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Strengthening Health Information Systems in Sabah: Lessons from the MOH ANMS

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ABSTRACT

Health information systems are essential for delivering health education and promoting healthy lifestyles among youth in geographically diverse regions like Sabah, Malaysia. The Ministry of Health (MOH) implemented the Agenda Nasional Malaysia Sehat (ANMS) to improve health communication and disease prevention. However, the effectiveness of these digital health communication systems in reaching university students remains underexplored. This study evaluates the awareness, brand perception, and platform preferences regarding the MOH ANMS campaign among youth in Sabah. A quantitative cross-sectional survey was administered to 34 undergraduate students at Universiti Malaysia Sabah (UMS). Data were collected using a structured questionnaire and analyzed through descriptive frequency analysis to assess awareness levels, brand perception, and media channel preferences. The results indicate moderate awareness of the ANMS campaign among respondents. Despite varying exposure levels, students consistently reported positive perceptions of the ANMS brand identity, agreeing that the logo and messaging effectively convey sincerity, confidence, and national relevance. Respondents also rated the MOH as a highly trustworthy and credible source of health information. Notably, the data reveal a strong preference for digital channels, with a clear majority identifying social media as the most useful and effective platform for accessing ANMS-related content, while traditional media platforms were viewed as less sufficient for youth engagement. The study concludes that strengthening health information systems in Sabah requires a strategic shift toward digital-first communication. The MOH should prioritize social media optimization and targeted online campaigns to improve youth awareness and sustain engagement. Aligning national health initiatives with the digital consumption habits of university students will enhance information accessibility and support broader public health objectives.

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1. Introduction

Health communication is the foundation of public health education and disease prevention. Effective communication ensures that health messages reach the target audience and influence their daily behaviors. For national health campaigns to succeed, the communication strategy must align with the preferences and habits of the target demographic [2]. Youth and young adults process health information differently from older generations. They prefer interactive, visually engaging, and peer-relatable content over formal or clinical messaging. Studies show that when health communication uses informal language and relatable scenarios, youth are more likely to pay attention and retain the information [7]. Furthermore, young people expect health messages to be easily accessible on the platforms they use daily. If the communication style is too rigid or the information is difficult to understand, youth will quickly disengage from the campaign.

The shift from traditional media to digital platforms has changed how health campaigns are delivered, forming modern health information systems. These systems rely on various communication channels to distribute health messages, track public engagement, and evaluate the reach of national health campaigns [12]. Youth now rely heavily on social media and mobile applications for their daily information needs. Research indicates that social media is a more effective platform for reaching young adults because it allows for two-way communication, peer sharing, and immediate feedback [11]. University students, in particular, use digital networks not just for entertainment, but to seek out information that affects their daily lives, including health and wellness advice [2].

In Malaysia, the Ministry of Health (MOH) regularly launches national campaigns to address rising non-communicable diseases and promote healthy lifestyles. The Agenda Nasional Malaysia Sihat (ANMS) is a recent framework designed to unify these health communication efforts [9]. The ANMS aims to create a strong, recognizable brand for national health initiatives, using a specific logo and color scheme to represent energy, strength, and confidence. The success of this initiative requires the target population to not only access the information but also perceive the health messages as credible, relevant, and easy to understand [5].

Sabah presents a unique context for the implementation of national health communication systems. The state features diverse geographical areas, varying levels of digital infrastructure, and a highly diverse youth population. While the MOH deploys the ANMS framework nationwide, the specific reception, brand perception, and platform preferences among university students in Sabah remain under-researched. Previous studies on Malaysian health campaigns often focus on urban populations in Peninsular Malaysia or evaluate clinical data systems rather than public-facing digital health communication [5]. There is a clear gap in understanding how effectively the ANMS digital health communication reaches youth in regional settings like Sabah, and whether the current media channels align with their consumption habits.

To address this gap, this study evaluates the awareness, brand perception, and platform preferences regarding the MOH ANMS campaign among undergraduate students at Universiti Malaysia Sabah (UMS). Specifically, the research focuses on students from the Faculty of Business, Economics and Accountancy (FPEP). By analyzing survey data from 34 respondents using descriptive frequency analysis, this study identifies the strengths and weaknesses of the current ANMS digital communication strategy. The findings will provide actionable insights for the MOH to strengthen health information systems in Sabah, optimize digital platform usage, and ensure that national health agendas effectively translate into positive health behaviors among the youth.

2. Literature Review

2.1 Health Communication and Youth Engagement

Health communication is the primary tool for public health education and disease prevention. Effective communication ensures that health messages reach the target audience and influence their daily behavior. For national health campaigns to succeed, the communication strategy must match the preferences and habits of the target group [2]. Young people process health information differently than older adults. They prefer interactive and visual content rather than formal or clinical text.

Research shows that when health messages use everyday language and relatable situations, young people pay more attention and remember the information better [4]. Young adults also expect health advice to be easy to find on the apps and websites they already use. If the communication is too strict or hard to read, they will simply ignore it and look for information elsewhere [10].

2.2 Digital Media as the Primary Channel for Health Information

The move from traditional media to digital platforms has changed how health campaigns are delivered. In the past, television, radio, and printed brochures were the main ways to share public health messages [10]. Today, young people rely mostly on social media and mobile apps for their daily information. Studies show that social media is much better for reaching young adults because it allows them to share posts, ask questions, and get immediate feedback [11].

Traditional media can still help build general awareness, but digital platforms are needed for actual engagement and a deeper understanding of health topics among students [2]. University students do not just use the internet for entertainment. They actively use digital networks to find advice on wellness and disease prevention that affects their daily lives [4].

2.3 Brand Perception, Trust, and Message Clarity

The success of any health campaign depends heavily on how the audience views the brand and the organization behind it. A strong brand identity, including the logo and the campaign name, helps people recognize and remember the health message [6,8]. In health communication, the brand needs to show sincerity, confidence, and relevance to the people it is trying to reach. If the brand looks weak or unappealing, the audience might ignore the campaign entirely.

Trust is another major factor in whether people will accept a health message. When the public believes the health authority is honest and credible, they are much more likely to follow the advice [10]. Young people are especially careful about where they get their health information. If they doubt the source, they will reject the message. Clear and simple messaging also reduces confusion, making it easier for youth to apply the health information in their real lives [12].

2.4 The Malaysian Context and the ANMS Campaign

In Malaysia, the Ministry of Health (MOH) regularly launches national campaigns to fight non-communicable diseases and promote healthy living. The Agenda Nasional Malaysia Sihat (ANMS) is a recent framework created to bring all these health communication efforts together under one clear brand [9]. The ANMS uses a specific logo and color scheme to show energy, strength, and national commitment. The goal is to make national health initiatives easily recognizable to the public.

Even though the MOH uses both traditional and digital media for these campaigns, we still need to understand how university students in Sabah actually receive and react to the ANMS brand. Previous studies on Malaysian health campaigns mostly focus on cities in Peninsular Malaysia or look at clinical data systems instead of public digital communication [5]. Finding out which media platforms Sabah students prefer and how they view the ANMS brand will help the MOH improve its strategy for better youth engagement [9].

3. Methodology

This study used a quantitative cross-sectional survey design to evaluate youth engagement with the Ministry of Health's Agenda Nasional Malaysia Sihat (ANMS) campaign. The target population comprised undergraduate students at Universiti Malaysia Sabah (UMS). Using purposive sampling, a total of 34 students from the Faculty of Business, Economics and Accountancy (FPEP) were selected to participate. This faculty was chosen because its students represent a diverse group of youth who regularly use digital platforms, making them an appropriate group to assess modern health communication strategies. The sample size provides sufficient preliminary data to identify clear trends in campaign awareness and media preferences within this regional university context [3].

Data were collected using a structured online questionnaire distributed via a digital link over a two-week period. The instrument was divided into three sections: demographic profile, ANMS brand perception, and media channel preferences. It measured the students' awareness of the campaign, their agreement with the brand identity, and their preferences for social media versus traditional media platforms. Responses for the perception and preference items were recorded on a five-point Likert scale. The collected data were analyzed using descriptive frequency analysis to calculate the frequencies and percentages of each response category. This analytical approach allowed the researchers to clearly identify the dominant trends in how the students perceive the ANMS brand and which communication channels they find most useful for health information [1].

4. Findings and Results

4.1 Demographic Profile of Respondents

The survey collected valid responses from 34 undergraduate students at Universiti Malaysia Sabah (UMS). The demographic data revealed that the majority of the respondents were female ($n=24$, 70.6%), while male respondents accounted for the remainder ($n=10$, 29.4%). In terms of age, the sample was highly concentrated in the early twenties, with 21-year-olds forming the largest group ($n=21$, 61.8%), followed by 20-year-olds ($n=8$, 23.5%), 23-year-olds ($n=3$, 8.8%), and 22-year-olds ($n=2$, 5.9%). The ethnic composition of the sample reflected the diversity of Sabah. The largest groups were Bajau ($n=7$, 20.6%), Chinese ($n=4$, 11.8%), and Kadazan ($n=4$, 11.8%). Other represented groups included Suluk ($n=3$, 8.8%), Sungai ($n=2$, 5.9%), Brunei ($n=2$, 5.9%), and Tidung ($n=2$, 5.9%), alongside single respondents identifying as Arab, Melayu, Bugis, Banjar, Tambonuo, Rungus, Dusun, Bangladeshi, and Buddha (each $n=1$, 2.9%). All 34 respondents (100%) were enrolled in the Faculty of Business, Economics and Accountancy (FPEP) or its equivalent naming variations.

4.2 Campaign Awareness and Brand Perception

When asked if they had previously heard of or seen the Agenda Nasional Malaysia Sihat (ANMS) campaign, 41.2% of respondents ($n=14$) indicated "Yes," while 58.8% ($n=20$) responded "No." Despite this moderate baseline awareness, the brand perception among those who evaluated the campaign

elements was overwhelmingly positive. Regarding the brand name representing sincerity and honesty, 100% of respondents agreed (n=19, 55.9%) or strongly agreed (n=15, 44.1%). Similarly, for the brand name representing confidence, 97.1% of respondents agreed (n=18, 52.9%) or strongly agreed (n=15, 44.1%), with only one respondent (2.9%) disagreeing.

The clarity and credibility of the campaign information also received maximum positive ratings. All 34 respondents (100%) indicated that the ANMS campaign information is easily understandable, with 41.2% (n=14) strongly agreeing and 58.8% (n=20) agreeing. Furthermore, 100% of the sample perceived the provider posting the ANMS campaign as trustworthy, with 41.2% (n=14) strongly agreeing and 58.8% (n=20) agreeing. These results demonstrate that when the ANMS brand and its messages are encountered, they are perceived as clear, credible, and well-designed by the youth demographic.

4.3 Media Channel Preferences

The data revealed a distinct and uniform preference for digital platforms over traditional media for accessing health information. When asked if they use modern media (social media) to search for ANMS-related information, 100% of respondents agreed (n=20, 58.8%) or strongly agreed (n=14, 41.2%). More specifically, 100% of the sample agreed (n=20, 58.8%) or strongly agreed (n=14, 41.2%) that modern media is a better source of ANMS information than other media platforms such as television, radio, or print.

In contrast, traditional media was viewed as less effective and less consistent for this specific demographic. When asked if information reported by traditional media could change their opinion about ANMS, responses were mixed: 44.1% (n=15) strongly agreed and 41.2% (n=14) agreed, but a notable segment expressed neutrality (n=3, 8.8%), disagreement (n=1, 2.9%), or strong disagreement (n=1, 2.9%). Similarly, when asked if traditional media (television, magazines, brochures) is a very effective platform for understanding ANMS, only 82.4% (n=28) agreed or strongly agreed, while 8.8% (n=3) were neutral, 2.9% (n=1) disagreed, and 5.9% (n=2) strongly disagreed. The frequency distribution clearly indicates that while traditional media retains some baseline utility, social media is the dominant and preferred channel for youth engagement with national health campaigns in this regional university context.

5. Discussion

5.1 Campaign Awareness and Brand Perception

The findings of this study reveal a distinct pattern in how university students in Sabah interact with the MOH ANMS campaign. While initial awareness of the campaign remains moderate, with only 41.2% of respondents reporting prior knowledge of it, the brand perception among those who evaluated it was overwhelmingly positive. Specifically, 100% of the sample agreed that the ANMS brand name conveys sincerity, confidence, and trustworthiness, and that the campaign information is easily understandable. This indicates that the core design and messaging of the ANMS campaign are highly effective once the target audience actually encounters them. The high level of trust and clarity suggests that the MOH has successfully created a credible and relatable brand identity for its national health initiatives.

This pattern aligns with established theories on brand identity and health communication. Keller [6] notes that a strong, consistent brand identity builds familiarity and trust, which are essential for encouraging the audience to accept health advice. Furthermore, Hovick and Freimuth (2013) emphasize that when the public views a health authority as credible and the messaging as clear,

young people are much more likely to accept and apply the information. The moderate awareness level in this study suggests that while the ANMS "product" is well-designed and trusted, the initial "distribution" or reach needs improvement. The MOH must find ways to increase baseline awareness so that more students are exposed to this highly credible brand.

5.2 Digital Media Preferences and Health Information Seeking

The data clearly demonstrate a uniform preference for digital platforms over traditional media for accessing health information. All 34 respondents (100%) agreed that they use modern media, specifically social media, to search for ANMS-related information and that it is a better source than traditional platforms like television, radio, or print. In contrast, traditional media received mixed reviews, with a notable portion of students expressing neutrality or disagreement regarding its effectiveness in changing their opinions or providing sufficient information. This confirms that university students in Sabah rely almost entirely on digital networks for their daily health information needs and find traditional broadcast methods less relevant to their lifestyles.

These findings strongly support existing literature on youth digital health behavior. Moorhead *et al.*, [10] and Ventola [11] found that young adults prefer digital media because it offers interactivity, convenience, and the ability to share information with peers. Chou *et al.*, [2] also highlighted that youth expect health information to be easily accessible on the digital platforms they already use for entertainment and socializing. The low effectiveness of traditional media in this study confirms that standard broadcast methods are insufficient for active youth engagement. To reach this demographic, health information systems must operate primarily within the digital spaces where young people spend their time, allowing for two-way communication and immediate access to health resources [12].

5.3 Implications for Strengthening Health Information Systems in Sabah

To strengthen health information systems in Sabah, the MOH must align its communication strategy with the digital habits of regional youth. The ANMS campaign has a strong, trusted, and clear brand identity, but the moderate awareness level indicates a gap in initial reach. The most practical lesson from this study is that the MOH should shift its primary focus toward social media optimization. By pushing the trusted ANMS brand more aggressively through targeted social media campaigns, the MOH can increase baseline awareness and ensure that more students are exposed to the health messages. Maintaining the high quality and clarity of the content while expanding its digital distribution will directly improve youth engagement and health literacy.

Furthermore, the diverse ethnic representation in the sample, including Bajau, Kadazan, Chinese, and other local groups, highlights the need for culturally inclusive digital communication. The Institute for Public Health [5] emphasizes the importance of targeted communication strategies that reflect the diversity of the Malaysian population. By utilizing social media, the MOH can tailor health messages to different cultural contexts within Sabah, ensuring that the ANMS campaign resonates with all student groups. Adapting digital health systems to the specific consumption habits of local demographics is essential for improving overall health outcomes and ensuring that national health agendas are effectively implemented in regional settings [12].

6. Implications

The practical implications of this study highlight the need for the Ministry of Health to reallocate communication resources toward digital platforms. Since the ANMS brand already possesses high credibility and clarity among the youth, the primary challenge is increasing baseline awareness. Health communicators should shift from traditional broadcast methods to targeted social media campaigns. This involves creating interactive, visually engaging, and peer-oriented content that fits naturally into the daily digital routines of university students. By utilizing the platforms where youth already spend their time, the MOH can significantly improve the reach and active engagement of the ANMS campaign [2,10].

From a regional policy perspective, the findings emphasize the importance of tailoring health information systems to the specific demographic and cultural context of Sabah. The diverse ethnic representation in the sample indicates that a single, uniform communication strategy may not be fully effective. Digital platforms offer the flexibility to deliver culturally tailored health messages that resonate with different local groups, such as the Bajau, Kadazan, and Chinese communities. Furthermore, universities like UMS can serve as strategic hubs for health promotion. Integrating the ANMS framework into university digital ecosystems, student portals, and campus activities can help bridge the awareness gap and ensure that national health agendas are effectively adopted by regional youth [5,12].

7. Conclusion

This study evaluated the awareness, brand perception, and media preferences regarding the MOH ANMS campaign among 34 undergraduate students at Universiti Malaysia Sabah. The findings reveal that while initial campaign awareness remains moderate, the students who evaluated the campaign reported high levels of trust, clarity, and positive brand perception. Furthermore, the data demonstrate an overwhelming preference for social media over traditional media for accessing health information. The study concludes that strengthening health information systems in Sabah requires the MOH to maintain its credible brand identity while shifting its primary distribution strategy toward digital and social media platforms. By aligning health communication with the digital habits of regional youth, the MOH can effectively close the awareness gap and promote healthier lifestyles among young adults.

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