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HEALTH AND NUTRITIONAL LITERACY OF SPA SERVICE AS A FACTOR OF PERCEIVED SPA EXPERIENCE QUALITY

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Abstract

The importance of tourist experience is reflected in economic success, competitiveness, and reputation of destinations, contributing to tourist loyalty and positive word-of-mouth. Accordingly, improving customer experience has become a key strategic priority in contemporary tourism. At the same time, trends in health tourism emphasize the need for active user participation in maintaining and improving personal health, where health and nutrition literacy play an important role. Spa destinations represent integrated tourism products that combine medical, wellness, and gastronomic services, requiring users to understand information related to therapies, dietary recommendations, and healthy lifestyles to achieve high-quality experience. The aim of this paper is to examine the level of health and nutrition literacy among spa users, with a focus on Vrnjačka Banja Spa, and its influence on perceived tourist experience quality. The research was conducted using a quantitative approach through a survey among spa users in Serbia, contributing to a better understanding of the relationship between literacy, satisfaction, and revisit intentions. The findings revealed a significant relationship between the understanding of therapy purposes and the expected effects of the stay, while a positive correlation was identified between specific dimensions of satisfaction and the overall perception of services. These

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results confirm that a higher level of health and nutrition literacy directly contribute to a more positive and meaningful tourist experience.

Key Words: health literacy, nutrition literacy, spa tourism, tourist experience quality, customer satisfaction

JEL classification: I12, L83, L15, I31

Introduction

The quality of the tourist experience in the contemporary tourism industry serves as a primary factor in competitiveness and, consequently, the long-term success of a tourist destination. Furthermore, regarding the phenomenon of health tourism as a blend of medicine and travel, market focus has shifted from primary curative functions toward an integrated form of preventive medicine and wellness, requiring an active role from the user. Central to health tourism travel is the concept of health and nutritional literacy, defined as an individual's ability to understand, evaluate, and apply information regarding therapeutic procedures and proper nutrition. Higher levels of user literacy enhance the potential for improving the expected effects of health procedures, thereby increasing the perception of stay quality at the destination. The understanding of the connection between such a level of knowledge (literacy) and satisfaction is because health awareness directly conditions how an individual approaches health preservation. The paper methodology was based on a quantitative approach. The study was conducted from January to March 2026 using a structured questionnaire administered to a sample of 59 spa service users. Data processing included descriptive statistics, reliability analysis (Cronbach's alpha), Pearson correlation analysis, and the chi-square (χ^2) test. Descriptive statistics revealed a high level of satisfaction with the stay at the spa.

Literature Review

Health literacy is recognized as a key determinant of individual behavior, influencing preventive actions and lifestyle choices (Forthofer & Bryant, 2000; Pelikan et al., 2019; Sørensen et al., 2015). Individuals with higher health awareness are more proactive in seeking and applying health information (Moorman & Matulich, 1993; Wang et al., 2021). Daily habits such as nutrition, sleep, and physical activity play an important role in shaping health awareness (Insel & Roth, 2006; Velardo, 2015), while motivation and behavioral patterns support the adoption of healthy lifestyles (Gould, 1990; Paakkari & Okan, 2020; Nutbeam & Lloyd,

2021). Nutritional literacy, defined as the ability to access and apply nutrition-related information, is closely linked to education, income, and information-seeking behavior (Krause et al., 2017; Wang et al., 2021). Its importance is reflected in its influence on dietary habits and disease prevention, while inadequate levels are associated with negative health outcomes. Health and nutritional literacy are interconnected and should be observed within a broader social and institutional context (Pelikan et al., 2019; Sørensen et al., 2021). User satisfaction in health tourism depends on individual characteristics and the overall quality of experience. Perceived quality significantly influences satisfaction and loyalty (Anaya-Aguilar et al., 2021; Sthapit et al., 2023), while accommodation, food, environment, and social interaction also play important roles. The study further highlights the importance of information quality, accuracy, and credibility in shaping satisfaction, particularly in digital health contexts (Handayani et al., 2020; Wang et al., 2021; Nutbeam & Lloyd, 2021).

Methodology

This paper aims to examine the relationship between the health and nutritional literacy of spa service users and their overall satisfaction with their stay, with a specific focus on Vrnjačka Banja. The study was conducted from January to March 2026 using a quantitative approach. Data were collected through a structured survey questionnaire distributed among spa service users in the Republic of Serbia, with a total of 59 respondents participating. The questionnaire included sections related to socio-demographic characteristics, health and nutritional literacy, and overall satisfaction with the spa stay. Statements were measured using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), while composite variables were formed based on respondents' answers. Descriptive statistics were used to analyze mean values and standard deviations of the variables. The Cronbach alpha coefficient was applied to test the reliability and internal consistency of the health and nutritional literacy scale, while Pearson correlation analysis examined the relationships between literacy indicators and satisfaction with the spa stay. Statistical data processing was performed using IBM SPSS Statistics.

Data Analysis

Data analysis involved the application of descriptive statistics and reliability analysis. The internal consistency of the scale was confirmed

using the Cronbach alpha coefficient, whereby satisfactory reliability was established ($\alpha = 0.816$). To examine the connection between health and nutritional literacy and overall satisfaction with the spa stay, a chi-square (χ^2) test of independence was applied. The variables were previously categorized to enable the application of this non-parametric method. Statistical data processing was performed in the IBM SPSS Statistics software package. Socio-demographic characteristics were used and analyzed to provide a clearer overview of the sample structure and contribute to a more comprehensive interpretation of the research findings:

Respondents of the paper were analyzed through socio-demographic characteristics were analyzed according to gender, age, level of education, region of residence and employment status: Regarding to gender structure, female respondents were dominant, accounting for 64% of the sample, while male respondents represented 36%. In terms of age, the largest proportion of respondents belonged to the 18-25 age group (42%), followed by respondents aged 26-35 (22%). Respondents aged 46-55 accounted for 18% of the sample, while those aged 36-45 represented 8%. Smaller proportions were recorded among respondents aged 56-65 (6%) and those older than 65 years (4%). Concerning educational attainment, the majority of respondents had completed secondary (high) school education (38%), followed by respondents with master academic studies (30%). No respondents reported doctoral academic studies as their highest level of education. Respondents with primary school education and those with bachelor academic studies were equally represented, each accounting for the 16% of the sample. Regarding regional distribution the largest number of respondents came from the Region of Šumadija and Western Serbia (40%), followed by the Region of Southern and Eastern Serbia (26%) and the Region of Vojvodina (18%). Respondents from the Belegarde Region accounted for 14%, while only 2% of respondents came from Kosovo and Metohija. Analysis of employment status showed that most respondents were employed 64%. Students accounted for 26% of the sample, while pensioners represented 6% and unemployed respondents 4%. No respondents selected the category *Other*.

Results

The reliability of the health and nutritional literacy scale was tested using the Cronbach alpha coefficient. As shown in Table 1, the coefficient value is $\alpha = 0.816$, while the standardized value is $\alpha = 0.817$, which indicates

high internal consistency of the scale. The results obtained confirm that the selected variables reliably measure the same construct and are suitable for further statistical analysis (Table 1).

Table 1: *Reliability of the health and nutritional literacy scale (Cronbach alpha)*

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,816	,817	5

Source: *Authors*

The results shown in Table 2 indicate the existence of positive correlations between all observed variables of health and nutritional literacy. Most correlations are of medium to high intensity, which confirms the interconnectedness of the analyzed dimensions. The most pronounced association was observed between the variable's "purpose" and "expectations" ($r = 0.890$), indicating a strong connection between the understanding of therapeutic goals and the expected effects of the stay in the spa. Also, significant correlations were observed between the variable's "combination" and "expectations" ($r = 0.655$), as well as between "purpose" and "information" ($r = 0.508$), which further confirms the consistency of the health and nutritional literacy construct.

Table 2: *Inter-correlation matrix of health and nutritional literacy variables*

	Combination	Quality	Goal	Expectations	Information
Combination	1,000	,219	,527	,655	,336
Quality	,219	1,000	,470	,428	,187
Goal	,527	,470	1,000	,890	,187
Expectations	,655	,428	,890	1,000	,503
Information	,336	,187	,508	,503	1,000

Source: *Authors*

A more detailed analysis of the mutual relationships between health and nutritional literacy indicators, shown in Table 3, confirms the existence of statistically significant positive associations between most of the observed variables. The most pronounced connection was observed between variables Q21 and Q22 ($r = 0.890$; $p < 0.01$), which indicates a high level of interdependence between these indicators. Also, significant correlations were recorded between variables Q12 and Q22 ($r = 0.655$; p

< 0.01), as well as between Q21 and Q9 ($r = 0.508$; $p < 0.01$). On the other hand, weaker and statistically insignificant correlations were observed between certain variables, such as Q12 and Q16 ($r = 0.219$; $p > 0.05$), which indicates a different intensity of association within the analyzed construct. Overall, the results indicate the existence of a consistent and interconnected structure of health and nutritional literacy.

Table 3: *Pearson correlation analysis of health and nutritional literacy variables*

		Q12	Q16	Q21	Q9	Q22
Q12	Pearson Correlation	1	,219	,527**	,336*	,655**
	Sig. (2-tailed)		,127	,000	,017	,000
	N	50	50	50	50	50
Q16	Pearson Correlation	,219	1	,470**	,187	,428**
	Sig. (2-tailed)	,127		,001	,193	,002
	N	50	50	50	50	50
Q21	Pearson Correlation	,527**	,470**	1	,508**	,890**
	Sig. (2-tailed)	,000	,001		,000	,000
	N	50	50	50	50	50
Q9	Pearson Correlation	,336*	,187	,508**	1	,503**
	Sig. (2-tailed)	,017	,193	,000		,000
	N	50	50	50	50	50
Q22	Pearson Correlation	,655**	,428**	,890**	,503**	1
	Sig. (2-tailed)	,000	,002	,000	,000	
	N	50	50	50	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: *Authors*

The results of descriptive statistics (Table 4) indicate that the respondents express a relatively high level of satisfaction with their stay in the spa, given that the mean values of the analyzed variables range from 4.80 to 5.48. The obtained standard deviation values indicate a moderate dispersion of responses, which confirms the relative homogeneity of the respondents' attitudes.

Table 4: *Descriptive statistics of spa stay satisfaction variables*

	Mean	Std. Deviation	N
Q19	4,8000	1,42857	50
Q20	5,4800	1,40320	50
Q27	5,4600	1,50116	50
Q30	5,4000	1,52530	50

Source: *Authors*

The results of Pearson correlation analysis indicate the existence of statistically significant positive associations between all satisfaction indicators. The most pronounced association was observed between variables Q19 and Q20 ($r = 0.680$; $p < 0.01$), as well as between Q19 and Q30 ($r = 0.609$; $p < 0.01$), which indicates a high degree of consistency in the perception of the quality of the stay. Also, significant correlations were observed between variables Q20 and Q27 ($r = 0.513$; $p < 0.01$), as well as between Q27 and Q30 ($r = 0.533$; $p < 0.01$), which confirms that the analyzed indicators reliably measure the overall satisfaction of spa service users (Table 5).

Table 5: *Correlation analysis of spa stays satisfaction variables*

		Q19	Q20	Q27	Q30
Q19	Pearson Correlation	1	,680**	,301*	,609**
	Sig. (2-tailed)		,000	,034	,000
	N	50	50	50	50
Q20	Pearson Correlation	,680**	1	,513**	,538**
	Sig. (2-tailed)	,000		,000	,000
	N	50	50	50	50
Q27	Pearson Correlation	,301*	,513**	1	,533**
	Sig. (2-tailed)	,034	,000		,000
	N	50	50	50	50
Q30	Pearson Correlation	,609**	,538**	,533**	1
	Sig. (2-tailed)	,000	,000	,000	
	N	50	50	50	50

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: *Authors*

Conclusion

Contemporary trends in health tourism point to the growing importance of active user participation in preserving and improving health, with health and nutritional literacy playing an important role in shaping attitudes and behavior. The aim of this paper was to examine the level of health and nutritional literacy among spa users and its influence on the perception of tourist experience quality and overall satisfaction. The results showed a relatively high level of health and nutritional literacy among respondents, confirmed by a high Cronbach alpha coefficient ($\alpha = 0.816$) and significant correlations between indicators. Although respondents expressed high satisfaction with their stay, statistical analysis did not confirm a significant relationship between literacy levels and overall satisfaction. This suggests that satisfaction in spa destinations is

influenced more by service quality, ambiance, staff communication, and overall organization than by users' knowledge alone. The paper highlights the importance of distinguishing cognitive and experiential aspects of tourist experience and emphasizes the need for further research on factors influencing user satisfaction in health tourism.

References

1. Anaya-Aguilar, R., Gemar, g., & Anaya-Aguilar, C. (2021) Factors associated with spa tourists' satisfaction. *Mathematics*, 9 (4), 332. <https://doi.org/10.3390/math9040332>
2. Forthofer, M. S., & Bryant, C. A. (2000). Using audience-segmentation techniques to tailor health behavior change strategies. *American Journal of Health Behavior*, 24(1), 36–43. <https://doi.org/10.5993/AJHB.24.1.6>
3. Gould, S. J. (1990). Health consciousness and health behavior: the application of a new health consciousness scale. *American Journal of Preventive Medicine*, 6(4), 228–237. [https://doi.org/10.1016/S0749-3797\(18\)31009-2](https://doi.org/10.1016/S0749-3797(18)31009-2)
4. Handayani, P. W., Gelshirani, N. B., Azzahro, F., Pinem, A. A., & Hidayanto, A. N. (2020). The influence of argument quality, source credibility, and health consciousness on satisfaction, use intention, and loyalty on mobile health application use. *Informatics in Medicine Unlocked*, 20, 100429. <https://doi.org/10.1016/j.imu.2020.100429>
5. Insel, P. M., & Roth, W. T. (2006). *Wellness worksheets*. McGraw-Hill.
6. Krause, N., Hill, P. C., Emmons, R., Pargament, K. I., & Ironson, G. (2017). Assessing the relationship between religious involvement and health behaviors. *Health Education & Behavior*, 44(2), 278–284. <https://doi.org/10.1177/1090198116655314>
7. Moorman, C., & Matulich, E. (1993). A model of consumers' preventive health behaviors: The role of health motivation and health ability. *Journal of consumer research*, 20(2), 208–228. <https://doi.org/10.1086/209344>

8. Nutbeam, D., & Lloyd, J. E. (2021). Understanding and responding to health literacy as a social determinant of health. *Annual review of public health*, 42(1), 159–173. <https://doi.org/10.1146/annurev-publhealth-090419-102529>

9. Paakkari, L., & Okan, O. (2020). COVID-19: health literacy is an underestimated problem. *The lancet public health*, 5(5), e24–e250. [https://doi.org/10.1016/S2468-2667\(20\)30086-4](https://doi.org/10.1016/S2468-2667(20)30086-4)

10. Pelikan, J. M., Ganahl, K., Van den Broucke, S., & Sørensen, K. (2019). Measuring health literacy in Europe: introducing the European health literacy survey questionnaire (HLS-EU-Q). In *International handbook of health literacy* (pp. 115–138). Policy Press. <https://doi.org/10.51952/9781447344520.ch008>

11. Sørensen, K., Pelikan, J. M., Röthlin, F., Ganahl, K., Slonska, Z., Doyle, G., & Brand, H. (2015). Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *The European Journal of Public Health*, 25(6), 1053–1058. <https://doi.org/10.1093/EURPUB/CKV043>

12. Sthapit, E., Björk, P., & Coudounaris, D. N. (2023). Memorable nature-based tourism experience, place attachment and tourists' environmentally responsible behaviour. *Journal of Ecotourism*, 22(4), 542–565. <https://doi.org/10.1080/14724049.2022.2091581>

13. Velardo, S. (2015). The nuances of health literacy, nutrition literacy, and food literacy. *Journal of nutrition education and behavior*, 47(4), 385–389. <https://doi.org/10.1016/j.jneb.2015.04.328>

14. Wang, H., Liu, S., Gao, B., & Aziz, A. (2025). How do recommendations influence patient satisfaction? Evidence from an online health community. *Information Technology & People*, 38(6), 2381–2412. <https://doi.org/10.1108/ITP-04-2023-0332>