



# Design and Implementation of Taizhou Integrated Prostate Screening

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## Abstract

A community-based prostate cancer screening program was conducted to assess the morbidity and associated factors for prostate cancer among the subpopulation of men aged  $\geq 50$  years in Taizhou, China. Taizhou Integrated Prostate Screening (TIPS) is a large, observational, population-based study of prostate cancer screening data based on serum prostate-specific antigen (PSA) concentrations. A pilot census of all male residents aged 50 years or older was conducted in Luqiao District, one of the field sites of the TIPS cohort in the city of Taizhou, Zhejiang. The interviewer-administered questionnaire evaluated demographic characteristics and environmental exposure factors. A total of 1,806 out of 3,516 participants completed the questionnaire. The overall prevalence of PSA  $\geq 4$  ng/mL was 11.5%, and included participants at low risk (9.2%), moderate risk (1.7%), and high risk (0.6%). Participants aged 60–69, 70–79, and  $\geq 80$  years had a 2.7-fold, 4.2-fold, and 6.5-fold higher risk of elevated PSA, respectively, in comparison with those aged 50 to 59 years ( $p < .001$ ). Eighteen patients were diagnosed with prostate cancer, of whom 11 (61.1%) underwent radical surgery. This community-based PSA screening program indicated the results for early detection of prostate cancer among men aged  $\geq 50$  years. Early screening and appropriate clinical therapy for the management of prostate cancer are essential in this subpopulation.

## Keywords

prostate cancer, prevalence, prostate-specific antigen, population-based study, China

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Prostate cancer is the second-most common cancer and the fifth-leading cause of cancer-related mortality in the male population worldwide (Ilic et al., 2018). The incidence of prostate cancer has notably increased in Asian, Northern, and Western European countries (Teoh et al., 2019). The progression of this disease is highly variable and depends mostly on the initial state at diagnosis. Prostate cancer patients with a Gleason score of 8 to 10 can progress from localized disease to metastasis and final death within a relatively short period (Tabei et al., 2020). Although the exact cause of prostate cancer remains unknown, advanced age remains the leading risk factor from a clinical viewpoint. A previous study indicated that prostate cancer was rare among patients aged less than 50 years (Dunn, 2017). Because it is a common and important disease that imposes a substantial burden on the health care and economic system (Cao et al., 2021), early detection of this disease by regular screening

followed by an appropriate therapeutic strategy may offer a practical means for prevention of disease-associated damage in men aged more than 50 years (J. He et al., 2022).

Screening for prostate cancer with serum prostate-specific antigen (PSA) aims to detect the early stages of prostate cancer, the interposed stage susceptible to treatment, and further reductions in overall and specific mortality

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(Ilic et al., 2018). The European Randomized Study of Screening for Prostate Cancer (ERSPC) identified that 4-year PSA-based screening for prostate cancer in participants aged 55 to 69 years increased the incidence of cancer diagnoses by 41% and reduced the mortality rate by 20% over a 16-year follow-up period (Hugosson et al., 2019). The PSA test is a low-cost procedure, but it may yield false-positive results that result in unnecessary biopsies, overdiagnosis, and overtreatment (Fenton et al., 2018; Hugosson et al., 2019). Several effective drugs have been approved for treatment and their concomitant use has significantly improved the survival of patients with advanced prostate cancer (Tian et al., 2018).

In China, prostate cancer is becoming more problematic and an increased incidence of prostate cancer is inevitable due to the longer life expectancy and Westernized lifestyles related to rapid economic growth and sociocultural changes (R. Chen et al., 2017). The majority of newly diagnosed cases of prostate cancer are in the middle or late stage, and only 30% of the cases are clinically localized, which leads to a poor prognosis of prostate cancer in China (Zhang et al., 2021). To identify the incidence and predictive factors of prostate cancer in the male population, community-based screening for early detection of prostate cancer is essential. Early cases of prostate cancer can be ascertained through PSA examination. Trends of the incidence and mortality of prostate cancer in the United States indicate that large-scale screening may be beneficial (H. He et al., 2022). Few community-based epidemiological studies have focused on incident prostate cancer in China. In this study, we conducted a community-based screening program for prostate cancer to assess the morbidity and associated factors of prostate cancer among the subpopulation of men aged  $\geq 50$  years in Taizhou, China.

## Method

### Study Population

Taizhou Integrated Prostate Screening (TIPS) is a large, observational, population-based study of prostate cancer screening based on serum PSA measurements. We conducted a pilot census of all male residents aged 50 years or older in Luqiao District, one of the field sites of the TIPS cohort in the city of Taizhou, Zhejiang Province, China in December 2020 ( $N = 7,279$ ), by using the official residential register. A total of 3,516 eligible men enrolled from 30 villages received a total PSA (tPSA) test from November to December 2020. The response rate to our pilot survey was 48.3% (3,516/7,279), which is comparable to that of other surveys of community-dwelling residents. The personal identification number assigned to each Chinese citizen at birth was used to link the participants' screening data

with their health examination records. The questionnaire, covering participants' demographic characteristics and environmental exposure factors, was administered by interviewers. Of them, 1,806 men aged  $\geq 50$  years or patients with diabetes and/or hypertension underwent physical examinations in community health service centers in 2020. Figure 1 shows the detailed procedure for the TIPS. This study was approved by the Ethics Committee of Taizhou Enze Medical Center (Group) Enze Hospital (No: K20210402). All participants signed an informed consent form and understood the procedure before the screening.

### The Screening Program

The prostate screening program has been held in Taizhou, Zhejiang Province, China, since December 2020. To encourage participation, we conducted an educational seminar or on-air health program for health workers, health counselors, and the public before screening. Measurement of the serum prostate-specific antigen (PSA) level with a cutoff value of  $\geq 4.0$  ng/mL was the main screening test and indication for biopsy. The criteria for prostate biopsy were as follows: PSA  $\geq 10.0$  ng/mL or 4.0 to 10.0 ng/mL with free-to-total PSA ratio  $\leq 15\%$ , suspicious digital rectal examination (DRE) findings, or no abnormal signals on ultrasound or magnetic resonance imaging (MRI).

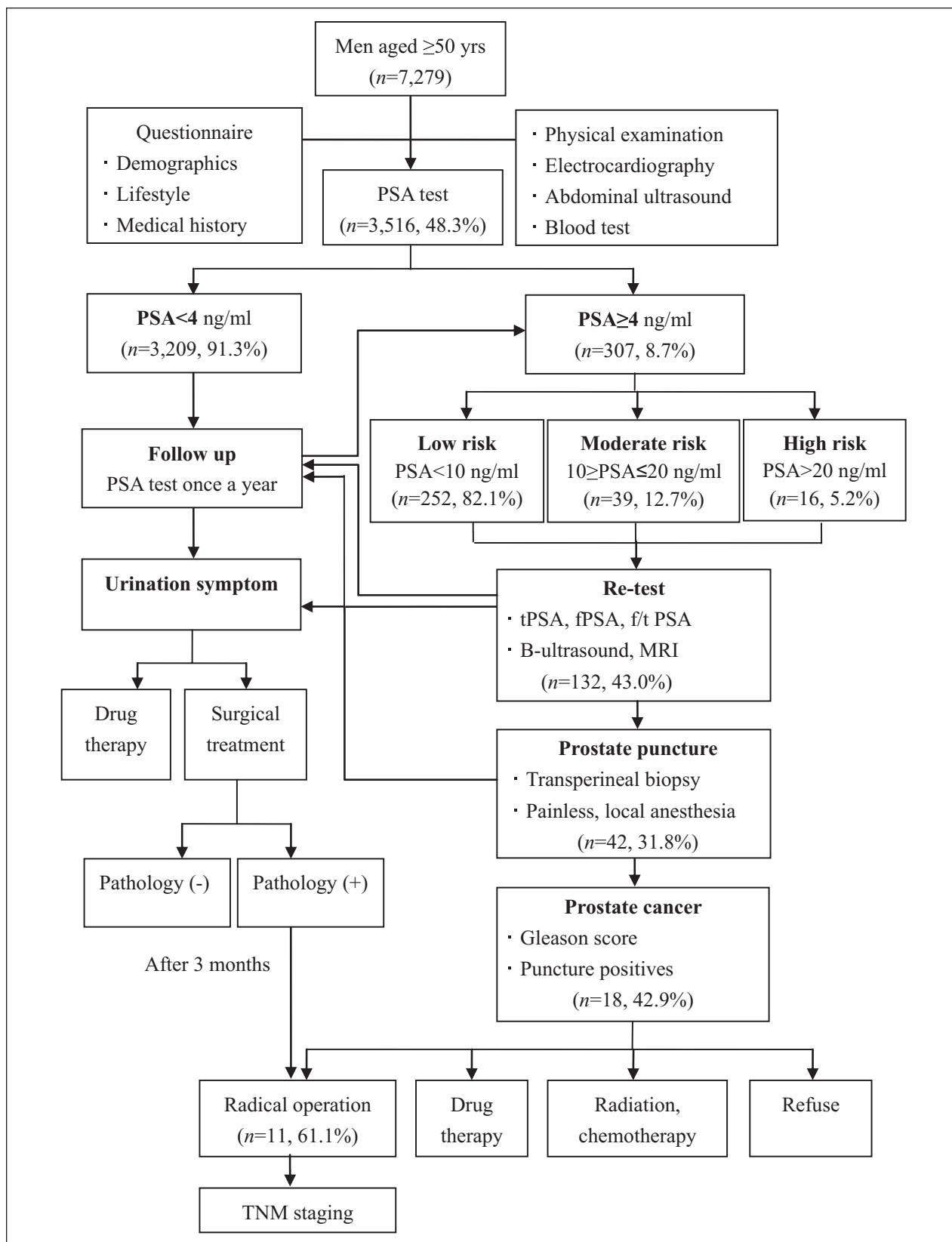
### Serum PSA Assay

The concentration of total PSA (tPSA) and free PSA (fPSA) in serum samples was determined by using Beckman Coulter immunoassays on a DXI800 instrument. The PSA measurements were performed in accordance with the standard assays and procedures at the hospital, with recalibration to the World Health Organization (WHO) standard (PSA-WHO 96/670) using the appropriate correction factor (Vignati & Giovanelli, 2007). Serum PSA levels were used to stratify the individuals' risk of prostate cancer (normal, PSA  $< 4.0$  ng/ml; low risk, 4.0 ng/ml  $\leq$  PSA  $< 10.0$  ng/ml; moderate risk, 10 ng/ml  $\leq$  PSA  $\leq 20$  ng/ml; and high risk, PSA  $> 20$  ng/ml).

### Statistical Analyses

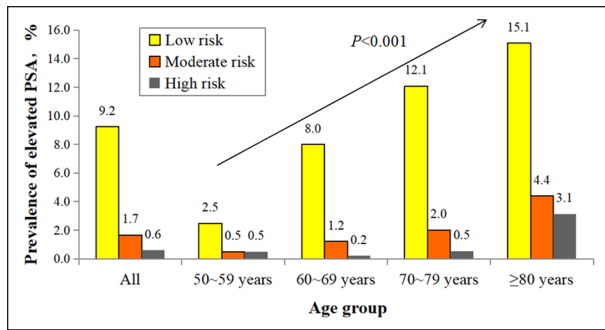
Based on a cross-sectional design, we estimated that an enrollment target of 117 participants would provide the study with greater than 90% statistical power to detect a 30% or more difference in risk factors between PSA  $\geq 4.0$  ng/ml group and PSA  $< 4.0$  ng/ml group at a significance level of .05, using a two-tailed test (Cohen, 1988; Faul et al., 2009).

We used the Statistical Package for Social Sciences software (Version 22.0; IBM SPSS, Chicago, IL, USA)



**Figure 1.** The Procedure of Taizhou Integrated Prostate Screening

Note. PSA = prostate-specific antigen; MRI = magnetic resonance imaging; TNM = tumor, node, and metastases.



**Figure 2.** Prevalence of Elevated PSA in Taizhou Integrated Prostate Screening (N = 1,806)

Note. PSA = prostate-specific antigen.

for statistical analysis. Frequency distributions were displayed for the classified data, and  $\chi^2$  tests were used to compare the prevalence of positive PSA tests and basic characteristics among age groups. Clinical characteristics, with a normal distribution, were expressed as mean  $\pm$  SD. One-way analysis of variance (ANOVA) was used to evaluate mean differences among the age groups. Data on serum PSA, fasting blood glucose, triglyceride, alanine aminotransferase, aspartate transaminase, and creatinine levels showed skewed distributions and were expressed as geometric mean with the interquartile range and logarithmically transformed for analysis. Scheffé post hoc analysis was performed for multiple comparisons for continuous data. Binary logistic regression was applied to identify the factors related to increased PSA, with the odds ratio (OR) and 95% confidence interval (CI). Independent variables that were significant in the univariate analyses were included in the logistic regression model. Statistical significance was set at  $p < .05$  for all analyses.

## Results

In this study, the 1,806 participants with completed data were older than those without health records ( $68.0 \pm 7.8$  vs.  $58.2 \pm 7.5$  years,  $p < .001$ ). As Figure 2 shows, the overall prevalence of PSA level  $\geq 4$  ng/mL was 11.5%, and included individuals at low risk (9.2%), moderate risk (1.7%), and high risk (0.6%). Participants aged 60–69, 70–79, and  $\geq 80$  years had a 2.7-fold, 4.2-fold, and 6.5-fold higher risk of elevated PSA, respectively, than those aged 50 to 59 years ( $p < .001$ ).

Table 1 displays that participant age was significantly related to self-assessment of health ( $p = .002$ ), smoking status ( $p < .001$ ), hypertension ( $p < .001$ ), diabetes ( $p < .001$ ), and heart disease ( $p = .023$ ). In addition, age was significantly associated with PSA concentration (1.7 ng/mL for 50–59 years, 1.4 ng/mL for 60–69 years, 1.9 ng/mL for 70–79 years, and 2.3 ng/mL for  $\geq 80$  years,  $p < .001$ ). The relationships between BMI ( $p < .001$ ), waist

circumference ( $p < .001$ ), waist-to-height ratio ( $p < .001$ ), fasting blood sugar ( $p < .001$ ), triglyceride ( $p < .001$ ), total cholesterol ( $p = .049$ ), alanine aminotransferase ( $p < .001$ ), creatinine ( $p < .001$ ), and urea ( $p < .001$ ) are shown in Table 2. Multiple comparison results from Scheffé post hoc test are also presented in Table 2.

In the univariate analysis, age, height, fasting blood sugar, alanine aminotransferase, history of hypertension, and diabetes were potential associated factors for elevated serum PSA ( $p < .1$ ). As illustrated in Table 3, in further multivariate analysis, only age and history of hypertension were independent associated factors for increased PSA and the other variables were no longer statistically significant ( $p > .05$ ).

## Discussion

### Clinical Implications

Prostate cancer fulfills the Wilson screening criteria that specify that the disease is a critical health problem and which are listed as follows: the disease natural history should be understood; there should be a recognizable latent or early symptomatic stage; there should be a test that is easy to perform and interpret, acceptable, accurate, reliable, sensitive, and specific; there should be an accepted treatment recognized for the disease; treatment should be more effective if started early; there should be a policy on who should be treated; diagnosis and treatment should be cost-effective; and the case finding should be a continual process (J. Y. Chen et al., 2013).

To the best of our knowledge, only a few population-based prostate screening studies for identification of early stage prostate cancer in this male subpopulation have been conducted to date in China. From the preventive medicine viewpoint, medical policy makers must consider the multilevel situations in which organized screening regimens are necessary for early detection in a specific population (Sivaram et al., 2018). The participants showed heterogeneity in education level, economic status, knowledge, attitude, self-efficacy, and willingness to seek medical care, which could influence the promotion of cancer screening. In addition, medical policy makers in these communities may also face competing priorities for health care expenses as well as shifting political and financial considerations from a national perspective. To consider the sociopolitical and healthcare-related circumstances for the appropriated screening strategy is difficult and complex. In addition, using the findings of fixed projects is also essential for decision making to programs or policies by medical policymakers. (Wender et al., 2019).

The findings of previous studies in Western countries indicated that the mortality rates associated with prostate

**Table 1.** Baseline Characteristics of Participants in Taizhou Integrated Prostate Screening in 2020 (N = 1,806).

Variables	Categories	All	Age group (years)					$\chi^2$	p
			50~59	60~69	70~79	≥80			
n (%)		1,806 (100)	201 (11.1)	900 (49.8)	546 (30.2)	159 (8.8)			
Health by self-assessment							12.016	.002	
	Satisfied	1,077 (68.3)	/	619 (70.9)	367 (67.2)	91 (57.2)			
	Dissatisfied	501 (31.7)	/	254 (29.1)	179 (32.8)	68 (42.8)			
Exercise frequency							9.650	.380	
	Every day	351 (19.4)	36 (17.9)	159 (17.7)	120 (22.0)	36 (22.6)			
	More than once a week	77 (4.3)	8 (4.0)	37 (4.1)	24 (4.4)	8 (5.0)			
	Occasionally	142 (7.9)	17 (8.5)	82 (9.1)	34 (6.2)	9 (5.7)			
	No exercise	1,236 (68.4)	140 (69.7)	622 (69.1)	368 (67.4)	106 (66.7)			
Dietary status									
	Balanced diet	1,760 (97.5)	194 (96.5)	879 (97.7)	532 (97.4)	155 (97.5)	0.876	.831	
	Halophilic diet	1,491 (82.6)	167 (83.1)	728 (80.9)	461 (84.4)	135 (84.9)	3.720	.293	
Smoking status							34.987	<.001	
	Never smoke	792 (43.9)	88 (43.8)	363 (40.3)	246 (45.1)	95 (59.7)			
	Quit smoking	422 (23.4)	44 (21.9)	201 (22.3)	138 (25.3)	39 (24.5)			
	Smoke	592 (32.8)	69 (34.3)	336 (37.3)	162 (29.7)	25 (15.7)			
Drinking frequency							15.318	.083	
	Never	820 (45.4)	82 (40.8)	400 (44.4)	248 (45.4)	90 (56.6)			
	Occasionally	284 (15.7)	41 (20.4)	136 (15.1)	89 (16.3)	18 (11.3)			
	Often	117 (6.5)	17 (8.5)	56 (6.2)	34 (6.2)	10 (6.3)			
	Every day	585 (32.4)	61 (30.3)	308 (34.2)	175 (32.1)	41 (25.8)			
History of exposure to occupational hazards									
	No	1,779 (98.5)	199 (99.0)	881 (97.9)	540 (98.9)	159 (100.0)	4.646	.098	
	Yes	27 (1.5)	2 (1.0)	19 (2.1)	6 (1.1)	0			
Hypertension							87.935	<.001	
	No	879 (48.7)	39 (19.4)	503 (55.9)	260 (47.6)	77 (48.4)			
	Yes	927 (51.3)	162 (80.6)	397 (44.1)	286 (52.4)	82 (51.6)			
Diabetes							41.360	<.001	
	No	1,576 (87.3)	148 (73.6)	791 (87.9)	489 (89.6)	148 (93.1)			
	Yes	230 (12.7)	53 (26.4)	109 (12.1)	57 (10.4)	11 (6.9)			
Heart disease							7.556	.023	
	No	1,766 (97.8)	198 (98.5)	887 (98.6)	529 (96.9)	152 (95.6)			
	Yes	40 (2.2)	3 (1.5)	13 (1.4)	17 (3.1)	7 (4.4)			
Cerebrovascular disease							3.380	.337	
	No	1,731 (95.8)	191 (95.0)	869 (96.6)	522 (95.6)	149 (93.7)			
	Yes	75 (4.2)	10 (5.0)	31 (3.4)	24 (4.4)	10 (6.3)			

cancer have been reducing since the 1990s, and this reduction was partially attributable to routine screening for prostate cancer (Tabei et al., 2020). Two major randomized controlled trials of PSA-based screening, namely, the prostate, lung, colorectal, and ovarian (PLCO) trial (Pinsky et al., 2019) and the ERSPC (Hugosson et al., 2019), yielded discrepant findings related to prostate cancer-specific mortality. These differences may be explained by disparities in study designs

and populations as well as the relatively high proportions of men in the control group who received PSA-based screening (de Koning et al., 2018). PSA may not be a reliable marker for prostate cancer because it is also secreted by normal healthy prostate tissue (Wassersug & Fox, 2021). Serum PSA levels can be elevated due to reasons other than cancer, such as prostatitis, infection, or trauma. PSA may perform other functions in healthy men (Wassersug & Fox, 2021).

**Table 2.** Clinical Characteristics of Participants in Taizhou Integrated Prostate Screening in 2020 (N = 1,806).

Variables	All	Age group (years)				p	Post hoc test
		50–59 <sup>a</sup>	60–69 <sup>b</sup>	70–79 <sup>c</sup>	≥80 <sup>d</sup>		
n (%)	1,806 (100)	201 (11.1)	900 (49.8)	546 (30.2)	159 (8.8)		
PSA <sup>a</sup> (ng/mL)	1.7 (1.1–2.3)	1.4 (1.0–1.9)	1.6 (1.1–2.2)	1.9 (1.3–2.8)	2.3 (1.4–3.8)	<.001	d>c>b>a
BMI (kg/m <sup>2</sup> )	24.1 ± 3.2	25.8 ± 2.9	24.0 ± 3.1	23.8 ± 3.4	23.3 ± 3.2	<.001	a>b, a>c, a>d
Waist circumference (cm)	84.3 ± 9.2	87.8 ± 8.0	83.7 ± 9.0	84.1 ± 9.7	84.6 ± 9.2	<.001	a>b, c>b, d>b
Waist to height ratio	0.52 ± 0.06	0.53 ± 0.05	0.51 ± 0.05	0.52 ± 0.06	0.53 ± 0.06	<.001	a>b, c>b, d>b
Fasting blood sugar <sup>a</sup> (mmol/L)	5.52 (4.90–5.90)	5.97 (5.10–6.90)	5.53 (4.80–5.90)	5.42 (4.90–5.70)	5.32 (4.70–5.70)	<.001	a>b, a>c, a>d
Triglyceride <sup>a</sup> (mmol/L)	1.40 (0.97–1.91)	1.77 (1.13–2.54)	1.43 (0.98–1.98)	1.30 (0.93–1.78)	1.22 (0.87–1.6)	<.001	a>b, a>c, a>d, b>c, b>d
Total cholesterol (mmol/L)	4.99 ± 0.88	5.13 ± 0.92	5.00 ± 0.88	4.93 ± 0.84	4.99 ± 0.91	.049	—
LDL-C (mmol/L)	2.44 ± 0.64	—	2.45 ± 0.63	2.42 ± 0.64	2.47 ± 0.67	.711	—
HDL-C (mmol/L)	1.25 ± 0.31	—	1.24 ± 0.31	1.26 ± 0.31	1.25 ± 0.30	.757	—
Alanine aminotransferase <sup>a</sup> (U/L)	24 (19–29)	29 (22–38)	25 (19–29)	23 (19–28)	21 (17–24)	<.001	a>b, a>c, a>d, b>d, c>d
Aspartate transaminase <sup>a</sup> (U/L)	26 (22–30)	26 (21–31)	26 (22–29)	27 (23–30)	27 (23–30)	.091	—
Creatinine <sup>a</sup> (μmol/L)	86 (75–95)	—	84 (74–92)	88 (74–98)	91 (78–103)	<.001	c>b, d>b
Urea (mmol/L)	6.25 ± 1.88	—	6.04 ± 1.66	6.41 ± 2.03	6.83 ± 2.26	<.001	c>b, d>b

Note. Data are expressed as the mean ± SD or n (%). PSA = prostate-specific antigen; BMI = body mass index.

<sup>a</sup>Data are skewed distribution, expressed as the geometric mean (interquartile range) and logarithmically transformed for analysis.



**Table 3.** Associated Factors of Elevated PSA in Univariate and Multivariate Analyses (N = 1,086).

Variables	All (N = 1,806)		PSA <4.0 ng/mL (n = 1,598)		PSA ≥4.0 ng/mL (n = 208)		p for $\chi^2$ test	OR	Multivariate logistic regression model		p
	n (%) or M ± SD	n (%) or M ± SD	n (%) or M ± SD	n (%) or M ± SD	n (%) or M ± SD	n (%) or M ± SD			95% CI		
									Lower	Upper	
Age group (years)							<.001				
50~59	201 (11.1)	194 (12.1)	7 (3.4)				ref.				
60~69	900 (49.8)	815 (51.0)	85 (40.9)				2.92	1.31	6.49		.009
70~79	546 (30.2)	466 (29.2)	80 (38.5)				4.45	1.99	9.97		<.001
≥80	159 (8.8)	123 (7.7)	36 (17.3)				6.96	2.91	16.63		<.001
Hypertension											
No	879 (48.7)	790 (49.4)	89 (42.8)				ref.				
Yes	927 (51.3)	808 (50.6)	119 (57.2)				1.50	1.11	2.03		.008
Diabetes											
No	1,576 (87.3)	1,385 (86.7)	191 (91.8)				ref.				
Yes	230 (12.7)	213 (13.3)	17 (8.2)				0.76	0.42	1.38		.366
Height (cm)	163.0 ± 6.5	163.2 ± 6.4	161.9 ± 6.9				0.99	0.97	1.01		.405
Fasting blood sugar (mmol/L) <sup>a</sup>	5.52 (4.90–5.90)	5.55 (4.90–5.90)	5.36 (4.80–5.80)				0.68	0.28	1.67		.399
Alanine aminotransferase (U/L) <sup>a</sup>	24 (19–29)	25 (19–30)	23 (18–27)				0.69	0.45	1.08		.105

<sup>a</sup>Data are skewed distribution, expressed as the geometric mean (interquartile range) and logarithmically transformed for analysis. PSA = prostate-specific antigen; OR = odds ratio; CI = confidence interval.

In this study, 1.00% ( $n = 18$ ) of the patients were diagnosed with early stage prostate cancer and received immediate further therapy. Some studies have suggested that the costs and damages associated with prostate cancer screening outweigh the health advantages of early detection and diagnosis. Another contrasting view is that prostate cancer screening has become so broadly recognized that one should consider the disadvantages of this approach in light of the health care cost reduction achieved with prostate cancer screening (Karlsson et al., 2021). A decrease in the number of biopsies and overtreatment can improve the health-related quality of life and lower medical costs (Hugosson et al., 2019).

With the implementation of mass screening programs for cancers, the population-level findings have deepened our knowledge of cancer biology. Screening efforts for prostate cancer have shown a previously unidentified incidence of cancers that would not have come to clinical attention otherwise. Screening for disease prevention is associated with the idea that it is to invite healthy-like people better for early detection (Hugosson et al., 2019). Prostate cancer screening is increasing the probability of biopsy investigations and identification of the progression of metastatic disease. These routine screening regimens could be advantageous if the diagnosis and therapy of an early stage tumor could avoid progression of the disease to metastasis and/or final death (Wender et al., 2019).

To the best of our knowledge, almost all studies have reported an increased risk of men's prostate cancer with advancing age. This study found that advancing age and history of hypertension were associated with increased PSA, in line with the recommendation of screening guidelines that the beginning age of prostate cancer screening should be 60 years.

We also found that history of hypertension significantly increased the likelihood of PSA elevation. Previous studies on relationship between hypertension and prostate cancer risk have been inconsistent. The Prostate Cancer throughout life (PROCA-life) study reported that men (>45 years) with systolic blood pressure > 150 mm Hg had a 35% increased risk of prostate cancer compared with men with systolic blood pressure <130 mm Hg. Prostate cancer patients with high systolic or diastolic blood pressure also had a significantly increased risk of death (Stikbakke et al., 2022). A pooled cohort study recently suggested that elevated blood pressure is unlikely to be an important risk factor for prostate cancer (Jochems et al., 2022). Further large-scale, well-designed prospective cohorts, as well as mechanistic studies, are needed to confirm our preliminary findings.

## Limitations

Since we combined prostate cancer findings based on a combination of PSA screening, a noninvasive examination, and biopsy, the sensitivity of the prostate cancer diagnosis was better than that of other evidence-based studies. The screening information and biochemical data were collected simultaneously; however, some unknown potential factors, including family history of prostate cancer, could still be biased in this population-based study. With our study design, it was possible to explore the relationship between biochemical levels and prostate cancer. Although the sample included in this study allowed power to reach 99%, the possible influence on the morbidity and associations in early prostate cancer in our estimations was inevitably due to the relatively low response rate for first screening and further clinical examinations. In addition, in our study, the nonparticipants were younger, indicating that many participants from previous studies did not return for follow-up. This could indicate the presence of a selection bias. Non-differential misclassification-bias identification may occur and cause a biased estimation of prostate cancer prevalence. The few advanced prostate cancers in our study did not carry sufficient statistical power to allow an assessment of the association between risk factors and advanced stages of prostate cancer. Finally, our measurements were conducted at only a single time point and, by clear inference, could not reflect long-term exposure to various demographic or biochemical aspects or factors, which might be essential influences on the development and/or progression of prostate cancer. The solution to such an obfuscation would be reached by organizing prospective longitudinal analogous studies, the findings of which would be expected to assist the cross-sectional results of this study.

## Conclusion

In conclusion, the advantages of routine cancer screening are superior when the detection of malignancy at a primary (or precancerous) stage results in better outcomes. Thus, the assessable treatment should be reliable, proper, and more valid when implemented earlier in the course of the disease. This community-based PSA screening program indicated the results of early detection of prostate cancer among men aged  $\geq 50$  years. Early screening and appropriate clinical therapy for the management of prostate cancer are essential in this subpopulation.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.



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## Ethical Approval

This study was approved by the Ethics Committee of Taizhou Enze Medical Center (Group) Enze Hospital (No: K20210402).

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