STROBE Statement — Checklist of items that should be included in reports of cross-sectional studies

Item No	Recommendation	Reported on line No
1	(a) Indicate the study's design with a commonly used term in the title or the abstract (b) Provide in the abstract an informative and balanced summary of what was done and what was found	Title (line 2) & Abstract (lines 11-33) (a) "cross-sectional" stated in title: "a cross-sectional analysis of psychosocial and socioeconomic determinants"; also stated in Methods section of Abstract. (b) Structured abstract provided: Background, Methods (design, setting, participants, instruments, analysis), Results (prevalence, PFI scores, multivariable findings), Conclusion (implications for intervention).
INTRODUCTION		
2	Background/rationale: Explain the scientific background and rationale for the investigation being reported	Introduction, (lines 38-97) Rationale clearly stated: CRC is 3rd in incidence/2nd in mortality globally (GLOBOCAN 2022); >50% of patients in China present at advanced stage; health-seeking delay is a major barrier to early diagnosis; cancer fatalism is an underexplored psychosocial predictor in mainland Chinese CRC patients. Gap in literature identified.
3	Objectives: State specific objectives, including any prespecified hypotheses	Introduction, (lines 98-105) "This study aimed to assess the prevalence of health-seeking delay and its associated factors—including fatalistic beliefs—among adult CRC patients in China."
METHODS		
4	Study design: Present key elements of study design early in the paper	Methods – Study design (lines 108-111) "In this cross-sectional study…" explicitly stated at the start of the Methods section.
5	Setting: Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Methods – Study design & Participants (lines 115-129) Setting: tertiary hospital – Fifth Affiliated Hospital of Sun Yat-sen University, Zhuhai, Guangdong Province, China. Recruitment period: February to October 2023.
6	Participants: (a) Give the eligibility criteria, and the sources and methods of selection of participants. (b) For matched studies, give matching criteria and number of exposed and unexposed	Methods – Participants (lines 117-123) Inclusion criteria: (1) pathologically confirmed CRC; (2) aged ≥18 years; (3) able to understand and complete questionnaire independently or with assistance; (4) informed consent obtained. Exclusion criteria: (1) severe cognitive impairment; (2) psychiatric disorder; (3) other concurrent malignancies. Sampling: consecutive sampling during the recruitment period from the oncology ward. (b) Not applicable – no matching used.
7	Variables: Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Methods – Variables & Measures (lines 137-152)

		Outcome: health-seeking delay, defined as patient interval ≥3 months from symptom recognition to first healthcare visit (binary). Main exposure: cancer fatalism, measured by Powe Fatalism Inventory (PFI); strong fatalism defined as PFI score ≥9. Covariates: age, sex, education, monthly household income, marital status, employment, health insurance, residence (urban/rural), diagnostic pathway (symptom-driven vs. screening-detected), tumor location, clinical stage (I–IV).
8	Data sources/measurement: For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Methods – Data collection & Instruments (lines 132-152) Demographic and clinical data: structured self-administered questionnaire plus medical record review. PFI (Powe Fatalism Inventory): validated 15-item scale (score 0–15); permission obtained from original developer (Prof. Barbara D. Powe). Psychometric properties cited [28, 35]. Health-seeking delay: patient self-report of symptom onset date and date of first healthcare visit, corroborated with medical records.
9	Bias: Describe any efforts to address potential sources of bias	Methods – Statistical analysis / Limitations (lines 163-178)/ (lines 384-400) Potential biases addressed: • Firth's penalized likelihood method applied to handle quasi-complete separation (zero delayed cases in screening-detected subgroup), preventing infinite parameter estimates. • Recall bias acknowledged in Limitations: participants retrospectively reported symptom onset timing; misclassification risk discussed. • Selection bias acknowledged: single tertiary center; may over-represent advanced-stage patients.
10	Study size: Explain how the study size was arrived at	Methods – Sample size (lines 119-123) Sample size calculation: based on EPV (events per variable) rule of thumb (≥10 events per predictor variable) [27]. With 41 delayed cases and 4 predictors in the final model,; authors note this as a limitation and applied Firth's penalized method to compensate. 126 consecutive eligible patients were enrolled during the study period.
11	Quantitative variables: Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Methods – Statistical analysis (lines 154-162) / Table 3 (lines 249-250) PFI score: continuous variable transformed to binary (strong fatalism: ≥9 vs. ≤8) based on validated cutoff from Powe (1995) [28]. Monthly income: categorized as <2,000, 2,000–5,999, and ≥6,000 CNY. Tumor stage: I–II (reference), III, IV. All variable coding detailed in Table 3.
12	Statistical methods: (a) Describe all statistical methods, including those used to control for confounding (b) Describe any methods used to examine subgroups and interactions (c) Explain how missing data were addressed (d) If applicable, describe analytical methods taking account of sampling strategy	Methods – Statistical analysis (lines 154-178) (a) Descriptive statistics: means ± SD for continuous variables; frequencies and percentages for categorical variables. Chi-square

	(e) Describe any sensitivity analyses	test or Fisher's exact test for group comparisons; independent t-test or Mann-Whitney U for continuous variables. Multivariable logistic regression with Firth's penalized likelihood method to control for confounding. (b) Subgroup analysis: delayed vs. non-delayed groups; PFI strong vs. weak fatalism groups; Stage I–II vs. III vs. IV. (c) Missing data: not explicitly reported; complete case analysis implied (n=126 with full data used in regression). (d) Consecutive sampling from one tertiary center; no complex sampling weights required. (e) Model fit assessed by Hosmer-Lemeshow test, Nagelkerke R^2, AUC (sensitivity analysis on model discrimination).
RESULTS		
13	Participants: (a) Report numbers of individuals at each stage of study—e.g., numbers potentially eligible, examined, confirmed eligible, included in the study, completing follow-up, and analysed (b) Give reasons for non-participation at each stage (c) Consider use of a flow diagram	Methods – Participants / Results (lines 181-182) A total of 126 patients with CRC were enrolled from consecutive admissions. Exclusion criteria applied to screen eligible participants (see Item 6). Note: A consort/flow diagram is not explicitly included; authors may consider adding a participant flow diagram to clarify enrolment process.
14	Descriptive data: (a) Give characteristics of study participants (e.g., demographic, clinical, social) and information on exposures and potential confounders (b) Indicate number of participants with missing data for each variable of interest (c) Summarise follow-up time	Results – Participant characteristics (lines 181-182)/ Table 2 (lines 195-197) (a) Table 2 provides full demographic and clinical characteristics: age, gender, education, marital status, employment, monthly income, health insurance, residence, diagnostic pathway, tumor stage, and PFI score distribution. (b) No missing data reported; complete case analysis (N=126). (c) Cross-sectional study; no follow-up period applicable.
15	Outcome data: Report numbers of outcome events or summary measures	Results – Prevalence of delay (lines 184-188)/Table 2 (lines 195-197) 41/126 patients (32.5%) experienced health-seeking delay (patient interval ≥3 months). Stage distribution in delayed vs. non-delayed groups: 97.6% (40/41) of delayed patients had Stage III/IV vs. 89.4% (76/85) of non-delayed patients.
16	Main results: (a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g., 95% confidence interval). Make clear which confounders were adjusted for and why they were included (b) Report category boundaries when continuous variables were categorized (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	Results – Multivariable analysis (lines 228-248) / Table 2 & Table 4 (a) Unadjusted associations presented in Table 2 (univariable analysis). Adjusted ORs with 95% CIs reported in Table 4. Key findings: strong fatalism (adj. OR=8.544, 95% CI: 3.154–23.150, P<0.001); Stage III (adj. OR=8.374, 95% CI: 1.108–63.310, P=0.025). Confounders selected based on clinical relevance and univariable significance (P<0.1). (b) PFI cutoff ≥9 for strong fatalism; income categories— all detailed in Table 3. (c) Absolute prevalence of delay reported (32.5%); absolute rates

		within strong vs. weak fatalism groups stated (66.7% vs. lower rate).
17	Other analyses: Report other analyses done—e.g., those examining subgroups and interactions, and sensitivity analyses	Results / Discussion (lines 191-193) / (lines 261-382) Subgroup analyses: • Delay rate by tumor stage (Stage I–II: 10.0%; Stage III: 46.9%; Stage IV: 25.4%; χ^2=8.836, P=0.012). • PFI strong vs. weak fatalism and delay rates compared (66.7% vs. non-strong group, P<0.05). • Income subgroup analysis (<3,000 vs. 3,000–6,000 vs. >6,000 CNY). Model fit/sensitivity: Hosmer-Lemeshow χ^2=6.631, df=8, P=0.577; Nagelkerke R^2=0.299; AUC=0.815 (95% CI: 0.735–0.895). Firth's method applied as sensitivity measure for sparse data subgroup.
DISCUSSION		
18	Key results: Summarise key results with reference to study objectives	Discussion, (lines 29-33) "In the present study, nearly one-third of CRC patients (41/126, 32.5%) exhibited delayed health-seeking behavior… Strong fatalistic beliefs and advanced tumor stage were independent predictors of delay." Key results directly linked to study objectives stated in Introduction.
19	Limitations: Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Limitations section (lines 384-400) Five limitations explicitly discussed: 1. Single tertiary center in southern China → limited generalizability. 2. Cross-sectional design → cannot establish causality; temporal relationship between fatalism and delay not established. 3. Retrospective self-report of symptom onset → recall bias; possible misclassification of delay status. 4. Small screening-detected subgroup (n=8, zero delay events) → wide CI (0.008–2.170); results interpreted with caution. 5. Wide CI for Stage III (1.108–63.310) due to limited events → warrants replication.
20	Interpretation: Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, and results from similar studies	Discussion (lines 280-382) / Conclusions (lines 402-409) Results contextualized against prior studies (Jin et al. 2022 [57.8%]; Danish study [25%]; European multicenter [55.9%]). Cancer fatalism mechanism explained via multiple psychological pathways (reduced symptom vigilance, therapeutic pessimism, avoidance). Cultural context ("sheng si you ming") addressed. Counterintuitive Stage IV finding explained. Caution noted for sparse subgroups. Clinical and public-health implications discussed (nurses, community outreach, policymakers).
21	Generalisability: Discuss the generalisability (external validity) of the study results	Limitations (lines 384-386)/ Discussion (lines 261-296) Generalizability explicitly discussed: single tertiary hospital in Zhuhai, Guangdong may not represent rural or low-resource settings; patient population may over-represent advanced-stage

		disease. Future multicenter, prospective studies recommended to validate findings across diverse Chinese populations.
OTHER INFORMATION		
22	Funding: Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Declarations – Funding (line 429) "No funding was received for conducting this study."

Note: Reporting checklist completed in accordance with the STROBE Statement (von Elm E, et al. 2007). This checklist corresponds to the cross-sectional study design. All items have been addressed in the manuscript: "The role of cancer fatalism in delayed health-seeking behavior among colorectal cancer patients in China: a cross-sectional analysis of psychosocial and socioeconomic determinants."