

Engagement Patterns of #NaturalRemedies on TikTok: A Formative Analysis

Apeksha Mewani, Corey Basch, Keanu Renne-Glover, Vincent Jones II, Cristiana Cordero, Adea Gutiqi

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Engagement Patterns of #NaturalRemedies on TikTok: A Formative Analysis

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Abstract

This research letter provides formative evidence from a cross-sectional analysis of 118 TikTok videos under #NaturalRemedies, identifying content formats and expertise cues associated with higher engagement, while also demonstrating the feasibility of using engagement metrics and thematic coding to analyze digital health narratives on emerging platforms such as TikTok.

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Original Manuscript

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Abstract

This research letter provides formative evidence from a cross-sectional analysis of 118 TikTok videos under #NaturalRemedies, identifying content formats and expertise cues associated with higher engagement, while also demonstrating the feasibility of using engagement metrics and thematic coding to analyze digital health narratives on emerging platforms such as TikTok.

Introduction

Social media platforms like TikTok are becoming increasingly popular sources for public health information and hold the potential to shape health perceptions, decisions, and behaviors, increasingly via influencer-led health messaging [1]. TikTok's short-form and hyper-specific algorithmic design accelerates dissemination of wellness content, raising concerns about creator credibility and the spread of misinformation [2,3]. Emerging studies of health content on TikTok and related platforms document patterns in education-oriented videos and influencer-audience dynamics, as well as gaps in evidence citation [4,6]. Other analyses highlight variation in credibility and communication strategies across platforms, showing how practices like cupping therapy or pharmaceutical promotion reflect broader challenges in evidence use and audience trust [8,9]. We present a formative analysis of #NaturalRemedies videos to identify themes linked to engagement, informing future digital public health interventions.

Methods

On February 21, 2025, we captured the first 120 videos under the hashtag #NaturalRemedies, sorted by view count; 118 unique videos met inclusion criteria after exclusions (non-English without subtitles, missing audio, duplicates/misclassification). For each video, we extracted likes, comments, shares, and saves and coded sentiment (positive/neutral/negative), format (tutorial, quick facts, narrative), creator expertise (credentialed expert, scientist/medical professional, influencer), and themes (e.g., educational content, DIY, gut/skin health). A 10% subsample was double-coded ($\kappa=1$).

Descriptive statistics summarized engagement; Mann-Whitney U tests compared theme-present vs theme-absent groups; Spearman correlations explored associations. Analyses were conducted in R (2024.12.0+467). Methods align with prior social media health content analyses [4,6,10].

Results

Descriptive statistics are summarized in Table 1; inferential comparisons appear in Table 2. Positive sentiment predominated (98/118) and corresponded with higher medians for likes and saves. Tutorials were associated with greater sharing and saving (shares: median 8,310 vs 5,661; $U=1194.5$, $p=.0302$; saves: median 15,600 vs 11,700; $U=1204.5$, $p=.035$). Videos without DIY content received more likes (median 51,150 vs 35,150; $U=1070.5$, $p=.046$) and comments (median 973.5 vs 469.5; $U=1152.5$, $p=.008$) than DIY videos. Credentialed-expert videos, though rare ($\Sigma_n=118$; $n=2$), achieved the highest engagement (likes: median 120,200; $U=15.5$, $p=.037$), compared to the median like count of 39,000 for nonexpert-created videos. Despite content categorized under "credentialed experts" represented approximately 1.69% ($\Sigma_n=118$; $n=2$) of the sample, 93.2% ($\Sigma_n=118$; $n=110$) of videos were coded as "educational content, and videos were marked as "not present" for "myth busting." These figures suggest that the majority of educational videos related to natural remedies and related health topics were produced by nonexperts. "Connection with nature" produced more comments when present (median 1,321 vs 477; $U=239.5$, $p=.01$). "Gut health" content showed higher shares when present (median 12,200 vs 6,106.5; $U=1076.5$, $p=.0197$) and trended toward more comments and saves ($p=.067$ and $p=.06$). Educational content approached significance for likes

($p=.097$). Personal-experience narratives differed in shares ($p=.028$), with lower medians when present in this sample. Furthermore, median like count for videos with the intent to sell a product were almost equivalent to those not (respectively, 39,800 vs. 39,900), despite the uneven distribution of videos with and without commercial intent ($\Sigma n=118$; 11 vs. 107).

Table 1. Descriptive statistics showcasing video content themes, likes, comments, shares, and saves of 118 TikTok videos for the hashtag #naturalremedies (N=118).

Content Theme	Presence	N	TikTok Likes			TikTok Comments			Shared TikToks			Saved TikToks		
			Total	Median	Mean	Total	Median	Mean	Total	Median	Mean	Total	Median	Mean
Positive	Not Present	20	770344	31650	38517.2	12217	356	610.85	132203	6522	6610.15	251117	8222	12555.85
	Present	98	5995337	40000	61176.91	79945	545.5	815.7653	1392592	7142.5	14210.12	2430065	13700	24796.58
Negative	Not Present	118	6765681	39850	57336.28	92162	520	781.0339	1524795	6650	12921.99	2681182	13100	22721.88
Neutral	Not Present	98	5995337	40000	61176.91	79945	545.5	815.7653	1392592	7142.5	14210.12	2430065	13700	24796.58
	Present	20	770344	31650	38517.2	12217	356	610.85	132203	6522	6610.15	251117	8222	12555.85
Educational Content	Not Present	8	524000	59150	65500	5653	408	706.625	82964	5192.5	10370.5	156697	16250	19587.12
	Present	110	6241681	37900	56742.55	86509	529.5	786.4455	1441831	7142.5	13107.55	2524485	13100	22949.86
Personal Experiences	Not Present	64	2854428	41700	44600.44	45472	447	710.5	993734	9152	15527.094	1386180	13700	21659.06
	Present	54	3911253	37650	72430.61	46690	556	864.6296	531061	5689.5	9834.463	1295002	11800	23981.52
D.I.Y.	Not Present	16	2417100	51150	151068.75	29243	973.5	1827.6875	246983	7945.5	15436.44	627809	12450	39238.06
	Present	102	4348581	35150	42633.15	62919	469.5	616.8529	1277812	6595.5	12527.57	2053373	13400	20131.11
Myth busting	Not Present	118	6765681	39850	57336.28	92162	520	781.0339	1524795	6650	12921.99	2681182	13100	22721.88
Mental Health	Not Present	107	6228539	37600	58210.64	78423	477	732.9252	1367702	7640	12782.26	2545989	13700	23794.29
	Present	11	537142	53300	48831.09	13739	1074	1249	157093	6389	14281.18	135193	12000	12290.27
Athletic Performance	Not Present	118	6765681	39850	57336.28	92162	520	781.0339	1524795	6650	12921.99	2681182	13100	22721.88
Pain Management	Not Present	86	4334883	43600	50405.62	62328	556	724.7442	1141172	7803	13269.44	2003933	14050	23301.55
	Present	32	2430798	29400	75962.44	29834	378.5	932.3125	383623	5947.5	11988.22	677249	10500	21164.03
Hair Growth	Not Present	114	6595646	39000	57856.54	89479	502	784.9035	1484426	6619.5	13021.28	2621607	13100	22996.55
	Present	4	170035	50450	42508.75	2683	651.5	670.75	40369	10724.5	10092.25	59575	13239	14893.75
Skin	Not Present	93	5871754	43900	63137.14	79597	555	855.8817	1344846	7649	14460.71	2340744	14400	25169.29
	Present	25	893927	26600	35757.08	12565	358	502.6	179949	5661	7197.96	340438	10500	13617.52
Gut Health	Not Present	82	4856513	37350	59225.77	60541	424.5	738.3049	921522	6106.5	11238.07	1622335	11450	19784.57
	Present	36	1909168	51100	53032.44	31621	770	878.3611	603273	12200	16757.58	1058847	17750	29412.42
Nutritional Benefits	Not Present	110	6489445	40000	58994.95	84256	529.5	765.9636	1427009	6650	12972.81	2536267	13400	23056.97
	Present	8	276236	28250	34529.5	7906	361.5	988.25	97786	7147	12223.25	144915	11000	18114.38
Spiritual Health	Not Present	118	6765681	39850	57336.28	92162	520	781.0339	1524795	6650	12921.99	2681182	13100	22721.88
Sleep	Not Present	110	6358015	39000	57800.14	85757	520	779.6091	1408941	7644.5	12808.55	2565180	13500	23319.82
	Present	8	407666	51300	50958.25	6405	736.5	800.625	115854	4957	14481.75	116002	12250	14500.25
Weight Loss	Not Present	110	6368897	39000	57899.06	85282	502	775.2909	1405941	6570	12781.28	2495081	12500	22682.55
	Present	8	396784	54550	49598	6880	953	860	118854	14150	14856.75	186101	22400	23262.62
Connection with Nature	Not Present	109	6313881	38200	57925.51	79815	477	732.2477	1439258	6655	13204.202	2564565	13700	23528.12
	Present	9	451800	49000	50200	12347	1321	1371.8889	85537	6594	9504.111	116617	11600	12957.44
Credentialed Expert?	Not Present	116	6525281	39000	56252.42	90176	502	777.3793	1489495	6619.5	12840.47	2574582	13100	22194.67
	Present	2	240400	120200	120200	1986	993	993	35300	17650	17650	106600	53300	53300
Group/Community	Not Present	118	6765681	39850	57336.28	92162	520	781.0339	1524795	6650	12921.99	2681182	13100	22721.88
Scientist/Medical Professional	Not Present	113	6427381	38200	56879.48	87290	477	772.4779	1453597	6594	12863.69	2575602	12900	22792.94
	Present	5	338300	77700	67660	4872	1093	974.4	71198	12200	14239.6	105580	15600	21116
Tutorial	Not Present	41	1576586	37600	38453.32	27353	555	667.1463	343865	5661	8386.951	556793	11700	13580.32
	Present	77	5189095	43900	67390.84	64809	517	841.6753	1180930	8310	15336.753	2124389	15600	27589.47

Narrative	Not Present	22	1122908	52800	51041.27	10468	294	475.8182	220339	6529	10015.41	473524	22050	21523.82
	Present	96	5642773	37350	58778.89	81694	580.5	850.9792	1304456	7142.5	13588.08	2207658	12500	22996.44
Quick Facts	Not Present	11	923200	55000	83927.27	10105	417	918.6364	105593	7778	9599.364	355456	23600	32314.18
	Present	107	5842481	37600	54602.63	82057	536	766.8879	1419202	6645	13263.57	2325726	12700	21735.76
Voice Over	Not Present	85	5315547	39900	62535.85	68665	555	807.8235	888771	6403	10456.13	1930458	13300	22711.27
	Present	33	1450134	39800	43943.45	23497	477	712.0303	636024	9146	19273.45	750724	12700	22749.21
Selling Something?	Not Present	107	6334287	39900	59198.94	83740	517	782.6168	1422869	6546	13297.84	2523464	13300	23583.78
	Present	11	431394	39800	39217.64	8422	577	765.6364	101926	8063	9266	157718	12900	14338
Product Promotion?	Not Present	108	6397770	39050	59238.61	87244	529.5	807.8148	1432702	6619.5	13265.76	2524668	13400	23376.56
	Present	10	367911	43350	36791.1	4918	382.5	491.8	92093	8195	9209.3	156514	10700	15651.4
Sponsored Video?	Not Present	118	6765681	39850	57336.28	92162	520	781.0339	1524795	6650	12921.99	2681182	13100	22721.88
Use of Before and After	Not Present	115	6621581	39800	57578.97	90315	517	785.3478	1519184	7640	13210.296	2653457	13500	23073.539
	Present	3	144100	47800	48033.33	1847	623	615.6667	5611	1944	1870.333	27725	9232	9241.667
Wellness Based?	Not Present	15	738611	55000	49240.73	9692	748	646.1333	136627	6389	9108.467	240501	15600	16033.4
	Present	102	6026530	37900	59083.63	82455	502	808.3824	1387184	7147.5	13599.843	2440486	13100	23926.33
	Missing	1	540	540	540	15	15	15	984	984	984	195	195	195
Holistic Health?	Not Present	100	6205611	43950	62056.11	81509	580.5	815.09	1371867	7644.5	13718.67	2256332	14050	22563.32
	Present	17	559530	27500	32913.53	10638	337	625.7647	151944	6234	8937.882	424655	11700	24979.71
	Missing	1	540	540	540	15	15	15	984	984	984	195	195	195
Individual Influencer/Wellness Enthusiast	Not Present	1	1241	1241	1241	5	5	5	203	203	203	370	370	370
	Present	117	6764440	39900	57815.73	92157	523	787.6667	1524592	6655	13030.7	2680812	13300	22912.92

Table 2. Mann-Whitney U Test: TikTok Video content themes that produced differences in the median number of likes, comments, shares, saves (N=118).

Content Theme	N (Present)	TikTok Likes		TikTok Comments		Shared TikToks		Saved TikToks	
		U	p-value	U	p-value	U	p-value	U	p-value
Positive	98	853.5	0.3661	901.5	0.5758	791	0.1763	722.5	0.06526
Neutral	20	1106.5	0.3661	1058.5	0.5758	1169	0.1763	1237.5	0.06526
Educational Content	110	595.5	0.09706	461	0.8263	423	0.8598	462.5	0.8138
Personal Experiences	54	1661	0.7194	1553	0.3459	2136	0.02772	1768	0.831
DIY	102	1070.5	0.04586	1152.5	0.008262	905	0.4866	904	0.4916
Mental Health	11	530.5	0.5946	428	0.1386	641	0.6303	692.5	0.338
Pain Management	32	1556.5	0.2759	1574	0.2319	1607	0.1629	1603.5	0.1694
Hair Growth	4	220.5	0.9171	218	0.8877	220	0.9112	257	0.6717
Skin	25	1394	0.1282	1391	0.1332	1440.5	0.06762	1414	0.09832
Gut Health	36	1220.5	0.1361	1162	0.06691	1076.5	0.0197	1156	0.06184
Nutritional Benefits	8	511	0.4504	438	0.9872	442	0.9872	481.5	0.6607
Sleep	8	398.5	0.6607	392	0.6111	510	0.4569	483.5	0.6453
Weight Loss	8	394.5	0.63	323	0.2124	304.5	0.1484	346	0.3169
Connection with Nature	9	405.5	0.3916	239.5	0.01109	462	0.7765	546	0.5771
Credentialed Expert?	2	15.5	0.03708	60	0.2472	56.5	0.2187	66.5	0.307
Scientist/Medical Professional	5	135.5	0.05032	145	0.06721	191	0.2241	230	0.4872
Tutorial	77	1338	0.175	1453	0.4799	1194.5	0.0302	1204.5	0.03478
Narrative	96	1178	0.4011	783	0.05971	1004.5	0.7245	1207	0.2984
Quick Facts	107	718	0.2324	638	0.6502	600.5	0.9152	691.5	0.3427
Voice Over	33	1443	0.8105	1481.5	0.6379	1068.5	0.04554	1482	0.6357

Selling Something?	11	617.5	0.7919	505	0.4423	559	0.7884	639	0.6435
Product Promotion?	10	605.5	0.5299	637	0.3511	586	0.6602	608.5	0.5111
Use of Before and After	3	145	0.6444	161	0.8508	280	0.06735	224	0.3832
Wellness Based?	102	848	0.5012	831	0.5933	678	0.4807	738.5	0.8321
Holistic Health?	17	1035	0.1536	1047	0.1286	1001.5	0.2428	945.5	0.4625
Individual Influencer/ Wellness Enthusiast	117	7	0.1343	1	0.09425	2	0.1002	4.5	0.1163

Discussion

In this formative analysis, engagement with natural remedy content was shaped by sentiment, format, and expertise cues. Tutorials—practical, action-oriented formats—were consistently associated with higher shares and saves, while DIY content underperformed. Rare appearances of credentialed experts corresponded with markedly higher engagement, indicating a strong demand and opportunity for health professionals to disseminate credible guidance on popular wellness topics (e.g., gut health, pain management, sleep, skin, mental health) and in doing so promote public access to evidence-based health information [1,3,5]. Findings complement prior reports on influencer dynamics, education-oriented health videos and the credibility, and platform specific engagement patterns [4,6,8,9]. Limitations include cross-sectional design, single-hashtag sampling, and lack of demographic data. Results are preliminary but demonstrate the feasibility of leveraging social media analytics to inform digital public health communication and future intervention design [10].

Conflict of interest: The authors declare no conflicts of interest.

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Ethics: IRB review was deemed unnecessary as the study did not involve human subjects.

Data Availability: The data supporting this study consist of publicly available TikTok videos under the hashtag #NaturalRemedies and are available on request.

Author contributions: AM conceived and led the research project and drafted the manuscript. CB provided research guidance and contributed to writing and critical revisions. KR conducted the statistical analyses. CC and AG were responsible for data collection. VJ developed and wrote the methodology section. All authors reviewed and approved the final manuscript.

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