In [35]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
import warnings
warnings.filterwarnings("ignore")
```

In [3]:
```
data=pd.read_csv("C:/Users/user/Downloads/netflix_content_2023.csv")
data
```

Out[3]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type
0	The Night Agent: Season 1	Yes	2023-03-23	81,21,00,000	English	Show
1	Ginny & Georgia: Season 2	Yes	2023-01-05	66,51,00,000	English	Show
2	The Glory: Season 1 // 더 글로리: 시즌 1	Yes	2022-12-30	62,28,00,000	Korean	Show
3	Wednesday: Season 1	Yes	2022-11-23	50,77,00,000	English	Show
4	Queen Charlotte: A Bridgerton Story	Yes	2023-05-04	50,30,00,000	English	Movie
...	...	...	...	...	...	...
24807	We Are Black and British: Season 1	No	NaN	1,00,000	English	Show
24808	Whitney Cummings: Can I Touch It?	Yes	2019-07-30	1,00,000	English	Movie
24809	Whitney Cummings: Jokes	No	2022-07-26	1,00,000	English	Movie
24810	Whose Vote Counts, Explained: Limited Series	Yes	2020-09-28	1,00,000	English	Movie
24811	Zach Galifianakis: Live at the Purple Onion	No	NaN	1,00,000	English	Movie

24812 rows × 6 columns

In [4]:
```
data.head()
```

Out[4]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type
0	The Night Agent: Season 1	Yes	2023-03-23	81,21,00,000	English	Show
1	Ginny & Georgia: Season 2	Yes	2023-01-05	66,51,00,000	English	Show
2	The Glory: Season 1 // 더 글로리: 시즌 1	Yes	2022-12-30	62,28,00,000	Korean	Show
3	Wednesday: Season 1	Yes	2022-11-23	50,77,00,000	English	Show
4	Queen Charlotte: A Bridgerton Story	Yes	2023-05-04	50,30,00,000	English	Movie

In [5]:
```
data.tail()
```

Out[5]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type
24807	We Are Black and British: Season 1	No	NaN	1,00,000	English	Show
24808	Whitney Cummings: Can I Touch It?	Yes	2019-07-30	1,00,000	English	Movie
24809	Whitney Cummings: Jokes	No	2022-07-26	1,00,000	English	Movie
24810	Whose Vote Counts, Explained: Limited Series	Yes	2020-09-28	1,00,000	English	Movie
24811	Zach Galifianakis: Live at the Purple Onion	No	NaN	1,00,000	English	Movie

In [6]:
```
data.shape
```

Out[6]:
```
(24812, 6)
```

In [7]:
```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 24812 entries, 0 to 24811
Data columns (total 6 columns):
 #   Column              Non-Null Count  Dtype 
---  ------              --------------  ----- 
 0   Title               24812 non-null  object
 1   Available Globally? 24812 non-null  object
 2   Release Date        8166 non-null   object
 3   Hours Viewed        24812 non-null  object
 4   Language Indicator  24812 non-null  object
 5   Content Type        24812 non-null  object
dtypes: object(6)
memory usage: 1.1+ MB
```

In [8]:
```
data.describe().T
```

Out[8]:

	count	unique	top	freq
Title	24812	19158	The Night Agent: Season 1	2
Available Globally?	24812	2	No	17162
Release Date	8166	1783	2020-03-20	28
Hours Viewed	24812	889	1,00,000	4046
Language Indicator	24812	6	English	17268
Content Type	24812	2	Movie	14104

In [9]:
```
data.isnull().sum()
```

Out[9]:
```
Title                    0
Available Globally?      0
Release Date         16646
Hours Viewed             0
Language Indicator       0
Content Type             0
dtype: int64
```

In [10]:
```
data.dropna()
```

Out[10]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type
0	The Night Agent: Season 1	Yes	2023-03-23	81,21,00,000	English	Show
1	Ginny & Georgia: Season 2	Yes	2023-01-05	66,51,00,000	English	Show
2	The Glory: Season 1 // 더 글로리: 시즌 1	Yes	2022-12-30	62,28,00,000	Korean	Show
3	Wednesday: Season 1	Yes	2022-11-23	50,77,00,000	English	Show
4	Queen Charlotte: A Bridgerton Story	Yes	2023-05-04	50,30,00,000	English	Movie
...	...	...	...	...	...	...
24805	Vir Das: Losing It	Yes	2018-12-11	1,00,000	English	Movie
24806	W. Kamau Bell: Private School Negro	Yes	2018-06-26	1,00,000	English	Movie
24808	Whitney Cummings: Can I Touch It?	Yes	2019-07-30	1,00,000	English	Movie
24809	Whitney Cummings: Jokes	No	2022-07-26	1,00,000	English	Movie
24810	Whose Vote Counts, Explained: Limited Series	Yes	2020-09-28	1,00,000	English	Movie

8166 rows × 6 columns

In [11]:
```
data.duplicated().sum()
```

Out[11]: 467

In [12]:
```
data.drop_duplicates()
```

Out[12]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type
0	The Night Agent: Season 1	Yes	2023-03-23	81,21,00,000	English	Show
1	Ginny & Georgia: Season 2	Yes	2023-01-05	66,51,00,000	English	Show
2	The Glory: Season 1 // 더 글로리: 시즌 1	Yes	2022-12-30	62,28,00,000	Korean	Show
3	Wednesday: Season 1	Yes	2022-11-23	50,77,00,000	English	Show
4	Queen Charlotte: A Bridgerton Story	Yes	2023-05-04	50,30,00,000	English	Movie
...	...	...	...	...	...	...
24798	Transformers: Cyberverse: Season 4	No	NaN	1,00,000	English	Show
24799	Travel Man: 48 Hours in...: Season 9	No	NaN	1,00,000	English	Show
24800	Two Weeks to a Stronger Core: Volume 1	Yes	NaN	1,00,000	English	Movie
24804	Vir Das: For India	Yes	2020-01-26	1,00,000	English	Movie
24807	We Are Black and British: Season 1	No	NaN	1,00,000	English	Show

24345 rows × 6 columns

In [19]:
```
data['Hours Viewed'] = data['Hours Viewed'].replace(',', '', regex=True).astype(f
data
```

Out[19]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type
0	The Night Agent: Season 1	Yes	2023-03-23	812100000.0	English	Show
1	Ginny & Georgia: Season 2	Yes	2023-01-05	665100000.0	English	Show
2	The Glory: Season 1 // 더 글로리: 시즌 1	Yes	2022-12-30	622800000.0	Korean	Show
3	Wednesday: Season 1	Yes	2022-11-23	507700000.0	English	Show
4	Queen Charlotte: A Bridgerton Story	Yes	2023-05-04	503000000.0	English	Movie
...	...	...	...	...	...	...
24807	We Are Black and British: Season 1	No	NaN	100000.0	English	Show
24808	Whitney Cummings: Can I Touch It?	Yes	2019-07-30	100000.0	English	Movie
24809	Whitney Cummings: Jokes	No	2022-07-26	100000.0	English	Movie
24810	Whose Vote Counts, Explained: Limited Series	Yes	2020-09-28	100000.0	English	Movie
24811	Zach Galifianakis: Live at the Purple Onion	No	NaN	100000.0	English	Movie

24812 rows × 6 columns

In [25]:
```
data["Release Date"]=pd.to_datetime(data["Release Date"])
data["Release_Month"]=data['Release Date'].dt.month
data["Release_Year"]=data['Release Date'].dt.year
data
```

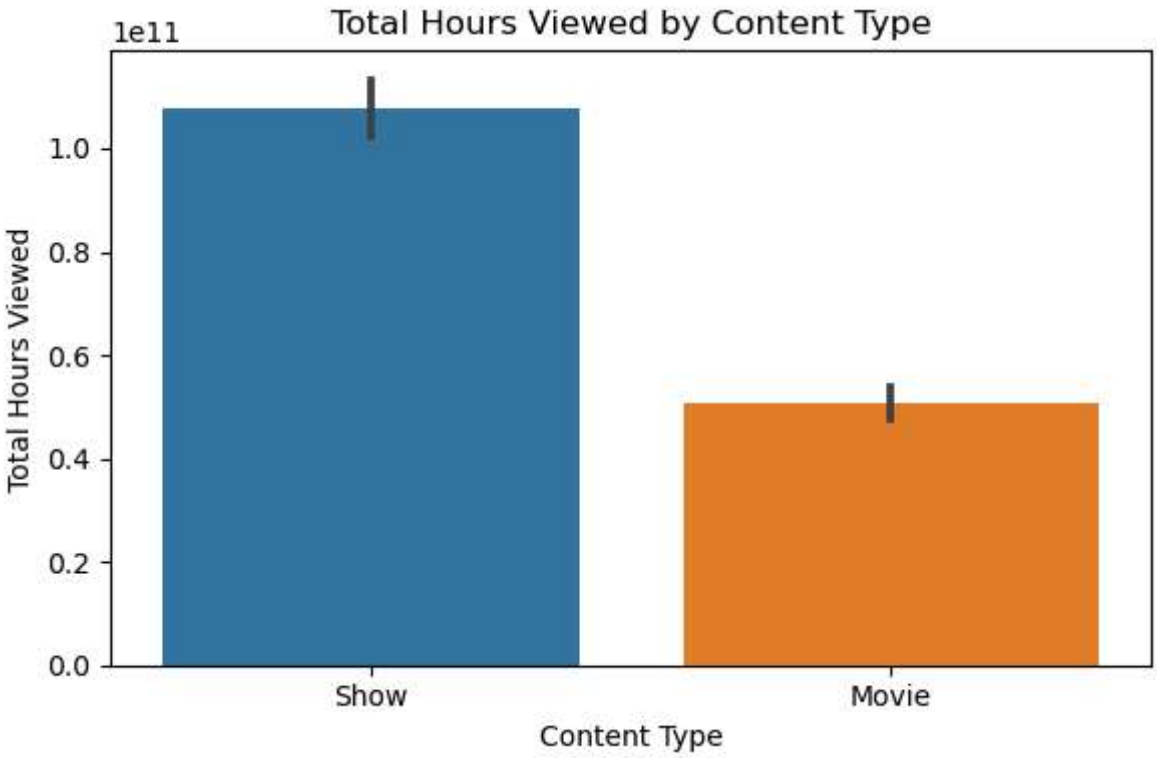
Out[25]:

	Title	Available Globally?	Release Date	Hours Viewed	Language Indicator	Content Type	Release_Month	Release_Y
0	The Night Agent: Season 1	Yes	2023-03-23	812100000.0	English	Show	3.0	202
1	Ginny & Georgia: Season 2	Yes	2023-01-05	665100000.0	English	Show	1.0	202
2	The Glory: Season 1 // 더 글로리: 시즌 1	Yes	2022-12-30	622800000.0	Korean	Show	12.0	202
3	Wednesday: Season 1	Yes	2022-11-23	507700000.0	English	Show	11.0	202
4	Queen Charlotte: A Bridgerton Story	Yes	2023-05-04	503000000.0	English	Movie	5.0	202
...	...	...	...	...	...	...	...	
24807	We Are Black and British: Season 1	No	NaT	100000.0	English	Show	NaN	N
24808	Whitney Cummings: Can I Touch It?	Yes	2019-07-30	100000.0	English	Movie	7.0	201
24809	Whitney Cummings: Jokes	No	2022-07-26	100000.0	English	Movie	7.0	202
24810	Whose Vote Counts, Explained: Limited Series	Yes	2020-09-28	100000.0	English	Movie	9.0	202
24811	Zach Galifianakis: Live at the Purple Onion	No	NaT	100000.0	English	Movie	NaN	N

24812 rows × 8 columns

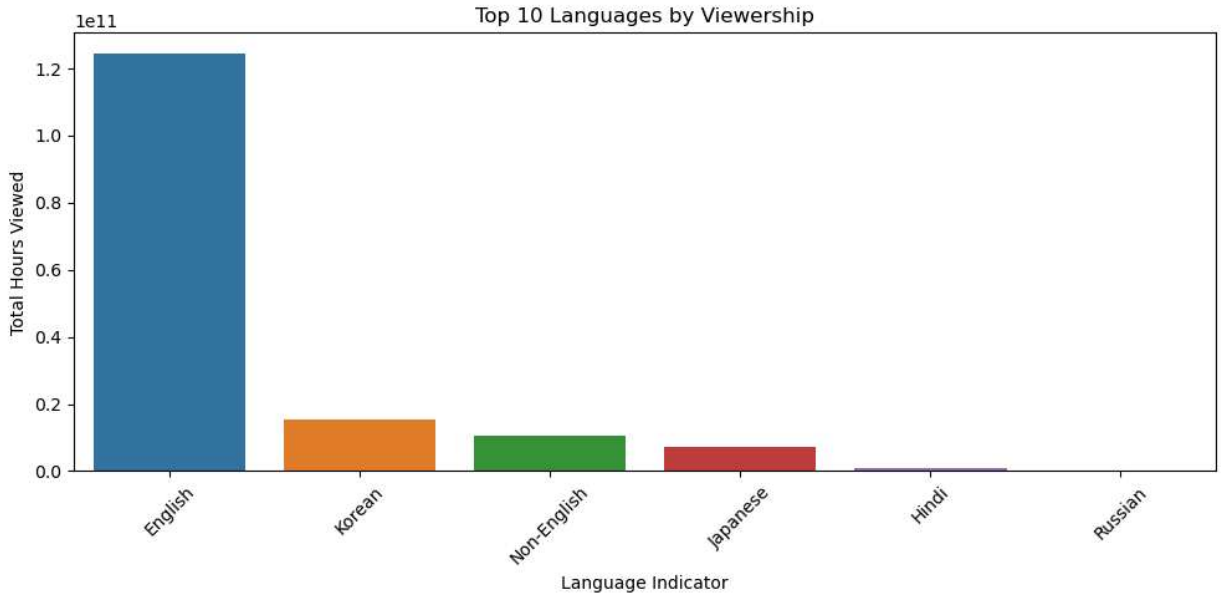
1. Viewership by Content Type

In [26]:
```
plt.figure(figsize=(6,4))
sns.barplot(data=data, x='Content Type', y='Hours Viewed', estimator=sum)
plt.title("Total Hours Viewed by Content Type")
plt.ylabel("Total Hours Viewed")
plt.xlabel("Content Type")
plt.tight_layout()
plt.show()
```



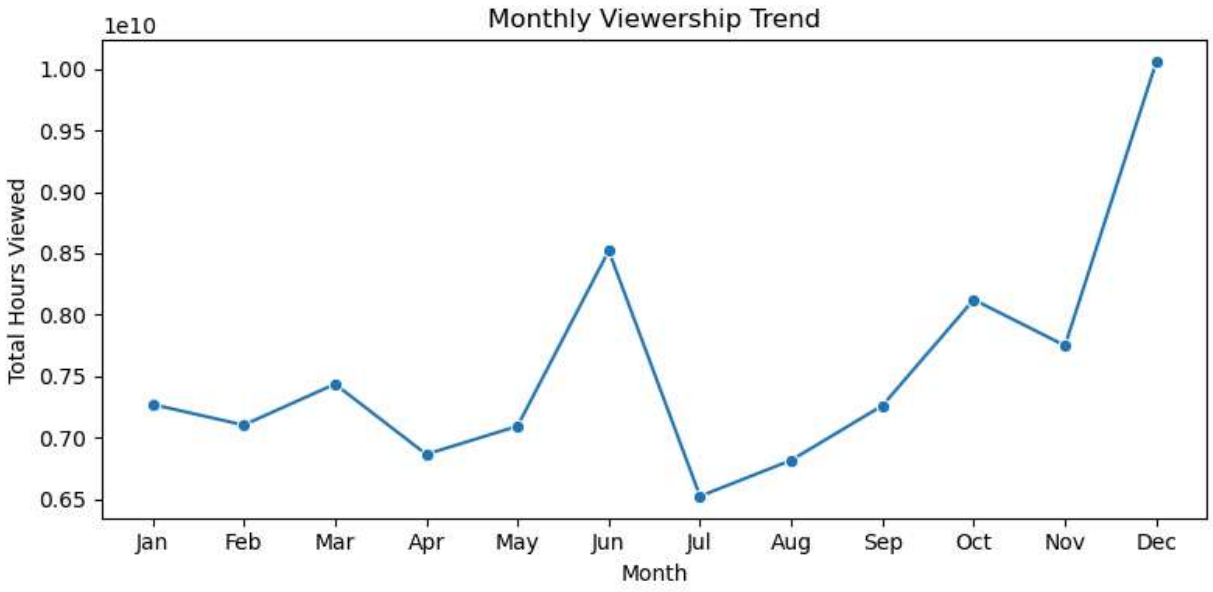
2. Viewership by Language

In [28]:
```
top_lang = data.groupby('Language Indicator')['Hours Viewed'].sum().sort_values(a

plt.figure(figsize=(10,5))
sns.barplot(x=top_lang.index, y=top_lang.values)
plt.title("Top 10 Languages by Viewership")
plt.ylabel("Total Hours Viewed")
plt.xticks(rotation=45)
plt.tight_layout()
plt.show()
```



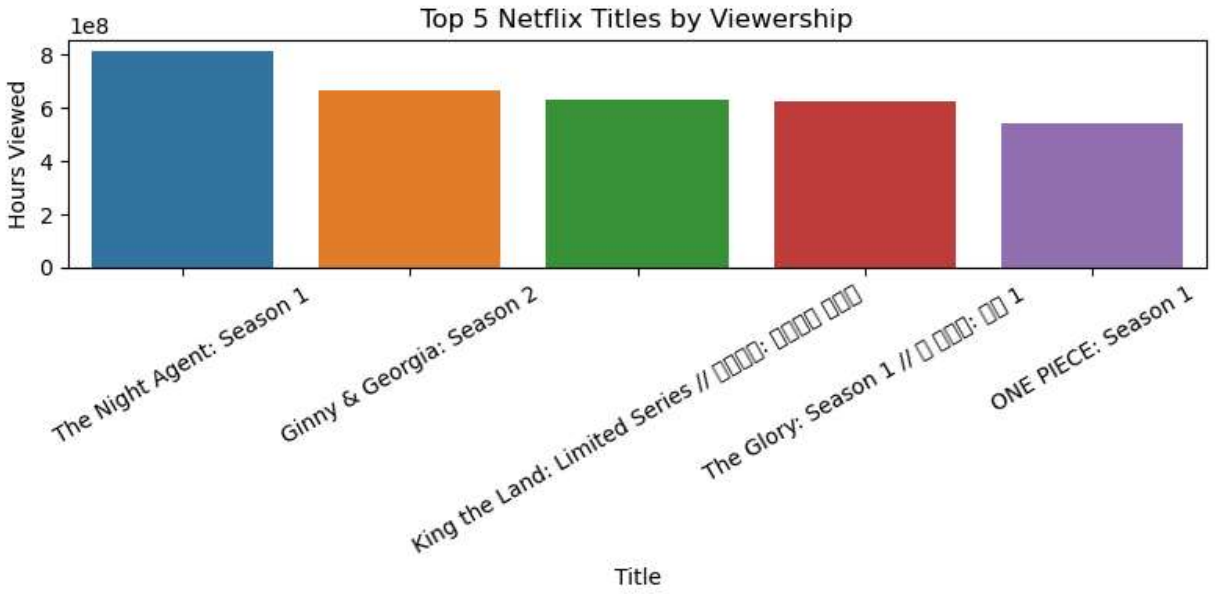
3. Monthly Viewership Trend

In [30]:
```
monthly = data.groupby('Release_Month')['Hours Viewed'].sum()

plt.figure(figsize=(8,4))
sns.lineplot(x=monthly.index, y=monthly.values, marker='o')
plt.title("Monthly Viewership Trend")
plt.xlabel("Month")
plt.ylabel("Total Hours Viewed")
plt.xticks(range(1,13), ['Jan','Feb','Mar','Apr','May','Jun','Jul','Aug','Sep','(
plt.tight_layout()
plt.show()
```



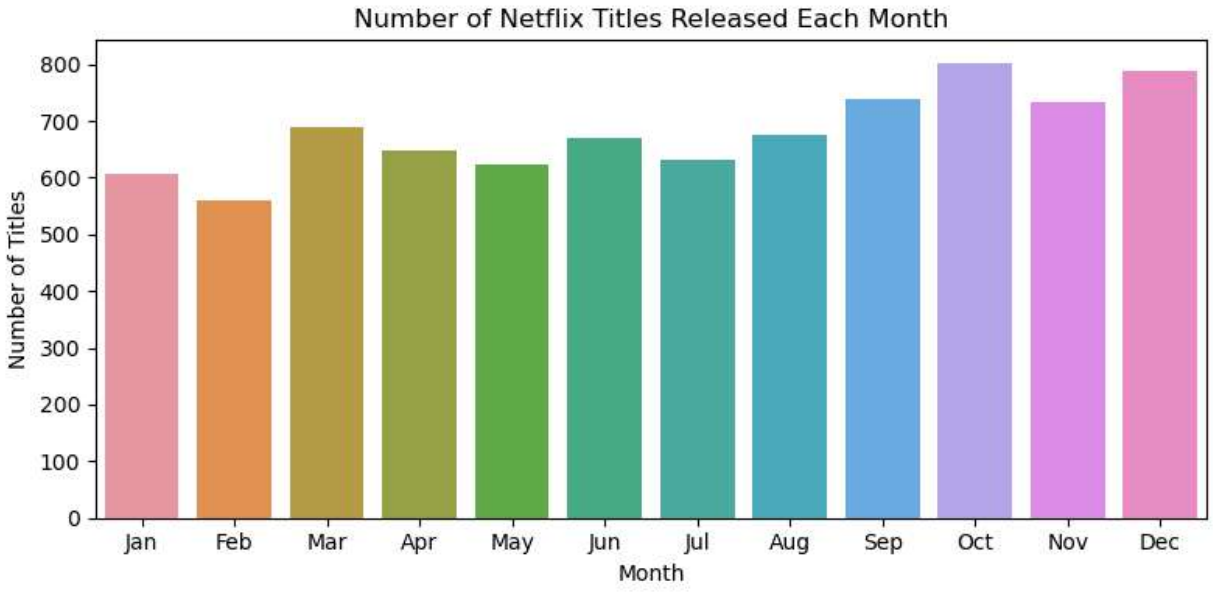
4. Top 5 Most Watched Titles

In [36]:
```
top5 = data.sort_values(by='Hours Viewed', ascending=False).head(5)

plt.figure(figsize=(8,4))
sns.barplot(data=top5, x='Title', y='Hours Viewed')
plt.title("Top 5 Netflix Titles by Viewership")
plt.ylabel("Hours Viewed")
plt.xticks(rotation=30)
plt.tight_layout()
plt.show()
```

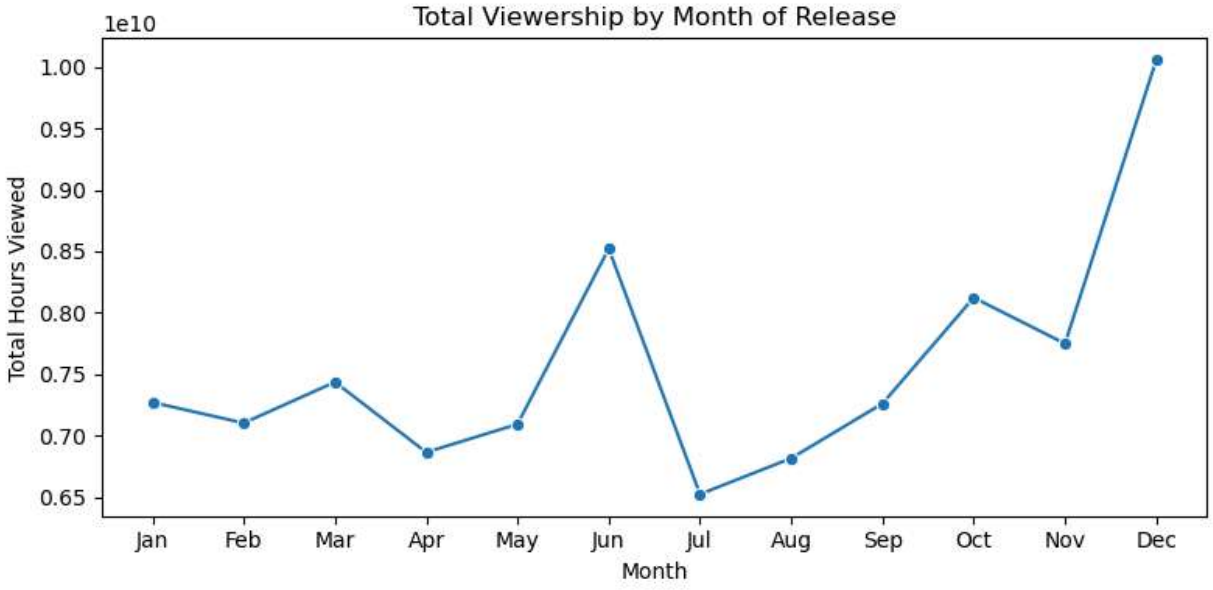


In [ ]:
```
```

In [38]:
```
monthly_releases = data['Release_Month'].value_counts().sort_index()
plt.figure(figsize=(8,4))
sns.barplot(x=monthly_releases.index, y=monthly_releases.values)
plt.title("Number of Netflix Titles Released Each Month")
plt.xlabel("Month")
plt.ylabel("Number of Titles")
plt.xticks(ticks=range(0,12), labels=['Jan','Feb','Mar','Apr','May','Jun','Jul',
plt.tight_layout()
plt.show()
```



In [40]:
```
monthly_views = data.groupby('Release_Month')['Hours Viewed'].sum()
plt.figure(figsize=(8,4))
sns.lineplot(x=monthly_views.index, y=monthly_views.values, marker='o')
plt.title("Total Viewership by Month of Release")
plt.xlabel("Month")
plt.ylabel("Total Hours Viewed")
plt.xticks(ticks=range(1,13), labels=['Jan','Feb','Mar','Apr','May','Jun','Jul',
plt.tight_layout()
plt.show()
```



In [ ]: