

# A Website on Mental Healthcare Act, 2017: Usage Analysis of Its First 2.5 Years

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## ABSTRACT

**Background and aims:** Websites are valuable tools to share information with countless persons in a cost-effective manner. No previous study has assessed the performance of a website meant for Indian mental health professionals (MHPs). This study aimed to analyze the usage data of a website on the Mental Healthcare Act (MHCA), 2017, for the 2.5 years since its launch (August 2018–February 2021).

**Methods:** Information on the number and location of visitors, devices and browsers they used, bounce rate, number and duration of sessions, pageviews, traffic sources, search engine keywords that brought visitors, and the most popular pages was collected using Google Analytics (GA).

**Results:** Out of the total 11,936 sessions, 34.66% were from returning visitors, 2,124 lasted >3 minutes, 226 lasted >30 minutes, and 90.34% were from India. Of the visitors, 49.6% came directly, 45.3% were from search engines, 51.06% used desktops, 45.92% used mobile phones, and 70.79% used Google Chrome. Bounce rate was 58.93%. Most keywords that brought visitors from search engines and the most popular pages were about admission and discharge procedures and the related forms.

**Conclusions:** The website received an adequate amount of quality traffic. It probably helped Indian MHPs understand the admission and discharge procedures the Act dictated and also provided them the related forms. Professional organizations, institutions, and departments should create websites, on focused topics, for Indian MHPs. They should ensure that the sites are compatible with mobile phones and diverse browsers. GA can be used to garner useful insights.

**Keywords:** Google Analytics, Mental health website, Mental Healthcare Act, 2017, Usage analysis.

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## INTRODUCTION

Mental Healthcare Act (MHCA), 2017, was passed on April 7, 2017, and came into force from May 29, 2018. Though the MHPs of India have had diverse concerns about several provisions of the Act,<sup>1,2</sup> once it came into force, it became imperative that they follow it in letter and spirit. Because many fellow professionals were not well aware of the Act's provisions and the various forms the Act mandated were not easily available, the author created a website ([www.mhca2017.com](http://www.mhca2017.com)) about the Act. It was launched on August 8, 2018. The medium of website was chosen for several reasons: Unlike printed material, a website is accessible from anywhere if one has a smartphone with an internet connection. By searching the website or a particular page, one can rapidly find any specific piece of information needed. Also, there is no risk of losing or misplacing as in the case of printed material. From the perspective of content production, a website can be easily updated regularly. When you intend to share the information with thousands of MHPs, a website is much more economical than printed material.

As the website is now >2.5-years-old, the author decided to analyze its usage patterns. Insights thus garnered can, in the future, guide MHPs, professional organizations, departments, and institutions creating websites on other such topics relevant to the country's mental health community. For example, analyzing the traffic and user behavior will help understand whether the site is reaching its target population and what type of content is popular. Information on the technical aspects—for example, what devices and browsers the visitors use—will help ensure that the site is properly accessible to the maximum proportion of its intended audience. Methods used to analyze the performance of a health-related website include examining its social media index,<sup>3</sup> doing simulated

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searches on Google,<sup>4</sup> presenting an online questionnaire to users,<sup>5</sup> and assessing the traffic logs recorded by GA.<sup>6,7</sup> For example, using GA, a study on an internet-delivered genetics education resource for nurses<sup>6</sup> found that their number of visitors increased soon after an email promotion and following a media coverage of the site.

Searches in PubMed and Google Scholar with appropriate keywords did not reveal any study that evaluated the performance of a website on the mental health act of any other country or other health-related Indian laws or any website intended for Indian MHPs. Hence, this study was undertaken to assess, with the help of GA, the following performance indicators of the website on MHCA for the first 2.5 years of its existence:

- The number of visitors, their engagement with the site, and the kind of devices and browsers they used,
- The geographical location of the visitors,
- The sources that sent visitors to the website,
- The keywords that brought the most search engine traffic, and
- The most popular pages.

## METHODS

### The Website

The site is built with the Joomla content management system, using a smartphone-friendly Joomla template. Though the Act is available in its entirety in various law websites, this website was unique: The chapters of the Act and its rules were provided on separate pages, and each of them was made accessible from the home page through a menu. Most chapters of the Act were appended with a “Practice implications” section, the content of which was taken from a journal article by a psychiatrist.<sup>8</sup> The site also provided the admission and discharge forms mandated by MHCA, in both English and Hindi, for easy download. (The Hindi versions were specially prepared for this site, by a MHP with expertise in the language.) Many journal articles on the Act were made available for reading on the website itself, and links to them were also included below the relevant chapters of the Act. A site search button was prominently placed at the top of all pages. The site was fully free of advertisements and any other unrelated content.

On its launch, its address was shared to various e-groups and WhatsApp groups of Indian MHPs, including a specific WhatsApp group on MHCA 2017.

### Google Analytics

Google Analytics (GA) is a free tool widely used to monitor and report website traffic. Though mainly designed to accumulate insights from a marketing perspective, it has been used in research to analyze the performance of many websites for health professionals. Examples include studies on the blog of the Association of Women Surgeons (AWS, USA)<sup>7</sup> and the website of the Global Pediatric Surgery Network.<sup>9</sup> Indian researchers have used GA to assess the Neurosurgery Education and Training School (NETS, an e-learning platform from the Department of Neurosurgery, All India Institute of Medical Sciences, New Delhi)<sup>10</sup> and the India against Cancer website of the Indian Council for Medical Research.<sup>11</sup>

### Definitions of GA Terms

- New visitor: GA records a visitor as “new” the first time a website is accessed from a device that does not contain GA’s cookie for the website.
- Returning visitor: Someone who revisits the site from the same device within 2 years of the first visit.
- Session: A group of user interactions at the website that takes place within a given time frame. A session starts when a user visits a page on a site and ends after 30 minutes of inactivity or when the person leaves the site.
- Pageviews: The number of pages accessed by all users.
- Unique pageviews: This differs from the pageviews mentioned above in that if a user visits a page more than once, here it will be counted as one visit only.
- Bounce rate: Percentage of visitors who left the site after viewing only one page.

### Data Collection

A Joomla extension named “Google Analytics for Joomla” was installed on the site. This extension inserts a tracking tag that collects various forms of data related to user behavior as soon as someone starts using the website. The website administrator can view the collected information by logging in to the GA website. Data on specific variables, for any given period, can also be downloaded in various formats, including Excel and PDF.

### Performance Indicators Studied

For this analysis, information was extracted for the first 2.5 years (August 8, 2018–February 7, 2021), on the following key performance indicators:

- Number of new and returning visitors
- Number of sessions, pageviews per session, and mean session duration
- Countries and Indian states and union territories from which the visits originated
- Type of devices used for access (i.e., desktop, mobile, or tablet)
- Traffic source (e.g., direct visit by typing the website address in a browser, from a search engine)
- Keywords that brought visitors from search engines
- Pageviews and unique pageviews each page received and the mean time spent on each page

### Ethical Aspects

Google Analytics (GA) provides information as aggregated data, without any personally identifiable information about the site visitors. Hence, there are no ethical concerns in using it for research.<sup>6,12</sup> As this study was based only on the data from GA and did not involve direct assessment of human participants, ethics committee approval was not sought.

### Statistical Analysis

This is a descriptive study, and the aggregate data obtained from GA are being provided as-is. Categorical variables are summarized as n and percentage, while continuous variables are summarized as mean. (GA does not provide the standard deviation or individual data that we can use for an analysis.)

## RESULTS

In the study period, there were a total of 37,694 pageviews. The mean number of sessions per user was 1.52. Table 1 indicates that about one-third of the total 11,936 sessions were from returning visitors. Though they had a higher mean session duration, their bounce rate was higher and pageviews per session were lower.

The sessions of 822 visitors lasted 10–30 minutes, while those of 226 visitors lasted >30 minutes (Fig. 1). Visitors whose sessions lasted 3–10 minutes or 10–30 minutes viewed around 8,000 pages each (as a group). However, 7,266 sessions lasted <10 seconds only.

**Table 1:** Key user behavior indicators for new and returning visitors

	<i>n (%)</i>	<i>No. of sessions (%)</i>	<i>Bounce rate</i>	<i>Pageviews/session</i>	<i>Mean session duration</i>
New visitors	7,834 (83.40%)	7,799 (65.34%)	57.03%	3.25	00:02:40
Returning visitors	1,559 (16.60%)	4,137 (34.66%)	62.51%	2.98	00:03:24
Total	9,393	11,936	58.93%	3.16	00:02:55

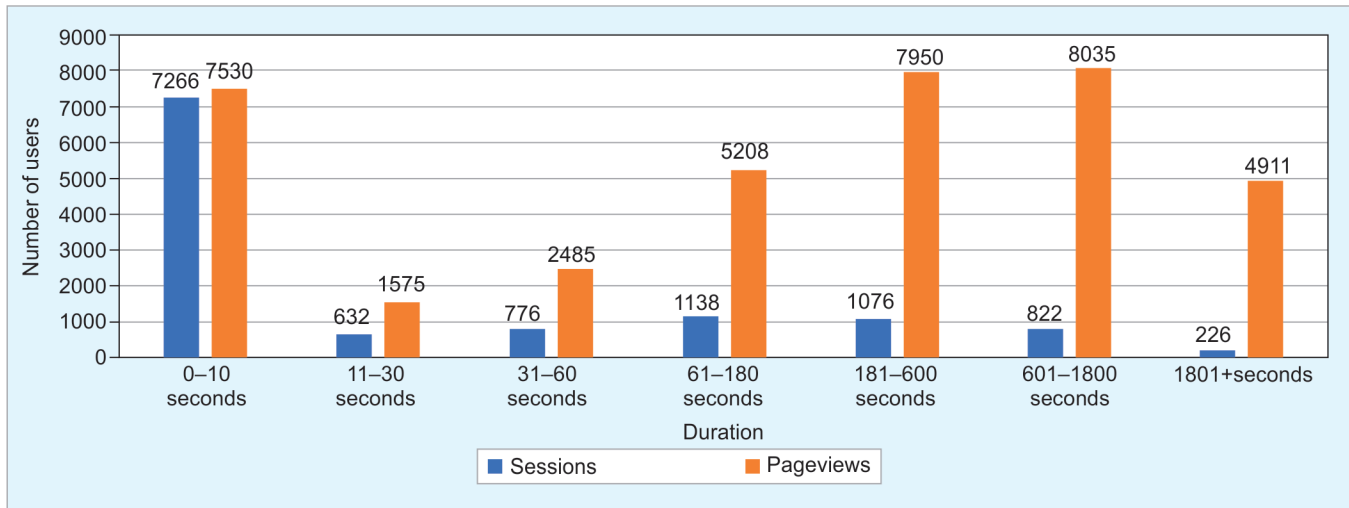


Fig. 1: Number of users whose sessions lasted various durations and the number of pageviews they had in those periods

Table 2: Numbers and proportions of new visitors who used desktop, mobile, or tablet and their key user behavior indicators

	Users (%)	New users (%)	No. of sessions (%)	Bounce rate	Pageviews/session	Mean session duration
Desktop	3,962 (51.06%)	3,982 (51.06%)	6,632 (55.56%)	58.16%	2.67	00:02:23
Mobile	3,563 (45.92%)	3,581 (45.92%)	4,931 (41.31%)	59.50%	3.84	00:03:39
Tablet	234 (3.02%)	236 (3.03%)	373 (3.12%)	65.15%	2.88	00:02:45

Table 3: Top 10 countries from which visitors accessed the site and the key user behavior indicators

	Country	New visitors	Sessions	Bounce rate	Pageviews/session	Mean session duration
1	India	6,754	10,783	57.18%	3.28	00:03:08
2	United States	265	281	87.19%	1.96	00:00:29
3	South Africa	217	255	53.33%	2.64	00:01:41
4	United Kingdom	75	85	55.29%	2.52	00:01:08
5	United Arab Emirates	23	23	78.26%	1.43	00:01:11
6	Australia	22	30	70.00%	2.73	00:03:09
7	Germany	13	13	76.92%	1.38	00:00:14
8	Saudi Arabia	13	14	85.71%	1.21	00:00:13
9	Singapore	12	15	46.67%	3.53	00:06:17
10	Malaysia	11	13	69.23%	1.54	00:00:20

More than half of the users accessed the site from a desktop, more than half of the sessions were from desktops, and the desktop users had the lowest bounce rate (Table 2). However, the mean pageviews per session and the mean session duration were the highest for mobile users.

The majority of visitors accessed the site using the Chrome browser (70.79%,  $n = 5,488$ ). Six other browsers too were used by at least 100 visitors: Safari ( $n = 867$ ), Firefox ( $n = 361$ ), Android Webview ( $n = 224$ ), Edge ( $n = 213$ ), Samsung Internet ( $n = 194$ ), and UC Browser ( $n = 101$ ).

After excluding those countries the visitors from which had a mean session duration of  $<5$  seconds, it was found that the site has been accessed from 41 countries. The country from which the most visitors came was India (Table 3). The 10,783 sessions from India constituted 90.34% of the site's total sessions.

After excluding those states and union territories from which the visitors had a mean session duration of  $<5$  seconds, it was

found that the site has been viewed from 31 Indian states and union territories. The maximum number of visitors was from Karnataka, Maharashtra being close behind (Table 4).

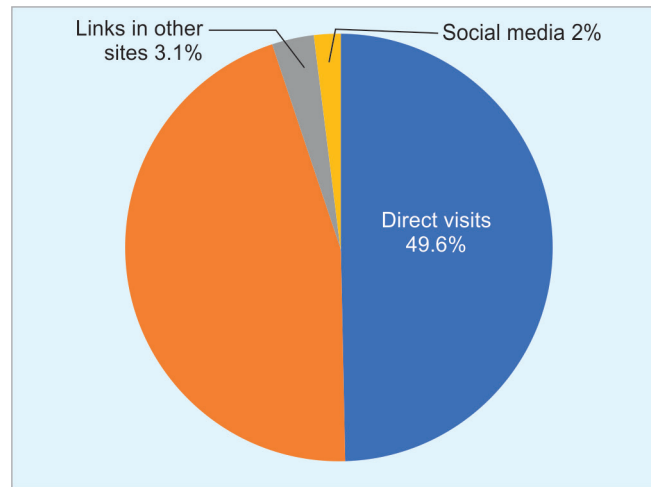
Nearly half of the users visited the site directly (i.e., by typing the website URL in the address bar of the browser or by clicking a bookmark.) About 45% came via search engines. Only a very small proportion came from social media or by clicking links on other websites (Fig. 2).

Table 5 reveals that the top 10 keywords that brought search engine traffic to the site were mostly about the forms related to the Act and the admission and discharge procedures.

The list of 10 most visited pages (excluding the home page) reveals the download page for the English version of the MHCA forms to be much ahead of all other pages (Table 6). Among the pages on MHCA chapters and rules, those on admission and discharge procedures were the most visited. Among the pages in the list, the one on the MHCA chapter on admission, treatment, and

**Table 4:** Top 10 Indian states from which visitors accessed the website and the key user behavior indicators

	State/union territory	New visitors	Sessions	Bounce rate	Pageviews/session	Mean session duration
1	Karnataka	858	1,376	56.03%	3.34	00:03:22
2	Maharashtra	853	1,391	53.92%	3.81	00:04:03
3	Delhi	754	1,240	58.31%	2.91	00:02:26
4	Uttar Pradesh	509	683	59.59%	3.24	00:02:35
5	Madhya Pradesh	487	563	73.00%	2.20	00:01:34
6	Tamil Nadu	445	725	58.48%	3.02	00:03:12
7	Kerala	427	832	51.92%	3.59	00:03:29
8	West Bengal	329	475	58.74%	3.25	00:02:44
9	Chandigarh	268	549	57.92%	3.23	00:02:48
10	Gujarat	284	445	56.40%	3.10	00:02:52

**Fig. 2:** Proportion of visitors who came from various sources**Table 5:** Ten search engine keywords that brought the most visitors to the site

	Keyword	Users	Sessions	Bounce rate	Pageviews/session	Mean session duration
1	Mental health review board	2	3	66.67%	1.33	00:00:03
2	MHCA 2017 forms	2	2	50.00%	3.00	00:00:39
3	MHCA duties	2	21	66.67%	1.38	00:03:18
4	MHCA forms	2	2	50.00%	1.50	00:00:23
5	Administrator application MHCA form	1	1	0.00%	3.00	00:00:30
6	Admission and discharge procedure for a mentally ill person	1	1	0.00%	2.00	00:00:02
7	Admission and discharge procedures of a mentally ill patients	1	1	0.00%	2.00	00:00:01
8	Admission and discharge process or procedure of mentally ill patients	1	1	0.00%	2.00	00:00:05
9	Admission and discharge procedure in mental health nursing	1	1	0.00%	2.00	00:00:08
10	Admission procedure according to act 2017	1	3	0.00%	3.33	00:07:25

discharge received the most mean time on the page. For all pages in the list, pageviews were higher than unique pageviews, meaning that the users visited the same pages more than once.

## DISCUSSION

This is the first study to assess the traffic sources, user details, and user behavior of an Indian website for MHPs. The major findings are that out of the total 11,936 sessions the site received,

one-third were from returning visitors, >2,000 lasted >3 minutes, and about 90% were from India. The proportion of both the visitors who came directly to the site and those who used a desktop were about 50%. Though about 70% of the visitors use Google Chrome, six other browsers, too, were used by >100 visitors. Most keywords that brought visitors from search engines and the most popular pages on the site were about admission and discharge procedures. These findings have many important implications, especially

**Table 6:** Details of 10 pages that got the most number of visitors

Rank	Topic of the page	Pageviews	Unique pageviews	Mean time on page
1	Download page for forms suggested in the central rules of MHCA	4,645	2,049	00:00:48
2	Chapter XII: Admission, treatment, and discharge	2,624	2,103	00:03:26
3	Download page for the Hindi versions of the forms suggested in the central rules of MHCA	1,566	711	00:00:37
4	Page that links to various journal articles on MHCA	1,276	906	00:00:51
5	Chapter I: Preliminary	806	628	00:02:43
6	Rules III: Forms for admission, discharge, and leave of absence	806	566	00:01:09
7	Chapter XI: Mental health review boards	797	621	00:02:54
8	Chapter V: Rights of persons with mental illness	759	602	00:03:03
9	Chapter IV: Nominated representative	749	614	00:03:08
10	Chapter VII: Central mental health authority	744	588	00:02:38

for professional organizations, departments, institutions, and individual MHPs who run websites for Indian MHPs.

According to a 2020 article,<sup>13</sup> only 15% of the visitors to the World Psychiatric Association (WPA) website were returning visitors. In this study, on the other hand, returning visitors contributed about one-third of the sessions. This and the findings that the returning visitors have a higher mean session duration and a higher bounce rate (Table 1) raise a possibility: Some MHPs visit specific pages of the site, probably those on admission and discharge, and probably from bookmarks for those pages, whenever they feel doubts about the procedures during their daily clinical work. However, this conclusion needs to be confirmed through other methods such as online surveys. In the study on the internet-delivered genetics education resource for nurses, named Telling Stories, too, the returning visitors spent longer time on the site.<sup>6</sup> The Global Pediatric Surgery Network<sup>9</sup> had a proportion of returning visitors (39%) similar to that of this study. However, the NETS platform<sup>10</sup> had a much higher percentage of returning visitors (57.7%) than this study. Also, in the study on Telling Stories,<sup>6</sup> returning visitors viewed more pages per session and had a smaller bounce rate than in this study. Such disparities may be due to the differences in the content, target audience, and country of origin of the websites. The bounce rate this study found (58.93%) was comparable to that of the Global Pediatric Surgery Network (56%).<sup>9</sup>

The mean pageviews per session was 3.16 for this website. It is comparable to the value of 3.43 reported for the Global Pediatric Surgery Network<sup>9</sup> but lower than the “4–5” reported for the WPA website.<sup>13</sup>

As >7,000 sessions were over within 10 seconds (Fig. 1), it is possible that this site failed to meet the expectations of many users.

Nearly 71% of the visitors used Chrome to access the site. This rate is comparable to that of the India against Cancer website,<sup>11</sup> where 75.8% of the visitors were Chrome users.

Though Chrome was the predominant browser in this study, six others too sent >100 visitors each. Also, though most visitors used desktops to access the site, the proportion of those who used mobile phones was not far behind (Table 2). These two findings have a strong implication for website owners—all sites should be optimized for access through mobile phones (by utilizing responsive design, Accelerated Mobile Pages versions, fast-loading pages, etc.) and also checked for compatibility with the detected browsers. This may be more relevant for institutional and organizational websites created in the pre-2010 era—they may

need a thorough design and technological overhaul to optimally serve more users.

While 88.7% of the visitors had used desktop in the NETS study<sup>10</sup> published in 2014, in the 2019 study on the AWS blog,<sup>7</sup> the proportion was 34.88%.

It is not surprising that >90% of the sessions were from India (Table 3). Some previous studies too found the highest proportion of visitors to be from the country where the website is based. The AWS blog, for example, received 84.91% of its visitors from the United States itself.<sup>7</sup>

Karnataka, Maharashtra, and Delhi were the states that sent the most visitors (Table 4). This may be because of the high presence of well-connected-to-the-internet MHPs in metros such as Bengaluru, Mumbai, and New Delhi.

Nearly half of the visitors came directly to the site (Fig. 2). This too may be explained by the possible bookmarking and visits to selected pages mentioned earlier. Unpublished data of a study by this author, which analyzed the usage profile of a regional Indian language website on mental health for the public, on the other hand, revealed that it was the social media that sent the maximum proportion (36.26%) of visitors. This difference may be attributed to the fact that while that site for the public has been heavily promoted through social media sites such as Facebook, the content of the MHCA site is not something social media algorithms can find attractive. For the Global Pediatric Surgery Network,<sup>9</sup> 59% of the visitors were from search engines, and only 19% were direct visitors. On the contrary, for the AWS blog,<sup>7</sup> 39.73% were direct visitors, and 35.92% were from social media referrals. Besides the differences in the content and the target audience of the websites as mentioned above, differences in the marketing and advertising strategies too may have contributed to these disparities.

Only about 3% of the visits came from links on other websites (Fig. 2). Mental health organizations, institutions, and departments of the country have to ensure that their websites link to other sites deemed relevant and useful to their potential visitors.

The keywords that drove most search engine traffic to the website were mental health review board, MHCA 2017 forms, MHCA duties, MHCA forms, etc. (Table 5). It is interesting to note that people searching for MHCA 2017 or MHCA did not come to this website often. A Google search with these important keywords revealed that the first page of the search results is populated by government websites, PubMed, and articles from prominent journals. The possible explanation is that, for high-traffic, important



keywords, only big, periodically updated websites that have lots of backlinks to them may be able to reach the first page of the search results. Besides, as this website was intended to be made known to MHPS through online groups and mouth-to-mouth publicity only, without availing any paid search engine optimization services, this result is understandable. It would not be cost-effective for this small, nonprofit website to aim to reach the first page of the search engine results pages for keywords such as MHCA 2017.

The higher interest the visitors had for the pages on admission and discharge procedures and the related forms (Table 6) indicates that at least in the initial months after the site's launch, there was a huge need for training on these aspects. This is likely to have been rectified by now. Professional organizations, etc., can undertake needs-assessment studies on the same, and if necessary, more webinars, etc., on the topic can be organized. As the forms are very popular, their translations in other Indian languages can be prepared by professional organizations or institutions in different states and made available for download on their websites.

### Limitations

Though the study is the first of its kind, it has some limitations:

- GA is not fully successful in removing visits by bots from its calculations;<sup>14</sup> some of the traffic included in this analysis may have been from them.
- This analysis did not consider the possibility that the site may have been down for hours or even days.
- The author was unable to analyze the sex or age category of the visitors—those data were unfortunately not recorded, probably due to incorrect settings.
- It is not necessary that all the visits were from MHPs. Patients, caregivers, etc., too may have been to the site.

### Future Directions

- Future studies that assess the performance of Indian websites for MHPs can supplement the information from GA with online surveys of users or even focus group discussions involving various stakeholders.
- Analyzing the age distribution of visitors will help decide if the "gray digital divide" prevents MHPs who are older from accessing useful websites.
- Numerous site visitors had opined, through personal communication, that it may be beneficial if the website is changed to a mobile app. Comparative studies of the same content in both app and website formats will be insightful.

### CONCLUSIONS

The website received an adequate amount of quality traffic. It has probably helped Indian MHPs understand the Act, especially its admission and discharge procedures, and also gave them the related forms, especially the Hindi version. Professional

organizations, institutions, and departments should consider creating and promoting such websites, on focused topics, for Indian MHPs. They should also keep analyzing the usage data for insights that would help enhance the websites' effectiveness.

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