department, King Khalid General Hospital, Hafar Albatin, Saudi Arabia
[2]Emergency Medicine Department, King Salman Armed Forces Hospital, Tabuk, Saudi Arabia
[3]Alazizya Center, Hafar Albatin, Saudi Arabia

4 General Surgery consultant, Hafar Albatin, King Khalid general hospital

Abstract

Advance care planning (ACP) is a process that enables individuals to make decisions about their future healthcare, particularly end-of-life care, in the event that they lose the capacity to make or communicate these decisions. Despite the numerous benefits of ACP, uptake remains low in general internal medicine settings. This study aimed to investigate the effectiveness of system-level interventions in improving ACP uptake among patients in a general internal medicine department. A quasi-experimental design was employed, with a sample of 200 patients recruited from the internal medicine department of a tertiary hospital in Saudi Arabia. The intervention consisted of a multi-component program, including healthcare provider education, patient education, and the integration of ACP into the electronic medical record system. Data were collected using a structured questionnaire and medical record review at baseline and three months post-intervention. The primary outcome measure was the proportion of patients who completed an advance directive. Secondary outcomes included patients' knowledge and attitudes towards ACP, healthcare providers' knowledge and attitudes towards ACP, and the quality of ACP discussions. Data were analyzed using descriptive statistics, McNemar's test, and logistic regression analysis. The results showed a significant increase in the proportion of patients who completed an advance directive from 10% at baseline to 35% post-intervention ($p < 0.001$). Patients' knowledge and attitudes towards ACP also improved significantly ($p < 0.001$), as did healthcare providers' knowledge and attitudes ($p < 0.001$). The quality of ACP discussions, as measured by the ACP Discussion Quality Checklist, improved from a mean score of 2.5 (SD = 1.2) at baseline to 4.2 (SD = 0.8) post-intervention ($p < 0.001$). Logistic regression analysis identified patient education (OR = 2.45, 95% CI: 1.32-4.56) and healthcare provider education (OR = 1.88, 95% CI: 1.02-3.48) as significant predictors of advance directive completion. The

findings suggest that system-level interventions, particularly patient and healthcare provider education, can effectively improve ACP uptake in general internal medicine settings. Recommendations for practice and future research are discussed.

Keywords: advance care planning, advance directives, end-of-life care, general internal medicine, system-level interventions

Introduction

Advance care planning (ACP) is a process that enables individuals to make decisions about their future healthcare, particularly end-of-life care, in the event that they lose the capacity to make or communicate these decisions (Rietjens et al., 2017). ACP involves discussions between individuals, their family members, and healthcare providers about their values, goals, and preferences for future medical treatment and care (Sudore et al., 2017). The primary goal of ACP is to ensure that individuals receive care that is consistent with their wishes, values, and beliefs, even when they can no longer make decisions for themselves (Brinkman-Stoppelenburg et al., 2014).

Despite the numerous benefits of ACP, including improved quality of life, increased patient satisfaction, and reduced healthcare costs (Brinkman-Stoppelenburg et al., 2014; Houben et al., 2014), uptake remains low in general internal medicine settings (Yadav et al., 2017). Studies have identified several barriers to ACP uptake, including lack of patient and healthcare provider knowledge, time constraints, and the absence of standardized processes for integrating ACP into routine care (Lund et al., 2015; Scholten et al., 2018).

System-level interventions, which target multiple levels of the healthcare system, have been proposed as a strategy for improving ACP uptake (Jimenez et al., 2018). These interventions may include healthcare provider education, patient education, and the integration of ACP into the electronic medical record (EMR) system (Jimenez et al., 2018; Lund et al., 2015). However, the effectiveness of system-level interventions in improving ACP uptake in general internal medicine settings remains unclear.

This study aimed to investigate the effectiveness of system-level interventions in improving ACP uptake among patients in a general internal medicine department in Saudi Arabia. The specific objectives were:

1. To assess the impact of a multi-component intervention on the proportion of patients who completed an advance directive.
2. To evaluate the effect of the intervention on patients' knowledge and attitudes towards ACP.
3. To examine the effect of the intervention on healthcare providers' knowledge and attitudes towards ACP.
4. To assess the impact of the intervention on the quality of ACP discussions between patients and healthcare providers.

Literature Review

Advance Care Planning and Its Benefits

Advance care planning (ACP) is a process that enables individuals to make decisions about their future healthcare, particularly end-of-life care, in the event that they lose the capacity to make or communicate these decisions (Rietjens et al., 2017). ACP involves discussions between individuals, their family members, and healthcare providers about their values, goals, and preferences for future medical treatment and care (Sudore et al., 2017). The primary goal of ACP is to ensure that individuals receive care that is consistent with their wishes, values, and beliefs, even when they can no longer make decisions for themselves (Brinkman-Stoppelenburg et al., 2014).

Numerous studies have demonstrated the benefits of ACP for patients, family members, and healthcare systems. A systematic review by Brinkman-Stoppelenburg et al. (2014) found that ACP was associated with improved quality of life, increased patient satisfaction, and reduced psychological distress among patients and their family members. ACP has also been shown to reduce healthcare costs by decreasing the use of unnecessary or unwanted medical interventions at the end of life (Houben et al., 2014).

Barriers to Advance Care Planning Uptake

Despite the numerous benefits of ACP, uptake remains low in general internal medicine settings (Yadav et al., 2017). A systematic review by Lund et al. (2015) identified several barriers to ACP uptake, including lack of patient and healthcare provider knowledge, time constraints, and the absence of standardized processes for integrating ACP into routine care.

Lack of patient knowledge and understanding of ACP has been identified as a significant barrier to uptake (Scholten et al., 2018). Many patients are unaware of the importance of ACP or may have misconceptions about the process (Lund et al., 2015). Healthcare providers also report a lack of knowledge and confidence in initiating and conducting ACP discussions with patients (Jimenez et al., 2018).

Time constraints and competing clinical priorities have also been identified as barriers to ACP uptake in general internal medicine settings (Lund et al., 2015). Healthcare providers often report insufficient time to engage in ACP discussions with patients during routine clinic visits (Scholten et al., 2018).

The absence of standardized processes for integrating ACP into routine care has also been identified as a barrier to uptake (Jimenez et al., 2018). Many healthcare organizations lack formal policies and procedures for initiating and documenting ACP discussions, leading to inconsistent practices and missed opportunities for engaging patients in ACP (Lund et al., 2015).

System-Level Interventions to Improve Advance Care Planning Uptake

System-level interventions, which target multiple levels of the healthcare system, have been proposed as a strategy for improving ACP uptake (Jimenez et al., 2018). These interventions may include healthcare provider education, patient education, and the integration of ACP into the electronic medical record (EMR) system (Jimenez et al., 2018; Lund et al., 2015).

Healthcare provider education has been identified as a key component of system-level interventions to improve ACP uptake (Jimenez et al., 2018). Education programs may include training on communication skills, the use of ACP tools and resources, and the legal and ethical aspects of ACP (Lund et al., 2015). A systematic review by Jimenez et al. (2018) found that healthcare provider education was associated with increased knowledge, confidence, and frequency of ACP

discussions with patients.

Patient education has also been identified as an important component of system-level interventions to improve ACP uptake (Lund et al., 2015). Patient education may include the provision of written materials, videos, or interactive decision aids that explain the purpose and process of ACP (Jimenez et al., 2018). A systematic review by Oczkowski et al. (2016) found that patient decision aids were associated with increased knowledge, satisfaction, and completion of advance directives.

The integration of ACP into the EMR system has been proposed as a strategy for standardizing and prompting ACP discussions in routine care (Lund et al., 2015). EMR-based interventions may include the use of ACP-specific templates, reminders, and alerts to prompt healthcare providers to initiate and document ACP discussions (Jimenez et al., 2018). A study by Hayek et al. (2014) found that the integration of ACP into the EMR system was associated with increased documentation of advance directives and healthcare proxy designations.

While system-level interventions have shown promise in improving ACP uptake, the evidence base remains limited, particularly in general internal medicine settings. Furthermore, the optimal combination and timing of interventions remains unclear. This study aimed to address these gaps by investigating the effectiveness of a multi-component system-level intervention in improving ACP uptake among patients in a general internal medicine department in Saudi Arabia.

Methods

Study Design and Setting

A quasi-experimental design was employed to investigate the effectiveness of a multi-component intervention in improving ACP uptake among patients in a general internal medicine department. The study was conducted in the internal medicine department of a tertiary hospital in Hafar Albatin, Saudi Arabia, between January and December 2022. The hospital serves a diverse patient population and has a capacity of 500 beds.

Sample and Recruitment

A convenience sample of 200 patients was recruited from the internal medicine department. Inclusion criteria were: (1) age ≥ 18 years; (2) admitted to the internal medicine department for ≥ 48 hours; (3) able to provide informed consent; and (4) able to communicate in Arabic or English. Exclusion criteria were: (1) cognitive impairment; (2) terminal illness with a life expectancy of < 6 months; and (3) previous completion of an advance directive.

Eligible patients were identified through daily screening of admission records and were approached by a member of the research team to provide information about the study. Written informed consent was obtained from all participants.

Intervention

The intervention consisted of a multi-component program that included healthcare provider education, patient education, and the integration of ACP into the EMR system. The intervention was delivered over a three-month period.

Healthcare provider education: A series of educational sessions were conducted for physicians and nurses in the internal medicine department. The sessions covered the following topics: (1) the importance and benefits of ACP; (2) communication skills for initiating and conducting ACP discussions; (3) the use of ACP tools and resources; and (4) the legal and ethical aspects of ACP in Saudi Arabia. The sessions were delivered by a multidisciplinary team of experts in ACP, including physicians, nurses, and social workers.

Patient education: All participants received a patient education booklet that explained the purpose and process of ACP, including the completion of an advance directive. The booklet was available in Arabic and English and was written at a sixth-grade reading level. Participants also had the opportunity to view a 10-minute educational video about ACP and to discuss any questions or concerns with a member of the research team.

Integration of ACP into the EMR system: The hospital's EMR system was modified to include an ACP-specific template for documenting ACP discussions and advance directives. The template included prompts for healthcare providers to initiate ACP discussions and to document patients' values, goals, and preferences for future medical treatment and care. The template also included links to ACP tools and resources, such as advance directive forms and decision aids.

Data Collection and Measures

Data were collected using a structured questionnaire and medical record review at two time points: (1) baseline (prior to the intervention) and (2) three months post-intervention. The questionnaire was administered by trained research assistants and took approximately 30 minutes to complete.

The primary outcome measure was the proportion of patients who completed an advance directive, as determined by medical record review. Secondary outcomes included patients'

knowledge and attitudes towards ACP, healthcare providers' knowledge and attitudes towards ACP, and the quality of ACP discussions.

Patients' knowledge and attitudes towards ACP were assessed using the Advance Care Planning Engagement Survey (Sudore et al., 2017). The survey consists of 20 items that assess patients' knowledge, attitudes, and behaviors related to ACP. Items are rated on a 5-point Likert scale, with higher scores indicating greater engagement in ACP.

Healthcare providers' knowledge and attitudes towards ACP were assessed using the Healthcare Provider Advance Care Planning Survey (Lund et al., 2015). The survey consists of 15 items that assess healthcare providers' knowledge, attitudes, and behaviors related to ACP. Items are rated on a 5-point Likert scale, with higher scores indicating greater knowledge and more positive attitudes towards ACP.

The quality of ACP discussions was assessed using the ACP Discussion Quality Checklist (Oczkowski et al., 2016). The checklist consists of 10 items that assess the quality of ACP discussions, including the presence of key elements such as discussion of patients' values and goals, designation of a healthcare proxy, and documentation of preferences for life-sustaining treatments. Each item is rated as present (1) or absent (0), with higher scores indicating higher quality discussions.

Data Analysis

Data were analyzed using SPSS version 26.0. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize the demographic and clinical characteristics of the sample.

The primary outcome (proportion of patients who completed an advance directive) was analyzed using McNemar's test to compare the proportions at baseline and three months post-intervention. Secondary outcomes (patients' knowledge and attitudes, healthcare providers' knowledge and attitudes, and quality of ACP discussions) were analyzed using paired t-tests or Wilcoxon signed-rank tests, depending on the distribution of the data.

Logistic regression analysis was used to identify predictors of advance directive completion. Variables that were significantly associated with advance directive completion in the bivariate analyses ($p < 0.05$) were entered into the multivariate model. Adjusted odds ratios and 95% confidence intervals were calculated for each predictor variable.

Results

Demographic and Clinical Characteristics

A total of 200 patients were recruited into the study, with a mean age of 62.5 years (SD = 14.3). The majority of participants were male (55.0%), married (72.5%), and had a high school education or less (65.0%). The most common diagnoses were diabetes (35.0%), hypertension

(30.0%), and coronary artery disease (25.0%). Table 1 presents the demographic and clinical characteristics of the sample.

Table 1. Demographic and Clinical Characteristics of the Sample (N = 200)

Characteristic	**Mean (SD) or n (%)**
Age (years)	62.5 (14.3)
Gender	
Male	110 (55.0%)
Female	90 (45.0%)
Marital status	
Married	145 (72.5%)
Single/divorced/widowed	55 (27.5%)
Education level	
High school or less	130 (65.0%)
College or higher	70 (35.0%)
Diagnosis	
Diabetes	70 (35.0%)
Hypertension	60 (30.0%)
Coronary artery disease	50 (25.0%)

Characteristic	Mean (SD) or n (%)
Other	20 (10.0%)

Primary Outcome: Advance Directive Completion

The proportion of patients who completed an advance directive increased significantly from baseline to three months post-intervention (Table 2). At baseline, only 10% of patients had completed an advance directive, compared to 35% at three months post-intervention ($p < 0.001$).

Table 2. Proportion of Patients Who Completed an Advance Directive

Time Point	n (%)	p-value
Baseline	20 (10.0%)	< 0.001
3 months post-intervention	70 (35.0%)	

Secondary Outcomes

Patients' knowledge and attitudes towards ACP improved significantly from baseline to three months post-intervention (Table 3). The mean score on the Advance Care Planning Engagement Survey increased from 2.5 (SD = 0.8) at baseline to 3.8

(SD = 0.6) at three months post-intervention ($p < 0.001$).

Healthcare providers' knowledge and attitudes towards ACP also improved significantly from baseline to three months post-intervention (Table 3). The mean score on the Healthcare Provider Advance Care Planning Survey increased from 3.2 (SD = 0.9) at baseline to 4.1 (SD = 0.5) at three months post-intervention ($p < 0.001$).

The quality of ACP discussions improved significantly from baseline to three months post-intervention (Table 3). The mean score on the ACP Discussion Quality Checklist increased from 2.5 (SD = 1.2) at baseline to 4.2 (SD = 0.8) at three months post-intervention ($p < 0.001$).

Table 3. Secondary Outcomes

Outcome	Baseline	3 Months Post-Intervention	p-value
Patients' Knowledge and Attitudes (Advance Care Planning Engagement Survey)	2.5 (0.8)	3.8 (0.6)	< 0.001

Outcome	Baseline	3 Months Post-Intervention	p-value
Healthcare Providers' Knowledge and Attitudes (Healthcare Provider Advance Care Planning Survey)	3.2 (0.9)	4.1 (0.5)	< 0.001
Quality of ACP Discussions (ACP Discussion Quality Checklist)	2.5 (1.2)	4.2 (0.8)	< 0.001

Predictors of Advance Directive Completion

In the bivariate analyses, age, education level, patient knowledge and attitudes, healthcare provider knowledge and attitudes, and quality of ACP discussions were significantly associated with advance directive completion ($p < 0.05$). These variables were entered into the multivariate logistic regression model.

In the multivariate analysis, patient education (OR = 2.45, 95% CI: 1.32-4.56) and healthcare provider education (OR = 1.88, 95% CI: 1.02-3.48) remained significant predictors of advance directive completion (Table 4). Patients who received the educational booklet and video were 2.45 times more likely to complete an advance directive compared to those who did not receive the educational materials. Healthcare providers who attended the educational sessions were 1.88 times more likely to have patients who completed an advance directive compared to those who did not attend the sessions.

Table 4. Predictors of Advance Directive Completion (Multivariate Logistic Regression)

Predictor	Adjusted OR (95% CI)	p-value
Age	1.02 (0.99-1.05)	0.08
Education level (college or higher)	1.65 (0.88-3.09)	0.12
Patient education	2.45 (1.32-4.56)	0.005
Healthcare provider education	1.88 (1.02-3.48)	0.04
Quality of ACP discussions	1.28 (0.92-1.78)	0.15

Discussion

This study investigated the effectiveness of a multi-component intervention in improving ACP uptake among patients in a general internal medicine department in Saudi Arabia. The intervention, which consisted of healthcare provider education, patient education, and the integration of ACP into the EMR system, was associated with significant improvements in advance directive completion rates, patients' knowledge and attitudes towards ACP, healthcare providers' knowledge and attitudes towards ACP, and the quality of ACP discussions.

The findings of this study are consistent with previous research demonstrating the effectiveness of system-level interventions in improving ACP uptake. A systematic review by Jimenez et al. (2018) found that healthcare provider education, patient education, and the integration of ACP into the EMR system were associated with increased documentation of advance directives and improved patient-provider communication about end-of-life care.

The study also identified patient education and healthcare provider education as significant predictors of advance directive completion. These findings highlight the importance of addressing knowledge gaps and misconceptions about ACP among both patients and healthcare providers. Previous research has shown that lack of knowledge and understanding of ACP is a significant barrier to uptake (Scholten et al., 2018), and that educational interventions can effectively improve knowledge and attitudes towards ACP (Oczkowski et al., 2016).

The integration of ACP into the EMR system was another key component of the intervention. While this factor was not a significant predictor of advance directive completion in the multivariate analysis, it may have contributed to the overall effectiveness of the intervention by prompting healthcare providers to initiate and document ACP discussions. Previous research has shown that EMR-based interventions can effectively promote ACP uptake by providing clinical decision support and facilitating communication among healthcare providers (Lund et al., 2015).

This study has several strengths, including the use of a quasi-experimental design, the inclusion of multiple outcomes measures, and the use of validated tools to assess patients' and healthcare providers' knowledge and attitudes towards ACP. However, there are also several limitations that should be acknowledged. First, the study was conducted in a single hospital in Saudi Arabia, which may limit the generalizability of the findings to other settings. Second, the study relied on a convenience sample of patients, which may introduce selection bias. Third, the study did not include a control group, which limits the ability to attribute the observed changes solely to the intervention.

Despite these limitations, the findings of this study have important implications for practice and research. Healthcare organizations should consider implementing system-level interventions, such as healthcare provider education, patient education, and the integration of ACP into the EMR system, to improve ACP uptake and patient-provider communication about end-of-life care. Future research should investigate the long-term effects of these interventions on patient outcomes, healthcare utilization, and costs. Additionally, research is needed to identify the

optimal combination and timing of interventions, as well as the barriers and facilitators to implementation in different healthcare settings.

Conclusion

This study demonstrates the effectiveness of a multi-component intervention in improving ACP uptake among patients in a general internal medicine department in Saudi Arabia. The intervention, which consisted of healthcare provider education, patient education, and the integration of ACP into the EMR system, was associated with significant improvements in advance directive completion rates, patients' knowledge and attitudes towards ACP, healthcare providers' knowledge and attitudes towards ACP, and the quality of ACP discussions. Patient education and healthcare provider education were identified as significant predictors of advance directive completion, highlighting the importance of addressing knowledge gaps and misconceptions about ACP among both patients and healthcare providers.

The findings of this study have important implications for practice and research. Healthcare organizations should consider implementing system-level interventions to improve ACP uptake and patient-provider communication about end-of-life care. Future research should investigate the long-term effects of these interventions on patient outcomes, healthcare utilization, and costs, as well as the optimal combination and timing of interventions in different healthcare settings.

References

Brinkman-Stoppelenburg, A., Rietjens, J. A., & van der Heide, A. (2014). The effects of advance care planning on end-of-life care: A systematic review. *Palliative Medicine*, *28*(8), 1000-1025.

Hayek, S., Nieva, R., Corrigan, F., Zhou, A., Mudaliar, U., Mays, D., Massoomi, M., & Ilksoy, N. (2014). End-of-life care planning: Improving documentation of advance directives in the outpatient clinic using electronic medical records. *Journal of Palliative Medicine*, *17*(12), 1348-1352.

Houben, C. H., Spruit, M. A., Groenen, M. T., Wouters, E. F., & Janssen, D. J. (2014). Efficacy of advance care planning: A systematic review and meta-analysis. *Journal of the American Medical Directors Association*, *15*(7), 477-489.

Jimenez, G., Tan, W. S., Virk, A. K., Low, C. K., Car, J., & Ho, A. H. Y. (2018). Overview of systematic reviews of advance care planning: Summary of evidence and global lessons. *Journal of Pain and Symptom Management*, *56*(3), 436-459.

Lund, S., Richardson, A., & May, C. (2015). Barriers to advance care planning at the end of life: An explanatory systematic review of implementation studies. *PLOS One*, *10*(2), e0116629.

Oczkowski, S. J., Chung, H. O., Hanvey, L., Mbukundla, D., & You, J. J. (2016). Communication tools for end-of-life decision-making in ambulatory care settings: A systematic review and meta-analysis. *PLOS One*, *11*(4), e0150671.

Rietjens, J. A., Sudore, R. L., Connolly, M., van Delden, J. J., Drickamer, M. A., Droger, M., van der Heide, A., Heyland, D. K., Houttekier, D., Janssen, D. J., Orsi, L., Payne, S., Seymour, J., Jox, R. J., Korfage, I. J., & European Association for Palliative Care (2017). Definition and recommendations for advance care planning: An international consensus supported by the European Association for Palliative Care. *The Lancet Oncology*, *18*(9), e543-e551.

Scholten, G., Bourguignon, S., Delanote, A., Vermeulen, B., Van Boxem, G., & Schoenmakers, B. (2018). Advance directive: Does the GP know and address what the patient wants? Advance directive in primary care. *BMC Medical Ethics*, *19*(1), 58.

Sudore, R. L., Heyland, D. K., Lum, H. D., Rietjens, J. A., Korfage, I. J., Ritchie, C. S., Hanson, L. C., Meier, D. E., Pantilat, S. Z., Lorenz, K., Howard, M., Green, M. J., Simon, J. E., Feuz, M. A., & You, J. J. (2018). Outcomes that define successful advance care planning: A Delphi panel consensus. *Journal of Pain and Symptom Management*, *55*(2), 245-255.

Yadav, K. N., Gabler, N. B., Cooney, E., Kent, S., Kim, J., Herbst, N., Mante, A., Halpern, S. D., & Courtright, K. R. (2017). Approximately one in three US adults completes any type of advance directive for end-of-life care. *Health Affairs*, *36*(7), 1244-1251.