



ASSESSMENT OF TREATMENT SATISFACTION AMONG DENTAL PATIENTS ATTENDING A STATE TERTIARY HOSPITAL, ONDO, NIGERIA

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Abstract

Background: Patient satisfaction is a vital indicator of healthcare quality and influences health-seeking behaviour and treatment outcomes. This study aimed to determine the level of satisfaction among patients attending the Dental Clinic at a state tertiary health facility in Ondo State, Nigeria.

Methods: This descriptive cross-sectional study was conducted at the University of Medical Sciences Teaching Hospital Dental Clinics in Ondo and Akure, Ondo state. A total of 261 questionnaires were distributed, and 245 dental patients correctly completed and returned them, yielding a response rate of 93.9%. Participants were selected through simple random sampling using a balloting method. Data collection involved self-administered Likert scale questionnaires, which covered various aspects, including demographics, oral health-seeking behaviour, and service dimensions such as tangibility, empathy, reliability, responsiveness, and assurance. Data were analysed using SPSS Version 25.

Results: Most participants were aged 18–35 years, with females accounting for 53.9%. Most were Christians (90.6%), married (61.2%), and Yoruba (84.9%) and first-time visitors. A significant proportion had attained a tertiary level of education (74.4%), and many were professionals (27.9%) or entrepreneurs (25.4%). Professional scaling and extractions were the most common treatments received. Regarding service satisfaction, empathy (93.45%) and assurance (92.03%) scored the highest, followed by reliability (86.28%) and responsiveness (75.18%). Tangibility had the lowest satisfaction score (58.43%). The reduced satisfaction in responsiveness was attributed to delays and long waiting times, while the low satisfaction in tangibility was due to the absence of informational materials such as hospital maps, dental artwork or logos, and a complaint box at the clinic.

Conclusion: Empathy and assurance emerged as key determinants of patient satisfaction. Overall satisfaction was influenced by staff neatness, effective communication, and the professional conduct of doctors. Improvements are needed in reducing waiting times, lowering treatment costs, and providing brochures and a visible complaint box

Keywords: Patient satisfaction, Empathy, Dental Clinic, Patient Acceptance of Healthcare, Communication, Health care costs, Nigeria

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INTRODUCTION

Patient satisfaction refers to how satisfied patients are with the services offered in terms of meeting their needs and desires¹. It is a critical component in evaluating the overall quality of care and serves as an important outcome measure in healthcare delivery, alongside clinical outcomes². Satisfaction has been extensively described as a person's positive feeling of pleasure or disappointment resulting from a comparison between the services received and their prior expectations^{3,4}.

Program evaluators have increasingly utilized patient's satisfaction as a tool to enhance healthcare providers' ability to render services that meet consumers' needs. This involves evaluating patients' perceptions of the services they received and the outcomes of their treatments⁵. Furthermore, the conceptual framework by Anand D. et al., 2012, underscores that patient satisfaction encompasses intellectual, emotional, and psychological dimensions, as well as previous experiences and expectations⁶.

Research has shown that the assessment of patient satisfaction in developed countries cannot be directly compared to that in developing nations like Nigeria⁷. In Nigeria, users of health services often vary in their evaluation of the quality of hospital care^{8,9}. Factors such as the attitudes of healthcare workers, long waiting times, high costs of care, bureaucratic processes, and the availability of alternative medical practices pose significant barriers to the utilization of orthodox healthcare services within the Nigerian context.

Patient satisfaction is more than just a reflection of service quality; it plays a pivotal role in shaping healthcare outcomes. Satisfied patients are more likely to seek medical consultations at hospitals, adhere to treatment plans, maintain ongoing relationships with healthcare providers, recommend the facility to others, and encourage continuous quality improvement within the system¹⁰.

In Nigeria, the provision of healthcare services has been a growing social concern^{11,12}. Increasing health awareness and easier access to information on health matters have empowered patients to take a more active role in assessing

the quality of care they receive¹². If satisfaction with the physical infrastructure and structural components of healthcare facilities is deemed critical, then the evaluation of care delivery should be conducted through the perspective of the patients themselves¹³.

This underscores the importance of a patient-centered approach in healthcare, where services are designed and delivered with the patients' experiences, expectations, and satisfaction as central considerations. Addressing these aspects not only improves health outcomes but also strengthens the overall healthcare system, fostering trust and engagement between patients and providers.

Therefore, this study aimed to assess the level of treatment satisfaction among dental patients attending the Dental Clinic at a state tertiary hospital in Ondo State, Nigeria.

METHODOLOGY

Study Design and Setting

A descriptive cross-sectional study was conducted among 245 dental patients at the University of Medical Sciences Teaching Hospital Complex (UNIMEDTHC) in Ondo and Akure, Ondo State, Nigeria. Data collection took place from February to May 2024. Ethical approval for the study was granted by the UNIMED Health Research Ethical Committee, Ondo (NHREC/TR/UNIMED-HREC-Ondo St/22/06/21).

Sample Size and Participant Recruitment

The study targeted all adult patients attending the UNIMEDTH dental clinic during the study period. The minimum required sample size was calculated using Cochran's formula for descriptive studies as outlined by Cochran, W.G. (1963)¹⁴

$$n_0 = (t^2 \times p \times q) / d^2$$

Where:

n_0 = minimum sample size



t = critical value corresponding to 95% confidence level = 1.96

p = estimated proportion of satisfied clients = 80.8% (Ogunnowo et al., 2015)

$q = 1 - p$

d = degree of precision = 0.05

Calculation:

$$n_0 = \{(1.96)^2 \times 0.81 \times 0.19\} / (0.05)^2$$

$$n_0 = 3.84 \times 0.154 / 0.0025 = 237$$

To account for potential non-response, 10% of 237 was added:

$$n = 10\% (237) + 237 = 260.7 \approx 261 \text{ participants}$$

Thus, 261 questionnaires were distributed. Of these, 245 were correctly completed and returned, resulting in a response rate of 93.9%.

Participants were selected through simple random sampling using the balloting method. Each eligible patient drew a paper marked either "YES" or "NO" to determine selection. Inclusion criteria were adult patients (aged 18 years and above) who consented to participate and had received at least one dental treatment during the study period.

Data Collection Instruments and Procedures

Data were collected using a modified SERVQUAL questionnaire, which was adapted for the specific needs of this study. The SERVQUAL framework assesses service quality and satisfaction based on five core dimensions¹⁵:

- Tangibles – physical facilities, technical quality, and appearance of personnel
- Reliability – ability to perform the promised service dependably and accurately
- Responsiveness – willingness to help consumers and provide prompt service
- Assurance – knowledge and courtesy of employees and their ability to inspire trust and confidence
- Empathy – caring, individualized attention provided to patients.

The original 25-point SERVQUAL instrument was reviewed, and suitable parameters under each of the five service dimensions were selected and adapted for this study. The questionnaire was pretested in the Medical Outpatient Department for clarity and comprehension.

Data were collected using self-administered 5-point Likert scale questionnaires. Informed consent was obtained from all participants, with assurances of confidentiality and the purpose of the study. The final instrument was divided into seven sections:

1. Section I: Socio-demographic characteristics of respondents
2. Section II: Oral health-seeking behaviour
3. Section III: Respondents' assessment of tangibility
4. Section IV: Respondents' assessment of empathy
5. Section V: Respondents' assessment of reliability
6. Section VI: Respondents' assessment of responsiveness
7. Section VII: Respondents' assessment of assurance

The primary outcome variable was treatment satisfaction, assessed across five dimensions: tangibility, empathy, reliability, responsiveness, and assurance. Each domain was scored using Likert-scale responses (ranging from 1 = strongly disagree to 5 = strongly agree), with higher scores indicating greater satisfaction. Descriptive statistics were used to determine the levels of satisfaction in each domain.

Data Analysis

The collected data were entered and analysed using the Statistical Package for Social Sciences (SPSS) software, version 25. Descriptive statistics, including frequencies and percentages, were used to summarize the socio-demographic characteristics and responses to satisfaction-related questions.

To assess relationships between service dimensions and patient satisfaction, Pearson's correlation analysis was used. This method allowed for evaluating the strength and direction of associations between continuous Likert scale responses across various service quality domains (tangibility, empathy, responsiveness, etc.). Statistical significance was set at $p < 0.05$. A total of 261 questionnaires were distributed, out of which 245 were correctly completed and returned, yielding a response rate of 93.9%. These responses provided sufficient data for analysis.

RESULTS

Table 1 shows Majority of respondents were aged 18-36 (40.4%), female (53.9%), Christian (90.6%), and of Yoruba ethnicity (84.9%). Most were professionals (27.9%) or entrepreneurs (25.4%).

Table 1: Demographic Data

Variables	Frequency %
Age (in years)	
18-36	40.4
37-55	30.6
56-74	21.6
75>	7.4
Sex	
Male	46.1
Female	53.9
Religion	
Christianity	90.6
Islam	9.0
Others	0.4
Occupation	
Student	22.6
Entrepreneurs	25.4
Farmer	3.8
Professionals	27.9
Retired	11.5
Artisan	7.4
Tribe	
Yoruba	84.9

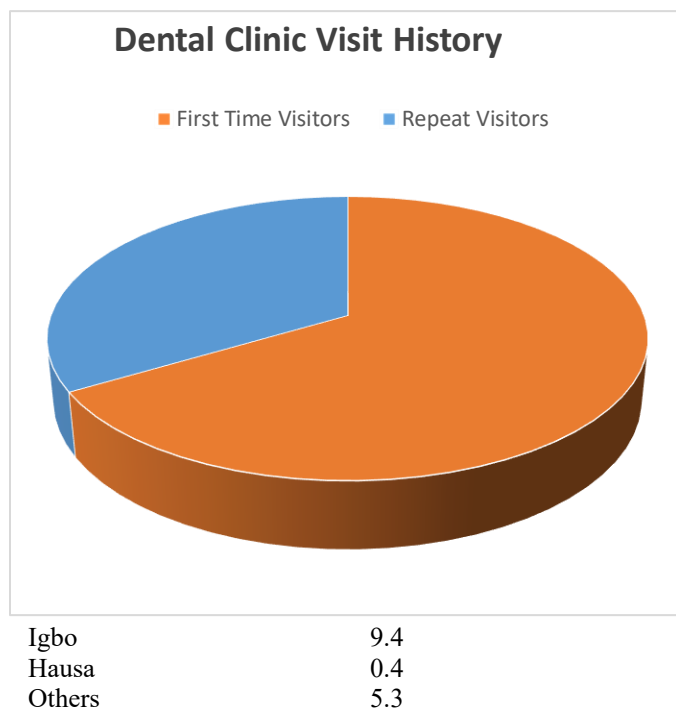


Figure 1 showing the Dental clinic visit history of participants. Most were first - time visitors (66.5%).

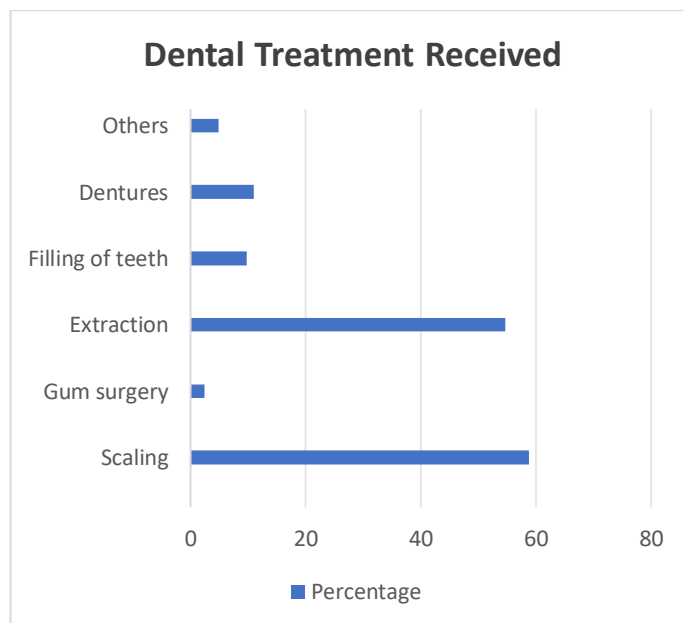


Figure 2 showing the dental treatment received by participants. Scaling (58.8%) and Extraction (54.7%) were the most common treatments received



Table 2: Tangibles and Empathy of service

Questions	Strongly Agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Strongly disagree N (%)
Tangibles					
The clinic is neat and has a comfortable environment	157 (61.2)	81 (33.1)	11 (4.5)	2 (0.8)	1 (0.4)
The clinic has information brochure	17 (6.9)	22 (9.0)	17 (6.9)	96 (39.2)	93 (38.0)
There are visible complaints box	10 (4.1)	11 (4.5)	21 (8.6)	99 (40.4)	104 (42.4)
There are well maintained dental facilities in the clinic	85 (34.7)	120 (49.0)	20 (8.2)	15 (6.1)	5 (2.0)
Staffs are neat in appearance	111 (45.3)	121 (49.4)	10 (4.1)	3 (1.2)	0 (0.0)
Privacy is observed when given care	18 (7.3)	113 (46.1)	56 (22.9)	42 (17.1)	16 (6.5)
Empathy of service					
Doctors have my best interest at heart	121 (49.4)	108 (44.1)	16 (6.5)	0 (0.0)	0 (0.0)
Nurses have my best interest at heart	108 (44.1)	122 (49.8)	15 (6.1)	0 (0.0)	0 (0.0)
Doctors understand my specific needs of	116 (47.3)	112 (45.7)	16 (6.5)	1 (0.4)	0 (0.0)
Instructions and follow up were given to me at the end of my treatment	125 (51.0)	104 (42.4)	16 (6.5)	0 (0.0)	(0.0)

Table 3: Reliability and Assurance of service

Questions	Strongly Agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Strongly disagree N (%)
Reliability of service					
Dentists are professional and Competent	131 (53.5)	94 (38.4)	17 (6.9)	2 (0.8)	0 (0.0)
Dentists explained the treatment I need clearly	127 (51.8)	99 (40.4)	17 (6.9)	2 (0.8)	0 (0.0)
Consultation is at my satisfaction	109 (44.5)	114 (46.5)	20 (8.2)	2 (0.8)	0 (0.0)
The treatment cost is affordable	75 (30.6)	90 (36.7)	25 (10.2)	44 (18.0)	11 (4.5)
I am satisfied with the dental care I received	112 (45.7)	106 (43.3)	24 (9.8)	3 (1.2)	0 (0.0)
Assurance of service					
Dentists are courteous and friendly	113 (46.1)	111 (45.3)	19 (7.8)	2 (0.8)	0 (0.0)
Nurses are courteous and friendly	105 (42.9)	118 (48.2)	19 (7.8)	2 (0.8)	1 (0.4)
I got clear explanation about my dental and medical condition	114 (46.5)	113 (46.1)	16 (6.5)	2 (0.8)	0 (0.0)
I received treatment with dignity and respect	112 (45.7)	116 (47.3)	15 (6.1)	2 (0.8)	0 (0.0)

From Table 3, The majority of respondents rated dentists and nurses as courteous and professional, with over 90% expressing satisfaction with communication and dignity of care. Most agreed that consultations were clear and satisfactory. However, treatment affordability drew a more mixed response, with over 22% disagreeing that care was affordable.

Table 4: Responsiveness of service

Questions	Strongly Agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Strongly disagree N (%)
Services were provided at the right time	60 (24.5)	98 (40.0)	22 (9.0)	32 (13.1)	33 (13.5)
Dentists showed quick response to my needs	78 (31.8)	131 (53.5)	27 (11.0)	9 (3.7)	0 (0.0)
Nurses showed quick response to my needs	74 (30.2)	137 (55.9)	26 (10.6)	8 (3.3)	0 (0.0)
Attitude of doctors boosted my confidence	80 (32.7)	133 (54.3)	28 (11.4)	4 (1.6)	0 (0.0)
Attitude of nurses boosted my confidence	77 (31.4)	136 (55.5)	28 (11.4)	4 (1.6)	0 (0.0)
Waiting time did not exceed one hour	45 (18.4)	56 (22.9)	28 (11.4)	73 (29.8)	43 (17.6)

Table 4 shows that Staff responsiveness was highly rated. However, waiting time remained a concern, with nearly half (47.4%) of respondents dissatisfied.

Table 5: Correlation Between Service Dimensions and Satisfaction

Variables	Pearson Correlation (r)	p-value
Facility maintenance vs. Satisfaction	0.273	<0.001*
Dentists' responsiveness vs. confidence	0.562-0.571	<0.001*
Waiting time vs. assurance	0.233-0.265	<0.001*

* Statistically significant

Table 5 shows significant positive correlations between the perceptions of facility maintenance, responsiveness of dental healthcare providers, assurance and patient satisfaction, with p-values all <0.001.

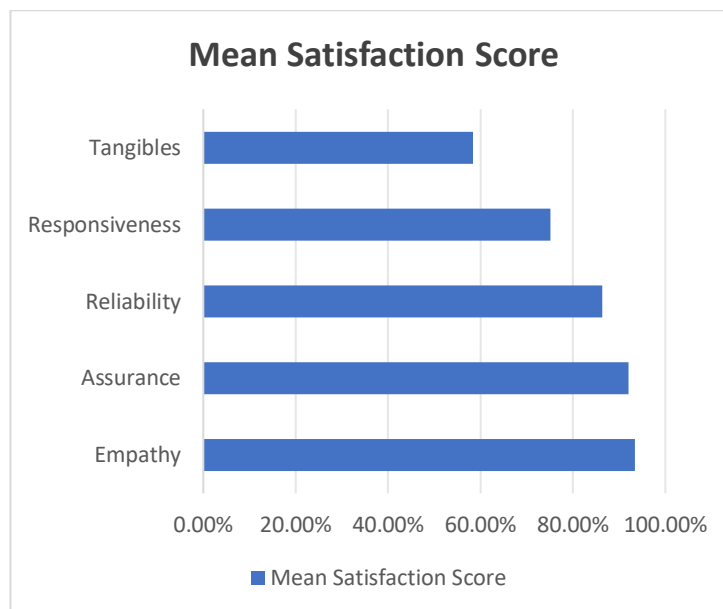


Figure 3: Overall assessment of patient satisfaction by service dimension.

The highest levels of satisfaction were recorded in the domains of empathy (93.45%) and assurance (92.03%), reflecting strong patient-provider relationships and trust in service delivery. Reliability also showed a high satisfaction (86.28%). Responsiveness however showed a moderate level of satisfaction (75.18%) while the Tangibles domain recorded the lowest satisfaction score (58.43%)

DISCUSSION

This study aimed to assess the level of treatment satisfaction among dental patients attending a state tertiary hospital in Ondo, Nigeria, using the SERVQUAL model across five core service dimensions: tangibles, empathy, reliability, responsiveness, and assurance.

Findings indicate that overall treatment satisfaction was high. Participants reported very high satisfaction in empathy (93.45%) and assurance (92.03%), suggesting that healthcare providers demonstrated care, trustworthiness, and competence.

Over one-third of the respondents in this study were within the age range of 18-36 years. This slightly contrasts with the

results of a similar study done at Randle Hospital in Surulere, Lagos, where one-third of participants were in the age range of 30-39 years¹⁶. The discrepancy may be attributed to differences in location and the period during which the studies were conducted.

A significant proportion of respondents (74.4%) had attained a tertiary level of education, with many being professionals (27.9%). These results align with previous studies in Obafemi Awolowo University Teaching Hospital, Ile-Ife, Nigeria¹⁷; Lagos University Teaching Hospital (LUTH), Nigeria¹⁸ and a study conducted among dental patients at a dental faculty outpatient clinic in Izmir, Turkey¹⁹. This similarity may be due to increased access to tertiary education in Ondo State, which is home to several tertiary institutions.

In terms of physical environment, more than two-thirds of patients acknowledged that the clinic was neat, with 94.3% confirming its clean physical appearance and 83.7% noting that the dental facility was well maintained. This finding is consistent with the result of a study done by Ogunnowo et al. (2015) at Randle General Hospital in Lagos, Nigeria where 80.8% of participants rated the service quality as good, and the majority (60.7%) agreed that the clinic was neat¹⁶. In contrast, a study conducted by Orenuga OO, Sofola OO, and Uti OO in 2009 at Lagos University Teaching Hospital (LUTH), Nigeria revealed significant dissatisfaction with the physical infrastructure, such as electricity and water supply¹⁴.

Despite high scores in most domains, tangibles (58.43%) and responsiveness (75.18%) were areas of concern. The lack of informational brochures, complaint boxes, and long waiting times were major contributors to low satisfaction in these domains as over 75% disagreed with the presence of essential physical resources such as brochures or complaint systems. This is somewhat similar to the findings at Randle General Hospital, where more than half (54.5%) of participants were unsure if the clinic provided an information brochure¹⁶.

Furthermore, the study revealed that while most participants were satisfied with various aspects of service, dissatisfaction



with long waiting times was a notable concern, especially waits exceeding one hour which was reported by nearly half (47.4%) of respondents. This is similar to a study at Lagos State University Teaching Hospital, where long waiting time was the item the respondents least liked²⁰. This contrasts with a study at Aminu Kano Teaching Hospital, where only 30% of respondents were dissatisfied with waiting times and treatment costs⁹.

The study indicates that the hospital has generally performed well in providing oral healthcare services, with workers demonstrating a passion for delivering excellent and qualitative care under the reliability determinant. However, the affordability of treatment was identified as an area of concern, with 22.5% of respondents expressing dissatisfaction. This is of particular significance, considering the high proportion of satisfied patients (67.3%) who may be beneficiaries of national health insurance, especially given that many patients are professionals (27.9%) covered by government health insurance schemes. Equally important to note is that fees charged are already heavily subsidized by the State government.

Regarding patient-provider interactions, patients reported that the attitude of doctors and nurses significantly boosted their confidence levels. This reflects the high ratings in empathy and assurance. However, dissatisfaction with waiting times, as mentioned above, may be due to limited numbers of dental chairs, few available doctors attending to multiple patients, a lack of treatment materials, and the absence of a patient scheduling or computerized system. These structural issues may contribute to lower ratings in responsiveness.

The study also explored relationships between service perceptions and satisfaction. Pearson correlation results revealed significant positive associations between maintenance of facilities, provider responsiveness, and treatment satisfaction. For instance, promptness in service and courteousness of staff were strongly linked to patients' feelings of confidence and trust.

Patient satisfaction is the overall unit of service as it positively affects the patients trust; continued participation

as well as potential recommendation of the services to family and friends. More studies are needed to improve on these findings.

LIMITATIONS OF THE STUDY

This study is limited by its cross-sectional design, which provides a snapshot of patient satisfaction at a single point in time and does not allow for causal inferences or the observation of long-term trends. Data collection relied on self-administered Likert scale questionnaires, introducing the potential for self-report bias. Conducting the study at a single institution (UNIMEDTHC Dental Clinic) restricts the generalizability of the findings to other clinics or healthcare settings. External factors like patients' personal experiences, socio-economic status, and access to other healthcare services were not assessed but may have influenced satisfaction. Furthermore, 66.5% of respondents were first-time visitors, which may have skewed satisfaction ratings upward due to initial optimism or lack of prior experience for comparison.

CONCLUSION

This study was a descriptive cross-sectional analysis of treatment satisfaction among dental patients aged 18 and above at the University of Medical Sciences Teaching Hospital Dental Clinics in Ondo and Akure, Nigeria. The results indicate that empathy and assurance were the major determinants of patient satisfaction at UNIMEDTHC. High levels of empathy, well-maintained dental facilities, and staff neatness positively influenced patient expectations regarding physical structures and service quality. Good communication between staff and patients, along with the confidence instilled by doctors' attitudes, enhanced trust and treatment adherence.

However, key areas such as waiting times, treatment affordability, the provision of information brochures, and visible complaint boxes require urgent attention, as these factors significantly impact responsiveness and overall service quality.

RECOMMENDATIONS

To improve patient satisfaction at UNIMEDTHC Dental Clinic, hospital management should conduct a client flow analysis to reduce waiting times and adopt a computerized system with receptionist services for better appointment scheduling. The clinic should provide brochures detailing available services and a hospital map for easier navigation. Visible complaint boxes should be installed to encourage patient feedback.

Post-operative care can be improved through written instructions and a follow-up system. Lastly, partnerships with individuals from higher socio-economic groups and advocacy with government and non-government organizations are recommended to support patients who cannot afford treatment and to enhance the quality of care at the clinic.

CONFLICT OF INTEREST: NIL

FUNDING: NIL

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