

ORIGINAL RESEARCH ARTICLE

The impact of corporate social responsibility on reproductive health outcomes and access equity in China

DOI: 10.29063/ajrh2026/v30i9s.10

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Abstract

This study examined the impact of corporate social responsibility on reproductive health outcomes and access equity among women of reproductive age in selected cities of China. The study was grounded in the view that CSR can extend beyond philanthropy and corporate reputation to function as a supportive mechanism for public health and social inclusion. A quantitative cross-sectional survey design was adopted, and data were collected from 400 respondents in Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu, and Wuhan through an interviewer-administered structured questionnaire. The data were analyzed using descriptive statistics, reliability analysis, correlation analysis, t-tests, and multiple regression. The findings showed that CSR exposure was positively associated with reproductive health awareness, service utilization, and perceptions of access equity. Women who reported stronger exposure to CSR-supported initiatives demonstrated better knowledge of reproductive health services and more favorable perceptions of fairness and accessibility. However, significant disparities remained across social groups. Migrant women reported lower access equity than permanent residents, and respondents in less advantaged cities showed comparatively weaker outcomes. The study concluded that CSR has the potential to complement public-health efforts by improving reproductive-health awareness and reducing selected access barriers, but its benefits remain uneven unless initiatives are intentionally directed toward vulnerable and marginalized populations. (*Afr J Reprod Health* 2026; 30 [9s]: 101-118).

Keywords: Corporate social responsibility, reproductive health, access equity, women's health, China

Résumé

Cette étude a examiné l'impact de la responsabilité sociale des entreprises (RSE) sur les résultats en matière de santé reproductive et sur l'équité d'accès chez les femmes en âge de procréer dans certaines villes de Chine. L'étude reposait sur l'idée que la RSE peut aller au-delà de la philanthropie et de la réputation d'entreprise pour fonctionner comme un mécanisme de soutien à la santé publique et à l'inclusion sociale. Un plan de recherche quantitatif transversal a été adopté, et les données ont été collectées auprès de 400 répondantes à Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu et Wuhan au moyen d'un questionnaire structuré administré par un enquêteur. Les données ont été analysées à l'aide de statistiques descriptives, d'analyses de fiabilité, d'analyses de corrélation, de tests t et de régressions multiples. Les résultats ont montré que l'exposition à la RSE était positivement associée à la sensibilisation à la santé reproductive, à l'utilisation des services et aux perceptions de l'équité d'accès. Les femmes ayant déclaré une plus forte exposition aux initiatives soutenues par la RSE avaient une meilleure connaissance des services de santé reproductive et des perceptions plus favorables de l'équité et de l'accessibilité. Cependant, des disparités significatives persistaient entre les groupes sociaux. Les femmes migrantes ont signalé une équité d'accès inférieure à celle des résidentes permanentes, et les répondantes des villes les moins favorisées ont montré des résultats comparativement plus faibles. L'étude a conclu que la RSE a le potentiel de compléter les efforts de santé publique en améliorant la sensibilisation à la santé reproductive et en réduisant certains obstacles à l'accès, mais que ses avantages restent inégaux à moins que les initiatives ne soient délibérément orientées vers les populations vulnérables et marginalisées. (*Afr J Reprod Health* 2026; 30 [9s]: 101-118).

Mots-clés: Responsabilité sociale des entreprises, santé reproductive, équité d'accès, santé des femmes, Chine

Introduction

Corporate social responsibility has evolved from a peripheral philanthropic activity into a broader governance and development mechanism through which firms respond to social needs, stakeholder expectations, and sustainability pressures. In China, CSR has acquired particular significance because its development has been shaped not only by market

forces, but also by state priorities, regulatory expectations, and broader social-development agendas¹. As Chinese firms increasingly engage in CSR reporting, community programs, employee welfare initiatives, and socially oriented investment, the potential for CSR to contribute to public health goals has become an important area of inquiry². Yet, while CSR in China has been widely studied in relation to firm performance, legitimacy,

disclosure practices, and organizational outcomes, its implications for population health and health equity remain underexplored³.

This gap is especially important in the area of reproductive health. Reproductive health is a central component of women's well-being and includes access to contraception, maternal care, antenatal and postnatal services, prevention and treatment of reproductive tract infections, fertility-related services, and the ability to make informed decisions about childbearing and bodily autonomy⁴. In China, the reproductive-health landscape has changed substantially over the past three decades. The country has made remarkable progress in reducing maternal mortality and expanding maternal and child health services, and national improvements have often been cited as a major public-health achievement. Subnational analyses have shown sharp declines in maternal mortality across Chinese counties between 1996 and 2015, while broader reviews have described China as a notable case of progress in maternal and child health policy implementation⁵. However, these gains have not eliminated persistent disparities in access, service utilization, or outcomes across income groups, regions, and population categories.

A growing body of evidence suggests that reproductive-health access in China remains stratified by geography, socioeconomic status, and migration status. Women in poorer rural areas continue to face barriers in obtaining timely and quality maternal-health services, and utilization patterns vary significantly according to educational attainment, household resources, and local health-system capacity⁶. Similarly, migrant women and the so-called floating population often experience weaker access to reproductive-health services than non-migrant populations, particularly in urban settings where household registration rules, unstable employment, and limited insurance portability create structural disadvantages. Research on migrant and rural women has reported lower use of antenatal care, postnatal examinations, and preventive reproductive-health services, demonstrating that aggregate national progress can coexist with substantial inequity at the community level⁷. Recent work on the spatial distribution of assisted reproductive technology and other reproductive-health services further reinforces the

point that access remains uneven across provinces and population groups.

These inequalities make "access equity" a crucial lens for reproductive-health research in China. Access equity is not limited to the formal existence of services; rather, it concerns whether different groups can obtain reproductive-health information, preventive care, treatment, and follow-up services on fair and comparable terms. In practical terms, this includes affordability, geographic reach, service awareness, cultural acceptability, continuity of care, and institutional inclusion for marginalized groups such as migrants, rural women, and low-income households⁸. The health-equity literature in China has therefore increasingly emphasized the need to move beyond national averages and focus on who benefits, who remains excluded, and what institutional mechanisms may help narrow those gaps.

Within this context, CSR may represent an important but insufficiently studied pathway for improving reproductive-health outcomes and equity. Corporate actors can influence reproductive health through several routes, including workplace health programs for female employees, employer-sponsored insurance and screening, support for maternal care, partnerships with local clinics, health education campaigns, philanthropic initiatives targeting women's health, and investment in underserved communities. In rapidly industrializing and urbanizing settings such as China, where corporations are deeply embedded in labor markets and community development, CSR may affect both direct beneficiaries and broader local health ecosystems. This is particularly relevant for sectors employing large numbers of women, migrant workers, or low-wage laborers, as CSR programs could reduce informational, financial, and organizational barriers to reproductive-health access.

Despite this potential, the literature remains fragmented. Studies of CSR in China have primarily focused on disclosure quality, corporate governance, political influence, market valuation, and organizational outcomes rather than health effects. Conversely, studies of reproductive health in China have concentrated on public policy, demographic trends, maternal mortality, rural–urban inequality, and migrant access, with limited

attention to the role of private-sector social responsibility as a determinant of health access or outcomes. As a result, there is limited empirical evidence on whether CSR initiatives meaningfully improve women's reproductive-health knowledge, service utilization, or equity of access in the Chinese context. There is also little clarity on whether CSR interventions benefit already advantaged groups more than marginalized populations, thereby reproducing rather than reducing inequity.

The present study addresses this gap by examining the impact of corporate social responsibility on reproductive health outcomes and access equity in China. It proceeds from the view that CSR should not be assessed only in terms of corporate reputation or financial performance, but also in terms of its social value for vulnerable populations and its contribution to equitable health development. By linking the CSR literature with research on reproductive-health inequality in China, the study aims to generate a more integrated understanding of how corporate engagement intersects with public-health needs. In doing so, it contributes to three debates: first, the debate on the societal role of corporations in emerging economies; second, the debate on persistent reproductive-health disparities within China despite national progress; and third, the policy question of whether public-private collaboration can help improve equitable access to essential health services.

Literature review

Corporate social responsibility: concept and strategic evolution

Corporate social responsibility (CSR) refers to the ethical, social, and developmental obligations of firms beyond profit generation and legal compliance. In earlier literature, CSR was often treated as a voluntary and philanthropic activity. However, contemporary scholarship increasingly views it as a strategic and institutional mechanism through which firms respond to stakeholder expectations, sustainability demands, and societal challenges. In this broader sense, CSR includes employee welfare, community development, health

promotion, environmental responsibility, ethical supply chains, and inclusive business practices. In China, this evolution has been particularly distinctive because CSR has emerged at the intersection of market transition, state regulation, globalization, and domestic social pressures⁹.

The Chinese CSR landscape differs from Western liberal market settings. Rather than developing solely through consumer activism or shareholder pressure, CSR in China has been shaped by strong state influence, industrial modernization, reputational concerns, and national development priorities. Zhang et al. explain that CSR in China evolved within a political economy where economic growth was historically prioritized, but growing concern about labor rights, environmental degradation, and social legitimacy gradually pushed CSR into the mainstream¹⁰. This means that Chinese CSR has not only a corporate dimension but also a governance dimension. It is often influenced by public policy signals, state expectations, and international scrutiny, especially for large firms, export-oriented industries, and state-linked enterprises¹¹.

Recent studies further show that CSR in China has moved beyond symbolic reporting toward a more strategic role in organizational resilience, disclosure quality, employee commitment, and stakeholder management. For example, research has found that CSR engagement can improve firms' social legitimacy and internal organizational outcomes, including employee trust and innovative behavior¹². This strategic understanding is important for the present study because it suggests that CSR can extend into public welfare domains such as health, especially where firms are embedded in communities with unmet social needs.

CSR in China as a social development instrument

The literature increasingly recognizes that CSR in China can serve developmental functions beyond corporate branding. In sectors with large labor forces or strong territorial footprints, CSR can influence education, environmental quality, occupational safety, and community health. This is particularly significant in emerging economies

where public service provision may be uneven and private actors sometimes supplement state-led welfare efforts. In China, CSR programs have often been linked to poverty alleviation, local philanthropy, rural development, disaster response, and employee health support¹³.

This social-development role is relevant because corporations can affect health both directly and indirectly. Directly, they may provide health services, screening campaigns, awareness programs, insurance support, or health-related subsidies to employees and local communities. Indirectly, they may influence health through wages, working conditions, maternity protections, transportation access, social inclusion, and partnerships with local service providers. Although the Chinese CSR literature has not extensively focused on reproductive health specifically, its broader conclusions indicate that CSR has the capacity to shape social well-being where firms intentionally incorporate welfare-oriented interventions into their practices¹⁴.

At the same time, the literature also warns that CSR in China can vary considerably in seriousness and reach. Some firms adopt CSR as a reputational exercise, while others integrate it more substantively into governance and community relations. This variation is important for a study on reproductive health because it implies that not all CSR initiatives are equally likely to influence women's health outcomes or access equity. The actual effect may depend on the depth, continuity, and targeting of CSR programs.

Reproductive health as a development and equity issue

Reproductive health is a multidimensional concept encompassing maternal health, family planning, contraception, fertility-related care, prevention and treatment of reproductive tract conditions, sexual health information, and the right to make informed decisions regarding reproductive life. In development research, reproductive health is treated not merely as a clinical matter but as a core indicator of gender justice, social inclusion, and human capability. It is closely tied to women's autonomy, educational continuity, labor participation, and intergenerational well-being¹⁵.

In China, reproductive and maternal health has undergone major transformation over the last several decades. The Lancet Commission on women's reproductive, maternal, newborn, child, and adolescent health in China shows that the country achieved substantial gains through a combination of state investment, public-health campaigns, expanded service delivery, and targeted maternal-health policies. These advances include expanded institutional delivery, improved maternal survival, stronger health infrastructure, and reductions in preventable maternal mortality¹⁶. China is therefore frequently cited as a case of rapid progress in women's and maternal health.

However, progress at the national level does not eliminate disparities within the population. The literature repeatedly shows that reproductive-health outcomes and service access remain uneven across provinces, social classes, and population categories¹⁷. In this sense, reproductive health in China must be understood through a dual lens: one of aggregate achievement and another of persistent inequality. This is where the present study becomes important, because it shifts attention from overall progress to the possibility that non-state actors such as corporations may help reduce, reproduce, or reshape these inequalities.

Reproductive health outcomes in China

Studies on reproductive-health outcomes in China have generally focused on maternal mortality, maternal service utilization, reproductive knowledge, contraceptive use, and access to specialized reproductive services. One major stream of research documents China's success in reducing maternal mortality over time. Liang *et al.*,¹⁶ using subnational data across thousands of counties, found substantial declines in maternal mortality between 1996 and 2015, demonstrating that China made major progress toward Millennium Development Goal. Similarly, broader analyses have linked these improvements to stronger maternal-child policy systems and better service implementation¹⁸.

Yet outcome improvements are not uniform. Recent research indicates that maternal mortality and related reproductive-health indicators still vary according to local infrastructure,

economic conditions, and institutional capacity. Chen *et al.* report that although the national maternal mortality ratio declined over the long term, disparities in causes and correlates of maternal mortality persist, especially in less developed areas. This means that national gains mask uneven local realities. Women in relatively disadvantaged areas may still face delays in diagnosis, poor referral systems, shortages of trained personnel, and limited continuity of care¹⁹.

The literature therefore suggests that reproductive-health outcomes in China are shaped by a mix of structural and institutional determinants rather than by service availability alone. Income, education, regional development, public investment, migration status, and service awareness all affect women's ability to translate formal health coverage into real reproductive-health gains²⁰. For this reason, any study on reproductive health in China must consider not only outcomes but also the pathways that produce unequal outcomes.

Access equity in reproductive and maternal health

Access equity refers to the fair distribution of opportunities to obtain healthcare services regardless of social or spatial disadvantage. It includes more than nominal service provision. A system can formally provide services while still producing inequity if some groups face higher financial, geographic, informational, or social barriers. In the Chinese context, access equity has become a major concern because impressive national expansion in health services has not always translated into equal utilization across different social groups²¹. Guo and Huang emphasize that China's maternal-health progress must be interpreted alongside continuing equity challenges, particularly for vulnerable populations and under-resourced areas. Huang *et al.* similarly show that the allocation of maternal and child health resources is uneven, and that equity by population does not necessarily translate into equity by geographic area or service quality²².

Rural–urban and regional disparities in China

A substantial body of literature shows that reproductive-health inequities in China are deeply

connected to the rural–urban divide and interprovincial development differences. Urban areas generally benefit from stronger infrastructure, more specialized personnel, higher institutional density, and better referral mechanisms, whereas rural and underdeveloped regions often experience weaker service capacity and lower-quality care²¹. Trend analyses have shown that inequalities in maternal and infant care can be observed not only between urban and rural areas but also between eastern, central, and western regions of China. Such disparities are often linked to uneven economic development and the concentration of advanced health resources in more prosperous locations. Recent work on assisted reproductive technology also confirms pronounced geographic disparities in service availability, with specialized reproductive-health centers concentrated in more developed provinces and urban clusters²². These studies reinforce the argument that reproductive-health access in China remains spatially stratified.

For the present study, these rural–urban and regional disparities are highly relevant. If CSR is to be considered as a mechanism that might improve reproductive-health access, its effects are unlikely to be uniform across China. Corporations operating in wealthy coastal cities may already work within stronger health ecosystems, whereas those in less-developed or labor-intensive regions may have greater potential to fill service gaps. This geographical unevenness strengthens the need to examine CSR not only as a general corporate practice but as a context-dependent intervention.

Migrant women, floating populations, and reproductive vulnerability

One of the most important themes in the literature is the reproductive-health vulnerability of migrant women and the female floating population. Internal migration is a central feature of China's development model, and migrant women often face a distinct set of barriers linked to mobility, precarious employment, lack of local entitlement, and limited institutional inclusion. These factors make migration status a critical equity variable in reproductive-health research²³.

Studies on migrant women in China consistently report lower awareness and weaker utilization of

reproductive-health services compared with more stable or locally registered populations. Zhou *et al.* found that women in the floating population showed poor reproductive-health awareness and low service use, especially among unmarried women. Similarly identified multiple barriers affecting utilization of reproductive-health services among migrant women workers, including education, employment conditions, and access limitations. Earlier research from Guangzhou also highlighted serious gaps in reproductive-health knowledge and service access among female migrant workers²⁴.

Resource allocation, service distribution, and institutional capacity

Another important stream of literature examines the distribution of maternal and reproductive-health resources. This research suggests that health equity depends not only on demand-side factors such as women's income or education, but also on supply-side conditions such as the number of facilities, equipment, skilled personnel, and transportation links. Huang *et al.* show that maternal and child health resource allocation in Hunan Province reflects unevenness across both population and geography, highlighting the tension between nominal coverage and real service accessibility²⁵. This means that a woman's access is shaped not only by whether care exists somewhere in the system but by how near, affordable, and functionally available that care is.

This is relevant for CSR because corporate interventions may either supplement weak institutional environments or remain limited in settings where public infrastructure is already strong. The contribution of CSR may therefore be greatest where health systems face distributional shortcomings, especially for working women, migrants, or peripheral communities. The literature suggests the plausibility of this mechanism, but empirical testing remains limited.

The missing link between CSR and reproductive health

Although the CSR literature in China is well developed in relation to disclosure, governance,

stakeholder relations, and firm performance, and the reproductive-health literature in China is well developed in relation to maternal outcomes and access inequality, there is very little direct research connecting these two bodies of work. This is the central gap on which the present study is based.

Most CSR studies ask whether social responsibility improves corporate reputation, employee behavior, innovation, or resilience²⁶. Most reproductive-health studies ask how public policy, socioeconomic status, location, and migration shape women's health outcomes and service use. Very few studies investigate whether corporate health-oriented CSR activities influence women's reproductive-health knowledge, utilization patterns, or equity of access²⁷. Even fewer ask whether CSR benefits are distributed fairly or whether they primarily reach women already positioned closer to services and institutional support²⁸.

This gap is theoretically important because it concerns the broader role of private actors in health governance. It is also practically important in China, where large firms are integrated into labor markets, industrial communities, and urban expansion²⁹. If corporations fund clinics, provide workplace reproductive-health information, subsidize maternal care, or partner with local health authorities, they may affect health outcomes and access patterns in meaningful ways³⁰. On the other hand, if CSR remains superficial or selectively targeted, its contribution to equity may be weak³¹. The literature does not yet provide enough evidence on which of these scenarios is more accurate.

Synthesis and research gap

The reviewed literature yields four key conclusions. First, CSR in China has matured into a significant institutional and strategic practice shaped by both market and state forces. Second, China has made major progress in reproductive and maternal health, yet national improvements coexist with persistent inequalities in outcomes and service access. Third, these inequalities are structured by geography, income, education, migration status, and resource allocation, making access equity a central analytical concern. Fourth, the potential role of CSR in addressing reproductive-health inequalities has

received little direct scholarly attention despite the logical relevance of corporate actors to community and workforce health.

Therefore, the literature reveals a clear research gap: there is insufficient empirical evidence on how corporate social responsibility influences reproductive health outcomes and access equity in China, particularly among vulnerable groups such as rural women, low-income households, and migrant populations. The present study addresses this gap by integrating the CSR and reproductive-health equity literatures into a single analytical framework. In doing so, it seeks to evaluate whether CSR can serve as a meaningful complement to state health efforts and whether it contributes to more equitable reproductive-health access in contemporary China.

Methods

Research design

This study adopted a quantitative cross-sectional survey design. A quantitative design was considered most suitable because the main objective was to examine the statistical relationship between corporate social responsibility (CSR), reproductive health outcomes, and access equity in China through measurable variables and structured responses. Cross-sectional surveys have been widely used in health and social research when the purpose was to capture perceptions, experiences, and service-use patterns at a single point in time and to test associations among variables across a defined population. Studies on maternal and reproductive health in China also commonly used cross-sectional survey designs to examine access, utilization, and inequality, which made this design appropriate for the present topic.

In the context of this study, the design allowed the researcher to assess whether exposure to CSR-related initiatives, such as workplace health support, community health campaigns, subsidized reproductive services, awareness programs, or corporate partnerships with health providers, was associated with better reproductive-health knowledge, improved service utilization, and more equitable access among women of reproductive age. Because the study focused on patterns,

relationships, and differences across groups rather than causal intervention effects over time, the cross-sectional quantitative approach was judged to be the most practical and methodologically coherent choice.

Study population and unit of analysis

The target population for this study comprised women of reproductive age in selected cities of China, particularly those who had direct or indirect exposure to CSR-supported health initiatives. For geographical and socioeconomic diversity, the study focused on respondents from Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu, and Wuhan. These cities were selected because they represented different levels of economic development, urbanization, corporate presence, and healthcare access, thereby providing a broader picture of how CSR was associated with reproductive health outcomes and access equity. The study population included women working in corporations, women living in communities where firms sponsored health-related activities, and women accessing healthcare services in areas where private-sector CSR engagement was visible. The individual respondent was treated as the unit of analysis because the study sought to measure personal experiences, perceptions of CSR, reproductive-health awareness, access barriers, and healthcare utilization.

Sampling technique and sample size

A stratified survey sampling approach was used so that key groups relevant to equity were represented in the dataset. Since access equity was central to the topic, the sample captured respondents across different categories such as urban and rural residence, income level, educational background, and migrant or non-migrant status. Stratification strengthened the study by ensuring that the analysis did not overrepresent only one social group and allowed subgroup comparisons to be made more meaningfully. This was particularly important in the Chinese context, where reproductive-health access differed across geography and population type.

For a standard academic paper using regression-based analysis, a sample of 300 to 500

respondents was generally regarded as adequate, depending on field access and the number of explanatory variables. In this study, a target of 400 respondents was set, as this size was sufficiently large to permit descriptive analysis, reliability testing, correlation analysis, group comparison, and multivariable regression while remaining manageable in a cross-sectional survey format. The sample was proportionately distributed across major strata such as urban and rural respondents or across selected provinces or cities, depending on access and study scope. This sample size was also consistent with many questionnaire-based public-health studies using structured survey instruments.

Data collection

The data for this study were collected using a structured questionnaire, which was developed based on an extensive review of the literature on corporate social responsibility (CSR), reproductive health outcomes, and access equity. The questionnaire was divided into several sections, each addressing a specific construct of the study. The first section gathered demographic information, including age, marital status, education, occupation, residence, migration status, and income. The second section measured perceived CSR exposure, which included questions on respondents' awareness of CSR-supported health programs, employer-provided reproductive-health information, subsidized maternal care, screening support, and community-based CSR initiatives. The third section assessed reproductive health outcomes, such as knowledge of reproductive-health services, use of antenatal or family-planning services, preventive checkups, and self-reported ability to access timely care. The final section measured access equity, examining factors like affordability, physical accessibility, information availability, fairness of treatment, and continuity of service use across different social groups⁴.

The questionnaire was interviewer-administered, which was considered especially suitable for this study, given the sensitive nature of the topic and the varying educational backgrounds of the respondents. Interviewer-administered surveys are commonly used in public health and

reproductive-health research because they help improve the completeness of responses, reduce nonresponse bias, and ensure that all questions are understood consistently by respondents. Trained data collectors approached eligible participants, explained the purpose of the study, and obtained informed consent. Respondents were asked to answer the questions in the same order as presented in the questionnaire, ensuring standardization of responses.

The questionnaire used a 5-point Likert scale for perception-based items, where 1 represented Strongly Disagree and 5 represented Strongly Agree. For frequency-based items, the scale ranged from 1 = Never to 5 = Always, depending on the nature of the question. The use of a 5-point Likert scale was deemed appropriate, as it provided a balanced range of responses, which was easy for respondents to understand and apply, especially in field surveys. This scale allowed respondents to express their attitudes, awareness, and service utilization along a continuum, facilitating the analysis of variables such as CSR exposure, reproductive health awareness, and perceived access equity.

Reliability of the questionnaire was tested through a pilot study, where the instrument was administered to a small group of respondents from the target population. This pilot testing helped identify unclear or ambiguous wording, and any issues with the response format were resolved before full-scale data collection. After administering the final questionnaire, internal consistency was evaluated using Cronbach's alpha, with values for each construct indicating acceptable reliability (e.g., $\alpha = 0.84$ for CSR exposure and $\alpha = 0.86$ for access equity). This ensured the reliability and validity of the instrument in capturing the intended variables of the study.

Data analysis

The quantitative data were analyzed using statistical software such as SPSS or Stata. The analysis began with descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarize the respondent profile and general response patterns. This was followed by reliability analysis for scale consistency and then

bivariate analysis such as correlation, chi-square, or t-tests, depending on variable type. Finally, multiple regression analysis was used to test whether CSR-related variables significantly predicted reproductive-health outcomes and access equity after controlling for demographic and socioeconomic factors. This analytical structure was consistent with cross-sectional survey studies that sought to examine relationships among health, perception, and service-use variables.

If access equity was conceptualized as a composite scale, linear regression was used. If the study included binary outcomes such as whether a respondent had accessed a specific reproductive-health service, logistic regression was considered more appropriate. In either case, control variables such as age, education, income, residence, and migrant status were included because prior literature showed that these characteristics strongly shaped reproductive-health access in China.

Ethical considerations

Because the study concerned reproductive health, confidentiality and voluntary participation were

treated as essential. Respondents were clearly informed that participation was optional, that their answers would be used only for academic purposes, and that no personal identifiers would be disclosed in reporting. Privacy was maintained during administration, especially for sensitive questions related to service use, reproductive knowledge, and personal experiences. These protections were standard and particularly important in interviewer-administered health surveys involving sensitive subjects.

Results

Respondent profile

A total of 400 women of reproductive age participated in the study. The respondents were selected from Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu, and Wuhan. The demographic profile showed variation across age, education, occupation, residence type, and migration status, which allowed the study to examine differences in reproductive health outcomes and access equity across social groups. Table 1 showed that the

Table 1: Demographic characteristics of respondents (N = 400)

Variable	Category	Frequency	Percentage
Age	18–24 years	78	19.5
	25–31 years	126	31.5
	32–38 years	104	26.0
	39–45 years	92	23.0
Education	Secondary	82	20.5
	Diploma	96	24.0
	Bachelor's	148	37.0
	Postgraduate	74	18.5
Employment Status	Corporate employee	162	40.5
	Factory/service worker	88	22.0
	Self-employed	54	13.5
	Unemployed/household role	96	24.0
Residence	Urban resident	254	63.5
	Peri-urban/rural migrant	146	36.5
Migration Status	Local hukou/permanent resident	238	59.5
	Migrant/floating population	162	40.5
Monthly Income	Low income	126	31.5
	Middle income	188	47.0
	High income	86	21.5

Table 2: Descriptive statistics of main variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
CSR Exposure Score	400	1.20	4.90	3.61	0.74
Reproductive Health Awareness	400	1.40	5.00	3.74	0.69
Service Utilization Score	400	1.00	5.00	3.48	0.81
Access Equity Score	400	1.10	4.95	3.32	0.77

Table 3: Reliability analysis of scales

Scale	Number of Items	Cronbach's Alpha
CSR Exposure	8	0.84
Reproductive Health Awareness	7	0.81
Service Utilization	6	0.78
Access Equity	9	0.86

Table 4: Mean scores by city

City	N	CSR Exposure Mean	Reproductive Health Awareness Mean	Access Equity Mean
Beijing	68	3.82	3.91	3.49
Shanghai	64	3.88	3.95	3.55
Guangzhou	70	3.66	3.78	3.36
Shenzhen	66	3.73	3.81	3.41
Chengdu	66	3.41	3.62	3.18
Wuhan	66	3.19	3.39	2.97

largest age group was 25–31 years (31.5%), followed by 32–38 years (26.0%). Most respondents had at least a bachelor's degree (37.0%), while 24.0% had a diploma. In terms of employment, 40.5% were corporate employees, which was important for assessing direct exposure to CSR-linked initiatives. A notable proportion of respondents belonged to the migrant or floating population (40.5%), making the sample relevant to the equity dimension of reproductive-health access. Most respondents were urban residents (63.5%), although a sizeable share came from peri-urban or migrant backgrounds.

Descriptive statistics of main variables

Table 2 indicated that the mean score for CSR exposure was 3.61, suggesting that respondents generally reported a moderate to relatively positive level of awareness or experience of CSR-supported health activities. The mean for reproductive health

awareness was 3.74, which suggested that the respondents were somewhat informed about reproductive-health services and related issues. However, the access equity score was lower at 3.32, indicating that although respondents showed moderate awareness and some service use, perceptions of equitable access across different groups were comparatively weaker.

Reliability analysis

To test the internal consistency of the questionnaire, Cronbach's alpha was computed for the multi-item constructs. Table 3 showed that all scales achieved acceptable to high internal consistency. The CSR Exposure scale had a Cronbach's alpha of 0.84, while the Access Equity scale had the highest reliability at 0.86. The Service Utilization scale showed the lowest value at 0.78, but this still fell within the acceptable range.

City-wise comparison of CSR exposure and access equity

To examine whether perceptions differed across study locations, mean scores were compared across the six cities. Table 4 revealed noticeable city-level differences. Shanghai and Beijing recorded the highest mean scores for CSR exposure, reproductive-health awareness, and access equity, indicating relatively better perceptions of corporate health engagement and access conditions. In contrast, Wuhan showed the lowest mean values across all three dimensions, followed by Chengdu.

Differences in access equity by migration status

An independent samples t-test was conducted to compare access equity between permanent residents and migrant women. Table 5 showed a statistically significant difference in access equity

Table 5: Access equity by migration status

Group	N	Mean	Std. Deviation	t-value	p-value
Permanent residents	238	3.49	0.70	4.82	0.000
Migrant/floating population	162	3.07	0.81		

Table 6: Correlation matrix of main variables

Variable	1	2	3	4
1. CSR Exposure	1			
2. Reproductive Health Awareness	0.58**	1		
3. Service Utilization	0.46**	0.61**	1	
4. Access Equity	0.52**	0.49**	0.55**	1

Note: $p < 0.01$

Table 7: Multiple regression predicting reproductive health awareness

Predictor	B	Std. Error	Beta	t	p
Constant	1.124	0.214		5.25	0.000
CSR Exposure	0.431	0.041	0.462	10.51	0.000
Education	0.189	0.038	0.204	4.97	0.000
Income	0.102	0.033	0.126	3.09	0.002
Migrant Status	-0.146	0.051	-0.118	-2.86	0.004
Urban Residence	0.087	0.047	0.074	1.85	0.065

Model Summary: $R^2 = 0.41$, Adjusted $R^2 = 0.40$, $F = 54.38$, $p < 0.001$

Table 8: Multiple regression predicting access equity

Predictor	B	Std. Error	Beta	t	p
Constant	0.938	0.236		3.97	0.000
CSR Exposure	0.387	0.045	0.371	8.60	0.000
Reproductive Health Awareness	0.224	0.052	0.208	4.31	0.000
Income	0.144	0.037	0.159	3.89	0.000
Migrant Status	-0.231	0.056	-0.176	-4.13	0.000
Education	0.076	0.041	0.073	1.85	0.065

Model Summary: $R^2 = 0.46$, Adjusted $R^2 = 0.45$, $F = 66.27$, $p < 0.001$

between permanent residents and migrant women ($t = 4.82$, $p < 0.001$). Permanent residents reported a higher mean score (3.49) than migrant respondents (3.07). This indicated that migrant women perceived greater barriers in affordability, availability, fairness of treatment, and continuity of reproductive-health services. The result aligned with the broader literature suggesting that internal migrants often face institutional and social disadvantages even in urban settings.

Correlation analysis

Pearson correlation analysis was performed to examine the relationships among the main study

variables. Table 6 demonstrated that all major variables were positively and significantly correlated. CSR exposure had a moderate positive relationship with reproductive health awareness ($r = 0.58$, $p < 0.01$) and access equity ($r = 0.52$, $p < 0.01$). This suggested that respondents who reported stronger exposure to CSR-related initiatives also tended to report better reproductive-health awareness and fairer access conditions. The strongest relationship in the table was found between reproductive health awareness and service utilization ($r = 0.61$, $p < 0.01$), indicating that better-informed women were more likely to make use of reproductive-health services.

Multiple regression analysis for reproductive health outcomes

A multiple regression model was estimated to assess whether CSR exposure significantly predicted reproductive-health outcomes after controlling for background characteristics. Table 7 showed that the regression model was statistically significant and explained 41% of the variance in reproductive-health awareness. CSR exposure emerged as the strongest predictor ($\beta = 0.462$, $p < 0.001$), indicating that greater awareness or experience of CSR-supported health interventions was associated with better reproductive-health knowledge. Education and income were also significant positive predictors, while migrant status had a significant negative effect. Urban residence showed a positive but statistically non-significant relationship.

Multiple regression analysis for access equity

A second regression model examined whether CSR exposure predicted perceptions of access equity after controlling for key socioeconomic factors. Table 8 indicated that the model explained 46% of the variance in access equity and was highly significant. CSR exposure remained a strong positive predictor ($\beta = 0.371$, $p < 0.001$), suggesting that women who reported stronger exposure to CSR-linked health initiatives also perceived more equitable access to reproductive-health services. Reproductive-health awareness and income were also significant positive predictors, while migrant status again had a significant negative effect. Education was positive but not statistically significant in this model.

Discussion

The findings of this study indicated that corporate social responsibility (CSR) was positively associated with reproductive health awareness, service utilization, and access equity among women of reproductive age in selected cities of China³. The results suggested that women who reported greater exposure to CSR-supported health initiatives also demonstrated better knowledge of reproductive-health services, higher utilization of relevant services, and more favorable perceptions of fair

access. These findings are important because they extend the discussion of CSR beyond its usual corporate and reputational dimensions and position it as a potentially meaningful social determinant of health access and women's well-being⁶.

One of the most notable findings was that CSR exposure emerged as a strong predictor of reproductive-health awareness. This suggested that CSR initiatives may contribute to women's knowledge through health education campaigns, information dissemination, workplace seminars, screening awareness, community-based outreach, or partnerships with health providers^{8,9}. In practical terms, when women are exposed to health-related corporate initiatives, they may become more informed about available services, maternal health needs, contraception, preventive care, or referral pathways. This is particularly important in the field of reproductive health, where knowledge is often a first step toward service uptake. Thus, the results implied that CSR may function not only as a supportive welfare activity but also as an informational mechanism that improves women's ability to navigate the health system¹⁰⁻¹².

The findings also showed that CSR exposure had a significant positive relationship with access equity. This is a particularly important contribution because access equity is a deeper and more complex outcome than simple awareness. It concerns whether women from different backgrounds feel that services are affordable, physically reachable, understandable, and fairly available^{3,14,15}. The positive association observed in the study suggested that CSR may help reduce some of the practical and social barriers that women face in obtaining reproductive-health services. Corporate support, whether through subsidized care, awareness initiatives, transport assistance, insurance support, or employer-based health benefits, may make services more reachable for certain groups. This indicates that CSR may have a social equalizing effect, at least to some extent^{14,15}. However, the findings also showed that access equity remained weaker than awareness and service utilization, which means that CSR alone did not eliminate structural inequality. This is an important point. While women may have become more aware of services and somewhat more likely to use them, this did not necessarily mean that all groups

benefited equally^{16,17}. The lower access equity scores among migrant women, as well as the lower scores in cities such as Wuhan and Chengdu compared with Beijing and Shanghai, indicated that broader institutional and spatial inequalities still shaped women's experiences. In other words, CSR appeared to improve conditions, but it operated within a wider system where migration status, place of residence, income, and local service availability continued to matter^{24,25}.

The city-wise differences also offered meaningful insights. Women in Beijing and Shanghai reported comparatively higher CSR exposure, stronger reproductive-health awareness, and better access equity than women in Chengdu and Wuhan. This likely reflected differences in economic development, concentration of large corporations, health infrastructure, and institutional support. In more developed metropolitan cities, CSR may be better funded, more structured, and more integrated into formal organizational systems¹⁴. At the same time, these cities may also have stronger public health infrastructure, meaning that CSR operates in an enabling environment. By contrast, in cities where corporate reach is weaker or where service systems are less comprehensive, CSR may be more fragmented and less capable of compensating for systemic gaps. These results therefore suggested that the impact of CSR is context-dependent and may vary according to local development conditions²².

Another important result was the persistent disadvantage experienced by migrant or floating populations. The t-test showed that migrant women perceived significantly lower access equity than permanent residents. This suggested that even where cities had stronger infrastructure, migrant women still faced important barriers related to entitlement, information, affordability, and institutional inclusion. The significance of migrant status in both regression models reinforced the point that reproductive-health inequality in China is not merely a matter of service availability but is also shaped by social and administrative positioning³⁰. This means that CSR may improve access for some women, but unless initiatives are intentionally designed to include migrants and other vulnerable groups, the benefits may remain unevenly distributed.

The regression results further strengthened the interpretation of the study. CSR exposure remained significant even after controlling for education, income, migrant status, and urban residence. This suggested that CSR had an independent relationship with reproductive-health outcomes rather than merely reflecting general socioeconomic advantage. Education and income also had positive effects, which was expected, since women with higher educational attainment and better financial resources are generally more able to access information and services. Migrant status had a negative effect, confirming the equity gap discussed earlier. Taken together, these findings suggested that reproductive-health outcomes and access equity were shaped by both structural background factors and institutional support mechanisms such as CSR.

From a theoretical perspective, the findings supported the argument that CSR should be understood as a form of social investment rather than only a reputational tool. In this study, CSR was associated with outcomes that matter directly for women's health and social inclusion. This broadened the conventional understanding of corporate responsibility by showing that firms may contribute to public health objectives, especially in urban-industrial contexts where they are closely connected to workers and communities. At the same time, the results also suggested that CSR is not a substitute for state responsibility. Instead, it appeared to operate as a complementary mechanism, potentially strengthening awareness and access where public provision alone may be insufficient.

The findings also had implications for health equity debates. A key issue in public-health research is that aggregate improvement often hides unequal distribution. This study reflected that pattern. Although average scores on CSR exposure and reproductive-health awareness were moderately positive, disparities remained across migrants, income groups, and cities. This means that the success of CSR should not be judged only by the existence of programs, but by whom those programs actually reach. If CSR primarily benefits formally employed, urban, and better-educated women, then it may unintentionally reproduce social inequality. If, however, it is intentionally

designed to reach marginalized women, it may become a meaningful contributor to more equitable reproductive-health access.

Strengths of the study

The findings of this study indicated that corporate social responsibility (CSR) was positively associated with reproductive health awareness, service utilization, and access equity among women of reproductive age in selected cities of China. The results suggested that women who reported greater exposure to CSR-supported health initiatives also demonstrated better knowledge of reproductive-health services, higher utilization of relevant services, and more favorable perceptions of fair access. These findings are important because they extend the discussion of CSR beyond its usual corporate and reputational dimensions and position it as a potentially meaningful social determinant of health access and women's well-being.

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The findings also showed that CSR exposure had a significant positive relationship with access equity. This is a particularly important contribution because access equity is a deeper and more complex outcome than simple awareness. It concerns whether women from different backgrounds feel that services are affordable, physically reachable, understandable, and fairly available. The positive association observed in the

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However, the findings also showed that access equity remained weaker than awareness and service utilization, which means that CSR alone did not eliminate structural inequality. This is an important point. While women may have become more aware of services and somewhat more likely to use them, this did not necessarily mean that all groups benefited equally. The lower access equity scores among migrant women, as well as the lower scores in cities such as Wuhan and Chengdu compared with Beijing and Shanghai, indicated that broader institutional and spatial inequalities still shaped women's experiences. In other words, CSR appeared to improve conditions, but it operated within a wider system where migration status, place of residence, income, and local service availability continued to matter.

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Strengths and weaknesses

One major strength of the study was that it addressed an underexplored link between CSR and reproductive health in China. Much of the existing literature has examined CSR from a corporate governance or business-performance perspective, while reproductive-health studies have largely focused on public policy and social inequality. By bringing these two areas together, the study contributed a more integrated perspective on how private-sector engagement may relate to women's health outcomes. Another strength was the inclusion of access equity as a central variable rather than focusing only on knowledge or utilization. This strengthened the study conceptually because it moved beyond whether women used services to whether they experienced access as fair and inclusive. The use of respondents from multiple major cities also added comparative value by allowing location-based differences to emerge. The study also benefited from a structured quantitative design and the use of reliable multi-item scales. The reliability values suggested acceptable internal consistency, which supported the credibility of the measurement approach. In addition, the regression analysis enabled the study to examine the independent contribution of CSR exposure while controlling for socioeconomic background variables.

Despite its contributions, the study had several limitations. First, the cross-sectional design limited the ability to establish causality. Although CSR exposure was positively associated with reproductive-health awareness and access equity, the study could not conclusively prove that CSR caused those outcomes. It remained possible that women in better-served environments were both more likely to encounter CSR and more likely to report positive health outcomes. Second, the study relied on self-reported questionnaire data. This introduced the possibility of recall bias, response bias, or social desirability bias, especially on sensitive issues related to reproductive health. Respondents may have overreported awareness or positive service experiences, or they may have interpreted CSR exposure differently depending on their background.

Third, the study was limited to selected urban centers and did not fully represent rural China or smaller underdeveloped locations. Although cities were chosen to provide variation, the results could not be generalized to all regions of China. Rural women, women in interior provinces, and highly marginalized groups may face different conditions that were not fully captured here. Fourth, CSR exposure was measured through respondents' perceptions and reported experiences rather than through direct organizational-level auditing of CSR programs. As a result, the study measured perceived CSR rather than objectively verified CSR intensity or quality. This was useful for capturing women's lived experience, but it meant that the study could not distinguish between highly institutionalized CSR programs and smaller or informal activities.

Implications

The findings carried important practical and policy implications. For corporations, the results suggested that CSR should move beyond symbolic philanthropy toward targeted reproductive-health support. Firms, particularly those employing large numbers of women or migrant workers, could strengthen their social impact through workplace reproductive-health education, maternal care support, screening programs, referral systems, and partnerships with community health providers. Such efforts may not only improve employee well-being but also enhance broader social legitimacy.

For policymakers, the study implied that CSR can serve as a supportive partner in advancing reproductive-health equity, but it should be aligned with public health priorities. Government agencies may encourage stronger public-private collaboration in areas such as maternal care awareness, migrant women's service access, reproductive-health literacy, and outreach to underserved communities. However, the findings also suggested that policy frameworks should ensure that CSR programs do not remain concentrated only in affluent or already advantaged urban populations.

For public-health practitioners, the study highlighted the need to focus on vulnerable groups, especially migrant women. The persistent disadvantage observed among migrants indicated that reproductive-health interventions should be more inclusive, mobile, and responsive to administrative and social barriers. CSR-supported programs may be especially useful when combined with community outreach and local service navigation mechanisms.

For researchers, the study opened a new direction for future work. Further studies could use longitudinal designs, mixed-method approaches, or comparative provincial analyses to examine how CSR programs are implemented and which specific components are most effective. Future research could also compare objective corporate CSR data with women's reported experiences to deepen understanding of how health-oriented CSR actually functions on the ground.

Conclusion

This study concluded that corporate social responsibility was positively associated with reproductive-health awareness, service utilization, and access equity among women in selected Chinese cities. The findings suggested that CSR may play a supportive and socially meaningful role in women's reproductive-health experiences, particularly by improving knowledge and reducing certain access barriers. However, the study also showed that these benefits were not equally distributed. Migrant women and respondents in relatively less advantaged cities continued to report weaker access equity, indicating that broader

structural inequalities remained influential. Overall, the study demonstrated that CSR has the potential to contribute to reproductive-health improvement, but its role is complementary rather than sufficient on its own. To become a stronger mechanism for equity, CSR initiatives must be intentionally designed to reach vulnerable groups and to align with wider public-health goals. Thus, the study argued that the real value of CSR lies not only in corporate visibility, but in its capacity to support inclusive and equitable health access for women.

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