

Calling for Multiculturalism-Based Communication Campaigns in Early Prevention of Youth Diabetes: Examination of Contemporary Indonesia

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Abstract

The increasing incidence of type 2 diabetes mellitus (DMT2) among Indonesian adolescents has prompted the consideration of early detection and management in school-age individuals. One contributing factor is the spatial shift phenomenon, where rural and urban areas in Indonesia are becoming more connected, leading to a uniform market for food and beverage options that pose a higher risk of developing diabetes. This study examines three key aspects of Indonesia's ethnically diverse youth population: their lifestyle, use of information technology, and dietary choices. These factors significantly impact their likelihood of consuming foods and beverages that are harmful for individuals with diabetes. The study, conducted using a library-centric research approach, reveals that Indonesian youths' daily routines blend traditional and modern cultural practices which profoundly influenced by technological advancements, social media prevalence, and globalization. Interestingly, the findings highlight that no communication campaigns have been launched to address diabetes prevention among Indonesian adolescents from a multicultural perspective. The research also found that it is crucial for DMT2 prevention initiatives to develop effective strategies that can penetrate the subconscious mindset of individuals living in urban and rural areas while considering Indonesia's diverse cultural context. Efforts should be made to raise awareness and provide guidance tailored to different cultural backgrounds to combat the rising problem of diabetes among Indonesian youth.

Keywords: Diabetes Prevention, Communication Campaign, Indonesian Youth, Multicultural

INTRODUCTION

The current trend towards an increased prevalence of type 2 diabetes mellitus (DMT2) among younger individuals, specifically those within the 15–24-year age range, as reported by the Indonesian Ministry of Health (Badan Penelitian dan Pengembangan Kesehatan, 2018; Pusat Data dan Informasi, 2020) has prompted consideration of preventive measures, particularly in the early stages of development among individuals within school age. DMT2 is a non-communicable disease that arises from the dysfunction of the pancreas, which either hinders the production of adequate insulin or compromises the effectiveness of this hormone. As a result, glucose molecules are unable to transit from the blood vessels to the interior of cells in various tissues of the body. The mitochondrial organelles are incapable of undergoing combustion to yield caloric or energetic yields. The circumstance may result in heightened levels of glucose in the bloodstream, consequently leading to cellular impairment within the vascular network across various bodily organs such as the brain's tissue capillaries, nerves, heart, kidneys, among others. Failure to regulate blood glucose levels over an extended period can result in progressive damage to blood vessels, leading to an array of potential complications such as heart disease (Pencina et al., 2019), kidney failure ((Bhatt et al., 2021), stroke (Bradley et al., 2022) and other co-morbidities (Schrader et al., 2022).

In the context of adopting an earlier onset pattern, particularly during adolescence, Rianti (2017) posits that adolescents tend to perceive diabetes mellitus (DM) as a benign condition, primarily associated with parental affliction. Consequently, their knowledge regarding DM and its associated complications remains limited (Meirizka et al., 2021). Due to a lack of awareness, numerous adolescents remain uninformed regarding the significance of making mindful lifestyle choices as a means of preventing diabetes, particularly type 2 diabetes. An individual's lifestyle, frequently characterized by high-stress scenarios, such as habitual late-night activities, excessive engagement in online gaming, inadequate physical exercise, and a significant tendency towards the consumption of high-risk dietary items, warrants scholarly attention. In addition to that, there was a discernable variation in the incidence of DMT2 not only in relation to age, but also with respect to geographical location. Presently, the occurrence frequency of DMT2 has achieved isotropic in rural regions in comparison to urban regions. According to Bujawati et al. (2021), there exists minimal variation between inhabitants of the two regional typologies regarding the frequency of DMT2 occurrence. The present study posits a comprehensible argument for the phenomenon of spatial shift, which suggests that the physical connectivity of rural areas to urban areas has led to isotropic in terms of product types between the two regions. The availability of diverse food options is ubiquitous in both urban and rural settings, comprising food items that are susceptible to the development of DMT2.

Comparable to this phenomenon, the acceleration of social media usage was propelled by the proliferation of information technology infrastructure in remote regions. The advancement has not solely augmented the homogeneity of food items that have a susceptibility to DMT2; it has additionally impacted the behavioral patterns of rural teenagers in a manner analogous to their urban counterparts. Namely, such factors as engagement in online gaming, decreased physical activity, and the frequency of consumption of precarious comestibles are among the common lifestyle traits shared by both subsets. Thus, the prevailing belief that DMT2 exclusively affects the elderly population residing in urban areas and having a history of over-consumption has been heretofore debunked and is no longer considered valid. Henceforth, Indonesian youth from different social foundations are exposed to their well-being challenges to diabetes. Components such as different dietary propensities, way of life choices, and get to healthcare can impact their generally well-being in term of the DMT2 prevention. The multicultural environment in which they develop up too plays a part, because it uncovered them to different social hones which will affect their well-being. Dietary propensities change among diverse social bunches, and it is imperative to guarantee that multicultural Indonesian youth have get to nutritious and adjusted suppers. Well-being instruction programs can be actualized to advance solid eating propensities and teach them approximately the significance of a well-rounded diets to prevent them in having DMT2. Provided with that, it is important to assess the current condition of Indonesian youth especially in the brink of diabetes shade awaits behind their back.

Given these circumstances, the research problem can be stated as follows “what factors are contributing to the increasing prevalence of DMT2 among Indonesian multicultural youth aged 15-24, both in urban and rural settings, and how can awareness and understanding about DMT2 and its complications be improved in Indonesia's diverse cultural populations for better prevention strategies?” This research problem encapsulates the current situation and points towards a need for a deeper understanding of the factors driving the increase in DMT2 and potential solutions in Indonesia that has been slightly tapped by several researchers such as Malini et al., (2022), Tanoey et al (2021) and Perng et al., (2023) This will involve investigating lifestyle choices, dietary habits, and other potentially influencing factors like the influence of social media. Therefore, the objective of this article is to provide an overview of

the present diverse factors that contribute to the health issue among the Indonesian youth population. This is done by encompassing trend evaluations, and geographical disparities. The article also endeavors to contextualize the state of Indonesian adolescents within the prevailing circumstances. Ultimately, the article accentuates the significance of comprehensive effective communication strategies that can penetrate the subconscious mindset of individuals living in urban and rural areas while considering Indonesia's diverse cultural context.

RESEARCH METHODS

This research is using qualitative approach, particularly through the utilization of a literature review. A methodical and all-encompassing exploration of pertinent literature ensues, targeting sources that delve into diabetes prevention in the adolescent demographic, intercultural communication tactics, and the unique cultural and healthcare milieu of Indonesia. The extant literature is subjected to a thorough and rigorous review and assessment aimed at determining its relevance and quality, whereby only the most pertinent and reliable sources are deemed suitable for incorporation into the present study. Subsequently, the selected literary works are subjected to a thorough examination and amalgamation process wherein the investigator endeavors to identify recurring themes, inclinations, disparities, and insufficiencies within the data. The primary emphasis of the analysis is to comprehend the underlying themes and concepts conveyed in the literature, as opposed to conducting quantitative measurements of data.

This methodology facilitates the researcher in creating an elaborate depiction of the topic under investigation, thereby furnishing valuable perspectives on the potential effectiveness of a communication drive anchored in multiculturalism in forestalling diabetes among young individuals in present-day Indonesia. The qualitative literature review is an essential element that establishes a strong basis for the research, thereby facilitating a nuanced comprehension of the prevailing academic discussion on the subject and enabling the identification of potential gaps for further exploration. The apex of this approach results in a thorough, perceptive, and socio-culturally informed survey of the significance of communication founded on multiculturalism in the prevention of diabetes among Indonesian adolescents.

RESULT AND DISCUSSION

Current Lifestyle of Indonesia's Multicultural Youth

The multicultural youth of Indonesia constitute a heterogeneous and dynamic demographic, which is exerting a considerable influence on the cultural milieu of the country. The demographic of young individuals in Indonesia constitutes an estimated 28% of the nation's overall populace, thus rendering it an essential factor in comprehending the prevailing trends and lifestyle biases within the country. This part endeavors to examine three pivotal facets of Indonesia's culturally diversified young population, namely, their lifestyle, information technology usage, and dietary preferences.

The youth population in Indonesia, which is characterized by its multicultural makeup, exhibits a distinctive way of life that is shaped by a confluence of factors including their cultural heritage, social standing, and economic circumstances. Some experts research inquiries investigating the lifestyle of Indonesian adolescents revealed that customary practices and cultural pursuits remain integral components of their everyday activities (Roshita et al., 2021; Schut, 2021). Notwithstanding, contemporary cultural activities, namely online browsing, and

mobile gaming, also exert an impact on the younger demographic (Guntarto & Sevrina, 2019; Lee et al., 2020). The research indicates that the daily schedules of Indonesia's youth are frequently a blend of customary and contemporary cultural practices.

The use of social media has become ubiquitous in the everyday lives of Indonesian adolescents. Within the population of online users in Indonesia, it is noted that a significant proportion of Indonesian youth engage with social media platforms. According to APJII, as cited in Djamzuri et al. (2023), approximately 67% of them are social media avid users. Notably, the youth demographic of Indonesia, characterized by ethnic and cultural diversity, has attained a level of technological acumen owing to their upbringing with advancements in technology. The incorporation of mobile devices and social networking sites has become an indispensable component of individuals' everyday routines, facilitating communication with peers, and offering easy access to information. An investigation into the application of social media among Indonesian youth revealed that the most utilized platforms are Facebook, Twitter, and Instagram (Murti et al., 2023; Wibowo & Hartono, 2023). The findings of the investigation divulged that the employment of social media by young individuals is not purely for recreational purposes but rather, encompasses utilization for retrieval of information, interaction, and exchange of data.

The involvement of Indonesia's young populace in the advancement of the country's digital economy has been substantial. According to a study conducted by Google and Temasek, the anticipated growth of Indonesia's digital economy is projected to reach \$100 billion by the year 2025 (Ha & Chuah, 2023). This growth can be attributed to the country's youthful demographic, which possesses a high level of technological proficiency. The youthful population of Indonesia has demonstrably engaged in the establishment of digital companies, inclusive of but not limited to online marketplace platforms, ride-sharing applications, and financial technology-based enterprises.

Indonesia boasts a diverse and elaborate food culture, characterized by distinct culinary traditions across various regions. The multicultural youth of Indonesia exhibit a wide range of food preferences, which are shaped by both their cultural heritage and the environmental circumstances in which they live. A research investigation into the culinary inclinations of Indonesian adolescents has revealed that authentic Indonesian cuisine, including dishes such as *Nasi Goreng* (an Indonesian rendition of fried rice) and *Sate* (a grilled meat skewer delicacy), remains the foremost choice of food. Nevertheless, the investigations established that the emerging generation of Indonesian individuals display a growing inclination towards experimenting with diverse gastronomical cultures and venturing into global culinary alternatives (Andriyanty & Wahab, 2022; Fatikhani & Setiawan, 2019; Lusiana et al., 2020)

The dietary preferences of Indonesian adolescents have undergone significant changes in recent years owing to the changes in their lifestyle, urbanization, and globalization. Although traditional Indonesian cuisine continues to maintain its popularity, there has been a marked increase in the consumption of Western-style fast food, processed snacks, and sugary beverages within this demographic. Globalization has exerted a notable influence on the establishment of dietary patterns (Herminingrum, 2020). The Indonesian teenage populace has become accustomed to Western food culture through exposure to various forms of international media such as advertisements, movies, and television shows. The portrayal of Western fast food and snacks as fashionable and modern, leading to their association with a contemporary way of living, has engendered appeal among the youthful demographic (Wijaya, 2021). The perception of Western cuisine as an emblem of prosperity and elevated social standing has in turn augmented its widespread appeal.

Moreover, the influential marketing tactics utilized by multinational food conglomerates have resulted in significant consequences. Corporations extensively endorse

their merchandise through diverse platforms, comprising television, social media, and tailored initiatives, proficiently impacting the decision-making and inclinations of Indonesian adolescents (Ha & Chuah, 2023; Roshita et al., 2021). The aesthetically pleasing presentation, captivating catchphrases, and celebrity endorsements enhance the perceived allure and enthusiasm towards these commodities (Wijaya, 2021). In summary, the multicultural youth of Indonesia exhibit a distinctive way of living, which is significantly influenced by technological advancements, social media, and globalization.

Prevalence Trend of DMT2 in Indonesia by Age and Rural-Urban Typology

The notion that DMT2 is a disease of the elderly that never attacks teenagers is now a myth. According to Rao and Jensen (Rao & Jensen, 2020) in the USA it is even more worrying, there has been a lot going on at the age of 10 with an increase of 4.8% per year between 2002-2003 and 2014-2015. Its proliferation is also more aggressive in DMT2 as indicated by the incidence of retinopathy of 9.1% compared to DMT1 which is only 5.6%. This means that there has been a shift to a younger age. The same condition also appears to take conduct in Indonesia. Ministry of Health data (Badan Penelitian dan Pengembangan Kesehatan, 2018; Pusat Data dan Informasi, 2020) shows that around 22.3% are in the age range of 15-24 years. This age range is the age range from to undergraduate level universities. This shift occurs because teenagers generally mistakenly think that DMT2 is only a parental disease as a normal result of the degenerative effects of human physiological functions. With so many teenagers having risky lifestyles such as smoking and consuming foods that are fatty, high in salt, fizzy, and even alcoholic without adequate regular physical activity.

In addition to the myth about being the most polar disease in old age, the myth about the polarization of the incidence of DMT2 in urban areas has also been refuted. According to Bujawati et al. (2021) in the last decade the growth of DMT2 sufferers in rural areas beyond urban areas. It can be said that the prevalence is almost isotropic, or almost evenly distributed between the two regional typologies. This reality is controlled by the better physical infrastructure from city to village and vice versa. Road networks, bridges, ports, telecommunications networks, and other physical infrastructure are getting better at distributing industrial products from urban to rural areas, including food products that are at risk of causing DMT2.

Not only that, the expansion of telecommunications networks has also caused the ownership of gadgets, especially cellphones, to expand to rural areas, which has also fueled the rapid flow of information about various foods at risk for DMT2. Apart from TV, the spread of information and distribution is also strengthened by the widespread use of social media. This means that access to consume various types of goods is no different (isotropic) between urban and rural areas. Goods in urban areas are generally also easy to obtain in villages, including food products at risk of DMT2. This reality explains the incidence of DMT2 which is increasingly isotropic between urban and rural areas. The implication is that public policy for the early prevention of DMT2 needs to be prioritized on targeting the youth segment, it should also not be biased only towards urban communities, rural communities. Moreover, the Ministry of Communication and Information Technology, as cited in Dudhat (2023) has targeted that by the end of 2024 there will be no gap in access to information between rural and urban areas. Indeed, there have been many positive impacts from this policy target, but negative excesses on adolescent behavior have also emerged, including the expansion of the prevalence of DMT2 to rural areas, mainly through consumption patterns of various risky foods.

The Urgency of Early Prevention of DMT2 for Indonesian Adolescents

Youth is the hope of the nation. This classic adage also directs us to the importance of public policy for the early prevention of DMT2 which should be directed at adolescents without focusing only on residents of urban areas. The urgency of a policy that is anti-urban biased and pro-rural like this is very important if it is intended to succeed the health pillar of the SDGs program which at the same time leads to the need to meet the demographic bonus in 2030 or even 2045. The argument that needs to be stated here is that as can be observed in Rijal and Tahir's report (2022) until 2030-2045, the carry over effect of development programs that prioritize urban areas since the New Order era will still have a strong impact. This means that the welfare of urban residents will still grow more rapidly than in rural areas. Between 2030 and 2045, the prevalence of DMT2 in Indonesia is estimated to increase by 11.8% (Intan et al., 2022) The main implication of this residual effect is that the attraction of urbanization, to obtain educational facilities or to work, will remain difficult to stem. The flow of human resources (HR) to urban areas must be qualified human resources, including those free from DMT2. If not, then it is certain that the urbanites will become a burden to the city, including the demand for DMT2 health services. Therefore, promotions or campaigns for early prevention of DMT2 are urgently needed to be escalated immediately, not only for residents of urban areas, but also so that they extend to reach residents of rural areas.

The classic problem faced from the past until now is the limited resources and time of health educators. Health extension workers are very limited both in number and competence. In general, the time resources owned by health workers in each jurisdiction have been depleted and allocated for routine curative services. Especially when the threat of a re-explosion of the Covid 19 Pandemic is still looming. In this situation it is certain that health education tasks are forced to be sidelined, especially for a disease that occurs indirectly and immediately like DMT2. If so, the counseling process and DMT2 prevention campaigns need to find potential strategies to be effective in reaching the subconscious areas of every individual in urban and rural communities. In other words, the application of communication, information, and education (IEC) programs to educational institutions is an alternative that can have great effectiveness. Media like this is very useful as a supplement to learning a subject.

Calling For DMT2 Early Prevention Campaigns Through Multiculturalism-Based Communication

Communication is a process of forming meaning to achieve a homonymic state, which means that there has been a similarity in meaning between the parties involved, namely between the communicator and the communicant. Efforts to achieve this situation have a continuum degree from easy to very difficult, depending on various variables that are the background condition of the communicator, communicant, environment, and most importantly the content of the message itself. Understanding the contents of abstract messages is more difficult than messages that are visible. Messages whose effects are delayed or require a slow time will be more difficult than messages whose effects are immediate and instantaneous. Health messages scientifically concerning physiological processes and mechanisms can be ascertained to be more difficult for communicants with low and lay education than communicants who have higher education let alone compared to communicants with special education or specialists. The content of the message about the DMT2 incident process is a message that is very difficult for communicants from rural and urban residents, especially those with low levels of education. This level of difficulty is caused by the nature of the field of knowledge which is very advanced and integrated with various other fields of science. Apart from that, the character of the effect is also delayed and the content of the message itself is indeed complex, especially if it is associated with several co-morbidities or complications. For

communication experts, no matter how complicated and complex a message is to be understood by even clouded communicants, it is an obligation that must be a challenge. The success of understanding the contents of the message means opening opportunities for understanding the contents of the message which also means increasing knowledge. The accumulation of knowledge in a person can build his intellectual power, further increasing creativity and creativity when facing various problems in his life. This sequence is a logical sequence that must become the obsession of every communication media designer, to develop information for education that empowers individual citizens of rural or even urban communities, including empowering themselves to avoid DMT2 (Intan et al., 2022) which may only appear in the future.

Although the importance of multiculturalism in healthcare interventions has been widely recognized, it is evident that there is an apparent minimum presence of culturally customized communication initiatives that are aimed at addressing the prevention of diabetes among Indonesian youth (Keloko, 2015; Kusumo et al., 2020; Permatasari & Bernadette, 2020; Utama & Nainggolan, 2021). Although generic health promotion initiatives are implemented, they frequently neglect the intricate and diverse cultural milieu that is characteristic of Indonesia. The presence of this void indicates a failure to effectively utilize cultural idiosyncrasies to stimulate modification of behavior and enhance outcomes related to health. Tailoring campaigns to the unique languages, dietary customs, cultural symbols, media preferences, community leaders, traditional health beliefs and particular needs of distinct communities is a crucial aspect that has been significantly lacking in communication strategies thus far. As a result, the untapped and underutilized potential of Indonesia's multiculturalism to address the increasingly alarming issue of youth diabetes warrants further recommendations.

Hence, the circumstance highlights the critical necessity to devise and execute the cultural tailoring of health information approach. The implementation of a culturally sensitive approach that considers the intricate variations between Indonesia's diverse cultures, languages, traditions, and practices has the potential to facilitate the effective dissemination of vital health-related messaging. This study posits that the utilization of cultural facets that align with the youth's preferences can create customized campaigns that increase awareness, promote comprehension, and stimulate modifications in behavior. Consequently, such interventions can bolster diabetes prevention endeavors in heterogeneous communities, ultimately yielding greater impact.

There are eight strategies that can be utilized to prevent Indonesian youth diabetes based on multiculturalism approach. First, the development of multilingual resources is pertinent to address the rich linguistic diversity of Indonesia, wherein over 700 living languages are prevalent. This opulence connotes the essentiality of crafting health resources in a diversified range of languages such as Underwood et al. (Underwood et al., 2007) found in Zambia. The utilization of regional languages such as Javanese, Sundanese, Madurese in translating health education materials can effectively enhance the dissemination of vital health-related information to a broader range of communities, despite Bahasa Indonesia being the national language. A potential approach to addressing diabetes prevention in linguistically diverse communities is the development of a series of educational videos delineating the risks, symptoms, and prevention strategies associated with diabetes (Phan et al., 2023). These videos may be distributed via local community centers, schools, and digital platforms to enhance their reach and impact. The proposed approach aims to address the needs of diverse age ranges, encompassing individuals who are well-versed in the use of online technology, as well as older members of the community. Second, the incorporation of culturally relevant foods is paramount when formulating dietary recommendations, with particular attention paid to the varied culinary customs found in Indonesia. It is recommended that dietary guidance

incorporates cuisine that is familiar to diverse ethnic groups while also highlighting methods of preparing such food in a manner that promotes improved health outcomes (Forouhi, 2023; Sijangga et al., 2023). Rather than proposing a total adoption of novel or atypical food items amongst specific communities, the alternative approach could entail disseminating healthier preparation techniques for indigenous culinary choices (Amjad et al., 2023). As an exemplification, proposing a nuanced and equitable amalgamation of white and brown rice instead of advocating an outright shift to brown rice might be a more tenable and culturally appropriate proposition for a community that predominantly relies on white rice, such as most Indonesian communities. Offering recommendations for enhancing the nutritional value of conventional culinary preparations, such as diminishing the quantity of coconut milk (utilized in a rendang (Amsah et al., 2023) or augmenting the proportion of vegetables in a nasi goreng, renders the guidance more accessible and amenable to implementation.

Third, the utilization of cultural symbols and analogies serves as a critical component in effectively communicating intricate health information. The utilization of these tools can facilitate the elucidation of diabetes and its prophylaxis in a manner that resonates with diverse cultural demographics. Analogous to the concept of "Rwa Bhineda" in Balinese culture - which denotes a harmonious balance between two opposing forces (Aditya & Putra, 2023; Yuniari et al., 2023)- the significance of maintaining a balanced diet and lifestyle in averting diabetes can be explicated. An approach that could potentially promote the sustenance of healthy behaviors could be the utilization of conventional Indonesian symbols, such as the Garuda, to symbolize potency and tenacity. Fourth, to effectively disseminate health information, it is recommended that culturally relevant media channels, including both traditional and popular local media outlets, be engaged through active participation and engagement. This can encompass a multitude of communication outlets, such as nearby radio (Priana & Nurjuman, 2022) and television broadcasting networks, nearby magazines or periodicals with limited circulation, and neighborhood digital platforms dedicated to social engagement. An effective strategy for disseminating information on diabetes prevention is to collaborate with a prominent Javanese radio station to convey the message (Soeharno & Al Faruq, 2021). Scheduled time slots could be arranged for esteemed health professionals to impart knowledge about diabetes prevention whilst also providing a platform for listeners to engage in interactive discussions and seek answers to pertinent queries. The intended outcome of such arrangements would be to enhance the quality of information disseminated and foster an engaging informative environment.

Fifth, collaboration with prominent members of the community, such as social media influencers, religious leaders, esteemed elders, and leaders of local organizations, can substantially contribute to the promotion of health and well-being (Flodgren et al., 2019; Masuda et al., 2022; Zhao et al., 2022). The adeptness and reverence of individuals within their respective communities can be utilized to effectively disseminate crucial health-related communications. An instance of effective communication within a Dayak community in Kalimantan can be achieved through collaborative efforts with the community's esteemed elder (Rico et al., 2022), resulting in a successful community gathering in pertaining to diabetes prevention. The involvement of a community leader can facilitate the organization of an event, as well as the invitation of community members and the introduction of health professionals, ultimately leading to increased community acceptance and engagement. Sixth, the maintenance of traditional health beliefs and practices, such as the utilization of Jamu (Harismayanti & Syukur, 2022), holds considerable importance in the healthcare management of numerous Indonesian communities. It is imperative for any healthcare intervention to recognize and address the significance of traditional healing practices in the diabetes prevention domain (Pradipta et al., 2023). Proper dissemination of information regarding the assimilation of such practices with contemporary medicine must be ensured to optimize health outcomes. During a

community education session on diabetes prevention, it is advisable for the speaker to recognize the contribution of Jamu towards maintaining optimal health. Additionally, the speaker may elaborate on the various Jamu components that can complement a healthy dietary regimen. However, the speaker is reminded to underscore the importance of maintaining regular physical activity and well-balanced nutrition, as the efficacy of Jamu in isolation remains uncertain in this context.

Seventh, professionals in the healthcare field must possess a comprehensive understanding of cultural competency as an essential skill in delivering quality care in an increasingly diverse society such as Indonesia. It is imperative for healthcare providers to possess a thorough comprehension of the cultural nuances, health beliefs, and practices of the individuals they attend to (Alkhaled et al., 2022; Antón-Solanas et al., 2022). The dissemination of training programs to healthcare professionals operating within culturally diverse contexts would equitably empower them to proficiently communicate with patients of varying cultural backgrounds. A healthcare professional operating in Jakarta may require training to comprehend the distinctive health beliefs inherent in the Betawi, Sundanese, or Javanese communities to deliver guidance that is culturally apt (Prihatiningsih & Boelen, 2022). Eighth, user-centered design plays an integral role in the development process of health materials, particularly when involving members of the targeted cultural groups in the design process. This measure promotes the assurance of cultural relevance, enhanced engagement, and efficacy of materials. An empirical strategy that can be employed in the development of a brochure on diabetes prevention for the youth in Madura is to seek feedback from Madurese teenagers. This approach holds the potential to effectively enhance the attractiveness, engagement, and relevance of the brochure to the targeted audience. The adolescent demographic may provide insight on the stylistic (Muthmainnah et al., 2021), linguistic, and substantive aspects (Sarintohe et al., 2022) of the brochure, resulting in a customized resource that suits their specific requirements (Carollo et al., 2022).

All in all, it is widely acknowledged that culturally tailored interventions hold significant potential to enhance the efficacy of diabetes prevention initiatives targeting youth in the diverse and richly multicultural context of Indonesia. The implementation of a comprehensive and effective approach to diabetes prevention can be achieved through the consideration of diverse factors such as linguistic, culinary, symbolic, media, and leadership diversity. Additionally, it is essential to respect traditional health beliefs, equip health professionals with adequate training, and involve the target population in the development of relevant educational materials

CONCLUSION

Many youths are unaware that making attentive lifestyle choices is essential to prevent diabetes, especially type 2 diabetes. Individual lifestyles, often characterized by high-stress scenarios, such as habitual late-night activities, excessive involvement in online games, inadequate physical exercise, and significant trends in high-risk food consumption, require scientific attention. The DMT2 counseling and prevention campaign needs to find potential strategies that are effective in reaching everyone's subconscious in urban and rural communities. Human resource flows (SDMs) to urban areas must be qualified human resources, including those free from DMT2. If not, then it is certain that urban people will be a burden for the city, including the demands of DMT2 health services. Therefore, the promotion or early prevention campaign of DMT2 is urgent not only for urban residents (urban areas), but also to expand to reach rural residents (rural areas). Factors such as different dietary habits,

lifestyle choices, and access to health care can affect their overall health in terms of DMT2 prevention. The diet changes among different social groups, and it is important to ensure that multicultural Indonesian youths get nutritious and balanced meals. Health communication campaign based on multiculturalism programs should be implemented immediately to improve healthy eating habits and teach them the importance of a comprehensive diet to prevent them from getting DMT2

REFERENCES

- Aditya, D. K., & Putra, I. D. A. D. (2023). The application of the philosophy and technical style of Batuan Bali painting to the modern narratives and process. In *Sustainable Development in Creative Industries: Embracing Digital Culture for Humanities* (pp. 349–353). Routledge.
- Alkhaled, T., Rohde, G., Lie, B., & Johannessen, B. (2022). Navigating the care between two distinct cultures: a qualitative study of the experiences of Arabic-speaking immigrants in Norwegian hospitals. *BMC Health Services Research*, 22(1), 1–11.
- Amjad, A., Khaliq, M., Ali, A., Raza, S. Q., & Iqbal, S. (2023). Glycaemic index and glycaemic load of dairy based products, indigenous recipes and confectionery items of Pakistan. *International Dairy Journal*, 137, 105517.
- Amsah, N., Md Isa, Z., & Ahmad, N. (2023). Development of a Semi-Quantitative Food Frequency Questionnaire to Estimate Macronutrient Intake among Type 2 Diabetes Mellitus Patients in Malaysia. *Nutrients*, 15(3), 506.
- Andriyanty, R., & Wahab, D. (2022). Indonesian generation Z consumer ethnocentrism on food and beverage product. *Technium Soc. Sci. J.*, 28, 522.
- Antón-Solanas, I., Rodríguez-Roca, B., Vanceulebroeck, V., Kömürçü, N., Kalkan, I., Tambo-Lizalde, E., Huércanos-Esparza, I., Casa Nova, A., Hamam-Alcober, N., & Coelho, M. (2022). Qualified Nurses' Perceptions of Cultural Competence and Experiences of Caring for Culturally Diverse Patients: A Qualitative Study in Four European Countries. *Nursing Reports*, 12(2), 348–364.
- Badan Penelitian dan Pengembangan Kesehatan. (2018). *Laporan Riset Kesehatan Dasar Indonesia*.
https://labmandat.litbang.kemkes.go.id/images/download/laporan/RKD/2018/Laporan_Nasional_RKD2018_FINAL.pdf
- Bhatt, D. L., Szarek, M., Steg, P. G., Cannon, C. P., Leiter, L. A., McGuire, D. K., Lewis, J. B., Riddle, M. C., Voors, A. A., & Metra, M. (2021). Sotagliflozin in patients with diabetes and recent worsening heart failure. *New England Journal of Medicine*, 384(2), 117–128.
- Bradley, S. A., Spring, K. J., Beran, R. G., Chatzis, D., Killingsworth, M. C., & Bhaskar, S. M. M. (2022). Role of diabetes in stroke: Recent advances in pathophysiology and clinical management. *Diabetes/Metabolism Research and Reviews*, 38(2), e3495.
- Bujawati, E., Awaliah, R., & Ansar, J. (2021). Type 2 Diabetes In Urban and Rural Areas: A Comparative Study. *Al-Sihah: The Public Health Science Journal*, 13, 176.
<https://doi.org/10.24252/al-sihah.v13i2.25884>
- Carollo, A., Chai, W., Halstead, E., Dimitriou, D., & Esposito, G. (2022). An exploratory analysis of the effect of demographic features on sleeping patterns and academic stress in adolescents in China. *International Journal of Environmental Research and Public Health*, 19(12), 7032.

- Djamzuri, M. I., & Mulyana, A. P. (2023). Fenomena Cyberbullying Pembiaran Juvenile Delinquency Dalam Teknologi Media Baru. *JISIP (Jurnal Ilmu Sosial Dan Pendidikan)*, 7(1).
- Dudhat, A., & Agarwal, V. (2023). Indonesia's Digital Economy's Development. *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, 4(2), 109–118.
- Fatikhani, D. A., & Setiawan, A. (2019). The relationship between the level of knowledge regarding fast food and the dietary habits among adolescents in Jakarta, Indonesia. *Enfermeria Clinica*, 29, 172–175.
- Flodgren, G., O'Brien, M. A., Parmelli, E., & Grimshaw, J. M. (2019). Local opinion leaders: effects on professional practice and healthcare outcomes. *Cochrane Database of Systematic Reviews*, 6.
- Forouhi, N. G. (2023). Embracing complexity: making sense of diet, nutrition, obesity and type 2 diabetes. *Diabetologia*, 66(5), 786–799.
- Guntarto, B., & Sevrina, N. (2019). “You sure there's nothing more to say?": Indonesian Youth Culture Represented in YouTube Video Advertisements. *Celt: A Journal of Culture, English Language Teaching & Literature*, 19(1), 68–88.
- Ha, H., & Chuah, C. K. P. (2023). Digital economy in Southeast Asia: challenges, opportunities and future development. *Southeast Asia: A Multidisciplinary Journal*.
- Harismayanti, H., & Syukur, S. B. (2022). The Analysis of the Benefit of Jamu (Indonesian Traditional Medicine) and Herbal Medicine and Its Effect on Women of Childbearing Age. *Journal of Community Health Provision*, 2(2), 116–125.
- Herminingrum, S. (2020). A Cultural Dimension of American-Indonesian “Fast Food Diplomacy.” *Humaniora*, 32(1), 1.
- Intan, N., Dahlia, D., & Kurnia, D. A. (2022). Asuhan Keperawatan pada Pasien Diabetes Melitus Tipe 2, Fase Akut dengan Pendekatan Model Adaptasi Roy: Studi Kasus. *Jurnal Keperawatan Silampari*, 5(2), 680–688.
- Keloko, A. B. (2015). Gambaran Sosial Budaya terhadap Diabetes Melitus pada Masyarakat di Wilayah Kerja Puskesmas Gunungtua Kecamatan Padang Bolak Kabupaten Padang La Was Utara Tahun 2014. *Kebijakan, Promosi Kesehatan Dan Biostatistika*, 1(1), 14371.
- Kusumo, M. P., Hidayah, N., & Pramono, N. A. (2020). Pemberdayaan Masyarakat Dalam Mengendalikan Diabetes Melitus Berbasis Budaya LOKAL. *Prosiding Seminar Nasional Program Pengabdian Masyarakat*.
- Lee, Y. L., Jung, M., Nathan, R. J., & Chung, J.-E. (2020). Cross-national study on the perception of the Korean wave and cultural hybridity in Indonesia and Malaysia using discourse on social media. *Sustainability*, 12(15), 6072.
- Lusiana, Y., Laksono, P. M., & Hariri, T. (2020). Self-Styling, Popular Culture, and the Construction of Global-Local Identity among Japanese Food Lovers in Purwokerto. *I-Pop Int. J. Indones. Pop. Cult. Commun*, 1(1), 21–40.
- Malini, H., Lenggogeni, D. P., Windah, A., Qifti, F., Thapa, D. K., West, S., & Cleary, M. (2022). # Stressed: Covid-19, chronic illness and technostress. *Issues in Mental Health Nursing*, 43(2), 189–192.
- Masuda, H., Han, S. H., & Lee, J. (2022). Impacts of influencer attributes on purchase intentions in social media influencer marketing: Mediating roles of characterizations. *Technological Forecasting and Social Change*, 174, 121246.
- Meirizka, S. A., Indriyani, F., Purwo Jatinging Putri, D., & Norma Ethica, S. (2021). Socialization of the Importance of Early Diabetes Mellitus Prevention using Poster Media for Young Tenants of Boarding House in Tembalang Sub-District, Semarang. *Jurnal Pengabdian Pada Masyarakat*, 6(3), 959–970. <https://doi.org/10.30653/002.202163.760>

- Murti, D. C. W., Ratriyana, I. N., & Asmoro, I. D. (2023). “Dream Now, Travel Tomorrow”: Communicating the Nation Branding of Indonesia through Tourism-Based Social Media. *Howard Journal of Communications*, 1–22.
- Muthmainnah, Nurmalia, I., Siswantara, P., Rachmayanti, R. D., & Devi, Y. P. (2021). Implementation of adolescent health programs at public schools and religion-based schools in Indonesia. *Journal of Public Health Research*, 10(4), jphr-2021.
- Pencina, M. J., Navar, A. M., Wojdyla, D., Sanchez, R. J., Khan, I., Ellassal, J., D’Agostino Sr, R. B., Peterson, E. D., & Sniderman, A. D. (2019). Quantifying importance of major risk factors for coronary heart disease. *Circulation*, 139(13), 1603–1611.
- Permatasari, Y., & Bernadette, S. (2020). Analisis pesan persuasif yang dibangun oleh kementerian kesehatan melalui video cegah, lawan, obati diabetes di Youtube. *Sosio Dialektika*, 5(2), 154–193.
- Peng, W., Conway, R., Mayer-Davis, E., & Dabelea, D. (2023). Youth-Onset Type 2 Diabetes: The Epidemiology of an Awakening Epidemic. *Diabetes Care*, 46(3), 490–499.
- Phan, P., Mitragotri, S., & Zhao, Z. (2023). Digital therapeutics in the clinic. *Bioengineering & Translational Medicine*, e10536.
- Pradipta, I. S., Aprilio, K., Febriyanti, R. M., Ningsih, Y. F., Pratama, M. A. A., Indradi, R. B., Gatera, V. A., Alfian, S. D., Iskandarsyah, A., & Abdulah, R. (2023). Traditional medicine users in a treated chronic disease population: a cross-sectional study in Indonesia. *BMC Complementary Medicine and Therapies*, 23(1), 1–9.
- Priana, R. Y. S., & Nurjuman, H. (2022). THE EFFECTIVENESS OF DELIVERING INFORMATION AND SOCIAL MESSAGES THROUGH RADIO PROGRAMS DURING THE COVID-19 PANDEMIC. *Journal of Business Studies and Management Review*, 6(1), 53–57.
- Prihatiningsih, T. S., & Boelen, C. (2022). Assuring Quality of Health Professions Education in the Context of Cultural Diversity. In *Challenges and Opportunities in Health Professions Education: Perspectives in the Context of Cultural Diversity* (pp. 169–196). Springer.
- Pusat Data dan Informasi. (2020). *Infodatin 2020 Diabetes Melitus*.
- Rao, G., & Jensen, E. T. (2020). Type 2 Diabetes in Youth. *Global Pediatric Health*, 7, 2333794X20981343. <https://doi.org/10.1177/2333794X20981343>
- Rico, R., Hayat, M. A., Khuzaini, K., Sanusi, S., & Susanto, D. (2022). *Huma Betang’s philosophical values in the character of Dayak cultural communication*.
- Rijal, S., & Tahir, T. (2022). Analisis Faktor Pendorong Terjadinya Urbanisasi di Wilayah Perkotaan (Studi Kasus Wilayah Kota Makassar). *Journal of Economic Education and Entrepreneurship Studies*, 3(1), 262–276.
- Roshita, A., Riddell-Carre, P., Sjahrial, R., Jupp, D., Torlesse, H., Izwardy, D., & Rah, J. H. (2021). A qualitative inquiry into the eating behavior and physical activity of adolescent girls and boys in Indonesia. *Food and Nutrition Bulletin*, 42(1_suppl), S122–S131.
- Sarintohe, E., Larsen, J. K., Burk, W. J., & Vink, J. M. (2022). The Prevalence of overweight status among early adolescents from private schools in Indonesia: sex-specific patterns determined by school urbanization level. *Nutrients*, 14(5), 1001.
- Schrader, S., Perfilyev, A., Ahlqvist, E., Groop, L., Vaag, A., Martinell, M., García-Calzón, S., & Ling, C. (2022). Novel Subgroups of Type 2 Diabetes Display Different Epigenetic Patterns That Associate With Future Diabetic Complications. *Diabetes Care*, 45(7), 1621–1630.
- Schut, T. (2021). ‘In the middle of things’: on educated un (der) employed young people’s pragmatism and idealism in rural Indonesia. *Children’s Geographies*, 19(5), 579–590.

- Sijangga, M. O., Pack, D. V., Yokota, N. O., Vien, M. H., Dryland, A. D. G., & Ivey, S. L. (2023). Culturally tailored cookbook for promoting positive dietary change among hypertensive Filipino Americans: a pilot study. *Frontiers in Nutrition, 10*.
- Soeharno, A., & Al Faruq, H. A. (2021). A SEMANTIC ANALYSIS ON THE JAVANESE WORD “JAJAN” AS USED BY “SUARA AKBAR” RADIO LISTENER IN JEMBER. *MEDIAKOM, 5*(1), 17–33.
- Tanoey, J., & Becher, H. (2021). Diabetes prevalence and risk factors of early-onset adult diabetes: results from the Indonesian family life survey. *Global Health Action, 14*(1), 2001144. <https://doi.org/10.1080/16549716.2021.2001144>
- Underwood, C., Serlemitsos, E., & Macwangi, M. (2007). Health communication in multilingual contexts: A study of reading preferences, practices, and proficiencies among literate adults in Zambia. *Journal of Health Communication, 12*(4), 317–337.
- Utama, Y. A., & Nainggolan, S. S. S. (2021). UPAYA PENGENDALIAN KOMPLIKASI DIABETES MELITUS DI RT 08 KELURAHAN 22 ILIR PALEMBANG. *Jurnal Abdimas Musi Charitas, 5*(1), 12–17.
- Wibowo, N., & Hartono, A. (2023). Effect of Social Media Marketing Activity, Relationship Equity, and Customer Loyalty: Studies on Consumers Using Indonesian Beauty Products, Somethinc. *Journal of Economics, Management and Trade, 29*(5), 52–64.
- Wijaya, B. S. (2021). Consuming midnights: Indonesian youths’ stay-up-late lifestyle in branded places. *International Journal of Interdisciplinary Cultural Studies, 17*(1), 17–30.
- Yuniari, I. G. A. M. E., Kasni, N. W., & Sutjaja, I. G. M. (2023). Transitivity and Social Context in Balinese Folklores: A Systemic Functional Perspective. *Theory and Practice in Language Studies, 13*(5), 1295–1303.
- Zhao, J., He, H., Zhao, X., & Lin, J. (2022). Modeling and simulation of microblog-based public health emergency-associated public opinion communication. *Information Processing & Management, 59*(2), 102846.