

Temporary Interventions in Urban Planning: An Analysis of Pop-Up Parks in the Context of Urban Resilience

Kent Planlamasında Geçici Müdahaleler: Kentsel Dirençlilik Bağlamında Pop-Up Parkların Analizi

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Received / Geliş Tarihi 21.05.2025

Revision Requested /
Revizyon Talebi 12.06.2025

Last Revision / Son
Revizyon 24.06.2025

Accepted / Kabul Tarihi 25.06.2025

Publication Date / Yayın
Tarihi 16.09.2025

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Cite this article: Sipahi, M. & Sipahi, S. (2025). Temporary Interventions in Urban Planning: An Analysis of Pop-Up Parks in the Context of Urban Resilience. *PLANARCH - Design and Planning Research*, 9(2), 275-281. DOI: 10.54864/planarch.1703940

ABSTRACT

The rapid development of cities has led to a decrease in response time to emergencies, thereby increasing the importance of the concept of urban resilience. Urban resilience is a multidimensional approach that encompasses social, economic, governance-related, physical, environmental, and infrastructural criteria, with design and planning at its core. The reduction of green spaces due to urbanization has brought alternative solutions to the forefront. In this context, pop-up parks, which emerge as temporary and flexible public spaces, have gained attention. This study aims to evaluate the impacts of pop-up parks on urban resilience through a qualitative analysis method. By matching resilience criteria derived from the literature with the characteristic features of pop-up parks, a multi-criteria qualitative analysis matrix was created, and the levels of contribution were classified as "high," "medium," and "low." The findings indicate that pop-up parks provide high contributions in areas such as social solidarity, psychological recovery, and the provision of temporary green spaces. They also support spatial resilience through the functional use of idle spaces and contribute to economic resilience with low-cost and rapid implementation. However, they were found to be limited in infrastructure integration and participatory governance processes. As a result, the study emphasizes that integrating pop-up parks into strategic planning can be an effective tool for enhancing urban resilience.

Keywords: Pop-up, parks, resilience, sustainability, city, urban planning.

ÖZ

Kentlerin hızlı gelişimi, acil durumlara karşı reaksiyon hızının düşmesine neden olmakta; bu durum, kentsel dirençlilik kavramının önemini artırmaktadır. Kentsel dirençlilik sosyal, ekonomik, yönetimsel, fiziksel, çevresel ve altyapısal kriterleri içeren çok boyutlu bir yaklaşımdır ve temelinde tasarım ile planlama yer almaktadır. Kentleşmeyle birlikte yeşil alanların azalması, alternatif çözümleri gündeme getirmiştir. Bu bağlamda, geçici ve esnek kamusal alanlar olarak ortaya çıkan pop-up parklar dikkat çekmektedir. Bu çalışma, pop-up parkların kentsel dirençlilik üzerindeki etkilerini nitel analiz yöntemiyle değerlendirmeyi amaçlamaktadır. Literatürden elde edilen dirençlilik kriterleri ile pop-up parkların karakteristik özellikleri eşleştirilerek çok kriterli nitel bir analiz matrisi oluşturulmuş ve katkı düzeyleri "yüksek", "orta" ve "düşük" olarak sınıflandırılmıştır. Bulgular, pop-up parkların sosyal dayanışma, psikolojik iyileşme ve geçici yeşil alan sağlama gibi konularda yüksek katkı sunduğunu göstermektedir. Aynı zamanda atıl alanların işlevlendirilmesiyle mekânsal dirençliliğe, düşük maliyet ve hızlı kurulumla ekonomik dirençliliğe destek verdiği tespit edilmiştir. Ancak altyapı entegrasyonu ve katılımcı yönetim süreçlerinde sınırlı kaldığı görülmüştür. Sonuç olarak çalışmada Pop-up parkların stratejik planlama ile entegre edilmesi, kentsel dirençliliği artırmada etkili bir araç olabileceği vurgulanmıştır.

Anahtar Kelimeler: Pop-up, parklar, dirençlilik, sürdürülebilirlik, kentsel planlama

Introduction

Cities have historically been the centers of development and society (Kartal et al., 2021; Riffat et al., 2016). With the growth of urban centers, the stress load that can lead to social, physical-environmental, and economic collapse in cities has increasingly intensified (Anwar & Sakti, 2024; Index, 2014; Oğuztürk & Pulatkan, 2022).

With the increasing population of cities today, numerous issues such as the climate crisis, terrorism, and security threats have begun to pose greater risks to urban areas and their inhabitants (Doğru et al., 2024; Reiner & McElvaney, 2017). Considering that urbanization accounted for 50% of the global population in 2014 and is projected to reach 70% by 2050, it is anticipated that these challenges



will intensify over time (Chen et al., 2019). The rapid pace of urbanization has also led to a rise in the frequency of disasters occurring in cities (Büyüköztürk, 2025; Malalgoda et al., 2018). As a result of these events, growing awareness among urban stakeholders has revealed that action plans and urban responses are often inadequate (Agheyisi, 2025; Malalgoda et al., 2014). In response to such challenges, the concept of urban resilience has emerged, aiming to enhance cities' ability to withstand these issues (Johnson & Blackburn, 2014). Although various organizations define urban resilience differently, it is generally

understood as a city's capacity to recover from and adapt to adverse events (Reiner & McElvaney, 2017).

Within the scope of urban resilience, while a city's capacity to recover from and adapt to adverse events is commonly emphasized, it is evident that various classifications have been proposed. However, in the context of this study, the classification of urban resilience is based on the main categories and sub-criteria presented in Table 1.

Main Title	Criteria	Reference
Social Resilience	Society's awareness level against disasters, solidarity, social support networks and protection of vulnerable groups.	(Champlin et al., 2023; Keck & Sakdapolrak, 2013; Martin, 2015)
Environmental Resilience	Protection of natural resources, continuity of ecosystem services, green infrastructure and adaptation to climate change.	(Moghim & Garna, 2019; Mori et al., 2013)
Economic Resilience	Local economy's resilience against crises, income diversity, continuity of workforce and economic recovery capacity.	(Williams & Vorley, 2014; Williams et al., 2013; Yang et al., 2024)
Infrastructure Resilience	Strength, redundancy and ability to maintain functionality against disasters of water, energy, transportation and communication infrastructures.	(Habib et al., 2024; Perrelet et al., 2024, Reiner & McElvaney, 2017)
Governance Institutional Capacity	Local governments' crisis management skills, public participation, transparency, coordination ability and planning ability.	(Cars et al., 2017; Vandergert et al., 2016)
Spatial Planning	Directing land use, construction decisions and urbanization policies in a way that will reduce disaster risks.	(Brunetta & Salata, 2019; Lu & Stead, 2013)

The concept of social resilience can be defined as the regulation of urban stakeholders' responses to disaster situations (Martin, 2015). Enhancing social resilience requires increasing public awareness of disasters and providing education to ensure informed and conscious behavior during such events (Quarantelli, 1985).

One of the most critical components in achieving urban resilience is environmental resilience. The preservation of natural resources holds a significant place in ensuring environmental resilience (Mori et al., 2013). In urban areas, the ecosystem services provided through green spaces not only enhance individuals' quality of life but also strengthen cities' resilience against environmental stressors (Elmqvist, 2019). Green infrastructure encompasses ecological elements integrated into urban areas through nature-based solutions. Applications such as parks, groves, urban forests, green roofs and wall systems, and bioretention systems for stormwater management contribute to improved environmental quality and enhance cities' resilience to climatic and hydrometeorological shocks (Bekci et al., 2019; Moghim & Garna, 2019). In the context of climate change adaptation, measures such as increasing shaded areas to combat heatwaves, restructuring water management strategies, expanding the use of permeable surfaces in flood-prone areas, and developing early warning systems have come to the forefront (Mori et al., 2013).

Within the framework of urban resilience, one of the key components is the concept of economic resilience. Economic resilience refers to the capacity of cities' economic systems to maintain functionality and recover quickly in the face of sudden shocks, disasters, or crises. Elements such as economic diversification at the local level, support for small and medium-sized enterprises, and avoiding dependency on a single source of income contribute to greater economic flexibility (Williams & Vorley, 2014). Additionally, the ability of the workforce to rapidly reorganize in the post-disaster phase and the maintenance of

production continuity are fundamental indicators of this type of resilience (Williams et al., 2013; Yang et al., 2024).

The resilience of infrastructure systems also holds particular significance within the scope of urban resilience. Strengthening critical infrastructure components—such as transportation networks, power lines, water supply systems, and communication systems—against potential risks prior to disasters ensures the uninterrupted provision of these services during crises. In particular, the establishment of backup systems and testing infrastructures under multiple scenarios contribute to maintaining functionality (Habib et al., 2024; Perrelet et al., 2024). Alongside physical robustness, the manageability and flexibility of these systems are also among the key factors influencing success in disaster management (Reiner & McElvaney, 2017).

Governance capacity and institutional effectiveness constitute another key component in determining the success of cities' responses to crises. The ability of local governments to make rapid, effective, and socially aligned decisions during emergencies, along with ensuring public participation in the process, directly enhances resilience levels (Cars et al., 2017). Institutional transparency, inter-agency coordination, and inclusive participation mechanisms play a crucial role in preparing cities for unexpected situations (Vandergert et al., 2016). The strength of these structures is not only vital during crises but also significantly contributes to the development of long-term risk reduction and adaptation policies.

Finally, spatial planning emerges as a strategic tool in the context of reducing disaster risks and building resilient cities. Key elements of this process include preventing development in hazard-prone areas, adopting urbanization policies aligned with sustainable land use principles, and shaping urban morphology in ways that mitigate risks (Lu & Stead, 2013). There is a direct relationship between the patterns of urban growth and the degree

of vulnerability to disasters, making it essential to integrate spatial planning processes with multidimensional risk assessments (Brunetta & Salata, 2019). In this context, various design approaches, methods, and tools have recently emerged in the field of architecture (Keleş et al., 2025).

One of the notable recent explorations in architectural design is the concept of pop-up spaces, characterized by their temporary and flexible nature. The concept of "pop-up" has become synonymous with any type of non-commercial, temporary activity in urban spaces (Warnaby & Medway, 2022). When examining the term, it is evident that it refers to a space deliberately occupied for a specific, limited period (Harris, 2015). In this context, urban voids come to the forefront within the scope of the concept, and urban parks are among the most frequently utilized urban spaces under the framework of pop-up interventions.

City parks, as pop-up spaces, stand out as short-term and low-cost interventions developed through coordination and collaboration among diverse urban stakeholders (Winter et al., 2020). Like other types of pop-up environments, pop-up parks are characterized by modularity, which enables their components to be disassembled, transported, and reconfigured based on spatial needs (Živković, 2015; Machado & Morioka, 2021). In addition, flexibility allows the space to be easily adapted to various user groups and evolving functional scenarios (Doron, 2000).

Further characteristics include speed, which emphasizes the minimal time and resources required for planning and implementation (Oswalt et al., 2013). Simplicity supports direct and user-friendly interventions that often do not demand complex technical infrastructure (Deslandes, 2013). Affordability makes such interventions appealing to municipalities with limited financial capacity due to their low-budget requirements (Madanipour, 2017).

Reversibility refers to the ability of these parks to be removed or transformed without causing permanent changes to the original site (Franck & Stevens, 2006). Closely related is second-life management, which enables the reuse of park elements in different contexts, contributing to material circularity (Kronenburg, 2007). Additionally, scalability facilitates the extension of these parks through modular units, and adaptability allows the space to evolve in response to temporal, user-based, or environmental changes (Tonnelat, 2010). Altogether, these attributes position pop-up parks not merely as temporary urban spaces but as innovative instruments that foster urban resilience and social cohesion.

Due to their inherent nature, pop-up urban parks are among

the urban spaces that should be considered within the scope of urban resilience. However, how pop-up parks contribute to the concept of urban resilience remains a subject of debate. In this regard, although there are studies focusing on pop-up spaces within cities (Miśniakiewicz, 2024; Stevens et al., 2024), pop-up parks (Noorani, 2021), urban resilience (Kochskämper et al., 2024; Lowe, 2024; Pelling et al., 2024), and the relationship between urban resilience and city parks (Sabri & Ponrahono, 2024; Zeng et al., 2024), no study has been found that specifically examines the relationship between pop-up urban parks and urban resilience.

Therefore, the aim of this study is to reveal the potential contributions of pop-up parks—which offer temporary and flexible spatial solutions in cities—to urban resilience. Specifically, it will assess the extent to which such parks can support the social, environmental, and physical resilience of cities before, during, and after disasters. In this context, the study will examine how pop-up parks can be related to existing urban resilience criteria, identify in which aspects they are supportive or insufficient, and explore how these interventions can be more effectively integrated into urban planning processes.

Material and Methods

This study evaluates the contributions of pop-up parks to urban resilience criteria within a qualitative analysis framework. In this context, the criteria influencing urban resilience and the characteristics of pop-up parks were examined through a comprehensive literature review. The research was conducted using a descriptive qualitative method, and an analysis matrix was created by matching resilience criteria derived from the literature with the characteristic features of pop-up parks. In the study, urban resilience was initially categorized under six main dimensions: social, environmental, economic, infrastructural, governance-related, and spatial. Each criterion was further divided into subcategories.

The characteristics of pop-up parks were classified according to fundamental attributes defined in the literature, including flexibility, modularity, low cost, rapid deployment, temporary use, mobility, and community engagement. The relationships between these attributes and the resilience criteria were evaluated based on their level of contribution as "high," "medium," or "low." A qualitative multi-criteria assessment matrix was used as the evaluation tool. For each match, the specific feature of the pop-up park responsible for the contribution was explicitly stated with justification, thereby minimizing subjectivity in the assessment (Table 2).

Research Stage	Description	Methods/Data Sources Used
Literature Review	National and international literature on pop-up parks and urban resilience has been reviewed.	Academic articles, reports
Criteria Determination	Resilience criteria (social, environmental etc.) and pop-up park features have been defined.	Theoretical framework, descriptive classification
Matching and Evaluation	Pop-up features have been associated with urban resilience criteria and the contribution level (high, medium, low) has been evaluated.	Qualitative assessment, multi-criteria analysis approach
Creating Analysis Matrix	The obtained data has been systematically processed in the analysis table.	Comparative assessment with tables
Evaluation and Recommendation	Intersection areas, strengths and weaknesses have been identified and suggestions have been developed.	Inferential assessment

Results

The findings of the study reveal that the contributions of pop-up parks to various urban resilience criteria vary in both type and degree. Pop-up parks were evaluated across six dimensions—social, environmental, economic, infrastructural, governance-related, and spatial planning—and their contributions in each area

were analyzed based on their specific characteristics. The analyses indicate that these parks provide a high level of contribution in certain areas of resilience, while their impact remains limited or weak in others. Table 3 presents these contributions in detail, categorized by both resilience domain and park characteristic.

Table 3.
Pop-up Parks - Evaluation within the Scope of Urban Resilience Criteria

	Urban Resilience Criteria	Contribution Level	Reason	Related Pop-up Park Features
SOCIAL	SOCIAL RESILIENCE	High	It provides social interaction, psychological support, and a post-disaster socialization area.	Community involvement, accessibility, rapid installation
	Community Disaster Awareness	Medium	Education can be provided through activities, but its impact decreases if it is not continuous.	Programmability, temporary use
	Social Solidarity Networks	High	It provides social contact and interaction in common areas.	Openness, public space, easy access
	Participation and Protection of Vulnerable Groups	Medium	It is successful if participatory planning is done, otherwise it can be exclusionary.	Flexibility, modularity, mobility
ENVIRONMENTAL	ENVIRONMENTAL RESILIENCE	Medium-High	It provides green space and temporary ecosystem support, but long-term ecosystem service may be limited.	Temporary green space, design in harmony with nature
	Ecosystem Protection	Medium	If it has green areas, it offers positive effects, albeit small-scale.	Green infrastructure elements (plants, trees)
	Green Area Increase	High	Idle areas can be temporarily turned into green.	Flexible site selection, rapid assembly
	Sustainability	Medium	It offers limited contribution since it is not permanent.	Portability, low material consumption
ECONOMIC	ECONOMIC RESILIENCE	Medium	It can be implemented at low cost and in a short time, but it is limited for the long-term economy.	Low cost, small-scale implementation, modularity
	Small and Medium Scale Intervention	High	Cooperation can be established with SMEs and local producers.	Rapid production and installation, scalability
	Post-Crisis Economic Recovery	Medium	It can be an activity area, but it is temporary.	Rapid activation, suitable for temporary commercial activities
INFRASTRUCTURE	INFRASTRUCTURE RESILIENCE	Low	It has a weak direct relationship with infrastructures such as water, energy, and communication.	Independence, infrastructure-free installation
	Critical Infrastructure Protection	Low	It does not have a direct function to protect the infrastructure.	Temporary structure, no external connection required
	Energy/Water Resilience	Low	It does not contribute unless it is integrated into systems.	Simplicity, portability
GOVERNANCE INSTITUTIONAL	GOVERNANCE INSTITUTIONAL CAPACITY	Medium	It increases resilience if it is included in participatory processes.	Potential for community-based planning, easy adaptation
	Participatory Decision Making	Medium	It increases if it is included in participatory decision-making processes, but this is lacking in most examples.	Openness, flexibility
	Transparency and Accountability	Low-Medium	The implementation process is generally unplanned and undocumented.	Short-term, project-based structures
SPATIAL PLANNING	SPATIAL PLANNING/LAND USE	High	It allows temporary, functional use of idle/public and risky areas and supports the transformation process.	Mobility, flexibility, temporary installation, low intervention
	Use in Risky Areas	High	It is advantageous to be suitable for temporary use.	Portability, no infrastructure required
	Compatibility with Urban Transformation	Medium-High	It can provide interim use in areas awaiting transformation.	Flexible installation, multifunctionality

The findings indicate that pop-up parks offer particularly high contributions to social, spatial, and, to some extent, environmental resilience criteria, while their impact is limited in the areas of infrastructure and governance.

The resilience category to which pop-up parks contribute most significantly is social resilience. These parks play a vital social restorative role by enhancing community engagement, supporting psychological recovery processes, and providing spaces for social interaction in the aftermath of crises. Their key features—such as ease of access, rapid deployment, the creation of open and inviting public spaces, and the capacity to host community events—form the foundation of this contribution.

From the perspective of environmental resilience, the integration of temporary green spaces enables pop-up parks to contribute to urban ecological stability. Effects such as vegetation, shading, and ecosystem support offer the potential to reduce urban heat islands, particularly in summer months, by creating microclimates. Although these contributions are not long-term, their provision of temporary nature-based solutions, potential for microclimate regulation, and the use of environmentally compatible surfaces make them noteworthy.

Economically, the low cost and rapid deployability of pop-up parks allow them to support temporary commercial activities during post-disaster recovery phases. They provide multi-

functional spaces for small and medium-sized enterprises, such as open-air markets and event venues, contributing economically through low-budget and quickly established setups.

Infrastructure resilience is the category with the lowest level of contribution from pop-up parks. Since they are not permanently integrated into infrastructure systems, they do not directly support critical systems such as energy, water, or communication. However, this limitation could be partially mitigated through portable modules such as solar lighting and rainwater harvesting systems.

In terms of governance, the contribution of pop-up parks is also limited. Without participatory planning, these spaces may not be fully embraced by users, reducing their sustainability. Conversely, when designed collaboratively with the local community, both solidarity and a sense of place attachment increase.

Regarding spatial planning, pop-up parks make a strong contribution. They serve as an effective tool for activating underutilized urban spaces and offering temporary solutions in high-risk areas. When integrated into vacant sites arising from urban transformation processes, pop-up parks can generate both social and environmental benefits through their modularity, flexibility, and temporary and mobile design features.

In light of the findings, pop-up parks offer the highest contributions to urban resilience in the areas of social resilience and spatial planning. They create temporary yet impactful public spaces that support post-crisis community gathering, social solidarity, and psychological recovery through their open, accessible, and modular structures. Additionally, they provide strategic contributions to spatial planning by enabling flexible uses in urban areas awaiting transformation or classified as high-risk.

From an environmental resilience perspective, while they offer short-term benefits such as microclimate improvement through the creation of temporary green spaces, these contributions are limited in scope and lack permanence. On the other hand, their contributions to infrastructure resilience are minimal, as they are not integrated into critical systems such as energy, water, or communication.

In terms of governance, when citizens and institutions are not adequately involved in the planning process, the sense of ownership and sustainability tends to weaken. Although pop-up parks offer advantages for economic resilience due to their low cost and rapid deployability, this contribution remains temporary and short-term, with limited influence on the development of long-term economic structures.

As a result of the study, it was determined that pop-up parks contribute to urban resilience particularly through their ability to enhance social solidarity, temporarily address the lack of green spaces, and serve as gathering areas in post-disaster contexts. Additionally, their low cost and rapid deployability make them suitable as quick-response spaces during emergencies. However, several limiting factors were also identified, including a lack of permanence, insufficient integration into long-term infrastructure systems, and challenges in ensuring sustainability without the support of local governments.

Conclusion and Recommendations

This study examined how pop-up parks, as temporary and flexible public spaces, can be related to existing urban resilience criteria and assessed their contributions to urban resilience in

concrete terms. The characteristic features of pop-up parks—such as flexibility, modularity, low cost, mobility, rapid deployability, and community engagement—align with various resilience criteria at different levels.

Among the strongest aspects of pop-up parks are their flexibility, modularity, low cost, rapid installation, and community-centered approach. These features make them effective tools for supporting psychological recovery after disasters, providing temporary gathering spaces, and reactivating underutilized urban areas. However, they are found to be inadequate in terms of infrastructure integration, alignment with institutional planning, and long-term sustainability.

As a result of the analysis, it was determined that pop-up parks provide a high level of contribution particularly in the areas of social and spatial resilience; they produce limited but meaningful effects in terms of environmental resilience; and they are more limited in the dimensions of infrastructure, economic, and governance resilience, though open to development through supportive interventions. When the relationship of pop-up parks with resilience criteria is evaluated, they support community gathering, solidarity, and post-disaster psychological recovery under social resilience. In spatial planning, they contribute to transformation processes by offering temporary and low-cost solutions. Although their contribution to environmental resilience is limited due to their temporary nature, their impact can be increased through proper planting and design strategies. Finally, in the dimensions of governance, infrastructure, and economic resilience, the level of contribution varies depending on the method of implementation and the support of local governments.

The findings obtained in the study reveal that pop-up parks can be planned not only as temporary urban furniture but also as strategic resilience tools. In this regard, strategic integration into urban planning processes is of great importance. Pop-up parks should be considered in conjunction with urban disaster preparedness plans, green space strategies, and temporary spatial use plans; they should be defined as temporary use areas in zoning plans and included in spatial decision-making processes. A modular design approach should be adopted based on resilience criteria, and different modules and usage scenarios should be developed for each resilience area (social, environmental, infrastructural). For example, socially oriented modules may offer seating and event spaces; environmental modules should be supported with green walls and shade-providing vegetation; and infrastructure-supported modules should include elements such as solar-powered lighting and water stations. Participatory and inclusive planning processes that prioritize public involvement from site selection to design should be adopted; in this way, while ownership of the parks is ensured, social inclusion is also enhanced. Pop-up parks can be considered as prototype areas that support the transition from temporary use to permanent impact, contributing to the shaping of long-term open space policies based on user experience and needs analysis. Furthermore, from a disaster-focused urban resilience perspective, the use of pop-up parks as first response, gathering, and temporary support points after disasters should be planned; they should be integrated into disaster management plans, and their applicability should be tested especially in high-risk areas. Finally, in order to evaluate the effectiveness of such practices, performance monitoring and feedback mechanisms based on criteria such as user satisfaction, accessibility, and infrastructure performance should be established; the data obtained should be actively used in the development of new implementations. In conclusion, thanks to their ability to offer rapid, economical, and community-oriented interventions, pop-up parks can be a

powerful tool in building resilient cities. However, fully realizing this potential requires a more strategic, participatory, and integrated approach.

Pop-up parks, by offering rapid and low-cost solutions, hold significant potential as a complementary tool in the development of resilient cities. However, for this potential to be sustainable and effective, temporary solutions must be integrated into the planning system, supported by infrastructure and governance, and designed with a user-centered approach. In conclusion, evaluating pop-up parks within a more comprehensive framework in urban planning and disaster management policies will contribute to the creation of more resilient and adaptable cities in the face of future crises.

Ethics Committee Approval Certificate: The authors declared that an ethics committee approval certificate is not required

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - MS - SS; Design- MS - SS; Supervision- MS; Resources- MS - SS; Data Collection and/or Processing- MS - SS; Analysis and/or Interpretation- MS - SS; Literature Search- MS; Writing Manuscript- MS - SS; Critical Review- MS - SS.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

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