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The influence of an interactive educational approach on advance care planning counseling in individuals with psychiatric disorders

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Abstract

Background In Taiwan, psychiatric patients often face premature judgments regarding cognitive impairment, emotional instability, communication barriers, or issues related to guardianship rights due to their psychiatric diagnosis. This leads to a reduction in their autonomy in healthcare decision-making. Advocacy for and experiential understanding of Advance Care Planning (ACP) among individuals with psychiatric disorders are significantly lacking. This research explores the influence of an interactive educational approach on the ACP process for psychiatric patients and whether this approach can enhance their comprehension, attitudes, and intentions regarding Advance Decisions (AD).

Methods To accommodate potential variances and ensure robustness in our findings, we ultimately elected to recruit 90 participants. Using a computer-generated random number generator, we conducted a randomized trial, assigning 45 individuals to the control group and an equal number to the intervention group. The control group continued with the routine self-care educational curriculum, while the intervention group, in addition to the standard curriculum, participated in bi-weekly intervention sessions for three months. This resulted in six group health education sessions, each lasting one hour. To evaluate participants' knowledge, attitudes, and intent to sign regarding ACP, the effects of group, time, and their interactions were assessed using Generalized Estimating Equations.

Results Both groups were homogeneous at baseline. Post-intervention, Knowledge improved by 3.31 points ($p < 0.001$) and Attitude by 4.91 points ($p < 0.001$). However, the increase in Intent to Sign (0.73 points, $p = 0.222$) was not statistically significant. The overarching findings indicate that the application of an interactive educational model significantly enhances psychiatric patients' knowledge and attitudes toward ACP, although it does not substantially impact their intention to sign.

Conclusions Interactive education effectively enhances psychiatric patients' knowledge and attitudes toward ACP but does not significantly influence their intent to sign AD. We advocate for their empowerment in ACP discussions. This study highlights the feasibility of integrating ACP promotion into routine psychiatric care.

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Introduction

Taiwan initiated the implementation of Hospice and Palliative Care in the year 2000 [1]. The legislative journey commenced with the enactment of the Hospice Palliative Care Regulation Amendment, culminating in the passage of the Patient Right to Autonomy Act (hereafter referred to as the Patient Autonomy Act) in 2016. This legislation underscores the process of Advance Care Planning(ACP), culminating in the execution of Advance Decisions (AD) [2]. Notably, the ambit of AD encompasses the realm of Hospice and Palliative Care, alongside choices pertaining to end-of-life medical treatments. The process involves adults possessing full decision-making capacity engaging in ACP alongside a specialized medical counseling team, two relatives within the second degree of kinship, or a designated Health Care Agent (HCA). This deliberative process is targeted at ascertaining healthcare preferences across five distinct clinical scenarios: the end-of-life phase, irreversible coma, permanent vegetative state, severe dementia, and other conditions as delineated by the central competent authority (including, but not limited to, Multiple System Atrophy, Cystic Fibrosis, Huntington's Disease, among others). Within this framework, individuals are empowered to select between life-sustaining treatments or artificial nutrition and hydration. Furthermore, they have the autonomy to choose among accepting, refusing, trialing a treatment for a specified duration, or deferring the decision to the Health Care Agent. Upon finalizing these care intentions in the specified clinical contexts, an AD is formalized. This decision is subsequently registered by the healthcare institution and noted on the health insurance card by the Ministry of Health and Welfare's National Health Insurance Administration. The consultation fee for this service is capped at 3,500 New Taiwan Dollars for a 60-minute session, which is approximately 109 USD [1, 2]. By the year 2023, the enrollment in AD represented 0.63‰ of the Taiwanese population aged over 20 years. Although this initiative is in its embryonic stage, there is an observable upward trend in the number of registrations on an annual basis [3, 4]. The cost of ACP varies significantly across different countries, depending on factors such as healthcare systems, insurance coverage, and local practices. In the US, ACP consultations can be covered by insurance, including Medicare and Medicaid, though the availability and extent of coverage can vary. Some private insurance plans may also cover ACP discussions, but patients might still face out-of-pocket costs depending on their plan [5]. In the UK, ACP has long been integrated into routine medical care, particularly in end-of-life care. Unlike Taiwan, where special appointments are required and additional fees may apply, in the UK, there is no need for such arrangements. If patients wish to discuss ACP during their healthcare process, healthcare professionals can initiate and provide consultation services [6]. Another notable difference from Taiwan is that in the UK, the initiation of ACP discussions is not limited to any specific location or type of healthcare professional. The UK's commitment to upholding individual medical autonomy and assisting those with impaired decision-making capacity in exercising the fullest extent of their rights is something Taiwan could learn from.

Taiwan's National Health Insurance (NHI) system is globally acclaimed for its equitable and accessible healthcare services. The population benefits from the ease of access to information on ACP. However, in clinical practice, psychiatric patients, especially at the onset of their illness, often face premature judgments of cognitive impairment, emotional instability, communicative barriers, or issues regarding guardianship rights due to their psychiatric diagnosis. This leads to a diminution of their autonomy in healthcare decision-making. In psychiatric healthcare, Psychiatric Advance Directives (PADs) were established prior to ACP, highlighting their significant utility for psychiatric patients [7, 8]. Both PADs and ACP facilitate autonomous decision-making. However, PADs specifically offer psychiatric patients the opportunity to make preemptive decisions regarding their mental health treatment when their cognitive faculties are clear. Despite their beneficial intent, PADs remain relatively unknown and, as a result, have not fully realized their legislative potential. In contrast, the advantages of ACP have been substantiated and are more widely recognized [9]. Yet, in practice, many healthcare professionals struggle to discard conventional thinking, often confining psychiatric patients within the limits of their diagnosis. This can challenge their decision-making capacity, consequently reducing their chances of participating in ACP or completing AD [10–13]. Furthermore, the Mini-Mental State Examination (MMSE) is commonly used as the primary tool for assessing decision-making capacity, with legal guardianship declarations serving as a secondary criterion in Taiwan [10, 14], this approach potentially infringes on the rights of individuals with mental and physical disabilities. Medical professionals are encouraged to provide maximal assistance to psychiatric patients who have cognitive impairments but retain the ability to express themselves, thereby empowering them as the primary decision-makers in their ACP. Among chronic psychiatric patients, a significant number are diagnosed with schizophrenia. Notably, the average lifespan of psychiatric patients is approximately 14.5

years shorter than the general population [15]. Research shows that such patients have a keen interest in accessing AD information, yet opportunities for engaging in ACP have not increased proportionately [16]. This highlights a significant gap in efforts to provide psychiatric patients with essential information on ACP. Traditionally, ACP has been conducted on a one-on-one basis. Through practical experience in advocacy, it has been observed that while this model allows focused interaction between counselor and patient, it lacks empathetic resonance and is inefficient in terms of broader dissemination. In contrast, employing an interactive educational approach among patients with similar disease profiles can enhance knowledge transmission and provide interactive support in health promotion and disease management education. For example, in support groups for chronic diseases such as diabetes or hypertension, not only is the quality of health education improved [17], but it also creates an interactive educational approach. These dynamics enable participants to engage in discussions about personal values and facilitate decision-making in future healthcare, thereby increasing satisfaction among healthcare providers and enhancing self-efficacy. Adopting such an approach in ACP can make the promotion of these practices more effective and beneficial [18, 19].

ACP represents an innovative approach to facilitate contemplation regarding end-of-life medical decisions. It necessitates consideration of an individual's familiar language and cultural background, which can help reduce potential disparities in sociodemographic contexts [7, 20, 21]. Taiwan is the first country in Southeast Asia to enact a Patient Autonomy Law. However, a prerequisite is that only adults with decision-making capacity can make AD. This criterion often leads to the exclusion of individuals with impaired mental capacity, including psychiatric patients, from participating in ACP. Consequently, there is a lack of systematic and effective AD guidelines specifically for psychiatric patients [10, 12, 14, 22]. In a 2021 investigation, the researcher observed that among chronic and stable psychiatric patients, there existed a positive correlation between exposure to hospice and palliative care information and their knowledge regarding the same. Intriguingly, psychiatric patients who engaged in discussions about hospice and palliative care demonstrated more favorable attitudes. However, it was particularly noted that psychiatric patients who conversed with healthcare professionals about hospice and palliative care issues or participated in related advocacy activities did not exhibit significant differences in their knowledge or attitudes towards these care modalities [11]. This finding necessitates a reevaluation of the methodologies employed in ACP, highlighting the imperative to focus on psychiatric patients as central participants. This entails the provision of individualized education in comprehensible terminology and ensuring their authentic understanding of the concepts and implications of AD [23, 24]. The study further indicates that a majority of psychiatric patients, especially those diagnosed with schizophrenia, retain the capacity to make informed medical decisions when supported by a trusted therapeutic team, friends, or family members. It is advisable to select study subjects who exhibit relatively stable symptomatology [25]. Presently in Taiwan, the psychiatric medical sector exhibits a substantial deficit in the advocacy and experiential understanding of AD making. Mental health systems across different nations vary considerably due to distinct cultural and national contexts, resulting in a lack of standardized, evidence-based guidelines for ACP specifically tailored to psychiatric patients. The target population for psychiatric day ward services consists of patients diagnosed by specialists with psychiatric disorders and rehabilitation potential. This primarily includes patients with stable psychiatric symptoms, no risk of self-injury or harm to others, rehabilitation potential, and the ability to reintegrate into the community [11]. Consequently, this research elected to focus on psychiatric patients in day wards of psychiatric rehabilitation units, employing an interactive educational model to explore enhancements in ACP for psychiatric patients. The objective is to explore the impact of an interactive educational approach on the ACP process for psychiatric patients and whether this approach can enhance their comprehension, attitudes, and intentions regarding AD, constituting the primary motivation and goal of this research.

Materials and methods

Study design and population

Building upon the evidence from previous research and utilizing a questionnaire, the Total Content Validity Index (CVI) achieved was 0.975. Positive relationships were found between knowledge of and attitude toward ACP, knowledge of and behavioral intention to sign up for ACP, and attitude toward and behavioral intention to sign up for ACP, all with p-values < 0.001 [11]. The study continued at the day ward of a psychiatric teaching hospital in the eastern part of Taiwan, involving individuals aged 20 years or older who were under care from October 1, 2021, to December 31, 2021. The psychiatric patient diagnoses encompassed schizophrenia (ICD-10-CM Diagnosis Code F20) and bipolar disorder (ICD-10-CM Diagnosis Code F31). The research methodology involved separating willing participants into a control group and an intervention group through a randomized controlled trial. The primary objective was to ascertain whether the application of an interactive educational model could enhance psychiatric patients' knowledge, attitudes, and behavioral intentions towards ACP. Approved by the Institutional

Review Board (or Ethics Committee) of the Antai Medical Care Cooperation Antai-Tian-Sheng Memorial Hospital (protocol code 21-105-B, approved on 5 October 2021). The principal investigator explains the content of the consent form to the participants. After obtaining the participants' consent, the case is included in the study. If the participant is unable to read, a witness is required to observe the informed consent process. The witness must be someone not involved in the research and not related to the medical or caregiving professions. Although the study involves a questionnaire survey and does not include invasive measures, if the research process causes physical or psychological discomfort to the participants, they can contact the principal investigator at any time for clarification or assistance, and they are free to withdraw from the study at any time. The research adhered to the principles outlined in the Helsinki Declaration, and all activities were conducted in accordance with applicable rules and regulations. The text includes a statement confirming that informed consent was obtained from all participants or their legal guardians.

The topic of ACP for psychiatric patients is a culturally sensitive and novel issue within the Asian context, with exceedingly limited related literature for reference. To achieve the necessary statistical power and mitigate sample attrition, we adopted a conservative estimation of effect size at 0.80 (indicating a large effect size), with an alpha (α) level of 0.05, and a power of 0.80 [26]. This calculation required a sample size of 52 individuals. To accommodate potential variances and ensure robustness in our findings, we ultimately decided to recruit 90 participants. The estimation of the sample size was conducted using G*Power (version 3.1).

Data collection

ACP is a dynamic, intricate, and ongoing process that requires facilitation by professionals who are adequately trained and equipped to address queries. It necessitates multiple discussions to provide individualized dialogue and sufficient time to resolve any questions, thereby preventing misconceptions about the purpose of AD [27]. Consequently, at this study location, all activities related to questionnaire collection, the elucidation of informed consent documents, and the implementation of interactive educational interventions were exclusively conducted by nurses. These professionals not only held certifications in ACP but also possessed substantial experience in psychiatric care and had undergone rigorous Institutional Review Board training.

Inclusion and exclusion criteria

The study's participant inclusion criteria were as follows: (i) individuals aged 20 years or older who were under the care of the research facility's day ward from October 1, 2021, to December 31, 2021; (ii) participants with clear consciousness capable of responding in Taiwanese; (iii) those who expressed no discomfort or fear regarding discussions (including specific terms) of Hospice and Palliative Care or AD content, whether in questionnaires or group educational sessions; (iv) for the purposes of data reliability and stability, participants were required to undergo a Mini-Mental State Examination (MMSE) conducted by a psychologist prior to the pre-test phase of the study, achieving a minimum score of 23. The exclusion criteria were as follows: (i) individuals unable to communicate in Taiwanese; (ii) those unwilling to provide consent by signing the participant agreement form; (iii) individuals with severe cognitive impairment, as evidenced by a Mini-Mental State Examination score below 23; and (iv) persons legally deemed incapable of acting or under guardianship. (The court determines this status based on Taiwan's laws regarding incapacity or guardianship, using professional evaluations, medical reports, and other evidence.) The study adhered strictly to the ethical guidelines stipulated in the World Medical Association's Declaration of Helsinki regarding the recruitment and consent of participants. Informed consent was meticulously obtained from all participants, requiring them to sign and return a written consent form via a provided prepaid return envelope.

Questionnaire design

This study integrated the experiences of Lum et al. (2017), Silveira et al. (2022), and Lum et al. (2020) [9, 18, 21] with Taiwanese cultural elements to implement the ACP interactive educational model. The methodology for both the pre-test and post-test phases employed rigorously questionnaires, underpinned by Hospice and Palliative Care frameworks, and comprised four distinct sections. The first section detailed the demographic attributes of the participants, incorporating seven key items. The variables in this section were methodically processed as both categorical and continuous variables for analytical precision. The second part is the "Hospice and Palliative Care Knowledge Scale", the third part is the "Hospice and Palliative Care Attitude Scale", and the last part is the "Intent to Sign Scale". Additionally, these scales were referenced from research conducted by Chen et al. in 2023 [11]. The knowledge scale encompassed a total of 13 questions. The scoring mechanism for this scale was designed to be straightforward yet effective: a correct response was assigned 1 point, whereas incorrect or 'unclear' answers were allocated 0 points. This resulted in a potential scoring range from 0 to 13 points, facilitating a clear quantification of the participants' knowledge. In the attitude scale, comprising 11 items, the scoring system was constructed to reflect the positivity of the participants' attitudes towards Hospice and Palliative Care.

A gradation of responses was established, with ‘strongly agree’ meriting 5 points, descending incrementally to ‘agree’ which received 4 points, and so forth. This scale provided a total scoring range from 11 to 55 points [11]. The Intent to Sign Scale comprises five items: (i) the possibility that I will sign a “Do Not Resuscitate Letter of Intent”, (ii) the possibility that I will sign the “Hospice and Palliative Care” form, (iii) the possibility that I will sign the “No CPR” form, (iv) the possibility that I will sign the “No Life-Saving Medical Treatment” form, and (v) the possibility that I will register my health insurance card for “Hospice and Palliative Care”. The scores are assigned as follows: 1 point for ‘Very Unlikely,’ 2 points for ‘Unlikely,’ 3 points for ‘Uncertain,’ 4 points for ‘Likely,’ and 5 points for ‘Very Likely,’ resulting in a total score range of 5 to 25 points.

Randomization

On October 1, 2021, there were 130 patients in the psychiatric day ward. After excluding those without a diagnosis of schizophrenia (ICD-10-CM Diagnosis Code F20) or bipolar disorder (ICD-10-CM Diagnosis Code F31), 6 patients were removed. Additionally, 19 patients were excluded due to an MMSE score of < 23, and 8 patients were excluded due to Guardianship Declarations. This left 97 patients who met the study criteria. Among them, 7 declined to participate, resulting in a final total of 90 participants. To minimize the possibility of sampling error, a robust randomization strategy was implemented. Using a computer-generated random number generator, eligible participants were stratified into two distinct cohorts based on their unique questionnaire identifiers. To maintain the integrity of the study, efforts were made to ensure that participants, caregivers, and researchers remained blinded to the intervention. The questionnaire identifiers used in the study were clearly documented to ensure transparency and traceability throughout the research process. By implementing these measures, we aimed to minimize potential bias and ensure the validity of the study’s findings. This methodological approach resulted in an equitable allocation of participants, with 45 individuals assigned to the control group and an equivalent number to the intervention group, aggregating to a total of 90 participants.

Intervention

In alignment with the principle of equitable dissemination of information, all participants deemed eligible during the screening phase jointly attended an educational session employing a lecture format. This session comprehensively covered topics pertaining to ACP and the Patient Autonomy Act, ensuring a foundational understanding among participants. Following the random assignment, the control group continued with the routine self-care educational curriculum of the day ward, encompassing modules on medication information, disease knowledge, and life care skills. The intervention group, in addition to the standard curriculum, participated in bi-weekly intervention sessions for a duration of three months, resulting in six group health education sessions, each lasting one hour. Educational videos for ACP have gained popularity as an effective educational tool [28] and were used throughout the six group health education sessions. The intervention approach was specifically tailored to resonate with the cultural context of Taiwan, utilizing local advocacy and teaching tools. The first session focused on sharing personal or familial experiences related to hospice and palliative care, alongside discussions about individual medical values. The second session delved into ACP, facilitated by materials provided by the Health Promotion Administration, Ministry of Health and Welfare of Taiwan [29]. The subsequent third and fourth sessions were centered on the Patient Autonomy Act and AD [30, 31], with an emphasis on the dynamic nature of ACP preferences in response to personal, clinical, or temporal changes, and an exploration of the Health Care Agent’s role. The fifth session aimed at exploring life values, integrating elements from the preceding sessions to prompt reflection, value clarification, and discussion regarding personal medical care preferences [20]. The final session, the sixth, was designed as an interactive platform for participants to discuss treatment options and alternatives, fostering concrete articulation of treatment preferences and encouraging communication of these preferences to family and friends [9]. The research framework of the study is as depicted in Fig. 1.

Statistical analysis

Data compilation and analysis were rigorously conducted using the SPSS for Windows 26.0 statistical software suite. The methods of data analysis implemented in the study were as follows: (i) The participants’ attributes were described using absolute and relative frequencies for categorical variables, and mean and standard deviation for continuous variables. The attribute variables of participants between the intervention and control groups were compared using chi-squared tests for categorical variables and independent sample t-tests for continuous variables. (ii) The scores related to knowledge, attitude, and intent to sign regarding ACP were analyzed at each stage for both the control and intervention groups using independent sample t-tests. Additionally, the scores for knowledge, attitude, and intent to sign regarding ACP before and after the intervention within each group were analyzed using paired t-tests. (iii) For the evaluation of the participants’ knowledge, attitude, and intent to sign in relation to ACP, the effects of group, time, and

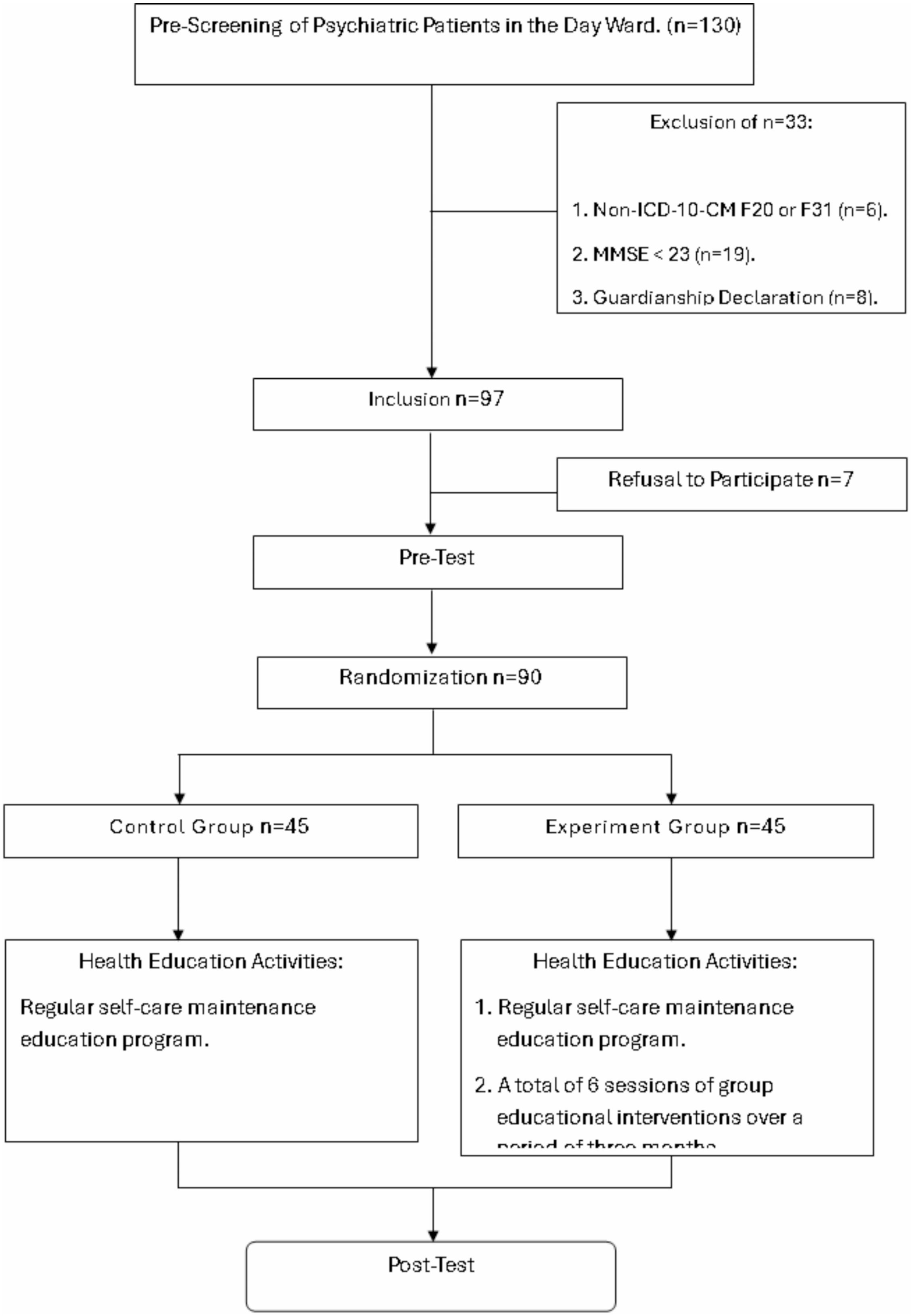

Fig. 1 Research Process Framework

interactions between the control and intervention groups were assessed using Generalized Estimating Equations.

Ethical considerations

This study was CONSORT 2010 checklist of information to include when reporting a randomised trial and followed all reporting guidelines for Randomised trials. It is a model for future randomised trials studies. Supplementary File S1 show the specific recommendations of CONSORT, which were met.

Results

Participant attributes

The demographic data for participants in both study groups are summarized in Table 1. The mean ages were comparable between the control and intervention groups, with no statistically significant difference. Gender distribution was also similar, with comparable male-to-female ratios in both groups. Additionally, no significant differences were observed between the groups in terms of educational level, marital status, religious beliefs, comorbid physical conditions, or caregiver experience. Overall, the analysis indicates that the two groups were highly homogeneous in their demographic characteristics (Table 1).

Scores of ACP for control group and intervention group

Before implementing the experimental intervention, participants in both the intervention and control groups were assessed using questionnaires across various scales. The performance of both groups on these scales prior to the intervention is presented in Table 2. In the domain of the Knowledge scale, the control group's mean score was 7.56 (SD = 2.68), and the intervention group's mean score was 6.71 (SD = 2.97), with the difference not reaching statistical significance ($p = 0.161$). This indicates a baseline uniformity in the Knowledge scale scores across both groups prior to the intervention. For the Attitude scale, the control group scored an average of 38.16 (SD = 6.29), and the intervention group scored an average of 36.07 (SD = 6.50). The difference between the groups was not statistically significant ($p = 0.125$), suggesting consistency in the Attitude scale scores pre-intervention. Regarding the Intent to sign scale, the control group had an average score of 14.27 (SD = 3.54), and the intervention group had an average score of 15.07 (SD = 5.38), with no statistically significant difference observed ($p = 0.407$). This implies no significant variance in Intent to sign scale performance pre-intervention.

Drawing from the baseline data acquired through the initial questionnaire administered to both the intervention and control groups prior, subsequent assessments were conducted post-intervention across a spectrum of scales for patients in both cohorts. The analysis of questionnaire outcomes, spanning the pre- and post-intervention phases for both groups, is explicated in Table 2. Post-intervention, the control group's Knowledge scale scores changed from a pre-intervention average of 7.56 (SD = 2.68) to a post-intervention average of 7.04 (SD = 2.67), showing no statistically significant difference ($p = 0.104$). In contrast, the intervention group's

Table 1 Participant characteristics ($n = 90$)

Characteristic	**Control group ($n = 45$)**		**Intervention group ($n = 45$)**		**χ^2**	***p*-value**
	n	**%**	***n***	**%**		
Gender						
Male	28	62.2	31	68.9	0.44	0.506
Female	17	37.8	14	31.1		
Education						
Below junior high school	11	24.4	14	31.1	0.50	0.480
High school (vocational) or above	34	75.6	31	68.9		
Marital Status						
Single	32	71.1	34	75.6	0.23	0.634
Married	13	28.9	11	24.4		
Religion						
No	3	6.7	9	20.0	3.46	0.063
Yes	42	93.3	36	80.0		
Physical Co-morbidity						
No	21	46.7	13	28.9	3.05	0.082
Yes	24	53.3	32	71.1		
Caregiver Experience						
No	24	53.3	26	57.8	0.18	0.671
Yes	21	46.7	19	42.2		
	Mean	SD	Mean	SD	t	p-value
Age (years)	56.69	11.88	58.73	11.47	-0.83	0.408

Table 2 Scores of ACP of knowledge, attitude and intent to sign at each stage for control group and intervention group

Scale scores at each stage	Control group	Intervention group	Independent sample t-test *p*-value
	Mean (SD)	Mean (SD)	
Knowledge scale (scores)			
T0	7.56(2.68)	6.71(2.97)	0.161
T1	7.04(2.67)	9.51(3.12)	< 0.001***
Paired t-test	t-value (p-value)	t-value (p-value)	
T0 VS T1	1.66(0.104)	-6.73(< 0.001***)	
Attitude scale (scores)			
T0	38.16(6.29)	36.07(6.50)	0.125
T1	35.87(6.11)	38.69(6.22)	0.032*
Paired t-test	t-value (p-value)	t-value (p-value)	
T0 VS T1	3.10(0.003**)	-2.78(0.008**)	0.546
Intent to sign scale (scores)			
T0	14.27(3.54)	15.07(5.38)	0.407
T1	14.62(3.58)	16.16(4.61)	0.082
Paired t-test	t-value (p-value)	t-value (p-value)	
T0 VS T1	-1.94(0.058)	-1.88(0.067)	

Note: T0 = before intervention; T1 = after intervention; $^{*}P < 0.05$, $^{**}P < 0.\ 01$, $^{***}P < 0.\ 001$

pre-intervention average of 6.71 (SD = 2.97) significantly increased to 9.51 (SD = 3.12) post-intervention ($p < 0.001$), indicating psychiatric patients' knowledge about ACP improved substantially after the intervention. In the Attitude scale, the control group exhibited a decrease in scores from a pre-intervention average of 38.16 (SD = 6.29) to a post-intervention average of 35.87 (SD = 6.11), with a statistically significant difference ($p = 0.003$). The intervention group, however, showed an increase from a pre-intervention average of 36.07 (SD = 6.50) to a post-intervention average of 38.69 (SD = 6.22), also statistically significant ($p = 0.008$), indicating psychiatric patients' attitude about ACP improved substantially after the intervention. Lastly, in the Intent to sign scale, the control group's pre-intervention score of 14.27 (SD = 3.54) and post-intervention score of 14.63 (SD = 3.58) showed no significant difference ($p = 0.058$). Similarly, in the intervention group, the pre-intervention score of 15.07 (SD = 5.38) and post-intervention score of 16.16 (SD = 4.61) also did not differ significantly ($p = 0.067$), indicating no substantial change in Intent to sign scale scores post-intervention.

Table 3 Measures of participants' ACP of knowledge, attitude and intent to sign for the effect of group, time, and interactions between the control and intervention group using generalized estimating equations

Measure	β	SE	Wald χ2	*p*-value
Knowledge scale (scores)				
Intercept	7.56	0.40	364.54	< 0.001***
Group(intervention vs. control)	-0.84	0.59	2.04	0.153
Time	-0.51	0.30	2.83	0.093
Group*Time	3.31	0.51	41.85	< 0.001***
Attitude scale (scores)				
Intercept	38.16	0.93	1692.45	< 0.001***
Group(intervention vs. control)	-2.09	1.33	2.46	0.117
Time	-2.29	0.73	9.81	0.002**
Group*Time	4.91	1.18	17.19	< 0.001***
Intent to sign scale (scores)				
Intercept	14.27	0.52	745.59	< 0.001***
Group(intervention vs. control)	0.80	0.95	0.71	0.399
Time	0.36	0.18	3.86	0.049*
Group*Time	0.73	0.60	1.49	0.222

Note: $^{*}P < 0.05$, $^{**}P < 0.01$, $^{***}P < 0.\ 001$

Measures of participants' ACP of knowledge, attitude and intent to sign for the effect of group

Utilizing Generalized Estimating Equations for repeated measures, as outlined in Table 3, the following results were observed.

(i) Regarding the Knowledge Scale:

  (1) Group Effect Analysis on the Knowledge Scale: Initially, the average score of the intervention group was lower than that of the control group, but the difference between them was not statistically significant ($p = 0.153$). This indicates that both groups were homogeneous in terms of Knowledge scale scores at baseline.
  (2) Timepoint Effect Analysis: Post-intervention, the control group's scores showed a marginal decrease, which was lower than the pre-test scores ($p = 0.093$), suggesting no significant change over time within the control group.
  (3) Interaction Effect Analysis between Group and Time: The intervention group demonstrated a significant improvement, with scores higher than those of the control group from pre-test to post-test ($p < 0.001$), indicating the intervention's effectiveness in enhancing Knowledge scale performance.

(ii) Regarding the Attitude Scale:

(1) Group Effect Analysis on the Attitude Scale: Initially, the average score of the intervention group was lower than that of the control group, which was not

statistically significant ($p = 0.117$), implying baseline homogeneity in Attitude scale scores.

(2) Timepoint Effect Analysis: Post-intervention, there was a notable decrease in the control group's scores, which were lower than the pre-test scores ($p = 0.002$), indicating a significant decline.

(3) Interaction Effect Analysis between Group and Time: The intervention group showed a substantial improvement, with scores higher than those of the control group from pre-test to post-test ($p < 0.001$), demonstrating the intervention's significant impact on Attitude scale performance.

(iii) Regarding the Intent to Sign Scale:

(1) Group Effect Analysis on Intent to sign Scale: At baseline, the difference between the intervention and control groups was not statistically significant ($p = 0.399$), indicating homogeneity in pre-test Intent to Sign scale scores.

(2) Timepoint Effect Analysis: Post-intervention, the control group's scores showed a slight increase, which was higher than the pre-test scores ($p = 0.049$), suggesting a minimal upward trend.

(3) Interaction Effect Analysis between Group and Time: The intervention group exhibited a marginal improvement, with scores higher than those of the control group from pre-test to post-test ($p = 0.222$). However, this change was not statistically significant, indicating that the intervention did not have a marked effect on the Intent to Sign scale performance.

Discussion

The analysis of the basic demographic data for the control and intervention groups indicates a high degree of homogeneity between them, with baseline uniformity in the Knowledge, Attitude, and Intent to Sign scale scores across both groups prior to the intervention. The intervention group demonstrated a significant improvement, with scores higher than those of the control group from pre-test to post-test ($p < 0.001$), indicating the intervention's effectiveness in enhancing Knowledge scale and Attitude performance, but showing that the intervention did not have a marked effect on Intent to Sign scale performance. Foti et al. (2005) demonstrated that psychiatric patients are emotionally capable of participating in ACP, and most are able to complete questionnaires [10], a finding corroborated by this study. With a participant attrition rate of 0% over the three-month study period, the average age was 56 years in the control group and 58 years in the intervention group. The high homogeneity in basic attributes among the groups increases the credibility of the study's data. To uphold the equitable right to education for participants, everyone eligible participated in an initial lecture-based session on ACP and patient autonomy. Pre-test results indicated that the control group scored higher in knowledge and attitude than the intervention group, while the latter scored higher in intent to sign. However, there were no significant differences in knowledge, attitude, or intent to sign between the control and intervention groups, indicating consistency in performance between the two groups.

ACP education can improve knowledge and attitudes, effectively enhancing patients' understanding and acceptance of these topics. However, this does not necessarily translate directly into the intention to actually sign an ACP. Possible reasons include the impact of the illness on patients' ability to make long-term decisions or a lack of trust in healthcare professionals. Even if patients understand the importance of ACP, they may still lack the psychological energy or capability to take concrete action. The results of this study are consistent with these findings [32, 33]. The post-test outcomes indicated that the control group exhibited a marginal decline in average scores for knowledge and attitudes, with a slight increase in the intent to sign, though these changes were not statistically significant. Notably, the intervention group demonstrated an ascending trend in average scores across knowledge, attitudes, and intent to sign metrics, with significant differences observed in knowledge and attitudes. These results are encouraging for healthcare professionals as they validate the efficacy of employing an interactive educational intervention model in initiating ACP dialogues within primary healthcare settings. The utilization of an interactive educational approach and peer-led guidance is instrumental in enhancing knowledge, fostering health behavior change, and augmenting self-efficacy [21]. Additionally, healthcare professionals bear the responsibility, regardless of the patient's disease background, to uphold principles of equity and autonomy. This entails integrating discussions about AD as a fundamental component of healthcare provision. An interactive educational approach is pivotal in assisting psychiatric patients to explore their medical care options, facilitating their ability to delineate medical care preferences informed by a balanced analysis of risks and benefits, aligned with their personal values [11, 21]. Through group feedback and exploration, there is an opportunity for patients to deepen their understanding and awareness of their circumstances, emotions, and beliefs, gradually consolidating their autonomous healthcare decisions and potential medical actions.

The advantages of ACP have been substantiated and are more widely recognized. These benefits encompass patient satisfaction, alignment of medical decisions with patient preferences, reduction of unnecessary medical interventions, and improvement in mental health for patients and their families [24, 34]. Research by Sudore et al. (2008) suggests that individuals engaging in ACP prefer discussions that clarify values and decision-making over merely focusing on document completion [20]. This finding resonates with the outcomes of this study, where the intervention group demonstrated significant post-test differences in knowledge and attitudes, though the intent to sign, while improved, did not achieve statistical significance. Despite the lack of significant differences in the intent to sign, the process facilitated valuable discussions on medical decision-making and ACP, aiding in the clarification and understanding of participants' perspectives. This can inform future efforts to enhance formal participation in ACP interventions [22]. Group decision-making is advantageous as it amalgamates the diverse resources and feedback from participants, creating a variety of strategies that can be integrated into the decision-making process, thereby enabling more informed and comprehensive decisions [35]. Considering the variable and extended nature of psychiatric patients' disease trajectories and the increased risk of decisional incapacity as the disease progresses, initiating ACP discussions at an early stage is ideal [11]. However, there is a practical need to balance the urgency for decision-making with maintaining the authenticity of patients' medical preferences. The intent of utilizing an interactive educational approach in ACP is not to hasten the completion of AD [26] but to ensure psychiatric patients have equitable access to education, providing suitable forums for discussing medical objectives and aiding them in contemplating future medical decisions when faced with terminal illness.

Given the variation in mental health systems, policies, and cultural attitudes toward ACP and AD across different countries [11], the success of ACP hinges on offering consultations in languages and scripts familiar to the participants, thereby diminishing communication barriers [20]. Furthermore, family dynamics play a pivotal role in motivating participation in ACP [7]. Despite their limited experience with ACP, psychiatric patients exhibit a strong interest, suggesting the potential benefit of involving family members in interactive educational activities or support groups. This approach could lead to the development of standardized, feasible, acceptable, and practical guidelines for ACP for psychiatric patients, potentially alleviating the frustration experienced by healthcare providers.

Conclusions

Family members and caregivers play a crucial role in the lives of individuals with mental disorders. During the five intervention sessions exploring life values, participants expressed a strong desire for support and understanding from their family members and caregivers in the ACP decision-making process. However, our study did not directly incorporate patient perspectives on their own experiences, nor did it include family participation in the activities, which represents a significant limitation in the research design. The overarching findings of this research demonstrate that the application of an interactive educational approach significantly improves psychiatric patients' knowledge and attitudes towards ACP, although it does not markedly influence their intention to sign. Reflecting on the impediments to the adoption of ACP among psychiatric patients in Taiwan, two primary issues are identified:

Firstly, Taiwan's globally acclaimed National Health Insurance system does not extend coverage to ACP consultations. The variability in counseling fees across different hospitals poses a substantial financial challenge for psychiatric patients, accentuating economic disparities, potentially constituting a more formidable barrier than cultural or attitudinal factors.

Secondly, as articulated in the Convention on the Rights of Persons with Disabilities (CRPD), there exists a distinction between a patient's legal capacity and actual capacity. It is feasible for patients to complete document signings when they are capable of autonomous decision-making. While supporting psychiatric patients' participation in ACP and the completion of Advance Directives, it must be acknowledged that healthcare professionals cannot swiftly ascertain a psychiatric patient's decision-making capacity. Beyond immediate counseling, comprehensive mental capacity evaluations may be required as corroborative evidence, which could lead to significant time and financial expenditure. This scenario may reduce the motivation for both healthcare professionals and patients to engage in ACP. Despite these challenges in operationalizing ACP and ensuring its integration into routine medical discourse, these obstacles also serve as catalysts for innovative approaches. This study explored the use of patients from psychiatric rehabilitation day wards as participants in interactive educational interventions. Post-study, there is an opportunity to sustain the ethos of ACP by incorporating it into standard nursing care practices. This strategy offers a potential avenue for enhancing the inclusivity and effectiveness of ACP in psychiatric care environments.

Suggestions and recommendations

The unique nature of psychiatric disorders presents distinctive challenges to healthcare professionals and families. Currently, there is no gold standard for defining the capacity of these patients to complete ACP decisions. However, the results of this study are committed to validating those psychiatric patients possess the ability to consider medical options and make autonomous decisions. Throughout the research process, participants were encouraged to communicate their feelings about the activities and their medical preferences to family and friends. Remarkably, following the study's conclusion, two participants from the intervention group spontaneously invited their family members to participate in ACP, leading to the completion of AD. These outcomes corroborate the hypothesis that intervention using an interactive educational approach in ACP can potentially increase psychiatric patients' knowledge and attitudes. However, the factors influencing the actual intent to sign are multifaceted and complex, necessitating further exploration with more extensive research samples and prolonged periods. A mixed-methods research approach and longitudinal studies integrating ACP into routine nursing care over time might reveal possibilities for change.

Research limitations

This study is characterized by two significant limitations. Firstly, the dataset was derived solely from patients attending a day ward in a psychiatric hospital located in Eastern Taiwan. Research within this specific patient population presents a range of challenges and influencing variables. Furthermore, the study was conducted under the specific legislative context of Taiwan, which necessitated the exclusion of psychiatric patients who were under legal guardianship. Consequently, the results of this study are representative of the sample and cannot be extrapolated to encompass all psychiatric patients universally. Secondly, the research period coincided with a critical phase of the COVID-19 pandemic in Taiwan, which influenced the ACP process in multiple ways. One commentator reported that COVID-19 had increased ACP requests, leading to a surge in palliative and supportive care services. This, in turn, provided momentum for more adaptable ACP conversations at the individual, health policy, and international levels. The heightened salience of health and end-of-life issues during the pandemic may have further shaped participants' perspectives and engagement in ACP discussions [36]. The reliability and validity of the findings might be influenced by the participants' mental and physical states during this time. Therefore, the outcomes are confined to the results obtained through the specific instruments employed in this study. These limitations necessitate a prudent approach to the interpretation of the findings and indicate that further research, conducted in more diverse contexts and under varying conditions, is required to substantiate and broaden the scope of these conclusions.

Abbreviations

ACP	Advance Care Planning
HCA	Health Care Agent
AD	Advance Decisions
NHI	National Health Insurance
MMSE	Mini-Mental State Examination
CVI	Content Validity Index
PADs	Psychiatric Advance Directives
CRPD	Convention on the Rights of Persons with Disabilities

Supplementary Information

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Supplementary Material 1

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Author contributions

Yi-Chien Chen, Ling-Yu Chang, Ming-Yuan Hsieh and Chao-Hsien Lee wrote the main manuscript text and Fang-Ying Chu prepared Tables 1, 2 and 3; figure 1. All authors reviewed the manuscript.

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Data availability

The dataset was not publicly available during the current study, as it contains potentially identifiable information for each patient. However, it is available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

All methods were performed in accordance with the Declaration of Helsinki [34] and approved by the Institutional Review Board (or Ethics Committee) of the Antai Medical Care Cooperation Antai-Tian-Sheng Memorial Hospital (protocol code, 21-105-B, and date of approval, 5 October 2021). Informed consent and signed informed consent statement forms was obtained from all subjects involved in the study, and publish anonymized data. All participants knew their right, could withdraw the study any time and provided written informed consent. All data were deidentified.

Consent for publication

Not Applicable.

Competing interests

The authors declare no competing interests.

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