

Perceived platform support as a value-based enabler: barriers to timely healthcare utilization among young platform workers in China—a cross-sectional study

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Research Article

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Abstract

Background

Value-based care (VBC) payment models reward healthcare providers based on the value of services rendered rather than volume, with the ultimate goal of improving health outcomes at sustainable costs. While VBC implementation has been widely studied in standard employment settings, little is known about how VBC-enabling mechanisms operate among non-standard workers, where the payer–provider link is mediated by digital labour platforms. Adopting Andersen's Behavioral Model of Health Services Use, this study examines whether platform-level support outweighs conventional financial protection in predicting timely healthcare utilization among young platform workers in China.

Methods

Cross-sectional survey of 507 Chinese platform workers aged 18–45, which is from March to May in 2026. Scales covered predisposing, enabling, and need factors. Univariate and stepwise multivariate logistic regression identified predictors of delayed healthcare-seeking.

Results

39.8% reported delayed/abandoned visits. Independent predictors: female sex (aOR = 0.43, 95% CI 0.26–0.72, $P = 0.001$); higher physical symptom severity (aOR = 1.33, 1.06–1.66, $P = 0.012$); stronger perceived platform support (aOR = 0.65, 0.55–0.77, $P < 0.001$); greater delay tendency (aOR = 1.39, 1.12–1.73, $P = 0.003$). Income and insurance had no independent effect (social insurance aOR = 1.17, $P = 0.603$).

Conclusions

Within the VBC framework, occupational environmental support serves as the dominant protective factor for young platform workers' healthcare access, outweighing traditional socioeconomic and insurance variables. Optimizing platform labour support systems can effectively mitigate the income-health trade-off and reduce presenteeism. These findings offer empirical evidence for adapting VBC payment models to diverse, platform-mediated health systems and speak directly to SDG 3 and SDG 10.

Trial registration:

This cross-sectional observational survey did not involve clinical healthcare intervention trials, and no trial registration was required.

()Background

The rapid expansion of the digital platform economy has reshaped the structure of global labour markets[1]. As an emerging form of work, platform employment has become a vital component of labour systems worldwide[2]. A growing number of workers deliver food delivery, ride-hailing services, instant logistics, online creative works and other online services through digital platforms[3], with young people forming the primary workforce in the platform labour sector[4]. As a typical type of non-standard employment, platform work has boosted labour market flexibility, expanded employment opportunities and driven the growth of the digital economy, while restructuring traditional labour relations and occupational risk frameworks[5]. Compared with standard formal employment, workers in emerging forms of labour are generally characterized by loose labour ties, volatile income streams, inadequate social security coverage, prolonged working hours and intensified algorithmic management[3]. Their health risks have gone beyond the scope of traditional occupational injuries, emerging as a novel research priority in international public health scholarship[4]. A growing body of literature has explored the occupational health, mental health and labour rights protection of platform workers; nevertheless, sufficient empirical research on their healthcare-seeking behaviors and corresponding institutional constraints remains scarce amid mounting occupational health hazards[6].

As healthcare systems worldwide continue to evolve, the shift toward value-based care (VBC) payment models has emerged as a pivotal strategy to improve health outcomes and enhance patient satisfaction[1]. These models focus on providing high-quality care at lower costs, aiming to reward healthcare providers based on the value of services rendered rather than the volume[2]. Implementing value-based care requires understanding the complexities of diverse health systems, as cultural, economic, and social factors influence both the delivery and reception of care across different populations[17]. The significance of transitioning to VBC models cannot be overstated in the context of rising healthcare costs and disparities in health outcomes[16]. Recent advances have demonstrated that when health systems adopt value-based payment approaches, there can be improvements in care coordination, patient engagement, and overall health outcomes[18]. Furthermore, organizations that embrace these models often report increased accountability among healthcare providers, fostering a culture of continuous improvement. Yet the dominant VBC discourse presupposes a standard employment relationship in which employers and insurers act as stable payers[16]. In the digital platform economy, this assumption breaks down: platform workers face loose employment affiliations and algorithmic management, while the platform itself emerges as a quasi-payer capable of mediating—or obstructing—timely care. Whether platform-level support functions as a VBC-style enabler that outperforms conventional financial protection remains an open empirical question, speaking directly to the assessment of VBC models in diverse populations and the barriers and facilitators to VBC implementation across health systems.

Health service utilization acts as a fundamental channel to satisfy health demands and a core indicator for evaluating the equity and accessibility of health systems[7]. Delayed healthcare-seeking refers to the behavioral pattern in which individuals recognize existing medical needs but fail to access professional medical services in a timely manner. Such behaviour usually leads to disease deterioration, increased medical expenses, diminished work capacity and widening health inequities. Existing studies have

confirmed that delayed healthcare-seeking is closely correlated with elevated disease burden, higher hospitalization risks and adverse health outcomes, serving as a major barrier to attaining the goals of Universal Health Coverage (UHC)[1]. However, delayed healthcare-seeking is more than a simple health behaviour issue; it essentially reflects the disconnection between medical demand and actual health service uptake[8]. When individuals cannot obtain timely care due to financial burdens, institutional restrictions or resource shortages, their identified health needs cannot be translated into formal health service utilization[9]. Accordingly, delayed healthcare-seeking involves not only individual health decision-making but also the efficiency of health resource allocation, health financing systems and overall health equity, making it a longstanding research focus in global public health and health economics[2].

Health service utilization is inherently a resource allocation decision jointly shaped by disease severity and a range of economic determinants, including medical fees, out-of-pocket payments, income volatility and institutional safeguards. Although numerous countries have advanced universal health coverage and expanded medical insurance enrolment in recent decades, insufficient financial risk protection remains a critical barrier to care access for vulnerable labour groups[1]. Wagstaff et al. (2012) further argue that the transition to universal health coverage is driven by a combination of political processes, income growth, and a structural shift from out-of-pocket spending to pooled financing, which collectively determine the financial protection capacity of health systems[2]. From the perspective of health accounting calculations, insufficient carrying capacity of health systems in conflict-affected regions will further amplify the implicit medical costs borne by informal workers and distort the allocation of health resources[10]. Such constraints are more pronounced for platform workers[5]. On the one hand, loose employment affiliations mean many workers in emerging jobs lack stable occupational medical benefits and paid sick leave, so most medical expenses must be covered personally[4]. On the other hand, platform labour adopts piece-rate compensation and real-time performance appraisal mechanisms[3]. Seeking medical treatment requires suspending order acceptance, which leads to immediate income losses, potential downgrades of platform ratings and reduced access to future work opportunities[5]. Therefore, compared with traditional employees, the costs incurred by platform workers when accessing care include not only direct medical expenditures but also opportunity costs such as lost wages, reduced labour prospects and diminished future earnings[6]. Even when workers develop clear physical or mental health needs, cost-benefit trade-offs may prompt them to continue working or postpone treatment[11]. It can thus be concluded that delayed healthcare-seeking reflects not merely medical cost burdens but patterns of health service utilization shaped by the combined effects of labour institutions, health financing and resource guarantee mechanisms[7].

Andersen's Behavioral Model of Health Services Use constitutes one of the most influential theoretical frameworks for interpreting healthcare-seeking behaviors[12]. This model posits that health service utilization is jointly determined by three core dimensions: predisposing factors, enabling factors and need factors[12]. Predisposing factors encompass demographic and social attributes such as age, gender, educational attainment and health beliefs[11]; enabling factors refer to accessible resources that facilitate care uptake, including medical insurance, economic resources, social support and geographic

health service accessibility[7]; need factors reflect individuals' objective and subjective health status, acting as direct triggers for medical demand[4]. This model has been widely applied in research on the elderly, patients with chronic diseases, rural residents and migrant populations, emerging as a key theoretical tool for analyzing health equity. Nevertheless, existing literature predominantly focuses on traditional formal workers, with limited attention paid to the rapidly expanding platform workforce[5]. Platform labour features algorithmic management, income fluctuations, flexible working hours and weak organizational support, meaning workers' care-seeking choices are simultaneously constrained by health demands, platform institutional arrangements and labour opportunity costs[3]. Conventional health utilization research rarely integrates platform work contexts into analytical frameworks and lacks systematic explanations of how institutional resources shape delayed medical care among digital laborers[6].

Current literature presents at least three prominent research gaps. First, research subjects are concentrated on the elderly, patients with chronic illnesses and socioeconomically disadvantaged groups, while young workers in emerging platform employment receive inadequate scholarly attention[4]. Existing studies cannot adequately address new public health challenges arising from structural shifts in the digital economy labour market[5]. Second, prior analyses prioritize conventional predictors such as health demand, insurance coverage and socioeconomic status, while giving limited consideration to institutional constraints unique to platform labour including income volatility, inadequate platform support and high opportunity costs; few studies systematically unpack how labour institutions shape individual medical care decisions[11]. Third, viewed from health financing and health equity lenses, existing research mainly analyses direct medical cost burdens while neglecting implicit costs such as income interruption and lost work prospects, failing to fully elaborate the institutional logic driving delayed care among platform workers. Against the backdrop of booming platform employment, health service utilization is no longer a simple matter of service accessibility but an outcome of the interplay between labour market institutions, health financing schemes and financial risk protection policies[2].

In China, the social health insurance system has historically been fragmented across three major schemes—the New Cooperative Medical Scheme (NCMS) for rural residents, the Urban Resident Basic Medical Insurance (URBMI), and the Urban Employee Basic Medical Insurance (UEBMI)—with significant disparities in funding levels, benefit packages, and portability across regions[15]. This fragmentation disproportionately affects informal and migrant workers, who are more likely to fall into coverage gaps or face higher out-of-pocket burdens, further exacerbating health inequities. As one of the world's largest digital platform economies, China offers a representative setting for investigating how value-based enablers operate in platform-mediated health systems. Against the above research gaps, this study targets young workers engaged in new forms of platform employment within China's digital economy context and adopts Andersen's Behavioral Model of Health Services Use as its core analytical framework[12]. Demographic characteristics and health perceptions are categorized as predisposing factors; medical insurance status, economic accessibility and platform support are defined as enabling factors; physical health conditions and psychological stress indicators are classified as need factors[7]. Combined with the distinctive occupational traits of platform labour, this paper systematically identifies

the determinants of delayed healthcare-seeking among young workers[5]. This study addresses a generalizable public health research question: amid the continuous expansion of platform employment, which barriers prevent young workers from accessing timely medical services, and can platform-level support function as a VBC-style enabler that outweighs conventional financial protection[6]? Answering this question will enrich research on healthcare utilization among platform workers and provide new empirical evidence for adapting value-based payment models to diverse, platform-mediated health systems, strengthening stakeholder engagement across patients, providers, payers, policymakers and industry, and advancing the goals of SDG 3 (Good Health and Well-being) and SDG 10 (Reduced Inequalities)[9].

(X)Methods

2.1 Study Design and Participants

This cross-sectional observational study aimed to explore the intertwined physical and mental health dilemmas of young workers in the new digital platform economy, and identify independent influencing factors behind delayed or forgone medical care when injuries or illnesses occur, so as to provide empirical evidence for targeted health governance of emerging labour groups. Questionnaire surveys were distributed online between 1 March and 31 May 2026, covering first- and second-tier Chinese cities with concentrated platform labour. Participants were young workers aged 18–45 engaged in full-time or part-time typical platform occupations, including food delivery riders, ride-hailing drivers, couriers and instant delivery staff. Standardized inclusion and exclusion criteria were pre-set.

Inclusion criteria:

1. Aged between 18 and 45 years old;
2. Having worked in platform-related jobs for no less than 3 consecutive months;
3. Voluntarily agreeing to participate in the survey.

Exclusion criteria:

1. Missing data of core variables (healthcare-seeking behaviour, health status, sociodemographic characteristics) exceeding 10%;
2. Responses with obvious logical contradictions (e.g., reporting no physical ailments while recording instances of delayed medical consultation);
3. Age outside the 18–45 range.

After screening, a total of 507 valid questionnaires were retained for subsequent statistical analysis.

2.2 Variable Measurement

(1) Outcome Variable

Delayed healthcare-seeking was measured based on Question 26 of the questionnaire: Have you had occasions where you ought to seek hospital treatment but failed to do so in the past 12 months? For data coding, respondents who selected "0 times" were coded as 0 (timely medical consultation), while those who chose "1 time", "2 times", "3 times" or "4 times and above" were coded as 1 (delayed or forgone medical care). Supplementary analysis was conducted with Question 28 regarding consequences of delayed care. Participants coded as 1 covered three scenarios: self-recovery without medical visits, aggravated illness that forced later hospital attendance, and complications induced by postponed treatment. This ensured the outcome variable fully captured the full spectrum of behaviors ranging from passive delay to complete abandonment of medical services.

(2) Independent Variables

Drawing on the Andersen Behavioral Model of Health Services Use and combined with occupational traits of workers in new forms of employment, potential determinants of delayed healthcare-seeking were divided into three dimensions: predisposing factors, enabling factors and need factors. Given the unique employment relations, organizational support and labour process control mechanisms of platform work that distinguish it from traditional formal jobs, platform-specific variables were further incorporated into the enabling factor dimension for analysis. The classification of all independent variables according to the Andersen model is summarized in Table 1.

Table 1

Factor Dimension	Sub-dimension	Corresponding Question No.
Sociodemographic and Occupational Characteristics	-	Q1-Q12 (Gender, age, educational attainment, marital status, dependency/support status, occupation type, employment pattern, income proportion, average monthly income, working years, urban tier)
Predisposing Factors	Health Values	Q13
	Health Risk Perception	Q14
Enabling Factors	Medical Insurance Participation and Coverage	Q15-Q16
	Economic Accessibility of Health Services	Q17
	Perceived Platform Support	Q18
	Perceived Algorithmic Control	Q19
Need Factors	Physical Health Status	Q20
	Mental Health and Stress	Q21
	Self-Rated Health Status	Q22
	Tendency of Delayed Healthcare-Seeking	Q23
	Healthcare-Seeking Behavior and Experience of Delayed Medical Care	Q24-Q28

☒ Predisposing factors

Predisposing factors refer to inherent individual characteristics that exist prior to the onset of illness and correlate with tendencies to utilize healthcare services. In this study, such factors cover two dimensions: sociodemographic attributes and health-related perceptions. The sociodemographic attributes specifically include gender, age (Q2), educational attainment (Q3), marital status (Q4), childcare burden (Q5, Q6), length of platform employment (Q11), and employment type (Q8). Health-related perceptions

were measured mainly via health values (Q13) and health risk perception (Q14). The health value scale contains three items such as "One should keep working even when feeling unwell to earn more money"; the health risk perception scale also includes three items such as "Visiting hospitals takes up too much time" and "Taking sick leave may lead to loss of job opportunities". All the above items adopted a 5-point Likert scoring system, where higher scores indicate stronger corresponding health beliefs or higher perceived risks.

☒ Enabling factors

Enabling factors denote various resources and conditions that facilitate or hinder individuals' access to medical care. Based on questionnaire items, this study subdivides enabling factors into four dimensions: economic resources, medical insurance accessibility, service and platform support, and social support. Economic resources include monthly personal income (Q10), the proportion of income earned from platform work (Q9), and perceived economic accessibility (Q17). The perceived economic accessibility section consists of three items including "Savings are sufficient to cover out-of-pocket costs for serious illnesses" and "Medical expenses will be cut first when money is tight". Medical insurance accessibility was measured by participation status in social medical insurance (Q15) and purchase of commercial health insurance (Q16). Service and platform support mainly covers perceived platform support (Q18, three items e.g., "The platform provides access to health services") and perceived algorithmic control (Q19, three items e.g., "I have to arrange my schedule as dictated by algorithms to earn income"), which separately measure platforms' supportive capacity and the restrictive intensity of algorithmic management. Social support is represented by the number of minor children to raise and elderly family members to support (Q5, Q6), reflecting the pressure and availability of family support systems. Except for insurance enrolment information, all attitudinal items above use the 5-point Likert scoring method.

☒ Need factors

Need factors reflect actual individual demand for health services, divided into perceived needs and evaluated needs. Perceived needs cover physical health status (Q20, three items such as lumbago, back pain and persistent fatigue), psychological status (Q21, four items including anxiety and depressive mood), and self-rated health level (Q22, three items). All these items use a 5-point Likert scale, with higher scores standing for poorer physical and mental conditions or more severe perceived health problems. Evaluated needs were objectively measured through Question 24 "Number of sick leave days taken due to physical discomfort in the past 12 months" and Question 25 "Number of hospital visits in the past 12 months", offering objective behavioral evidence for analyzing individual healthcare demand.

2.3 Statistical analytical methods

All data were cleaned and analyzed using SPSS 26.0 statistical software. Descriptive statistics were first applied to summarize all participant characteristics. Categorical variables were presented as

frequencies and constituent ratios; normally distributed continuous variables were expressed as mean $\pm$ standard deviation, while non-normal continuous variables were reported as median (interquartile range). Univariate binary logistic regression models were constructed to test the correlation between each variable and the outcome of delayed or forgone medical care. Odds ratios (OR) and their corresponding 95% confidence intervals (95% CI) were reported to quantify effect sizes, with $P < 0.05$ set as the threshold for statistical significance in univariate analyses. All variables with $P < 0.10$ in univariate tests were incorporated into stepwise multivariate binary logistic regression models, adjusting for confounding factors including age, gender, educational attainment, employment type and monthly personal income, so as to screen independent predictors of delayed or abandoned medical care linked to the coexisting physical and mental health burdens of young platform workers. Two-tailed tests were adopted for all statistical analyses in this study, with the significance level set at $\alpha = 0.05$.

(X)Results

This study analyzed 507 valid samples to systematically depict the health status and healthcare-seeking behaviors of young workers under the new platform economy model. The results revealed a high prevalence of delayed medical consultation among this population. After adjusting for confounding factors, mental health status, working hours, age and medical insurance coverage were identified as independent influencing factors. The detailed findings are presented as follows:

(1) Baseline Sociodemographic and Occupational Characteristics of Study Participants

Among the 507 platform workers recruited, males accounted for 66.3% and full-time workers made up 84.0%. In terms of occupation distribution, food delivery work was the largest category (46.0%), followed by ride-hailing driving (13.8%) and courier services (11.1%). The distribution of educational attainment presented a centralised pattern with medium-level education as the majority: 38.9% of participants had junior high school education or below, 31.8% held a high school or technical secondary school diploma, and 26.5% possessed college degree or above. Regarding the primary outcome indicator, 39.8% of respondents (202 individuals) reported delayed or forgone medical visits, which indicated that the healthcare demands of this emerging workforce were inadequately satisfied with prominent underlying health risks. The descriptive statistics for all study variables are presented in Table 2.

(2) Univariate Logistic Regression Analysis of Predictors for Delayed Healthcare-Seeking

Univariate screening identified five variables significantly correlated with delayed medical consultation (all $P < 0.05$). Mental health status, weekly working hours and demographic attributes were major risk factors. Each one-point increase in the mental health scale score corresponded to a 12% higher risk of delaying care (OR = 1.12, 95% CI 1.08–1.16, $P < 0.001$). Every additional working hour per week raised the

risk by 2% (OR = 1.02, 95% CI 1.01–1.03, Workers aged 40 years and above had an 87% greater risk relative to the 18–24 age group (OR = 1.87, 95% CI 1.15–3.04, $P = 0.012$). Females faced a 56% higher risk than males (OR = 1.56, 95% CI 1.08–2.25, $P = 0.018$). By contrast, medical insurance coverage functioned as a protective factor; however, the result showed no statistical significance for insured participants versus uninsured counterparts (OR = 1.17, 95% CI 0.65–2.11, $P = 0.603$).

(3) Multivariate Logistic Regression Analysis of Predictors for Delayed Healthcare-Seeking

To identify independent determinants of delayed medical consultation among platform young workers, fourteen variables with $P < 0.10$ from univariate analysis (covering sociodemographic features, occupational traits, insurance status and scale scores) were entered into a stepwise multivariate binary logistic regression model. Confounders including age group, highest educational attainment, number of minor children to raise and number of elderly dependents, monthly platform income bracket were adjusted simultaneously. The final regression model was fitted on 473 complete cases after excluding samples with missing covariate data from the total 507 participants and converged after six iterations.

After controlling for confounders, weekly working hours, age group of 40 years and above, and social or commercial insurance enrolment lost statistical significance (all $P > 0.05$) and were excluded from the final explanatory framework. The independent influencing factors fell into demographic features, occupational types and core scale dimensions. Being female served as an independent risk factor; males had a 57% lower probability of delayed care compared with females (adjusted OR [aOR] = 0.43, 95% CI 0.26–0.72, $P = 0.001$). Significant occupational disparities were observed: domestic service ride-hailing workers exhibited a 69% reduced risk of delayed consultation relative to food delivery riders (aOR = 0.31, 95% CI 0.11–0.93, $P = 0.064$). Courier and instant errand workers showed marginally non-significantly lower risk compared with food delivery staff (aOR = 0.52, 95% CI 0.26–1.04, $P = 0.064$). At the scale measurement level, perceived platform support was the strongest independent protective factor, with each one-point score increment associated with a 35% reduction in delayed care risk (aOR = 0.65, 95% CI 0.55–0.77, $P < 0.001$). Severity of physical health symptoms was an independent risk factor; each one-point rise in symptom score increased the risk by 33% (aOR = 1.33, 95% CI 1.06–1.66, $P = 0.012$). Delayed healthcare-seeking tendency score exerted significant predictive power on actual care avoidance behaviour, where each additional point raised the real delay risk by 39% (aOR = 1.39, 95% CI 1.12–1.73, $P = 0.003$). The fully adjusted multivariate logistic regression results are shown in Table 3.

Table 2
Descriptive Statistics(N = 507)

Variable	Category	Count	Percentage (%)
Gender	Male	336	66.3
Gender	Female	159	31.4
Gender	Prefer not to disclose	12	2.4
Age	18–24 years	81	16
Age	25–29 years	78	15.4
Age	30–34 years	97	19.1
Age	35–40 years	104	20.5
Age	40 years and above	147	29
Education Level	Primary school or below	15	3
Education Level	Junior high school	197	38.9
Education Level	High school/Technical secondary school	162	32
Education Level	College diploma	68	13.4
Education Level	Bachelor's degree	47	9.3
Education Level	Master's degree or above	18	3.6
Occupation Type	Food delivery rider	223	44
Occupation Type	Ride-hailing driver	67	13.2
Occupation Type	Courier	54	10.7
Occupation Type	Online domestic service worker	23	4.5
Occupation Type	Online content creator (self-media, short video creator, etc.)	14	2.8
Occupation Type	Live streamer/Live commerce host	12	2.4
Occupation Type	Local delivery runner	6	1.2
Occupation Type	E-commerce platform operator	3	0.6
Occupation Type	Other	81	16
Health Insurance Coverage	Urban and rural residents' basic medical insurance (including NCMS)	287	56.6

Variable	Category	Count	Percentage (%)
Health Insurance Coverage	Urban employee basic medical insurance (including flexible employment insurance)	141	27.8
Health Insurance Coverage	Not covered by any social medical insurance	79	15.6
Tendency to Delay Medical Care	0 times	305	60.2
Tendency to Delay Medical Care	1 time	100	19.7
Tendency to Delay Medical Care	2 times	65	12.8
Tendency to Delay Medical Care	3 times	14	2.8
Tendency to Delay Medical Care	4 times or more	23	4.5

Cronbach's Alpha Reliability Test

Internal consistency reliability was assessed using Cronbach's α coefficient. The results indicated that the Cronbach's α values for the scales were as follows: 0.617 for the Health Value Scale, 0.798 for the Health Risk Perception Scale, 0.727 for the Economic Accessibility Scale, 0.940 for the Platform Support Perception Scale, 0.851 for the Algorithmic Control Perception Scale, 0.940 for the Physical Health Symptoms Scale, 0.958 for the Psychological Stress Scale, 0.762 for the Self-rated Health Scale, and 0.939 for the Delayed Healthcare-seeking Tendency Scale. With the exception of the Health Value Scale ($\alpha = 0.617$), all scales demonstrated good to excellent internal consistency, with coefficients ranging from 0.727 to 0.958. Specifically, the Platform Support Perception, Physical Health Symptoms, Psychological Stress, and Delayed Healthcare-seeking Tendency Scales showed exceptional reliability ($\alpha > 0.9$), indicating high data reliability for the measurement instruments used in this study. It is noteworthy that the Health Value, Economic Accessibility, and Self-rated Health Scales contain items with potentially mixed directions; therefore, the interpretation of their α coefficients and subsequent modeling should be further validated after confirming reverse scoring rules based on the questionnaire anchors.

Table 3
Multivariable Logistic Regression Analysis of Factors Associated with Delayed or Forgone Medical Care
(n = 507)

Variable	Comparison/Unit	aOR (95% CI)	P value
Sociodemographic Characteristics			
Gender	Male vs Female	0.43 (0.26–0.72)	0.001
Age Group	Per 1-level increase a	1.06 (0.88–1.28)	0.527
Education Level	Per 1-level increase b	1.15 (0.90–1.47)	0.276
Number of Minor Children	Per 1-level increase c	0.94 (0.73–1.22)	0.659
Number of Elderly Dependents	Per 1-level increase d	1.18 (0.94–1.48)	0.157
Monthly Platform Income	Per 1-level increase e	0.89 (0.70–1.13)	0.335
Occupational Characteristics			
Primary Occupation	Courier/Local Delivery vs Food Delivery Rider	0.52 (0.26–1.04)	0.064
	Ride-hailing Driver vs Food Delivery Rider	0.68 (0.34–1.37)	0.285
	Live Streamer/E-commerce/Creator vs Food Delivery Rider	1.64 (0.61–4.44)	0.328
	Online Domestic Service Worker vs Food Delivery Rider	0.31 (0.11–0.93)	0.036
	Other vs Food Delivery Rider	0.77 (0.41–1.44)	0.416
Insurance Coverage			
Social Health Insurance	Insured vs Uninsured	1.17 (0.65–2.11)	0.603
Note: The dependent variable is the occurrence of delayed or forgone medical care (Q26 ≥ 1 time = 1, Q26 = 0 times = 0). aAge groups: 1 = 18–24 years, 2 = 25–29 years, 3 = 30–34 years, 4 = 35–40 years, 5 = 40 years and above. bEducation levels: 1 = Junior high school or below, 2 = High school/Vocational school, 3 = College diploma, 4 = Bachelor's degree or above. cNumber of minor children: 1 = None, 2 = One, 3 = Two, 4 = Three or more. dNumber of elderly dependents: 1 = None, 2 = One, 3 = Two, 4 = Three or more. eIncome levels: 1 = <¥3000, 2 = ¥3000–4999, 3 = ¥5000–7999, 4 = ≥¥8000. The Health Value, Economic Accessibility, and Self-rated Health scales were not included in the main model due to pending confirmation of item directionality.			

Variable	Comparison/Unit	aOR (95% CI)	P value
Commercial/Platform Health Insurance	Purchased vs Not Purchased	0.93 (0.60–1.44)	0.741
Scale Scores			
Health Risk Perception Mean	Per 1-point increase	0.95 (0.78–1.15)	0.601
Platform Support Perception Mean	Per 1-point increase	0.65 (0.55–0.77)	< 0.001
Physical Health Symptoms Mean	Per 1-point increase	1.33 (1.06–1.66)	0.012
Psychological Stress Mean	Per 1-point increase	0.98 (0.78–1.23)	0.857
Delayed Care Tendency Mean	Per 1-point increase	1.39 (1.12–1.73)	0.003
Note: The dependent variable is the occurrence of delayed or forgone medical care (Q26 ≥ 1 time = 1, Q26 = 0 times = 0). aAge groups: 1 = 18–24 years, 2 = 25–29 years, 3 = 30–34 years, 4 = 35–40 years, 5 = 40 years and above. bEducation levels: 1 = Junior high school or below, 2 = High school/Vocational school, 3 = College diploma, 4 = Bachelor's degree or above. cNumber of minor children: 1 = None, 2 = One, 3 = Two, 4 = Three or more. dNumber of elderly dependents: 1 = None, 2 = One, 3 = Two, 4 = Three or more. eIncome levels: 1 = <¥3000, 2 = ¥3000–4999, 3 = ¥5000–7999, 4 = ≥¥8000. The Health Value, Economic Accessibility, and Self-rated Health scales were not included in the main model due to pending confirmation of item directionality.			

(4) Multivariate Binary Logistic Regression Analysis of Factors Associated with Delayed Healthcare-Seeking

To further identify independent influencing factors, fourteen variables with $P < 0.10$ from univariate analysis were entered into a stepwise multivariate binary logistic regression model. Confounding variables including age group, highest educational attainment, number of minor children to raise, number of elderly dependents and monthly platform income were adjusted simultaneously. The final regression model was fitted with 473 complete valid records and achieved good convergence.

The regression results showed that weekly working hours, age group of 40 years old and above, medical insurance enrolment status, which were statistically significant in univariate analysis, lost independent statistical associations after controlling for confounders (all $P > 0.05$) and were excluded from the final explanatory model. In line with the three-dimensional framework of Andersen's Behavioral Model of Health Services Use, the independent influencing factors in each dimension are elaborated as follows:

☒ Predisposing Factors

Within the dimension of predisposing factors, sociodemographic characteristics and health-related perceptions exerted significantly different effects on delayed healthcare-seeking behaviors. Multivariate

regression results indicated that gender was the only statistically significant sociodemographic predictor. Compared with female workers, male workers had a 57% lower risk of delaying medical consultation (adjusted odds ratio [aOR] = 0.43, 95% CI: 0.26–0.72, $P = 0.001$), implying that female platform workers face greater barriers to accessing medical services.

By contrast, other sociodemographic indicators showed no independent effects after adjustment. Each upward shift of age category brought no statistically significant change in the risk of delayed care (aOR = 1.06, 95% CI: 0.88–1.28, $P = 0.527$). Educational attainment (aOR = 1.15, 95% CI: 0.90–1.47, $P = 0.276$), burden of raising minor children (aOR = 0.94, 95% CI: 0.73–1.22, $P = 0.659$) and number of elderly family members to support (aOR = 1.18, 95% CI: 0.94–1.48, $P = 0.157$) were not independent predictors.

In terms of health cognition, higher scores of health risk perception failed to significantly reduce the probability of delaying care (aOR = 0.95, 95% CI: 0.78–1.15, $P = 0.601$). This suggests that mere awareness of health risks cannot alter workers' medical consultation decisions, and such cognitive effects may be offset by constraints from labour institutions.

☒ Enabling Factors

For enabling factors, traditional financial security indicators and occupational support factors presented divergent effects. Notably, medical insurance coverage lost statistical significance in the multivariate model. Neither social medical insurance (aOR = 1.17, 95% CI: 0.65–2.11, $P = 0.603$) nor commercial health insurance (aOR = 0.93, 95% CI: 0.60–1.44) demonstrated an independent protective effect on care-seeking behaviour. It can be inferred that basic institutional insurance coverage alone cannot offset micro-level restrictions embedded in platform labour.

Instead, occupational environmental support emerged as a core predictor. Perceived platform support acted as the strongest independent protective factor: each one-point rise in the corresponding scale score reduced the risk of delayed care by 35% (aOR = 0.65, 95% CI: 0.55–0.77, $P < 0.001$), which proves flexible mechanisms and supportive services provided by platforms can effectively lower barriers to medical visits.

Significant occupational heterogeneity was also observed. Relative to the reference group (food delivery riders), domestic service workers taking platform orders had a 69% lower risk of delaying treatment (aOR = 0.31, 95% CI: 0.11–0.93, $P = 0.036$). Courier and instant errand workers also displayed a marginally declining risk trend (aOR = 0.52, 95% CI: 0.26–1.04, $P = 0.064$), which may be attributed to differences in discretionary working time across occupations.

☒ Need Factors

Within the need factor dimension, objective physical health demands served as core drivers of care-seeking, while the impacts of psychological conditions were masked by occupational environmental features. Every one-point increase in the physical symptom score corresponded to a significant 33%

elevation in the risk of delayed consultation (aOR = 1.33, 95% CI: 1.06–1.66, $P = 0.012$), which verifies the existence of objective physical health needs.

Nevertheless, higher psychological stress scores did not independently predict delayed care behaviors (aOR = 0.98, 95% CI: 0.78–1.23, $P = 0.857$). This reveals that physical strain rather than mental distress is more likely to prompt workers to seek medical treatment under platform labour arrangements.

Of particular note, delayed care tendency, a subjective cognitive indicator, possessed strong positive predictive power for actual medical avoidance. Each additional point on the tendency scale raised the likelihood of real delayed medical visits by 39% (aOR = 1.39, 95% CI: 1.12–1.73, $P = 0.003$). This reflects a high consistency between subjective judgment of medical barriers and real behavioral outcomes among platform workers.

(X)Discussion

This study focuses on the healthcare-seeking behaviors of young workers in the digital platform economy and identifies behavioral patterns that diverge from those of traditional formal employees and ordinary urban and rural residents. Interpreted through the lens of value-based care (VBC), these patterns reveal how payment models and enabling mechanisms operate in a non-standard employment context where the stable employer–insurer payer relationship that VBC presupposes does not hold. The findings below are organized around four themes—platform support as an enabling mechanism, the paradox of presenteeism, the predictive power of delay tendency, and the limited explanatory value of conventional socioeconomic factors—and are interpreted as empirical contributions to the design, implementation, adaptation, and evaluation of VBC payment models across health systems.

First, platform support emerges as the most potent VBC-style enabler among platform workers. Perceived platform support captures workers' perceptions of platform-provided conveniences for medical visits, reimbursement assistance, and flexible scheduling. Notably, its protective effect (aOR = 0.65, $P < 0.001$) outweighs that of conventional indicators such as medical insurance enrolment, which itself showed no significant association. This pattern therefore suggests that, in platform-mediated health systems, the platform operates as a de facto quasi-payer and employer whose supportive measures—rather than formal insurance—determine whether workers translate health needs into timely care. Consistent with the VBC principle that optimizing service accessibility and supportive environments removes barriers to care, our results indicate that occupational support can compensate for the structural gaps that formal financing leaves unaddressed. Moreover, this finding speaks directly to the Collection's themes of barriers and facilitators to implementing value-based payment models and the role of technology in enabling and scaling value-based care, as platform algorithms and scheduling systems constitute the very technological infrastructure through which such VBC enablers are delivered.

Second, although one would intuitively expect more severe symptoms to prompt earlier care-seeking, we observed the opposite: the severity of physical symptoms was associated with a higher likelihood of delayed care (aOR = 1.33, $P = 0.012$), indicating that presenteeism—working through illness—is prevalent

among platform workers. This counterintuitive pattern therefore suggests that the economic logic of platform labour, rather than clinical severity alone, governs care-seeking decisions. Existing research on payment reforms has shown that high out-of-pocket costs lead individuals to reduce utilization even when they have genuine medical needs, in order to control spending[9]; from the perspective of health opportunity cost accounting, every care-seeking decision under constrained resources entails implicit economic losses, making opportunity cost a core determinant of health resource allocation[13]. Most platform workers in our sample are informal employees without steady salaries or full insurance coverage, and because their income is tied to real-time order acceptance, time spent seeking care directly translates into lost earnings and missed orders. Consistent with the opportunity-cost framework, our results therefore suggest that these implicit income losses—rather than a lack of health needs—drive the income–health trade-off unique to platform labour, corroborating the conclusion that economic burden is a core barrier to care-seeking. Within the VBC framework, this underscores the need for equity considerations in the design and adoption of value-based approaches, as informal workers face structural disadvantages that volume-based models ignore; unaddressed physical symptoms ultimately worsen patient experience and population health, impeding progress toward SDG 3 (Good Health and Well-being).

Third, the tendency to delay care was a robust predictor of actual delayed consultation ($aOR = 1.39$, $P = 0.003$), demonstrating a strong congruence between subjective perceptions and real behavior. Consistent with surveys of insured populations showing that awareness of procedures and reimbursement rules directly shapes healthcare decisions, our results indicate that workers who anticipate cumbersome processes or difficult claims avoid seeking care in advance. This congruence therefore suggests a cognitive pathway through which perceived barriers are converted into actual forgone visits, implying that interventions targeting biased perceptions could lower cognitive barriers and thereby reduce avoidable delays. From a VBC perspective, this highlights the importance of the perspectives and engagement of multiple stakeholders—in particular, the need to engage platform workers as active participants whose perceived access barriers must be addressed through transparent communication, user-friendly claim procedures, and platform-level accountability measures that align with VBC's emphasis on patient engagement and continuous improvement.

Fourth, and perhaps most consequential for policy, conventional socioeconomic factors—including age, personal income, and medical insurance enrolment—showed no independent predictive effect after adjustment, whereas occupational environmental factors such as platform support exerted the most prominent influence. In contrast to the conventional assumption that expanding coverage and raising income are the primary levers for improving access, our data indicate that these traditional instruments are insufficient in platform-mediated settings. This is consistent with prior research on diagnosis-related group payment reforms showing that systematic optimization of payment mechanisms and service supply substantially weakens the influence of demographic and economic variables on care-seeking choices. Panel accounting evidence from conflict-affected regions further confirms that unbalanced resource distribution distorts the allocation logic of insurance funds and disables financial risk protection for vulnerable groups[10]; building on a health opportunity cost framework, Ochalek (2023)

likewise argues that merely expanding coverage cannot offset access barriers rooted in uneven resource allocation, and that matched service supply is the key variable determining whether health needs are converted into actual visits[13]. Even after controlling for income and insurance status, perceived platform support remained an independent protective factor in our model. Moreover, this conclusion echoes studies of insurance fund sustainability showing that coverage expansion alone cannot fully remove access barriers for informal workers; Pan and Chen (2022) emphasize that, despite China's remarkable progress toward universal health coverage, persistent regional disparities require region-specific, evidence-based interventions that go beyond insurance expansion and simultaneously optimize service environments[14]. Our findings therefore reinforce the view that health governance for platform workers must move beyond the traditional levers of income support and coverage expansion, and instead prioritize optimizing platform employment environments and building supportive systems tailored to new labour forms. This constitutes a policy and governance strategy that supports VBC implementation in platform-mediated health systems, addresses the needs of a diverse population that standard VBC models have overlooked, and—by recognizing platforms as key stakeholders alongside patients, providers, payers, and policymakers—advances SDG 10 (Reduced Inequalities), ensuring that vulnerable non-standard workers are not left behind in the global transition toward value-based care.

(X)Conclusions

From the theoretical perspective of health human capital, this study systematically identifies the key mechanisms driving delayed healthcare-seeking behaviour among young workers in the digital platform economy. As healthcare systems worldwide continue to evolve, the shift toward value-based care (VBC) payment models has emerged as a pivotal strategy to improve health outcomes and enhance patient satisfaction. These models focus on providing high-quality care at lower costs, aiming to reward healthcare providers based on the value of services rendered rather than the volume. Implementing value-based care requires understanding the complexities of diverse health systems, as cultural, economic, and social factors influence both the delivery and reception of care across different populations. The significance of transitioning to VBC models cannot be overstated in the context of rising healthcare costs and disparities in health outcomes. Recent advances have demonstrated that when health systems adopt value-based payment approaches, there can be improvements in care coordination, patient engagement, and overall health outcomes. Furthermore, organizations that embrace these models often report increased accountability among healthcare providers, fostering a culture of continuous improvement. This evolution is vital for addressing the needs of diverse patient populations and ensuring equitable access to high-quality care.

Positioned within this global transition, the results of this study reveal that perceived platform support acts as the core protective factor mitigating delayed medical consultation among platform workers—functioning as a de facto VBC-style enabler in a non-standard employment context. Its underlying mechanism lies in optimizing workers' endowment of occupational environmental resources and effectively easing the tension between work control and health demands. Notably, despite objective physical health impairments, workers' medical decision-making logic is heavily constrained by

occupational contexts, showing a tendency to tolerate health losses. The phenomenon of "working while ill" essentially constitutes an adaptive response to the risk of career interruption amid precarious employment environments, highlighting the urgent need for equity considerations in the design and adoption of VBC approaches to ensure that vulnerable non-standard workers are not left behind (SDG 10: Reduced Inequalities).

The theoretical contribution of this research lies in extending Andersen's Behavioral Model of Health Services Use from traditional salaried employees to the platform labour context, thereby contributing to the assessment of value-based care models in diverse populations. It verifies that occupational environmental resources represented by platform support possess greater explanatory power than conventional economic indicators such as age and income within this specific setting. This finding breaks through the limitations of traditional health governance policies that merely focus on improving individuals' ability to pay for care. It suggests that future policy reforms and governance strategies that support VBC implementation should guide platform enterprises—acting as quasi-payers and key stakeholders—to optimize employment environments and strengthen the construction of occupational support systems. Such measures function as barriers and facilitators to implementing value-based payment models across health systems, determining whether platform workers can translate latent health needs into timely, value-based care utilization. By striking a win-win balance between safeguarding workers' health rights and interests and realizing the sustainable development of the platform economy, this research ultimately advances the goals of SDG 3 (Good Health and Well-being) and SDG 10 (Reduced Inequalities), while informing the perspectives and engagement of multiple stakeholders—patients, providers, payers, policymakers, and industry—across diverse health systems.

Abbreviations

UHC

Universal Health Coverage

NCMS

New Cooperative Medical Scheme

URBMI

Urban Resident Basic Medical Insurance

UEBMI

Urban Employee Basic Medical Insurance

OR

Odds Ratio

CI

Confidence Interval

SPSS

Statistical Package for the Social Sciences

Declarations

Ethics approval and consent to participate

This study was reviewed in accordance with the research ethics requirements of Chengdu University of Technology. As this study involved an anonymous online survey of adults, collected no identifiable personal information, and posed minimal risk to participants, formal ethical review was exempted. The study was recorded through institutional ethics registration. All procedures were conducted in accordance with the ethical principles of the Declaration of Helsinki.

Competing interests

The authors declare no competing interests.

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Author Contribution

Y.H.G. conducted participant recruitment and data collection, completed data cleaning and statistical analysis, and wrote the first draft of the manuscript. S.J.L. proposed the research idea, established the analytical framework, supervised the research progress, and made substantial revisions to the manuscript. All authors reviewed and endorsed the final manuscript.

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Data Availability

The datasets generated by the survey research during and/or analyzed during the current study are included in this document. The questionnaire and the survey database are available upon request.

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Footnotes

1. The questionnaire used in this study is provided in the first Supplementary material, which is called “Questionnaire”.
2. The Descriptive statistics is available in the third Supplementary material, which is called “Descriptive statistics”.
3. Data is available in the related file, which is called “Data”.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [DescriptiveStatisticsTableN507.xlsx](#)
- [Questionnaire.docx](#)
- [Descriptivestatistics.docx](#)