Thinking About Childbearing Friendly Environment from the Perspective of Gender Tolerance

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Abstract. Since the 1980s, feminist geography and architecture have realized cross-integration, jointly exploring the concrete expression of gender differences in space, especially the restricted behavior of women in the space environment and its root causes. Nowadays, the phenomenon of fewer children in China has intensified. In the process of building a childbearing friendly society, many women have reduced their willingness to have children because of travel restrictions and the space environment is not friendly enough. Through literature review, this study summarizes the development and research status of feminist geography, and deeply analyzes the internal relationship between feminist geography and childbearing friendly society. Taking women's "third period" as the entry point, the paper classifates different influence paths on the fertility process according to space, sorts out the spatial and environmental factors that affect women's fertility intention, and aims to provide references for solving the environmental troubles of women's fertility and promote the further development of a childbearing friendly society.

Keywords: gender inclusion; Feminist geography; Childbearing friendly society; Spatial equity

1 Introduction

In order to comply with the law of population development, and actively cope with fewer children and aging, China proposed the implementation of the "three-child" policy and supporting measures, but the seventh census data shows that China's total population growth is still slow. At the same time, with the development of the awareness of space equality, women's space needs are gradually clear and diverse. However, at present, the research on childbearing friendly space in China is still in the early stage, and the lack of childbearing friendly space has not received effective attention, and the real needs of childbearing age groups have not been tapped. Therefore, in view of the above problems, this paper interprets and analyzes the fertility dilemma faced by female groups based on feminist geography, and explores the design elements of childbearing friendly urban space from the perspective of architecture.

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2 Overview of Research Progress at Home and Abroad

2.1 Feminist Geography

Feminist geography is a way of generating and being generated by gender identity through spatial arrangement. This theoretical framework emphasizes the central role of gender in social structure and spatial layout, and focuses on the unique challenges and experiences women face in social life [1]. In the 1980s, various social contradictions and conflicts such as the women's movement were widely launched in Western countries and quickly penetrated into various research fields of social sciences. Feminist geography was born from this and developed into one of the mainstream schools of geography. Early researchers emphasized the importance of women's daily lives and experiences in geographical research and opposed the male-centered research perspective [2]. With the development of research, in the late 1980s, the "cultural turn" movement of geography led to the divergence of feminist geography, and researchers began to explore the interaction between gender and other social identities (such as race and class), paying special attention to women located on multiple axes of difference [3]. For example, Sophia Bowlby et al paid attention to the relationship between space and power, studied how gender affects the interaction between people and space, and discussed gender inequality in space [4]. In the 1990s, the research content continued to expand, and Nicole Laliberte et al expounded the research made by feminist geographers in the fields of globalization, environment and ethics[5]. Based on psychoanalysis, post-structuralism and queer theory, Linda McDowell et al. turned to geographical research related to body, distance and identity [6].

The study of feminist geography in China is still in the early stage, and the related research content is few. In 1998, Song Guochen et al. introduced the concept of feminist geography. Huang Chunxiao et al. elaborated the development process of western feminist geography and reflected on China's urban construction based on gender [7]. With the deepening of the research, the relevant perspectives gradually increased. In 2013, Wan Hui et al. studied feminist geography based on the perspective of new cultural geography [8]. In 2017, He Jiaming et al. pointed out that existing built environment factors may further exacerbate gender inequality in daily activities and travel [9]. In the past five years, more studies have focused on women's poverty, gender differences in consumption space, career women's happiness, infrastructure research and other multi-perspective issues under the premise of feminist geography [10-13], and the research perspective is no longer confined to the female group, but turns to the mutual influence and respective preferences between the two groups.

2.2 Fertility Friendly Society

The fertility friendly society is proposed in response to the population crisis such as low fertility, fewer children and aging, and its essence is to support and encourage fertility, improve the population service system with complete coverage, and promote high-quality population development. Foreign fertility friendly studies mainly focus on the fields of "family", "women", "parenting", "reproductive health" and "gender

roles". A European study shows that the government's economic subsidies for childbearing can bring short-term population growth, but have limited effect on long-term development [14]. Anette Borchorst argues that increasing gender segregation between the public and private sectors of the Labour market will also exacerbate the gender pay gap. The Organisation for Economic Co-operation and Development (OECD) has highlighted that the problem of family work balance in Denmark leads to a decline in the birth rate, and that child care and parental leave policies may be the solution [15]. The research on "childbearing friendly" in our country is mostly limited to the policy and economic level, and pays little attention to the construction of environmental space. In 2022, Yi Wulin mentioned that the essence of a childbearing friendly society is a social form that is "willing to give birth", "can afford to give birth" and "can afford to raise". Therefore, it is very important to find the factors that hinder the release of female subjectivity in childbearing [16]. Ray Anne pointed out that the increase in the incidence of female diseases due to childbirth, while the quantity and quality of existing medical facilities still fail to meet the demand, will also lead to a decline in female fertility willingness[17]. In 2024, the Third Plenary Session of the 20th CPC Central Committee proposed to "improve the fertility support policy system and incentive mechanism, and promote the construction of a childbearing friendly society", which has attracted high attention from the academic community.

3 The Relationship Between Feminist Geography and Childbearing Friendliness

One of the studies of feminist geography is to understand how gender affects the use and perception of space. Gender differences are common in social life, and gender division of labor is closely related to spatial distribution. Therefore, feminist geography explores the social transformation of space and the definition of gender by studying how gender affects spatial arrangement. Childbearing friendliness can be subdivided into female-friendly, child-friendly and family-friendly [14]. In the process of childbearing, women bear almost all the physiological and social costs of giving birth. Therefore, the main perspective of childbearing friendly society should be "female perspective", combining women's unique experience and geographical cognition to analyze the spatial factors affecting women's childbearing intention. To sum up, feminist geography provides a theoretical basis for the research and development of fertility friendliness, which can be used as the research refinement of feminist geography, broaden the research perspective of human geography and promote the equitable development of space.

4 Identification of Fertility Friendly Space Elements

Feminist geography divides the influence of space on women's activity into the following three types: (1) Activity mode restriction, that is, physical/ability restriction; (2) Gender stereotype limitation, i.e. consciousness/culture limitation; (3) Activity

safety restrictions include the mixed restrictions of the first two [17]. Specific restrictions mainly include the phenomenon of "motherhood punishment", lack of resources, gender violence, gender differences in safety perception, traditional gender division of labor, and gender cultural narratives. By deconstructing it, it can be concluded that the main spatial elements restricting women's activities are living space, public service space, traffic space, activity space, industry production space, religious folk custom space and so on. Therefore, it can be analyzed that the potential planning topic is the optimization of planning concept, including the optimization of infrastructure system and the reshaping of spatial narrative [17]. China's "Special Regulations on Labor protection of Female workers" and "three-child policy" mentioned that special protection should be provided for women during the "three periods", namely pregnancy, perinatal period and lactation period. Therefore, combined with the research status and policy regulations, this paper identifies the spatial limiting factors in the three stages respectively to provide reference for responding to the childbearing friendly demand.

4.1 Pregnancy - Conscious/Physical Limitations

During pregnancy, women have physical decline, slow movement, easy fatigue, frequent urination, mental tension and other conditions, and the range of activity is also reduced, generally controlled within 30-40 minutes of walking. As the main activity place for pregnant women and future children within the scope, the imperfect design of community space will also impose secondary restrictions on women's limited activities, such as: air and noise pollution, lack of barrier-free design, insufficient rest seats in activity space, scarce public toilets, and uncomfortable layout of living space. In addition, affected by the awareness of gender blindness in space design (that is, ignoring gender as an important factor in interaction between people), the current standard of facilities in public Spaces is single, and furniture design that meets the ergonomic scale of women and children should be added.

4.2 Perinatal Stage - Mixed Physical/Ability/Consciousness/Cultural Limitations

The perinatal period can be divided into childbirth and puerperal period. Women are prone to postpartum depression, weight gain, postpartum thyroiditis, menstrual cramps and other physiological problems that seriously affect the physical and mental health and life status of women and infants due to the endocrine imbalance caused by the short-term fluctuations of progesterone and estrogen, so they need the dual care of mental and physical health. In 2018, a survey on the fear of childbirth in China showed that 73.1% of women in late pregnancy had varying degrees of fear about childbirth. In 2020, relevant scholars investigated the fear of childbirth among 278 pregnant women in the third trimester through the childbirth attitude questionnaire, and found that the incidence of fear of childbirth was 75.18% [18], including fear of medical environment. A closed medical space that is too functional will limit women's communication and interaction, resulting in isolation and helplessness. In order to

cope with this phenomenon, cities should optimize the spatial distribution of medical care, increase the service radius of medical facilities, and ensure that women receive timely and professional medical care services during the whole process of childbirth. The interior of medical facilities should also pay attention to the fine design, reflecting the humanistic care for women, such as the design of safe, comfortable and private consultation rooms and delivery rooms, in order to meet the needs of women in different ways of delivery, reflecting the respect for the dignity and needs of women; Design emotional support Spaces for family members to accompany, conduct postpartum depression screening and counseling, encourage family participation, and enhance maternal confidence and sense of security in childbirth.

According to the "Blue Book of National Depression 2022" data, the incidence of maternal depression is high and the treatment rate is low. One in every five women in China suffers from depression, 20% of women have suffered from depression during pregnancy, and 63% of women have suffered from postpartum depression. Studies have shown that natural space can significantly reduce stress and improve mood, and creating a connection between space and nature in daily life through design techniques can effectively alleviate anxiety and depression symptoms in women. In hospital design, a green and ecological natural environment can be constructed to create a healing landscape, so that women in wards or consulting rooms can have visual communication with nature. For example, multi-functional healing landscape gardens such as medical treatment, experience, meditation, rehabilitation and gardening can be set up [19] to provide communication space and relieve women's anxiety about medical environment and consultation. In community planning, we should design green parks that are easy to reach and safe and comfortable walking environment for women to carry out post-natal recovery activities. In urban planning, infrastructure should be designed in combination with blue and green conditions, such as walks along rivers, urban forests, etc., to provide a variety of natural landscapes and outdoor activity places, in order to support postpartum women's leisure activities and psychological relaxation. (Figure 1).

Fig. 1. Natural space combined with blue and green conditions (image credit: Network)

4.3 Lactation Stage - Ability/Cultural Limitations

According to the data of the International Labor Organization, the labor force participation rate of women aged 25-29, 30-34, 35-39 and 40-44 in China in 2020 will be 84.76%, 82.88%, 83.42% and 83.71% respectively. But women in the workplace

culture face motherhood penalties and often reproductive discrimination. Studies have shown that there is a negative correlation between the number of children and the employment probability of women, and each additional child of a woman will reduce her salary by about 10%. However, the impact of childbearing on male employment is not significant, and 62.3% of women believe that "childbearing is a burden that women cannot get rid of[20]. In the "2021 Working Mother Survival State Survey Report", the interviewed women scored the difficulty of returning to work (1-100 points to increase the difficulty), 39.8% chose "60-80 points", 36.5% chose "40-60 points", and only 16.2% chose less than 40 points. The main dilemma lies in: Travel range and distance restrictions, travel time restrictions, increased destinations, and inconvenient transportation[17]. Due to the social default parenting responsibility, the range and time of female activities in urban space are also affected by the hidden parenting behavior. The commuting space radius of major cities across the country is between 19 km and 40 km, and women are forced to choose jobs with short commuting times in order to balance family and work, resulting in serious separation between work and residence and limited career choices, according to the 2020 National Commuting Monitor Report. In terms of the choice of activity locations, women's activity willingness is related to the mix of land use, POI (point of interest) density and commercial accessibility[17], and women are more inclined to the activity locations with full functions and maternal and infant design, such as the third type of toilet and maternal and infant room.

The Blue Book of Public Security points out that the score of women's security assessment is significantly lower than that of men, and women are more sensitive to space security. In "Her City: A City Guide to Sustainable and Inclusive Urban Planning and Design with Girls", UN-Habitat noted that women around the world do not use urban public Spaces to the same extent as men: 80% of public Spaces are occupied by men, and women feel that these Spaces make them feel unsafe or excluded. Women and children travel together with more complex purposes and routes, and often adjust their activities because of fear, such as choosing to travel during the day rather than at night, choosing to drive rather than public transport. The fear of space environment is divided into the fear of lack of physical conditions and the fear of weak space vitality. Common physical factors are: lighting level, monitoring facilities are perfect, whether the environment is obscured by sight, whether it is convenient for children to pass, whether there is a safe place in case of emergency; The influence of spatial vitality means that when the number of pedestrians on the street is small, women are easy to feel that they are watched, tracked and hunted, so they give up going there.(Table 1)

Table 1. Identification table of childbearing friendly spatial elements in the third phase

Period	Corresponding urban Spaces/elements
Pregnancy - conscious/physical limitations	Living space, living facilities, barrier-free facilities, health and medical facilities, landscape space, dining space, urban furniture
Perinatal stage - mixed physical/ability/consciousness/cultural limitations	Health and medical facilities, living space, living facilities, barrier-free facilities, landscape space, eating space, consumption space, folk space, religious space
Lactation stage - Ability/cultural limitations	Walking/cycling space, public transport stations, childcare facilities, living facilities, barrier-free facilities, sports space, entertainment space, consumption space

5 Conclusions

To sum up, women are often subject to physical, ability, culture and consciousness restrictions from the society and environment, which further limit the scope, time and way of activities of women in urban space. In order to alleviate this phenomenon, refined design should be carried out from the perspective of social awareness and environment, considering the needs of women's physical and mental health, safety sensitivity, hygiene and travel convenience, such as the installation of ramps at the height difference of sidewalks for the convenience of mothers with strollers, the addition of lighting and monitoring facilities, and the setting of emergency locations. With feminist geography as the perspective and childbearing friendliness as the topic, this study analyzes the spatial troubles and needs of women in the third period from the perspectives of planning consciousness, social culture and environmental design, and presents the related spatial factors in the causes. In the future, when discussing the issue of childbearing friendly space, we should not only start from the perspective of fertility, but also take into account the physical and mental health and development opportunities of individual women, so that women can participate more in urban design, social consciousness and the construction of moral culture, and create a fair and just space environment.

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