

Social Cognitive Theory and Role of Key Actors in YouTube Comment Networks on Turmeric for Health

Received: 16-05-2025

Revised: 05-08-2025

Accepted: 26-11-2025

Risma Zahra Hana

Universitas Telkom

E-mail:

rismazahrahana@student.telkomuniversity.ac.id

Rita Destiwati*)

Universitas Telkom

E-mail:

ritadestiwati@telkomuniversity.ac.id

Abstract: This research examines the dissemination of health information on YouTube, specifically focusing on discussions in video comment sections about the use of turmeric as an alternative medicine, a topic deeply rooted in traditional Indonesian medicine. This study aims to identify key actors and understand the process of information dissemination formed in the comments of the YouTube video “Manfaat dan Cara Membuat Kunyit yang Benar untuk Kesehatan”. Using Bandura's Social Cognitive Theory with social network analysis method combined with content analysis. Network analysis identified @dr.emasuperr as a source of scientific information and @saptayusmana7022 as an empirical validator, which together form a decentralized network structure. Findings revealed a dynamic mechanism of reciprocal determinism: (1) personal (individual beliefs formed through user testimonials), (2) behavioral (adoption of health practices), and (3) environmental (social support and medical authority) influence each other. The interaction of these three SCT components creates a snowball effect in information dissemination.

Abstrak: Studi ini meneliti penyebaran informasi kesehatan di YouTube, secara khusus berfokus pada diskusi di kolom komentar video tentang penggunaan kunyit sebagai pengobatan alternatif, sebuah topik yang berakar kuat dalam pengobatan tradisional Indonesia. Penelitian ini bertujuan untuk mengidentifikasi aktor-aktor kunci dan memahami proses penyebaran informasi yang terbentuk dalam komentar video YouTube “Manfaat dan Cara Membuat Kunyit yang Benar untuk Kesehatan”. Menggunakan Teori Kognitif Sosial Bandura dengan metode analisis jaringan sosial yang dikombinasikan dengan analisis isi komentar. Analisis jaringan mengidentifikasi @dr.emasuperr sebagai sumber informasi ilmiah dan @saptayusmana7022 sebagai validator empiris, yang bersama-sama membentuk struktur jaringan terdesentralisasi. Temuan mengungkapkan mekanisme determinisme timbal-balik yang dinamis: (1) faktor personal (keyakinan individu yang terbentuk melalui testimoni pengguna), (2) faktor perilaku (adopsi praktik kesehatan), dan (3) faktor lingkungan (dukungan sosial dan otoritas medis) yang saling mempengaruhi. Interaksi ketiga komponen SCT ini menciptakan efek bola salju dalam penyebaran informasi.

*) *Corresponding Author*

Keywords: key actors, social cognitive theory, health information, turmeric, YouTube

INTRODUCTION

The popular slogan “Back to Nature” encourages the global community to switch to a healthier lifestyle, starting with using natural medicines. Through its strategic plan “WHO Traditional Medicine Strategy: 2014-2023”, the World Health Organization advocates the use of traditional medicine to its member countries in an effort to support global public health. More than 80% of the world's population in 170 of the 194 WHO member states have utilized various types of traditional medicine to date (World Health Organization, 2023). In addition, WHO has also discussed the role of traditional, complementary and integrative medicine in addressing pressing health challenges and driving progress in global health and sustainable development at the 2023 Traditional Medicine Global Summit. This conference demonstrated the important role of traditional medicine in supporting the delivery of sustainable development.

In Indonesia, the Ministry of Health of the Republic of Indonesia (2020) through the Circular Letter of the Directorate General of Health Services Number: HK.02.02/IV.2243/2020 recommends the use of traditional medicine for health maintenance and treatment as well as disease prevention. Traditional medicine includes materials or ingredients in the form of plants, animals, minerals, variant preparations, or a mixture of these materials. Indonesia, as a tropical country, is known as a living laboratory because it is home to 90% of all types of medicinal plants in the world which are then classified as biopharmaca plants consisting of fifteen types of plants, one of which is turmeric (Nisaa, 2020). Turmeric is one of the medicinal plants popular among Indonesians which is known to have medicinal properties. Turmeric, which is thought to originate from the Southeast Asian region, has also long been used in other countries, such as India and China (Mutis & Karyawati, 2021). Turmeric contains antioxidants, antibacterial, antiviral, antifungal, and anti-inflammatory properties that can be used as a treatment (Shan & Iskandar, 2018).

Currently, many Indonesians still use traditional medicine as an effort to maintain health and cure diseases. Based on the results of the Ministry of Health's Basic Health Research in 2018, 24.6% of Indonesian families utilize family medicinal plants (TOGA) and 31.4% have used traditional health services (Risksedas, 2018). This percentage continues to increase, especially since the Coronavirus disease 19 (Covid-19) pandemic. According to the Ministry of Health of the Republic of Indonesia (2022), 79% of Indonesians consumed traditional medicine during the Covid-19 pandemic. The utilization of plants as a source of treatment has long been carried out by the Indonesian people (Munaeni et al., 2022). Knowledge about the use of traditional medicine has been recognized since ancient times and has been passed down from generation to generation until it becomes a tradition. The long tradition of using traditional medicine in Indonesia reflects the community's long-standing emphasis on the importance of maintaining health. This concept is in line with a broader understanding of disease as a condition that is socially recognized and requires special attention for healing.

The concept of illness in the “illness” dimension is an understanding of illness from a sociological point of view. This concept relates to how society accepts someone who is experiencing illness (both “illness” and “disease”). A person who is in a state of “illness” is usually given a temporary respite from the responsibilities, roles, or habits that are usually carried out when healthy due to their unhealthiness. According to Wardhana, illness in this sociological concept involves a special role that is lived in connection with the pain experienced, as well as new responsibilities, namely seeking healing (Suryanti, 2021). Thus, many people consider health as important and always strive for their health. Medical and non-medical treatments can be used to seek a patient's recovery from an illness.

Medical treatment is chosen because people think that the treatment has been scientifically tested. However, it is not uncommon for patients to switch to non-medical treatment. Patients who switch usually reason that the use of medical drugs can cause side effects to the body, the cost is relatively expensive, and the disease suffered does not go away (Andira & Pudjibudojo, 2020). The tendency to switch from medical drugs to natural medicines is due to the stigma of the community itself which considers the price of chemical drugs to be expensive and the side effects caused are worrying (Munaeni et al., 2022). Traditional medicine is in great demand and increasingly popular among the wider community as a non-medical alternative treatment because it offers several advantages, such as less side effects than medical drugs, easy to obtain, and affordable prices (Ifora et al., 2021).

The use and consumption of herbal medicine in Indonesian society is strongly influenced by the level of individual knowledge. Limited understanding of the proper use of herbal medicine, as well as widespread inaccurate information among the public, has become a new problem that causes fluctuations in the consumption pattern of herbal medicine as a traditional medicine (Adiyasa & Meiyaniti, 2021). In 2024, through a survey by Alodokter as the number one digital health platform in Indonesia, it was found that 45% of users still trust herbal medicine more than modern medicine. Fluctuations in the percentage of alternative medicine use highlight the importance of effective health communication as an effort to disseminate appropriate health information and as a means of health promotion in the digital era.

Health communication is a discipline that plays an important role in the digital age, where change is rapid, difficult to control, and can increase the risk of misinformation. Through health communication, misinformation can be addressed by delivering information that is easy to understand, accurate and trustworthy, making it possible for people to make informed decisions about their health. Because in this digital era, not only doctors and governments have a role in supporting health campaigns, but also patients and all levels of society (Solihin et al., 2023).

Along with digitalization, social media is used as a means of health communication. Many audiences already have access to the internet, so it is expected that the dissemination of health information can occur massively through social media. Social media platforms are designed to facilitate the sharing and exchange of information, participation, and exchange of ideas in a visual network (Fitriani, 2017). One of the most popular social media platforms for health education is YouTube. YouTube is the world's largest video sharing platform that presents a wide variety of video content, including health-related content. The results of We Are Social (2024) research reported that Indonesia is the fourth country with the most YouTube users in the world, reaching 139 million users. Therefore, many health experts utilize YouTube as a medium to share information by presenting health content.

One of the many channels on YouTube that discusses health is the @dr.Emasuperr account. In one of its contents, the @dr.Emasuperr account discusses "Benefits and How to Make Turmeric Correctly for Health". Turmeric is one of the medicinal plants rich in benefits in Indonesia. The content about turmeric has become popular with an audience of around 2.2 million YouTube users. The popularity of this content is closely related to the hereditary habits of Indonesians who often use drugs and herbal concoctions from plants as an alternative treatment so that the content is considered suitable for historical and cultural backgrounds. On the @dr.Emasuperr channel, the content about turmeric is presented with data, facts, and easy-to-understand discussions, so it managed to get around 18,000 likes and 1,489 comments from YouTube users who watched the video. In the content, there is interaction between the doctor and the audience as well as among the audience.

Through Albert Bandura's Social Cognitive Theory, the adoption of health behaviors in the social network of YouTube video comment sections can be identified. Human behavior is

influenced by three factors that include personal, behavioral, and environmental influences (Bandura, 1986). This theoretical approach considers human behavior as a component of a model that interacts with each other to influence the components of environmental circumstances, as well as the human personal component, which consists of individual affection/emotion and cognition (Abdullah, 2019). The development of a reciprocal triadic relationship is influenced by observation of others, interaction with the environment, behavior, and cognition (Firmansyah & Saepuloh, 2022).

Social Cognitive Theory has three important components (mutual determination) that influence human behavior, namely personal, behavioral, and environmental. Personal factors relate to an individual's knowledge, attitudes, skills and beliefs (self-efficacy). Behavioral factors relate to the actions chosen by a person. Behavioral factors in the digital era are influenced by the model that a person chooses in adopting certain behaviors, usually from family, friends, and health figures followed by a person through social media. Environmental factors correlate with the physical environment, accessibility of resources, and social support. In health communication in the digital era, the context of environmental factors can be emphasized on the ease of use of technology, accessibility of health information, and social support as a means of promoting healthy behavior.

Social Cognitive Theory, as it relates to social media communication, states that new concepts, values, behavior patterns and social practices spread rapidly-globally through observational learning, partly due to social networks (Sarkar et al., 2018). According to Sarkar, when using online-based social networks to modify behavior, the idea of reciprocal determinism is crucial. The study mentions that people use social media to actively shape social media platforms into larger networks for social change. The topic of this study was chosen to understand how information about the health benefits of turmeric spreads and to identify the key actors in the social network formed in the comments of the YouTube video “Manfaat dan Cara Membuat Kunyit yang Benar untuk Kesehatan”.

This research was conducted based on previous research that examined Social Cognitive Theory in social networks. The study conducted by Sarkar used SCT to review the research landscape on social media utilization in cancer prevention efforts in young adults. This study looked at Instagram and Twitter social media data to understand health-related behaviors and identify opportunities in cancer prevention. The method used was a literature review and theoretical analysis, focusing on observational studies using social media data.

On the other hand, (Yoon & Tourassi, 2014) used SCT to analyze how information about colon cancer is spread through Twitter, distinguishing between “leaders” who actively spread the word and “followers” who respond to the information. This study utilized the principles of Social Network Analysis to identify and analyze the interactions between leaders and followers in the Twitter network. The results show that news that provides tangible benefits (such as the success of colon screening) receives more attention and traffic on social media, indicating that SCT and SNA can help in designing effective health campaigns.

Departing from the previous literature review, this study identifies knowledge gaps related to the adoption of health behaviors that occur from social networks formed in YouTube video comment sections, specifically related to personal, behavioral, and environmental factors (reciprocal determinism) in the context of traditional medicine from health communication studies. In which, the role of the key actors involved will be analyzed. Unlike previous studies that highlighted the use of social media Twitter and Instagram, this study uses YouTube social media. The difference in disciplines is also a novelty in this research, because in previous studies it was studied with health disciplines.

The urgency of this study lies in the need to understand how health information spreads and influences user behavior in digital communities. With people's increasing reliance on social

media to seek health information, it is important to analyze how interactions within social networks can accelerate the adoption of health behaviors. The focus of this study is to explore the dissemination of information in YouTube video comments about turmeric for health, identify key actors in the network, as well as understand how reciprocal determinants in SCT influence users' adoption of health behaviors.

By understanding this mechanism, this study aims to provide insight into how social media can be optimally utilized to disseminate accurate health information that can influence people's perceptions towards herbal medicine. This novelty will contribute to complete the understanding of the role of social media as a means of disseminating health information through the interactions that occur within it. This becomes important in the digital age, where health information developed on social media can have a direct impact on the health decisions of individuals and society at large.

This study employs two methodological approaches: Social Network Analysis (SNA) and content analysis. SNA, defined as a study that applies graph theory, enables the identification of interaction patterns and relationships between individuals (Tsvetovat & Kouznetsov, 2011). SNA focuses on the actors involved, the relationships that occur, the types of relationships, the number of relationships, structural holes, the duration of relationships, the location of bottlenecks, and the identification of key players (Prihantoro et al., 2021). Within the framework of graph theory, actors are represented as nodes, while their interactions are depicted as edges, forming a visual representation of the community and its interaction dynamics. The SNA method rests on the premise that relationships between actors or nodes hold crucial significance (Bakry & Kusmayadi, 2021). Meanwhile, content analysis is used to understand the network's influence on users. Content analysis in this case includes the content of messages in YouTube videos and comment sections (Nandiwardhana et al., 2019). The comments show the response of the users. User responses can be in the form of active interactions that show audience engagement with the uploaded content (Hadiati & Suksmawati, 2024). The detailed stages of the research are illustrated in the diagram below.

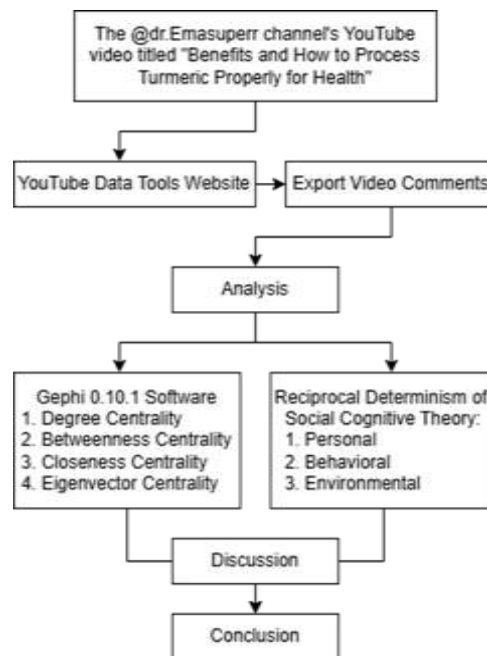


Figure 1. Chart of Research Stages

User comment data from the video "Manfaat dan Cara Buat Kunyit yang Benar untuk Kesehatan" was collected by researchers using YouTube Data Tools in 2024. This data collection yielded 1,085 actors (nodes) and 559 actor interactions (edges), which will be used in the research. The collected data was then analyzed using Gephi version 0.10.1. This study collected user comment data from a specific video.

In this study, user comments on YouTube videos were analyzed to identify key figures within the social network. Centrality analysis was applied using several metrics: degree centrality to measure popularity based on the number of connections, betweenness centrality to measure influence as a connector between users, closeness centrality to measure the proximity between users, and eigenvector centrality to measure influence based on interactions with other influential figures within the network (Alamsyah & Ramadhani, 2020). Network analysis can reveal key structural properties of social media networks, such as centrality, density, and modularity, which can provide insights into user behavior, information diffusion, and network resilience (Elislah, 2023).

This research employed content analysis of user comments on a YouTube video about turmeric to explore the adoption of health behaviors. The data obtained was interpreted through the lens of Social Cognitive Theory, with a focus on the role of actors and social networks formed in the online discussion.

RESULTS AND DISCUSSION

In today's digital era, social networks cannot only be formed by face-to-face interactions. Digital disruption has made the technology for social networking and interaction between individuals easier and more powerful (Chang & Chang, 2023). Therefore, social media platforms as part of today's technology can be a platform for the formation of social networks. YouTube as one of the video-sharing social media platforms has a social networking site where registered users can rate (like or dislike), comment, or share videos they choose (Ertemel & Ammoura, 2021).

This section of the results and discussion presents an in-depth analysis of processed data regarding the social networks formed through the comments column of a YouTube video entitled "Manfaat dan Cara Buat Kunyit yang Benar untuk Kesehatan" which is associated with Social Cognitive Theory.

In social network analysis (SNA), each YouTube user is represented as a point, also known as a node. Interactions between users, specifically in the form of comments, are depicted as lines or edges. A social network study on the YouTube video titled "The Benefits and How to Correctly Make Turmeric for Health" revealed a network formed from 1,085 comments involving 559 user accounts.

Table 1. Degree Centrality (Gephi, 2024)

No	Actor	In-Degree	Out-Degree	Degree Centrality
1.	@dr.Emasuperr	6	176	182
2.	@saptayusmana7022	118	1	119
3.	@rsucim4180	30	1	31
4.	@Quality470	18	1	19
5.	@rofiequrrohman8640	12	1	13

Degree centrality measures how much an account has connections with other accounts in the network. When viewed in table 1, the @dr.Emasuperr account has the highest degree centrality (182), followed by @saptayusmana7022 (119). This shows that @dr.Emasuperr, as the video owner, is the main center of information dissemination, while @saptayusmana7022, as an active user, has a strong influence in the discussion despite having fewer connections.

The @dr.Emasuperr account has a very high out-degree value (176), indicating that it is very active in providing responses or replies to other comments. Meanwhile, the @saptayusmana7022 account has the highest in-degree value (118), which means that comments from this account get a lot of responses from other users. In other words, while @dr.Emasuperr's account disseminates key information, @saptayusmana7022 gets greater response and interaction from the YouTube user community.

Table 2. Betweenness Centrality (Gephi, 2024)

No	Actor	Betweenness Centrality
1.	@dr.Emasuperr	0.000899
2.	@dewiratnap9953	0.000003
3.	@trijiforji	0.000003
4.	@lisaanggraeni226	0.000002
5.	@saptayusmana7022	0.0

Betweenness centrality measures how often an account acts as a connector in the network. Table 2 shows that only a few accounts have betweenness values greater than zero, with @dr.Emasuperr having the highest value (0.000899). However, this value is low, indicating that the network structure is decentralized, with multiple actors playing a role in information dissemination without a single point of control.

In the context of SCT, this low betweenness centrality indicates that information is not centered on a single actor, but spreads organically through various interacting accounts. This suggests that information dissemination in this network is more collective than hierarchical, where information develops through interactions between users without dependence on one central figure.

Table 3. Closeness Centrality (Gephi, 2024)

No	Actor	Closeness Centrality
1.	@dr.Emasuperr	1.0
2.	@dewiratnap9953	1.0
3.	@trijiforji	1.0
4.	@lisaanggraeni226	1.0
5.	@ettyharyati9631	1.0

Closeness centrality measures how quickly an account can reach other accounts in the network. The data shows that 287 accounts, including @dr.Emasuperr, have the highest value of closeness centrality (1.0). This means that in this comment network, many actors have quick access

to the information circulating, which allows for more effective information dissemination.

However, the account @saptayusmana7022 has a closeness centrality of 0, which indicates that although its comments have a strong impact, it does not have quick access to many other users. In other words, @saptayusmana7022's influence is more profound but not extensive, while @dr.Emasuperr has wider access but not as much influence on the discussion as other active user accounts.

Table 4. Eigenvector Centrality (Gephi, 2024)

No.	Actor	Eigenvector Centrality
1	@saptayusmana7022	1.0
2	@rsucim4180	0.29535
3	@Quality470	0.150237
4	@rofiequrrohman8640	0.137399
5	@titikmaryam715	0.078973

Eigenvector centrality measures how influential an account is based on the relationship with other influential accounts. The analysis shows that @saptayusmana7022 has the highest eigenvector centrality (1.0), beating @dr.Emasuperr which is only ranked 47th.

This result indicates that although @saptayusmana7022 has fewer connections than @dr.Emasuperr, its influence is greater in shaping community opinion. This is because the comments from this account are based on personal experiences, which receive a lot of support and validation from other users. In the context of SCT, this phenomenon reflects how real-life experiences of individuals have a greater impact on shaping the behavior of others than information provided by health authorities.

In Social Network Analysis (SNA) of YouTube video comments about turmeric for health, each YouTube user is represented as a node, while interactions between users through comments are represented as edges. Centrality analysis reveals that @dr.Emasuperr and @saptayusmana7022 are the two most central actors in this network. Although both are central, @dr.Emasuperr excels in the number of connections and speed of information access but lacks influence. Conversely, @saptayusmana7022 has a significant influence on other users, although their connections are fewer and their information access is slower.

The findings from the SNA indicate a significant interaction between doctors, acting as video educators, and the viewers. Additionally, there is interaction among the viewers themselves in the video comments section. These interactions play a crucial role in disseminating information about "Manfaat dan Cara Membuat Kunyit yang Benar untuk Kesehatan " The social network formed through comments on the YouTube video illustrates how information can spread extensively through user-to-user interactions.

In this video commentary network, there is a dynamic relationship between these factors. When individuals who initially only acquire information then try turmeric and share their experiences, they indirectly play a role in shaping the larger social environment. Personal experiences shared through comments can influence the beliefs and behaviors of other individuals, thus reinforcing the social learning process as described by Bandura.

Furthermore, to understand more about how this information is received and adopted, it is important to relate these findings to Social Cognitive Theory. This theory has three main

components called reciprocal determinism which include personal, behavioral, and environmental factors. Through the SNA findings, we can see how actors and social networks play a role in the process of disseminating information about the benefits of turmeric, which can then be analyzed using each component of Social Cognitive Theory. In general, the reciprocal determinism model of Social Cognitive Theory can be seen in Figure 2 below.

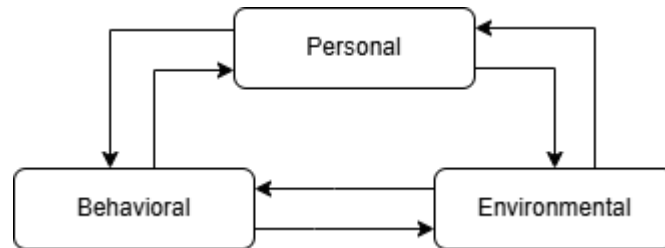


Figure 2. Bandura's Reciprocal Determinism Model of SCT

Bandura's Social Cognitive Theory emphasizes that human behavior is influenced by reciprocal determinism, which involves three primary factors: (1) personal factors, including beliefs, experiences, and individual perceptions of turmeric as an herbal remedy; (2) behavioral factors, such as actions taken after receiving information-like trying turmeric, commenting on videos, or sharing personal experiences; and (3) environmental factors, which encompass how social interactions within comment sections affect individual decision-making, including responses from other users and the credibility of information sources.

The first component is the personal factor, which reflects how an individual perceives turmeric as a health solution based on their beliefs, knowledge, or prior experiences. Some users already held beliefs about turmeric before watching the video, while others developed trust after reading comments from other users. For example, here are some excerpts from user comments.

"My experience of routinely drinking turmeric tea every day for 3 years, it's easy to make... the benefits are many..." Showing @rsucim4180's strong belief in the benefits of turmeric based on long-term personal experience.

"Sharing my experience, 1. My husband has colon cancer, rectum when bleeding medicine from the doctor... I use turmeric... drink it immediately the bleeding stops. 2. When I have diarrhea and vomiting, I cut a thumb-sized piece of old turmeric, I add water... I drink it immediately, my stomach feels good, I don't even vomit or have diarrhea..." User @srinovitaria7486 took action after facing an emergency with a turmeric mixture and successfully provided a healing effect.

"I have a personal experience... stomach ache to the back more than 3 times, I was confused because there was no stomach ache medicine, finally I crushed 3 fingers of turmeric, I added half a glass of boiled water, then I filtered it, I drank it warm, Alhamdulillah healed, it was truly a valuable experience." It can be seen that @trisetyahaniksaratno3909's belief in turmeric emerged after a successful personal experience in overcoming a health problem.

"Doc, should it be cooked to get the benefits? If I dry the turmeric and make it into flour, put it in a capsule. Drink it with milk, is it optimal, doc?" Showing that @rknee507's personal experience influences users' decisions to seek additional, more accurate information.

"My personal experience for chronic stomach acid, namely grated turmeric, then brewed with hot water. Wait a few minutes until warm then drink. Drink it morning and night before eating. Delicious. Only 2 days to finish." Reflecting @seawoman15's belief in the effectiveness of turmeric after trying and getting positive results.

The comments above indicate that personal factors play a crucial role in shaping an individual's initial response to information about turmeric. Individuals with positive prior experiences are more likely to believe in turmeric's benefits, while those who are doubtful tend to seek additional validation before trying it. The dimension of personal factors illustrates how self-efficacy develops through various pathways. Users like @rsucim4180 demonstrate strong confidence in turmeric's benefits based on long-term personal experience. Meanwhile, @rknee507's request for dosage clarification from medical experts shows how social persuasion strengthens beliefs during health decision-making. The case of @srinovitaria7486, who successfully used turmeric in a cancer-related emergency, exemplifies how intense personal experiences create strong health convictions that are then disseminated through digital testimonials.

Personal factors encompass not only cognition and beliefs but also involve intrapersonal communication and meaning construction-how individuals reflect on, interpret, and build meaning from the information they receive. Comments from users such as @rsucim4180, @srinovitaria7486, and @seawoman15 indicate that personal experience is a primary source for developing self-efficacy and outcome expectations. This process represents meaning making, where individuals internalize information through their subjective experiences. In the context of social media, interactions with video content and other comments serve as intrapersonal communication that reinforces beliefs. This also demonstrates cognitive mediation, where individuals are not passive recipients of messages but actively evaluate and construct meaning based on prior knowledge and experience.

The second component is the behavioral factor. This factor describes how individuals act after receiving information. Many users immediately try turmeric after watching explanatory videos or reading comments containing other users' experiences (testimonials). Below are several excerpts from users related to the behavioral factor.

"Thank you for sharing important information... I have applied this, I often have acid reflux, wheezing, shortness of breath... after taking according to your advice, now it's better... and my mood is also better..." Indicates that @chois_motivation acts after getting other users' suggestions and then feeling the benefits. Information received from other users encourages individuals to take similar actions.

"My experience, I once had quite acute acid reflux, went to the doctor and changed doctors 3 times but it still didn't get better, until I gave up hope, I didn't take medicine, I only drank grated turmeric squeezed with honey without cooking 3 times a day, for food only porridge/soft rice with boiled egg side dish... It didn't take 4 days to heal, but you have to be patient, the effect is gradual, not like taking medicine. I also tried the method I use on a neighbor who had the same complaint... thank God it healed..." Describes the actions taken by @saptayusmana7022 after trying various medical methods, until finally turning to turmeric and sharing his experience with others who indirectly influenced others to try using turmeric.

"I once had a chronic dry cough. I took various medicines. But it didn't get better, my stomach felt uncomfortable because of the constant coughing. Finally, a relative told me to snack on turmeric... thank God I got better, my throat isn't itchy anymore" Indicates that @Gamers-u6s experiences behavioral changes due to social influence, especially changes in health behavior related to the transition from using medical drugs to herbal

remedies on the recommendation of people he trusts.

These comments demonstrate that social learning occurs within the comment network. Individuals learn from others' experiences, then try it themselves, and eventually share their own experiences again. This creates a cycle of learning and social reinforcement that accelerates the dissemination of information and behavioral change. Behavioral factors are evident through observable patterns of action following exposure to information. For example, @chois_motivation's comment illustrates behavioral modeling, where users imitate actions described by peers. The narrative from @saptayusmana7022 about switching to turmeric after trying conventional treatments reveals a process of trial and adoption reinforced by successful outcomes. Such behavioral changes often lead to knowledge dissemination, as seen when @Gamers-u6s adopted turmeric use for chronic cough based on family recommendations and subsequently shared positive experiences.

Behavioral factors, manifested as trying turmeric and sharing experiences, represent interpersonal communication occurring within digital social networks. Comments from @chois_motivation and @saptayusmana7022 exemplify social learning happening directly through comment interactions. This reflects dialogic communication, where messages are not unidirectional but involve exchange of information, feedback, and negotiation of meaning among users. The process also illustrates diffusion of innovation in health communication, where an innovation (turmeric use) spreads through social networks based on testimonials and personal recommendations. Sharing experiences back into the social environment reinforces social norms and builds collective efficacy within the community.

The final component of reciprocal determinism relates to environmental factors involving responses from other users, social support and credibility of information sources. Some user comments supporting these factors include the following.

"Thank you, doc, this is very useful for me who suffers from acute stomach ulcers because I have consumed it but it was uncomfortable because it turned out to be the wrong way to consume it." It can be seen from @bangihonchammel8889's comment, that the user was able to straighten out his understanding due to the educational video and reply comments from the doctor concerned.

"Hello, for curcumin from turmeric, it is better to mix it with a little fat.. you can use olive oil or nuts which are also rich in good fats..." The account @dr.Emasuperr as the educating doctor replied to the comment by providing scientifically-based information that can influence an individual's decision to consume turmeric in a certain way.

"That's right, ma'am... just a little pepper for taste. Just 2 thumbs of turmeric each time you boil it..." The account @dr.Emasuperr Showing how information from the video owner's authority figure who is a doctor helps strengthen individuals' belief in a more effective method of turmeric consumption. "I have also tried this method on a neighbor who had the same complaint..." The comment from @saptayusmana7022 indicates that information received from the environment (community or other comments) can spread more widely and influence more individuals.

"It turns out that there are rules, yes, doc, so that it can be right on target, like chemical drugs, there is a dosage..." The comment from @hestikademayanti1921 shows that individuals receive information from authority figures in the network.

"I also gave my child milk mixed with turmeric, the results were extraordinary for my child. And it turns out that here the doctor confirmed my method" The comment from @trijiforji shows that it turns out that the information provided by a credible source

validates his experience using turmeric with milk, thus strengthening his belief.

"Thanks, Mr. Sapta for sharing. Please tell me, sir, how much turmeric is grated to use once....!" From @roslinabetty's comment 6594 shows how individuals learn from other users' comments and not just from videos.

In SCT, the social environment plays a crucial role in shaping individual decisions. Many users in the comment network who were initially hesitant were eventually motivated to try turmeric due to the abundance of positive experiences shared. The greater the number of supportive comments regarding certain information, the stronger its influence on individual decisions. Besides user testimonials, source credibility is highly influential, where doctors as educators directly provide education through videos and respond to various user questions in the comment section.

Environmental factors in this digital ecosystem operate through two main mechanisms: social support and authoritative validation. Emotional support is evident in comments such as the expression of gratitude from @bangjhonchammel8889, while informational support comes from fellow users and experts. Doctor @dr.Emasuperr offers scientifically based advice on curcumin absorption, reinforcing an authoritative voice that enhances information credibility. This normative social influence fosters community belief in turmeric's efficacy, as exemplified by @trijiforji's testimonial validating turmeric with milk for children's cough.

Within SCT, environmental factors are understood as the communication context involving social interactions in comment sections and the credibility of information sources. Social media as mediated communication provides a dialogic space enabling interactions among users from diverse backgrounds. The role of authority figures like @dr.Emasuperr in delivering science-based education exemplifies source credibility. This credibility increases central route processing, whereby individuals are more likely to accept and internalize messages due to trust in the source. Moreover, social interactions in comment sections shape social norms that influence individual behavior, consistent with the concept of social influence in health communication.

The cycle of reciprocal determinism within the social network of video comments can be described as follows: (1) Environmental Influence on Personal Factors: the abundance of successful testimonials shapes beliefs in turmeric's efficacy. (2) Personal Influence on Behavioral Factors: strong beliefs motivate users to try consuming turmeric. (3) Behavioral Influence on Environmental Factors: users' successful experiences generate testimonials that reinforce information dissemination within the environment. This cycle continuously repeats, creating a snowball effect in the spread of information and adoption of herbal-based health behaviors.

Therefore, the Social Network Analysis (SNA) results show that the dissemination of information about the benefits of turmeric in YouTube video comments is decentralized, with two main actors, namely @dr.Emasuperr as a source of medical information and @saptayusmana7022 as a user who shares personal experiences. This network structure allows for dynamic interactions, where information not only comes from the video owner, but also from other users who reinforce existing health information. In the context of SCT, these findings confirm that reciprocal determinism plays an important role in shaping users' perceptions and behaviors. Personal factors, such as individual beliefs and experiences with turmeric, are influenced by environmental factors, including comments from other users and the credibility of information sources. This then impacts behavioral factors, where many users are moved to try turmeric after reading testimonials in the comment section. The dynamic interplay among personal, behavioral, and environmental factors ultimately shapes health-related behaviors in digital spaces. Hence, social interaction in digital networks can accelerate the spread of health information, but it also needs to be balanced with science-based education so that the information circulating remains accurate and reliable.

CONCLUSION

Social Network Analysis (SNA) combined with Social Cognitive Theory (SCT) reveals that the YouTube comment section on turmeric's benefits forms a dynamic health communication environment. Through SNA, information dissemination occurs within a decentralized network structure, where @dr.Emasuperr acts as a credible scientific source and @saptayusmana7022 serves as a validator by sharing real-life experiences. This interaction pattern reflects the principle of reciprocal determinism in SCT, involving three interconnected components: the formation of personal beliefs through user testimonials, motivation to take concrete action, and the continuous enrichment of the informational environment through experience sharing. This dynamic interplay not only accelerates the adoption of new health behaviors among the public but also creates an ecosystem where accurate medical information is reinforced and validated by empirical user experiences. Thus, the findings demonstrate that the combination of scientific authority and personal experiential evidence in digital health communication generates a synergy that expands reach and enhances the persuasive impact of health messages, ultimately contributing to health behavior change. Moreover, this model offers a novel approach to delivering health information in the digital era.

REFERENCES

- Abdullah, S. M. (2019). Social cognitive theory: A Bandura thought review published in 1982-2012. *Psikodimensia: Kajian Ilmiah Psikologi*, 18(1), 85–100.
- Adiyasa, M. R., & Meiyanti, M. (2021). Pemanfaatan obat tradisional di Indonesia: distribusi dan faktor demografis yang berpengaruh. *Jurnal Biomedika Dan Kesehatan*, 4(3), 130–138.
- Alamsyah, A., & Ramadhani, D. P. (2020). *Pengenalan Social Network Analysis: Konsep dan Praktis*. Andry Alamsyah.
- Andira, D. A., & Pudjibudojo, J. K. (2020). Pengobatan Alternatif Sebagai Upaya Penyembuhan Penyakit. *Insight: Jurnal Pemikiran Dan Penelitian Psikologi*, 16(2), 393–401.
- Andrian, K. (2024, February 19). 45% Masyarakat Indonesia Masih Lebih Percaya Obat Herbal Dibanding Obat Modern. <https://www.alodokter.com/45-masyarakat-indonesia-masih-lebih-percaya-obat-herbal-dibanding-obat-modern>
- Bakry, G. N., & Kusmayadi, I. M. (2021). Peran pers sebagai aktor gerakan digital tagar#solidaritasuntukntt di Twitter. *Jurnal Kajian Jurnalisme*, 5(1), 98–114.
- Bandura, A. (1986). Social foundations of thought and action. *Englewood Cliffs, NJ*, 1986(23–28), 2.
- Chang, C.-W., & Chang, S.-H. (2023). The impact of digital disruption: Influences of digital media and social networks on forming digital natives' attitude. *Sage Open*, 13(3), 21582440231191740.
- Direktorat Jenderal Pelayanan Kesehatan. (2020). *Surat Edaran Nomor: HK.02.02/IV.2243/2020 tentang Pemanfaatan Obat Tradisional untuk Pemeliharaan Kesehatan, Pencegahan Penyakit, dan Perawatan Kesehatan*.
- Elislah, N. (2023). Discourse Network Analysis on Delaying Elections in President Joko Widodo's Era. *Jurnal ASPIKOM*, 8(2), 225–240.
- Ertemel, A., & Ammoura, A. (2021). Is YouTube a search engine or a social network? Analyzing evaluative inconsistencies. *Business and Economics Research Journal*, 12(4).

- Firmansyah, D., & Saepuloh, D. (2022). Social learning theory: Cognitive and behavioral approaches. *Jurnal Ilmiah Pendidikan Holistik (JIPH)*, 1(3), 297–324.
- Fitriani, Y. (2017). Analisis pemanfaatan berbagai media sosial sebagai sarana penyebaran informasi bagi masyarakat. *Paradigma*, 19(2), 148–152.
- Hadiati, N. A., & Suksmawati, H. (2024). Using Instagram as a Media for Various Information about Yogyakarta (Content Analysis of the Instagram Account@ wonderfuljogja). *Jurnal Dakwah Dan Komunikasi*, 9(1), 91–104.
- Ifora, I., Sintia, B., & Srangenge, Y. (2021). Pengaruh penghambatan enzim siklooksigenase-2 dan aktivitas antiinflamasi dari ekstrak daun ketumbar (*Coriandrum sativum* L.). *Jurnal Kefarmasian Indonesia*, 17–24.
- Munaeni, W., Mainassy, M. C., Puspitasari, D., Susanti, L., Endriyatno, N. C., Yuniastuti, A., Wiradnyani, N. K., Fauziah, P. N., Achmad, A. F., & Rohmah, M. K. (2022). *Perkembangan Dan Manfaat Obat Herbal Sebagai Fitoterapi*. Tohar Media.
- Mutis, A., & Karyawati, A. T. (2021). Potensi kunyit (*Curcuma longa*) sebagai nutraceutical. *Jurnal Biotropikal Sains*, 18(2), 93.
- Nandiwardhana, B. G., Pratama, B. I., & Tamitiadini, D. (2019). Study of Communication Network Travel-Related eWOM on Instagram Social Media. *Jurnal Pekommas*, 4(1), 97–110.
- Nisaa, K. (2020). *Pemanfaatan Tanaman Kunyit (Curcuma longa) Untuk Dijadikan Jamu Tradisional Sebagai Obat Penyakit Maag Didaerah Sumber, Kabupaten Cirebon*.
- Prihantoro, E., Rakhman, F. R., & Ramadhani, R. W. (2021). Digital Movement of Opinion Mobilization: SNA Study on# Dirumahaja Vs.# Pakaimasker Gerakan Digital Mobilisasi Opini: Studi SNA# Dirumahaja Vs# Pakaimasker. *Jurnal ASPIKOM*, 6(1), 77–93.
- Sarkar, U., Le, G. M., Lyles, C. R., Ramo, D., Linos, E., & Bibbins-Domingo, K. (2018). Using social media to target cancer prevention in young adults. *Journal of Medical Internet Research*, 20(6), e203.
- Shan, C. Y., & Iskandar, Y. (2018). Studi kandungan kimia dan aktivitas farmakologi tanaman kunyit (*Curcuma longa* L.). *Farmaka*, 16(2).
- Solihin, O., Sos, S., Kom, M. I., & Abdullah, A. Z. (2023). *Komunikasi Kesehatan Era Digital: Teori dan Praktik*. Prenada Media.
- Suryanti, P. E. (2021). Konsep Sehat-Sakit: Sebuah Kajian Filsafat. *Sanjiwani: Jurnal Filsafat*, 12(1), 90–101.
- Riskesdas. (2018). *Laporan Nasional RISKESDAS 2018*.
- Tsvetovat, M., & Kouznetsov, A. (2011). *Social Network Analysis for Startups: Finding connections on the social web*. “O’Reilly Media, Inc.”
- We Are Social. (2024). *DIGITAL 2024 INDONESIA*. <https://wearesocial.com/id/blog/2024/01/digital-2024/>
- Widyawati. (2022, June 1). *Formularium Fitofarmaka, Upaya Kemenkes Tingkatkan Pengembangan Industri Obat Tradisional di Indonesia*. <https://kemkes.go.id/id/%20formularium-fitofarmaka-upaya-kemenkes-tingkatkan-pengembangan-industri-obat-tradisional-di-indonesia>
- World Health Organization. (2013). *WHO Traditional Medicine Strategy 2014-2023*. WHO Press.
- World Health Organization. (2023, August 10). *WHO convenes first high-level global summit on traditional medicine to explore evidence base, opportunities to accelerate health for all*. <https://www.who.int/news/item/10-08-2023-who-convenes-first-high-level-global->

summit-on-traditional-medicine-to-explore-evidence-base--opportunities-to-accelerate-health-for-all

Yoon, H.-J., & Tourassi, G. (2014). Analysis of online social networks to understand information sharing behaviors through social cognitive theory. *Proceedings of the 2014 Biomedical Sciences and Engineering Conference*, 1–4.