Information Services & Use 43 (2023) 79–88
DOI 10.3233/ISU-230194
IOS Press

Preface

Preface: Lessons learned during the COVID-19 pandemic about public receptivity, health literacy, and health communication: A tribute to Andrew Pleasant

Robert A. Logan*
U.S. National Library of Medicine, N. Bethesda, MD, USA

Abstract. The preface summarizes six contributions within a special issue of *Information Services and Use* in tribute to Andrew Pleasant, Ph.D., 1962–2022. Five topic-oriented manuscripts within the special issue are devoted to health literacy and health communication issues during the COVID-19 pandemic. A sixth paper focuses on Dr. Pleasant's career and contributions. In addition to manuscript summaries, the preface introduces two health literacy/health mass communication topics: a constructive response to the 'infodemic'; and the value of health narratives. These topics were of interest to Dr. Pleasant during the pandemic and augment some of the issues raised within the special tribute issue's other contributions.

Keywords: Health literacy, health communication, Andrew Pleasant, COVID-19, infodemic

1. Introduction

This special issue of *Information Services and Use* is partially inspired by Andrew Pleasant's innovative contributions to health literacy and health communication. This special issue focuses more on current health literacy and health communication issues that challenged and interested Dr. Pleasant and less on his contributions, as suggested by collaborators and friends.

The special issue has two emphases that are summarized in the preface. The first emphasis contains five topic-oriented manuscripts devoted to health literacy and health communication issues during the COVID-19 pandemic. The second emphasis features a paper that addresses Dr. Pleasant's career and contributions.

Two additional health literacy/health mass communication topics are introduced in the preface; a constructive response to the infodemic; and the value of health narratives. These topics were of interest to Dr. Pleasant during the pandemic and augment the discussions found in the issue's other contributions.

An appreciation and kudos to all the authors who adjusted personal and professional schedules to contribute during the first half of 2023. Dr. Pleasant died unexpectedly in November 2022 at age 60.

*Corresponding author: Robert A. Logan, Ph.D., retired. E-mail: logrob@gmail.com.

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Commendably, all the papers were prepared within about three months following the issue's inception. The quick turnaround time to plan, write, edit, and publish this issue would have pleased Dr. Pleasant, who began his 35-year professional career as a photojournalist. Although Dr. Pleasant firmly supported peer review and academic publication, he often told colleagues that the timeline between the inception of research projects, paper preparation, review, acceptance, and diffusion could undermine a manuscript's impact and utility.

Not this time….

The special issue's authors are from universities in six nations. The U.S.-based authors are from the University of Massachusetts, Northwestern University, University of Washington, Mount Sinai School of Medicine, and George Mason University. International authors represent the University of Haifa in Israel, the Brazilian National School of Public Health, the University of Sydney in Australia, the University of Jyvaskyla in Finland, and the Technical University of Munich, Trier University, Fulda University of Applied Sciences, Leuphana University, and Bielefeld University in Germany. Additional authors represent research/practice organizations in three nations: the Global Health Literacy Academy in Denmark; Clalit Health in Israel; and Health Literacy Media in the U.S.

This special issue is not intended to be a comprehensive review of Dr. Pleasant's career or his professional and private interests. The focus within manuscripts was not based on whether Dr. Pleasant practiced or researched each of the addressed topics. In fact, Dr. Pleasant's work is not cited nor discussed in some of the contributions. Instead, the editors selected pandemic-based topics in health literacy and health communication to which Dr. Pleasant was attentive - and issues of interest to *Information Services and Use's* readers.

The co-editors of this special issue worked with Dr. Pleasant on several chapters in two books about health literacy practice and research that were published in 2017 and 2020 [1,2]. Dr. Pleasant worked on the U.S. National Academies of Sciences, Engineering, and Medicine Health Literacy Roundtable with the author.

Dr. Pleasant also helped revise the second aforementioned health literacy book - published in early spring 2020 as the COVID-19 pandemic emerged [2]. In a scenario distinguished by unpropitious timing, the book's 21 chapters were completed *just before* the pandemic started. Unexpectedly, the editors needed to acknowledge the latter timeline and introduce how the book's contributions might assist healthcare professionals as the then-nascent pandemic emerged. It speaks for itself that the editors turned to Dr. Pleasant (who, with Richard Carmona M.D.) pitched in expeditiously during the final hours before the book's publication deadline.

With this special issue, we salute Dr. Pleasant's gracious assistance and memory. As Dr. Pleasant's extensive contributions are his legacy, his last name bespoke his demeanor.

2. Summary of the special issue's topic-oriented manuscripts

Three of the issue's five topic-oriented manuscripts focus on health literacy during the COVID-19 pandemic. These manuscripts address: health literacy and empowerment; research about health literacy's contribution to public understanding and misunderstanding; and the impact of health literacy and health disparities on public attitudes. Two other topic-oriented manuscripts suggest: strategies to effectively communicate messages to promote the adoption of recommended health promotion actions; and how the pandemic fostered a need for new digital health literacy approaches.

In one of the five issue-oriented manuscripts, Smith and Carbone address the unexpected *negative* empowerment that emerged among millions of Americans during the COVID-19 pandemic [3]. The authors note that health literacy and mass communication scholars did not anticipate a development where public health empowerment could be grounded in misinformation and disinformation [3]. The authors define terms that further identify and operationalize the infodemic's dimensions, such as malinformation, disinformation, and misinformation.

Among the Americans who actively participated in political action and policy debates during the pandemic, Smith and Carbone explain that some were negatively empowered and made fatal healthcare and deleterious health policy decisions [3].

Smith and Carbone also explore why the COVID-19 'infodemic' inoculated the public with doubt and mistrust of health authorities and institutions [3]. Smith and Carbone close with suggestions about what to do to prepare for future public health crises [3].

McCaffery et al. review the international evidence base regarding the impact of health literacy on public beliefs about health during the COVID-19 pandemic [4]. The authors note how health literacy was associated with COVID-19-related outcomes in several nations, including Australia and the U.S. The authors explain how public health communicators in several nations routinely failed to follow basic health literacy principles [4].

McCaffery et al. suggest that health literacy is one of the few modifiable social determinants of health that directly influences clinical and public health outcomes [4]. The authors recommend short and longer-term investments to build the health literacy responsiveness of public health units, health organizations, and government departments to meet health literacy population needs and enhance public health during future pandemics [4].

Okan, Sorensen et al. also address how health literacy and digital health literacy contributed to public understanding and misunderstanding during the pandemic [5]. Okan, Sorensen et al. note key areas concerning health literacy have been identified that are useful to provide a strategic response to an infodemic [5]. The authors present a framework for systemic health literacy capacity and policy advice to inform and guide decision-makers on managing an infodemic with health literacy strategies [5]. The authors suggest a way forward includes an emphasis on the right to access information and a broader view on how health literacy can elevate public understanding in the aftermath of the COVID-19 pandemic [5]. The authors include a call to action for decision-makers to integrate systemic health literacy responses to thwart an infodemic's future diffusion [5].

Kreps examines the significant challenges to communicating relevant health information to those confronting serious health risks - and suggests 18 strategies to effectively communicate messages and utilize media to promote the adoption of evidence-based health promotion actions [6]. Drawing on his extensive research and experience, Kreps focuses on health communication strategies to develop culturally sensitive communication programs that can provide vulnerable consumer populations with the relevant health information needed to effectively understand, evaluate, and determine how to use health promotion recommendations to make informed health care decisions - and engage in health behaviors that address health risks [6].

Levin-Zamir notes the COVID-19 pandemic accelerated international interest in digital health literacy [7]. Levin-Zamir defines and differentiates digital health literacy from health literacy. Levin-Zamir also suggests the widespread cancellation of health literacy and digital health literacy interventions during the pandemic (to maintain social distance and prevent participant risk), ironically, fostered their expanded renewal to counter COVID infection risks [7]. Levin-Zamir suggests strategies to enhance digital health literacy among individuals and healthcare organizations [7].

3. Summary of the special issue's essay about Andrew Pleasant's contributions

In contrast to the issue-focused papers, O'Leary, Zarcadoolas, and Peres discuss Andrew Pleasant's career and contributions to health literacy, health communication, and public health [8]. Each author provides memoirs about working with Dr. Pleasant that afford insights into his scholarly range, personality, and enthusiasms. Some highlights include: how a wood-paneled living room at Brown University was the venue to create a pioneering book about health literacy; a Brazilian hang gliding mantra that impacted Andrew's work; and how Andrew seemed preoccupied - akin to double-parked - at the time he received notice of winning a significant health literacy award [8]. The authors underscore that Dr. Pleasant probably was the least self-impressed colleague they had ever met.

O'Leary, Zarcadoolas, and Peres mention how Dr. Pleasant influenced a host of international organizations as well as his significant contributions to the Health Literacy Roundtable of the U.S. National Academies of Sciences, Engineering, and Medicine [8]. The authors describe how Dr. Pleasant's lifelong reading fostered an array of health literacy ideas and interventions. For example, the authors note how Freire's Theater of the Oppressed influenced the organization of a health literacy community initiative in Lima, Peru [8].

Hopefully, after reading the O'Leary, Zarcadoolas, and Peres manuscript, future readers will feel like they met Dr. Pleasant. A postscript: after the manuscript was completed, Dr. O'Leary seconded a quip that Andrew would have liked the paper if it was written about somebody else.

4. A pandemic topic of interest to Dr. Pleasant: How professionals should contextualize the infodemic

The O'Leary et al. paper explains that Dr. Pleasant's career was distinguished by diverse personal and professional pursuits [8]. Two of Dr. Pleasant's interests - expressed in informal conversation - are further addressed here because he was attentive to them during the COVID-19 pandemic. Dr. Pleasant's interests in contextualizing the pandemic; a constructive 'infodemic' response; and medical narratives are discussed because each provides insights regarding his unfinished pursuits and augments some issues raised in other manuscripts.

Dr. Pleasant and the author shared a journalism background, received doctorates in communications fields, debated the importance of some health communication and mass communication scholars, and frequently discussed the barriers to the mass communication (and public understanding) of health.

Years before the pandemic, Dr. Pleasant deliberated and wrote about some of the underlying elements that advance the public understanding of science, health, and medicine [9–11]. During the COVID-19 pandemic, some dangling conversations with the author focused on how health communicators should respond constructively to the infodemic, contextualize the impact of traditional and social media on the public's understanding of health, and appreciate the emerging field of health narratives.

4.1. Extensive scholarly interest in the infodemic

The term 'infodemic' and its impact on public trust and understanding during the COVID-19 pandemic is mentioned in several of the special issue's contributions, and the concept is deconstructed in Table 1 of Smith and Carbone's paper [3–6]. As of this writing, an 'infodemic' search yields more than 700 manuscripts in PubMed compared to almost nil before 2020 [12]. The latter suggests the research term's

acceptance and emerging research importance. However, it seems premature to suggest 'infodemic' is a research construct because the term's operational definitions vary.

Smith and Carbone explain that the infodemic is widely described as a negative byproduct of the socio-cultural response to COVID-19 in the U.S. and other nations [3]. The infodemic is suggested to have deleteriously impacted public health and clinical practice by undermining evidence-based efforts to contain COVID's spread via initiatives such as vaccination and medications, wearing masks, and social distancing [3,4,13]. In 2020–2022 conversations with the author, Dr. Pleasant stipulated that continuing public exposure to misinformation and disinformation undermined life-saving evidence-based clinical and public health strategies during the pandemic.

Foundationally, the infodemic's diffusion and impact stirred Dr. Pleasant's long-standing interests in the multidimensional process of health communication; and the role of the press, popular culture, interpersonal, and social institutions compared to other health-related influences (such as health literacy) on the public's understanding of health. Dr. Pleasant was especially interested in understanding the infodemic's foundations and finding constructive strategies for the future.

4.2. Dr. Pleasant on the infodemic's origins and contextualization

In conversations, Dr. Pleasant discussed whether the origins and underpinnings of the infodemic should be contextualized as a mass media, social media, societal, governmental, health care, social institutional problem - or combination of all the above.

Before and during the pandemic, Dr. Pleasant suggested that the diffusion of medical disinformation and misinformation among the legacy mass media seemed to occur more within popular culture (fiction and non-fiction films, videos, websites, social media, books) than the news media. With some exceptions, Dr. Pleasant was unconvinced that educational interventions to counter the health disinformation and misinformation conveyed by social media, films, videos, and non-news websites would be productive because of a lack of leadership to elevate professional standards grounded in evidence-based narratives, accuracy, impartiality, and self-correction. "Many prefer to entertain than inform", he said.

In contrast, Dr. Pleasant was more optimistic about addressing health misinformation and disinformation among legacy-trained journalists because of the internal accuracy standards and traditions within some news organizations and U.S.-based health journalism organizations, such as the Association of Health Care Journalists, and existing projects to elevate news accuracy standards, such as the Trust Project [14,15].

Yet, compared to the news and popular culture media, Dr. Pleasant suggested the infodemic was *more* socio-culturally generated using social media as a tool and crucible. In conversation, Dr. Pleasant informally identified four reasons why social and digital media technology accelerate the public generation of health misinformation and disinformation.

4.3. Pleasant's reasons why social and digital media technology accelerate the generation of health misinformation and disinformation

First, Dr. Pleasant suggested information technology and social media blur the former distinctions between interpersonal and mass communication and create the potential for social media sources to overwhelm the public diffusion of medical information from the mass media, as Smith and Carbone note [3].

Second, Dr. Pleasant recognized that social media accelerate the formation, reinforcement, and diffusion of common understandings (and misunderstandings) within what Thayer termed 'epistemic communities' or socio-culturally created groups of like-minded people [16]. Third, Dr. Pleasant appreciated that contemporary information technology, which includes social media, reduces the need for physical presence and geographical proximity to create and sustain an epistemic community.

Fourth, Dr. Pleasant was aware that emerging artificial intelligence (AI) or 'deep fake' tools hasten the opportunities for health information abuse by convincingly mimicking a human voice, video, and text generation simultaneously in multiple languages [7,17]. For the first time, sharing health knowledge that galvanizes epistemic communities could be underpinned by misinformation and disinformation which lacks authentic attribution or even human social actors [17]. Fittingly, in spring 2023, more than 1,000 information technology leaders advocated better societal and governmental controls (sometimes called 'guardrails') for AI's development [18].

4.4. Pleasant on other sources of misinformation and disinformation during the pandemic

Besides information technology, social-cultural origins, social media. and traditional mass media practitioners, Dr. Pleasant added that some medical professionals, government agencies and officials, and politicians also contributed to disinformation and misinformation during the pandemic. Similar to findings in the McCaffery et al. and Smith and Carbone papers, Dr. Pleasant suggested that providers, provider organizations, public health officials, hospitals, pharmaceutical companies, medical educators, patient advocacy groups, public health/medical governmental and non-government organizations sometimes failed to provide evidence-based health information to health consumers [3,4].

Long before the pandemic, Dr. Pleasant also was concerned that the de-centralization of public health organizations in the U.S. spawned inter-agency inconsistencies and conflicting health information. The latter issue is discussed in papers by Smith and Carbone and McCaffery et al. within this special issue [3,4].

Again similar to findings by Smith and Carbone and McCaffery et al., Dr. Pleasant suggested that some politicians in the U.S. and some other nations occasionally challenged or countered evidence-based health information during the pandemic [3,4]. He remarked some politicians: 'seem to support evidence-based efforts only when it is reinforcing or convenient'.

Otherwise, Dr. Pleasant was displeased that the complexity of the COVID-19 information provided by U.S. government health care agencies (such as state health departments and the Centers for Disease Control and Prevention) was difficult even for healthcare professionals to understand - 'and almost impenetrable for citizens'. As McCaffery et al. find, Dr. Pleasant was disappointed when some U.S. public health agencies that otherwise support health literacy initiatives failed to demonstrate best practices during the pandemic [4].

Overall, Dr. Pleasant was unimpressed by one-dimensional explanations about the infodemic's origins and similar assessments regarding culpability. Beyond traditional mass media and social media, he suggested diverse stakeholders contributed to public misinformation and disinformation during the pandemic and recommended remedies that impact diverse socio-professional institutions and social actors.

4.5. Constructive options

Looking ahead, Dr. Pleasant suggested one of the specific strategies to counter disinformation and misinformation and enhance public understanding should include projects to assist journalists. Besides

self-generated initiatives by the Association of Health Care Journalists and some news organizations, Dr. Pleasant saluted efforts such as SciLine by the American Association for the Advancement of Science, which helps journalists find evidence-based health information and assists scientists and research institutions with news media and public interactions [19].

Dr. Pleasant added that interventions to thwart health misinformation and disinformation among epistemic and geographical communities would be more successful if they embraced evidence-based intervention strategies found in the health communication and health literacy research literature, as Kreps explains [6]. As O'Leary, Zaracadoolas, and Peres suggest, Dr. Pleasant's health promotion/intervention campaigns were based on a research legacy that utilized news media and mass media to raise awareness and set agendas with broader community and social engagement efforts to reinforce campaign goals [8]. Similar to Kreps' recommendations, Dr. Pleasant's work demonstrated how efforts to overcome health misinformation and disinformation and improve public trust often began with community dialogue and engagement [6,8].

Moreover, Dr. Pleasant advocated that efforts to elevate the public's health literacy should play an integral role in addressing the public's misunderstanding of health and generating increased public trust. To Andrew, health literacy interventions represented a constructive, high-minded strategy to advance public education, engagement, enrichment, and engender social trust. Dr, Pleasant agreed with McCaffrey et al. that health literacy is one of the social determinants of health that is modifiable with evidence-based approaches [4]. Dr. Pleasant remained enthusiastic about health literacy interventions because prior research suggested these efforts fostered therapeutic clinical (various disease-based) outcomes, a higher quality of life, and enhanced public health for communities [20,21].

In other words, health literacy interventions provided a constructive place to engage patients and the public as partners in their health care and cognizance.

In addition, Dr. Pleasant was intrigued by health narratives because they provided more informal, less invasive, inexpensive, intra-personal and inter-personal approaches to engage individuals in well-being. His interest in health narratives is summarized below.

5. A topic of enduring interest to Dr. Pleasant: The contribution of health narratives

Dr. Pleasant was encouraged by some findings about the contributions of health narratives from its diverse proponents and researchers [22–25]. To backup, research about health narratives reflects a range of subtopics such as, how to frame messages within health campaigns, how to create messages for or by underserved medical audiences, and the value of storytelling by healthcare practitioners and patients [24–27]. More specific research efforts include: redemptive patient autobiographical narratives and prosocial behaviors, the impact of how physicians frame clinical encounters on patient decision-making, and physician non-clinical self-expression about the more emotional and poignant aspects of health care delivery [27–30].

Usually, health narratives are identified as storytelling. Some health narratives report and illuminate the cultural contexts of health that suggest the practices and behaviors shared by individuals or groups, which may be defined by customs, language, and geography [22]. In many cases, health narratives convey the experience of illness and well-being, complementing (and sometimes challenging) epidemiological and public health evidence [22]. An extension of health narratives includes patient and e-patient efforts to detail self-care, coping, and caregiving [31].

While the field is too extensive to review here, Dr. Pleasant mentioned two examples of health narrative research in conversations with the author. Dr. Pleasant lauded a study about health promotions that emphasized resilience and hope (as opposed to suffering and challenges), which fostered prosocial responses among its intended audiences [28]. In addition, he was intrigued by adolescent-produced, hip hop video storytelling regarding how the cumulative sugar in some foods and soft drinks fostered diabetes - and boosted teen health awareness and engagement [32]. Similarly, Dr. Pleasant partially advanced health narratives via dialogue to advance interest in hygiene, family, and community health in low-income communities in Lima, Peru, as noted by O'Leary et al. [8].

The Peru initiative and other efforts represented Dr. Pleasant's interest in converging health narratives, health communication, and health literacy research. Although Dr. Pleasant realized health narratives were a stand-alone research category, 'health storytelling dovetails well with health literacy'. While he understood that medical narratives could be a source of health disinformation and disease-mongering, Dr. Pleasant noted they simultaneously provide a promising tool to further patient, provider, and community interest and interaction, which might generate increased interest and understanding [33].

In conversations before the pandemic, Dr. Pleasant saluted health narratives' cost-effective simplicity and elegance and suggested they could be advanced via new mass and social media IT tools with multi-language capabilities and audience tailoring [7].

Finally, Dr. Pleasant was intrigued by health narratives and health literacy because of a career-long interest in boosting public engagement and building the evidence base that health communication strategies are therapeutic. 'We need additional tools and more evidence that health communication helps patients, providers, and communities - and favorably impacts health and social outcomes.'

At its core, Dr. Pleasant sought innovative health communication strategies and was mindful of affordable approaches that were easy to implement, especially in underserved communities. He enjoyed involvement in all phases of generating strategies, assessment, measurement, diffusion, publication, public/professional remedies, and health policy implications. Andrew Pleasant was a person for all seasons whose work bridged cultural boundaries and left an inspirational legacy.

Andrew Pleasant obituaries

http://publiclinguist.blogspot.com/2022/11/andrew-pleasant-phd-1962-2022.html
https://us2.campaign-archive.com/?e=__test_email__&u=5aa260252f2f0686beade64eb&id=d04efc9cfb
https://www.i-hla.org/post/in-memory-and-celebration

Jurgen Pelikan farewell

With a salute and sadness, the editors note the recent, untimely death of Jurgen Pelikan Ph.D., one of health literacy's pioneers and leading quantitative researchers. Dr. Pelikan was the principal investigator of the European Health Literacy Survey and the Measuring Population and Organizational Health Literacy for WHO-Europe. Dr. Pelkian helped found the International Health Literacy Association. Dr. Pelikan's prolific scholarship included significant contributions to the health literacy books edited by Elliot Siegel and the author in 2017 and 2020 [1,2].

https://www.i-hla.org/post/in-memory-and-celebration

References

[1] R.A. Logan and E.R. Siegel (eds), *Health Literacy: New Directions in Research, Theory, and Practice*, IOS Press, Amsterdam, 2017.

[2] R.A. Logan and E.R. Siegel (eds), *Health Literacy in Clinical Practice and Public Health: New Initiatives and Lessons Learned at the Intersection with Other Disciplines*, IOS Press, Amsterdam, 2020.

[3] S.S. Smith and E. Carbone, Health literacy and empowerment in the COVID-19 era, *Inf Serv Use* **43**(2) .

[4] K.J. McCaffery, J. Ayre, R. Dodd, K. Pickles, T. Copp, D.M. Muscat et al., Disparities in public understanding, attitudes, and intentions during the COVID-19 pandemic: The role of health literacy, *Inf Serv Use* **43**(2) (2023).

[5] O. Okan, M. Messer, D. Levin-Zamir, K. Dadaczynski, L. Paakkari, D. Schaeffer et al., How health literacy and digital health literacy contributed to public understanding and misunderstanding during the pandemic, *Inf Serv Use* **43**(2) (2023).

[6] G.L. Kreps, Addressing resistance to adopting relevant health promotion recommendations with strategic health communication, *Inf Serv Use* **43**(2) (2023).

[7] D. Levin-Zamir, Digital health literacy and health technology in health systems and beyond – the importance of measurement, planned action and policy for readiness and sustainability, *Inf Serv Use* **43**(2) (2023).

[8] C. O'Leary, C. Zarcadoolas and F. Peres, Remembering Andrew Pleasant's career and contributions, *Inf Serv Use* **43**(2) (2023).

[9] A. Pleasant, *Health Literacy Around the World: Part 2 Health Literacy Within the United States and a Global Overview*. Institute of Medicine, Washington, D.C., 2013.

[10] C. Zarcadoolas, A. Pleasant and D. Greer, *Advancing Health Literacy: A Framework for Understanding and Action*. Jossey Bass, San Francisco, CA, 2006.

[11] A. Pleasant, Advancing health literacy measurement: A pathway to better health and health system performance, *J Health Commun* **19**(12) (2014), 1481–1496. doi:10.1080/10810730.2014.954083, PMID: 25491583; PMCID: PMC4292229.

[12] https://pubmed.ncbi.nlm.nih.gov/?term=infodemic. Retrieved May 11, 2023.

[13] S.C. Ratzen, L.O. Gostin, N. Meshkati, R.M. Parker and K. Rabin, COVID-19: An urgent call for coordinated, trusted sources to tell everyone what they need to know and do, *NAM Perspectives Commentary* (2020). doi:10.31478/202003a.

[14] https://healthjournalism.org/center-mission.php. Retrieved May 11, 2023.

[15] https://thetrustproject.org. Retrieved April 17, 2023.

[16] L. Thayer, Communication and social change. in: *Communication and Social Change*, R.W. Budd and B.D. Ruben (eds), Rutgers University Press, New Brunswick, 1974.

[17] The age of pseudocognition, *The Economist* **447**(9343) (2023), 15–18.

[18] https://www.npr.org/2023/03/29/1166891536/an-open-letter-signed-by-tech-leaders-researchers-proposes-delaying-ai-developme. Retrieved May 12, 2023.

[19] https://www.sciline.org. Retrieved May 3, 2023.

[20] R. O'Conor, A. Moore and M.S. Wolf, Health literacy and its impact on health and healthcare outcomes. in: *Health Literacy in Clinical Practice and Public Health: New Initiatives and Lessons Learned at the Intersection with Other Disciplines*, R.A. Logan and E.R. Siegel (eds), IOS Press, Amsterdam, 2020, pp. 3–21.

[21] D. Schillinger, The intersections between social determinants of health, health literacy, and health disparities. in: *Health Literacy in Clinical Practice and Public Health: New Initiatives and Lessons Learned at the Intersection with Other Disciplines*, R.A. Logan and E.R. Siegel (eds), IOS Press, Amsterdam, 2020, pp. 22–41.

[22] T. Greenhalgh, *Cultural Contexts of Health: The Use of Narrative Research in the Health Sector [Internet]*. WHO Regional Office for Europe, Copenhagen, 2016, (Health Evidence Network Synthesis Report, No. 49.) Available from: https://www.ncbi.nlm.nih.gov/books/NBK391066/. Retrieved May 4, 2023.

[23] A. Shaffer, E.S. Focella, A. Hathaway, L.D. Scherer and B.J. Zikmund-Fisher, On the usefulness of narratives: An interdisciplinary review and theoretical model, *Ann Behav Med* **52**(5) (2018), 429–442. doi:10.1093/abm/kax008, PMID: 29684135; PMCID: PMC6369912.

[24] K.R. Christy, J.D. Jensen, S.H. Sarapin, Y.N. Yale, J. Weaver and M. Pokharel, Theorizing the impact of targeted narratives: Model admiration and narrative memorability, *J Health Commun* **22**(5) (2017), 433–441. doi:10.1080/10810730.2017.1303555, Epub 2017 Apr 17. PMID: 28414617.

[25] A.M. Ballard, A. Davis and C.A. Hoffner, The impact of health narratives on persuasion in African American women: A systematic review and meta-analysis, *Health Commun* **36**(5) (2021), 560–571. doi:10.1080/10410236.2020.1731936, Epub 2020 Mar 2. PMID: 32122156.

[26] K.M. Gallagher and J.A. Updegraff, Health message framing effects on attitudes, intentions, and behavior: A meta-analytic review, *Ann Behav Med* **43**(1) (2012), 101–116. doi:10.1007/s12160-011-9308-7, Erratum in: *Ann Behav Med.* **46**(1) (2013), 127. PMID: 21993844.

[27] W. Wang and F. Shen, The effects of health narratives: Examining the moderating role of persuasive intent, *Health Mark Q* **36**(2) (2019), 120–135. doi:10.1080/07359683.2019.1575061, Epub 2019 Mar 23. PMID: 30907268.

[28] K. Fitzgerald, E. Paravati, M.C. Green, M.M. Moore and J.L. Qian, Restorative narratives for health promotion, *Health Commun* **35**(3) (2020), 356–363. doi:10.1080/10410236.2018.1563032, Epub 2019 Jan 7. PMID: 30614737.

[29] Y. Huang and M.C. Green, Reducing COVID-19 vaccine hesitancy among African Americans: The effects of narratives, character's self-persuasion, and trust in science, *J Behav Med* **46**(1–2) (2023), 290–302. doi:10.1007/s10865-022-00303-8, Epub 2022 Mar 19. PMID: 35305206; PMCID: PMC8933767.

[30] L. Robertshaw, S. Dhesi and L.L. Jones, Challenges and facilitators for health professionals providing primary healthcare for refugees and asylum seekers in high-income countries: A systematic review and thematic synthesis of qualitative research, *BMJ Open* **7**(8) (2017), e015981. doi:10.1136/bmjopen-2017-015981, PMID: 28780549; PMCID: PMC5629684.

[31] D. deBronkart, *Laugh, Sing, and Eat Like a Pig: How an Empowered Patient Beat Stage-IV (and What Healthcare Can Learn from It)*, Media, Changing Outlook Press, PN, 2010.

[32] E.A. Rogers, S. Fine, M.A. Handley, H. Davis, J. Kass and D. Schillinger, Development and early implementation of the bigger picture, a youth-targeted public health literacy campaign to prevent type 2 diabetes, *J Health Commun* **19**(Suppl 2) (2014), 144–160. doi:10.1080/10810730.2014.940476, PMID: 25315590; PMCID: PMC4217646.

[33] https://www.washingtonpost.com/parenting/2023/05/11/tiktok-medical-mamas/?utm_campaign=morning_rounds&utm_medium=email&_hsmi=258009391&_hsenc=p2ANqtz-8_xHtMAEMxbAFVThV2_iJ7oGx4u87Oy4NKo86PpYQrn-9WmNNWuVodOlCpGrSRNho4diFrYvjXIVjkHzjzcZSp_3YfjQ&utm_content=258009391&utm_source=hs_email. Retrieved May 5, 2023.