基于空间分析的森林公园对游憩者健康的影响研究

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摘 要:【目的】森林公园对于改善游憩者综合健康状况具有积极的影响作用，景观元素评价与空间特征分析对于研究森林公园健康效益评价机制具有重要意义，目前较少研究关注空间特征在公园景观元素与游憩者健康效益影响关系中的潜在调节作用。【方法】本研究以福州国家森林公园为例，尝试探讨景观元素、空间特征与健康效益评估的直接效应与调节效应，通过 AHP 法与问卷调查分析森林公园景观元素与健康效益评估状况，运用 GIS 空间分析法量化评估空间特征指标因子，最终利用相关性分析与 Johnson-Neyman 技术解析森林公园景观元素、空间特征与健康效益评估之间的影响关系，并对空间特征的调节效应与调节阈值进行评估，揭示其作用逻辑和影响边界。【结果】（1）森林公园景观元素对健康效益评估具有显著影响，植被（0.1213）、自然互动体验（0.0962）、动物（0.0914）是重要指标；（2）绿视率、植被覆盖度、归一化植被指数、空间可达性、空间围合度与健康效益评估存在显著相关性，但不同要素之间的影响关系具有差异性；（3）森林公园景观元素对健康效益评估产生影响的过程中，空间特征对于局部路径存在显著调节作用，绿视率、植被覆盖度、归一化植被指数和空间围合度的调节阈值下限分别为 34.489、0.2316、0.1911、0.664。在进行森林公园开发建设时，如能把以上空间特征指标设置在阈值区间内，将更有利于发挥公园景观对游憩者健康恢复的促进作用。【结论】结合森林公园评价和空间特征分析，通过相关性分析与调节效应检验，解析了森林公园景观元素、空间特征与健康效益评估的影响关系，为健康导向的森林公园景观规划设计提供参考。

关键词: 森林公园；景观元素；空间特征；健康效益；调节效应；福州

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Research on the influence of forest park and tourist health based on spatial analysis

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Abstract:【Objective】The forest has a positive effect on improving the comprehensive health of tourist. The landscape elements evaluation and spatial feature analysis have a important significance for discussing the impact mechanism of the forest park health benefits assessment. At present, few research has focused on the potential moderate effect of spatial characteristics in the relationship between park landscape elements and tourists health benefits.【Method】This paper taking Fuzhou National Forest Park as an example, attempts to explore the direct and moderate effect between landscape elements, spatial characteristics and health benefits assessment in forest. This paper analysis the landscape elements evaluation and health benefits assessment through AHP method and questionnaire survey, and evaluate spatial characteristics indicator factors by using GIS spatial analysis. Finally, analysis the relationship between landscape elements, spatial characteristics and health benefits assessment based on correlation analysis and Johnson-Neyman technology, and determine the moderate effect and threshold, to explore the functional logic and impact boundaries. 【Result】1) Forest park landscape elements have significant correlation with health benefits assessment, among which the vegetation (0.1213), natural interaction experience (0.0962) and animals (0.0914) are important components. 2) The visible green index, vegetation coverage, NDVI,

space accessibility (cost) and space enclosure have significant correlation with health benefits assessment, but the influence relationship between various factors are different. 3) The visible green index, vegetation coverage, NDVI and space enclosure have a partial moderate effect in the relationship between the landscape elements and health benefits assessment, the lower limits of the thresholds are 34.489, 0.2316, 0.1911, 22.553, and 0.664. It is recommended to control the spatial characteristics within the threshold range during the development and construction of forest park, to better develop the promoting effect of park landscape on the recreationist’s health. 【Conclusion】Combined with forest park evaluation and spatial characteristics analysis, through correlation analysing and moderate effect testing, this paper discusses the relationship between landscape elements, spatial characteristics and health benefits assessment in forest park, which provides reference for the plan design of health-oriented forest park landscape.

Key words: forest park; landscape elements; spatial characteristics; health benefits; moderate effect; Fuzhou