Digital inclusion in the time of COVID-19: An evidence summary

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## Evidence Summary

* Digital inclusion is known by many different names – so within this summary evidence may discuss the ‘digital divide’, digital inclusion, inequalities, or exclusion.
* There is not much evidence for COVID-19 specific digital inclusion and what there is not classically defined as ‘high quality’ evidence – but may bear relevance to locally gathered intelligence.
* Based on the quality of evidence there is no way to make conclusive statements

## Evidence Review Summary

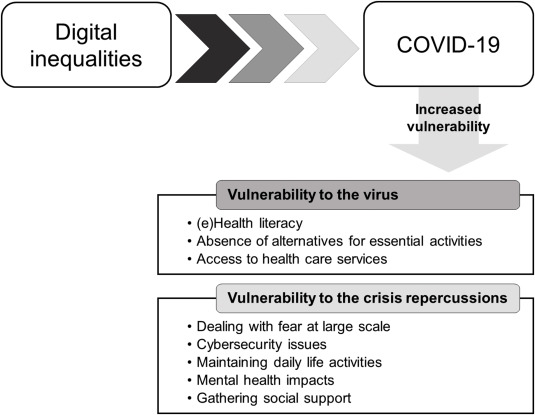
* Emerging evidence that: Digital inclusion being impacted by COVID-19
* Emerging evidence that COVID-19 is being impacted by digital exclusion
* Misinformation and low levels of health literacy are potential drivers
* You should read: [*Beaunoyer, E., et al. (2020). "COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies*](https://www.sciencedirect.com/science/article/pii/S0747563220301771) *–* It lays the issues of COVID-19 out across the wider digital inclusion/exclusion issues and reflects on how they may impact upon it each. It’s a very interesting read.
* Not covered to any great length in this summary but there is already a substantial amount of high-quality evidence and effective interventions on digital inclusion and health literacy already available

## Evidence Review

Whilst the evidence around COVID-19 and digital inclusion (including associated topics such as health literacy) is still limited, there are a few interesting pieces that could be of interest. The most pervasive of this emerging evidence base is *Beaunoyer, E., et al. (2020). "COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies."[[1]](#endnote-1)* Which provides a singular overview of the issues associated around COVID-19 and digital (lack of) inclusion. The article discusses digital inequalities as a determinant of health, how COVID-19 may increase likelihood of digital inequalities occurring, and how digital inequalities increase vulnerable to COVID-19 (both virus and the secondary impacts).

**Digital exclusion impacting COVID-19**

Figure 1: Impacts of digital inequalities on COVID-19 vulnerability (taken from *Beaunoyer et al. 2020)*

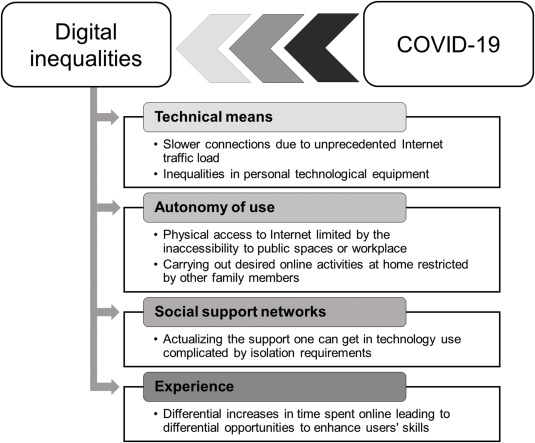


There is some evidence on the risk of low health literacy levels in certain ‘COVID at-risk groups’ – such as older people and adults with existing comorbidities. These editorials do argue that low health literacy could lead to worse COVID-19 outcomes through individual actions[[2]](#endnote-2) and how COVID-19 could engender digital exclusion – especially as social participation is becoming more digitally minded.[[3]](#endnote-3)

**COVID-19 impacting digital inclusion**

The mirror of this, that there is a negative impact collaboration between COVID-19 and digital exclusion is examined in a very interesting piece by Ramsetty & Adams (2020)[[4]](#endnote-4) examining it through the prism of health care service accessibility in the USA. They, and others find that digital exclusion is both a result and a driver of widening social inequalities – often worsening outcomes for those most at risk – a danger exacerbated during the COVID-19 crisis (see figure 2) which can be seen following an emergent pattern across the relationship between COVID-19 (and particularly the system responses to) and the wider social determinants that drive social inequality and social exclusion.

Figure 2: Impacts of the COVID-19 crisis on digital inequalities (taken from *Beaunoyer et al. 2020)*



**Misinformation**

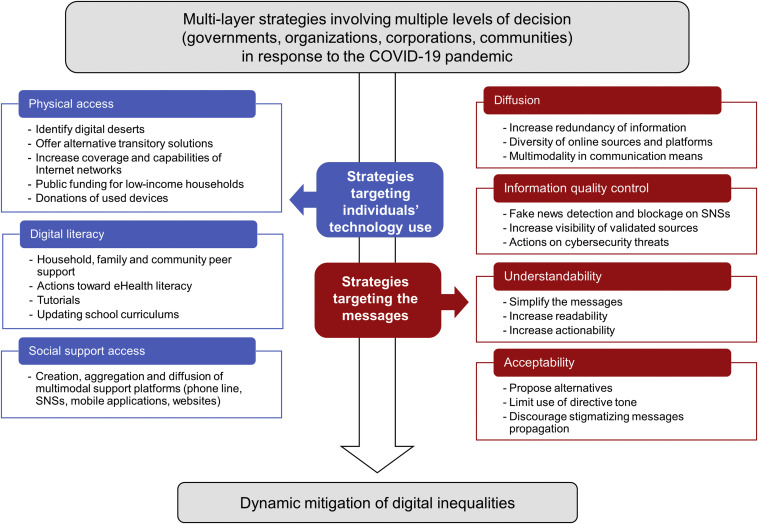
This challenge of misinformation during COVID-19 is labelled an ‘infodemic’ in several places and it highlights the impact poor health literacy levels can have during a pandemic. Paakkari & Okan (2020) argue that health literacy aids the prevention of communicable diseases (as it already does for non-communicable diseases) – and on an individual level it develops resilience and the preparedness and skills for solving complex real-life problems” [[5]](#endnote-5). The danger is, claims Cuan-Baltazar et al (2020)[[6]](#endnote-6), exacerbated by poor digital and/or poor health literacy skills

**Meeting the Challenge**

The challenges of providing accurate and effective public health messages during COVID is discussed across the resources linking to the need for good health literacy and in particular ‘critical health literacy’[[7]](#endnote-7) (an individual's understanding of the social determinants of health combined with the skills to take action at both the individual and the community level[[8]](#endnote-8)) .

However, all hope is not lost – once again referring to Beaunoyer et al (2020), they highlight strategies targeting the individual and their use of digital technology and strategies for targeting the messages – handily summarized in another table from the paper:

Figure 3: Mitigation strategies to limit the impacts of digital inequalities during the COVID-19 crisis (taken from *Beaunoyer et al. 2020)*



Within the wider evidence there are further discussions of approaches to, and opportunities to increase health literacy thus combatting the duel dangers of misinformation and COVID-19 – with the World Health Organisation[[9]](#endnote-9) (WHO)taking a lead, and strategies for effective online COVID-19 public health messages jumping out as particularly interesting[[10]](#endnote-10).

**Wider Issues**

It is impossible not to consider the concept of digital inclusion without acknowledging the issues which underpin it – particularly literacy including health literacy, and those wider social determinants which impact social exclusion/social inequalities as often digital exclusion and social exclusion are linked within similar cohorts. Work by ONS[[11]](#endnote-11) and the governments digital Inclusion Strategy[[12]](#endnote-12) highlight several groups (including many already known to be at risk from worse COVID-19 related outcomes):

* those in social housing –
  + 37% of those who are digitally excluded are social housing tenants
* those on lower wages, or unemployed –
  + 17% of people earning less than £20,000 never use the internet, as opposed to 2% of people earning more than than £40,000.
  + 44% of people without basic digital skills are on lower wages or are unemployed
* those with disabilities –
  + 33% of people with registered disabilities have never used the internet.
  + This is 54% of the total number of people who have never used the internet
* older people –
  + over 53% of people who lack basic digital skills are aged over 65, and 69% are over 55
* young people –
  + 6% of people who lack digital skills are between 15 and 24 years.
  + Only 27% of young people who are offline are in full-time employment

These wider issues are too broad to cover in this review, but a flavour of the highest quality evidence has been including in the results list. You should read the full set of results, but the most relevant in terms of giving wider context are:

* Cabinet Office. (2014). Government Digital Inclusion Strategy: <https://www.gov.uk/government/publications/government-digital-inclusion-strategy/government-digital-inclusion-strategy>
* Office for National Statistics. (2019). Exploring the UK’s digital divide. Retrieved 21 May 2020, from <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>
* Rowlands, G. Digital Health Literacy. Retrieved 21 May 2020, from <https://www.who.int/global-coordination-mechanism/activities/working-groups/17-s5-rowlands.pdf>
* Azzopardi-Muscat, N. and K. Sørensen (2019). "Towards an equitable digital public health era: Promoting equity through a health literacy perspective
* Borg, K., et al. (2019). "Digital inclusion & health communication: A rapid review of literature." Health Communication. Vol. **34**(11): 1320-1328.
* Davidson, S. (2018). "Age UK - Digital inclusion evidence review 2018."
* Gann, B. (2019). "Digital Inclusion and Health in Wales." Journal of Consumer Health on the Internet **23**(2): 146-160.

## Must Read Results

* Beaunoyer, E., et al. (2020). "COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies." Computers in Human Behavior: 106424.
* Office for National Statistics. (2019). Exploring the UK’s digital divide. Retrieved 21 May 2020, from <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>
* Paakkari, L. and O. Okan (2020). "COVID-19: health literacy is an underestimated problem." The Lancet Public Health **5**(5): e249-e250

## Literature Search Results

Aakre, C. A., et al. (2019). "Barriers and facilitators to clinical information seeking: A systematic review." Journal of the American Medical Informatics Association **26**(10): 1129-1140.

The study sought to identify barriers to and facilitators of point-of-care information seeking and use of knowledge resources. Materials and Methods: We searched MEDLINE, Embase, PsycINFO, and Cochrane Library from 1991 to February 2017. We included qualitative studies in any language exploring barriers to and facilitators of point-of-care information seeking or use of electronic knowledge resources. Two authors independently extracted data on users, study design, and study quality. We inductively identified specific barriers or facilitators and from these synthesized a model of key determinants of information-seeking behaviors. Results: Forty-five qualitative studies were included, reporting data derived from interviews (n = 26), focus groups (n = 21), ethnographies (n = 6), logs (n = 4), and usability studies (n = 2). Most studies were performed within the context of general medicine (n = 28) or medical specialties (n = 13). We inductively identified 58 specific barriers and facilitators and then created a model reflecting 5 key determinants of information-seeking behaviors: time includes subthemes of time availability, efficiency of information seeking, and urgency of information need; accessibility includes subthemes of hardware access, hardware speed, hardware portability, information restriction, and cost of resources; personal skills and attitudes includes subthemes of computer literacy, information-seeking skills, and contextual attitudes about information seeking; institutional attitudes, cultures, and policies includes subthemes describing external individual and institutional information-seeking influences; and knowledge resource features includes subthemes describing information-seeking efficiency, information content, information organization, resource familiarity, information credibility, information currency, workflow integration, compatibility of recommendations with local processes, and patient educational support. Conclusions: Addressing these determinants of information-seeking behaviors may facilitate clinicians' question answering to improve patient care. © 2019 The Author(s) 2019. Published by Oxford University Press on behalf of the American Medical Informatics Association. All rights reserved.

Abdullah, A., et al. (2019). "Prevalence of limited health literacy among patients with type 2 diabetes mellitus: A systematic review." PLoS ONE [Electronic Resource] **14**(5): e0216402.

BACKGROUND: Health literacy (HL) skills are essential to enable self-management and shared decision-making in patients with type 2 diabetes mellitus (T2DM). Limited HL in these patients is associated with poorer outcomes. It is not clear what the burden of limited HL in patients with T2DM across countries and what factors influence it.

METHODS: A systematic review was conducted according to the PRISMA guidelines. The study protocol was registered with PROSPERO (CRD42017056150). We searched MEDLINE, EMBASE, PsycINFO, CINAHL and ERIC for articles published up to January 2017. Articles that measured HL levels in adult patients with T2DM; that used validated HL tools; and that were reported in English were included. Two reviewers assessed studies for eligibility and quality, and extracted the data. Prevalence of limited HL is calculated from the number of patients with less than adequate HL over the total number of patients with T2DM in the study. Meta-analysis and meta-regression analysis were conducted using the Open Meta-analyst software.

RESULTS: Twenty-nine studies involving 13,457 patients with T2DM from seven countries were included. In total, seven different HL measurement tools were used. The prevalence of limited HL ranged from 7.3% to 82%, lowest in Switzerland and the highest in Taiwan. Meta-regression analysis of all included studies showed the country of study (p<0.001), HL tool used (p = 0.002), and the country's region (p<0.001) contributed to the variation findings. Thirteen studies in the USA measured functional HL. The pooled prevalence of inadequate functional HL among patients with T2DM in the USA was 28.9% (95% CI: 20.4-37.3), with high heterogeneity (I2 = 97.9%, p <0.001). Studies were done in the community as opposed to a hospital or primary care (p = 0.005) and populations with education level lower than high school education (p = 0.009) reported a higher prevalence of limited HL.

CONCLUSION: The prevalence of limited HL in patients with T2DM varied widely between countries, HL tools used and the country's region. Pooled prevalence showed nearly one in three patients with T2DM in the USA had limited functional HL. Interactions with healthcare providers and educational attainment were associated with reported of prevalence in the USA.

Abel, T. and D. McQueen (2020). "Critical health literacy and the COVID-19 crisis." Health promotion international. **02**.

Ahmad, N. A. and K. Y. Yin (2019). "Using interactive media to support reading skills among underachieving children." International Journal of Innovation, Creativity and Change **8**(7): 81-88.

This article presents a literature review on improving reading skills, and recommendations for reading skills that prepare children for the world of tomorrow. Remediation should begin as soon as a child is diagnosed as having problems with reading. As the demand for digital know-how has dramatically increased in recent years, interactive media has become a basic tool in today's classroom. Children with weak working memory, and with difficulties in the rapid processing of information, need to be assisted to use digital literacy skills. Underachievers usually show a gap between their functional knowledge and performance potential. In order to prevent this gap from widening, underachievers are advised to work at their own functional level to overcome their deficits. Recommendations are made which are related to interventions that use interactive media as instructional material, and which may underscore an ability or desire to perform independently and more effectively. Three canvases for improving reading skills are suggested, namely, (1) creative canvas, (2) learning tools canvas and (3) reading skills service canvas. We conclude that there is a need for educators to move towards using interactive multimedia as an instructional tool in teaching and learning. Educators need to modify and re-design their educational curricula into an interactive learning environment that might reinforce and strengthen reading skills among underachievers. © 2019 International Press of Boston, Inc.

Ahmadvand, A., et al. (2019). "Trends and visibility of "digital health" as a keyword in articles by JMIR publications in the new millennium: Bibliographic-bibliometric analysis." Journal of Medical Internet Research **21**(12).

Background: Digital health has become an advancing phenomenon in the health care systems of modern societies. Over the past two decades, various digital health options, technologies, and innovations have been introduced; many of them are still being investigated and evaluated by researchers all around the globe. However, the actual trends and visibility of peer-reviewed publications using "digital health" as a keyword to reflect the topic, published by major relevant journals, still remain to be quantified. Objective: This study aimed to conduct a bibliographic-bibliometric analysis on articles published in JMIR Publications journals that used "digital health" as a keyword. We evaluated the trends, topics, and citations of these research publications to identify the important share and contribution of JMIR Publications journals in publishing articles on digital health. Methods: All JMIR Publications journals were searched to find articles in English, published between January 2000 and August 2019, in which the authors focused on, utilized, or discussed digital health in their study and used "digital health" as a keyword. In addition, a bibliographic-bibliometric analysis was conducted using the freely available Profiles Research Networking Software by the Harvard Clinical and Translational Science Center. Results: Out of 1797 articles having "digital health" as a keyword, published mostly between 2016 and 2019, 277 articles (32.3%) were published by JMIR Publications journals, mainly in the Journal of Medical Internet Research. The most frequently used keyword for the topic was "mHealth." The average number of times an article had been cited, including self-citations, was above 2.8. Conclusions: The reflection of "digital health" as a keyword in JMIR Publications journals has increased noticeably over the past few years. To maintain this momentum, more regular bibliographic and bibliometric analyses will be needed. This would encourage authors to consider publishing their articles in relevant, high-visibility journals and help these journals expand their supportive publication policies and become more inclusive of digital health. © 2019 Alireza Ahmadvand, David Kavanagh, Michele Clark, Judy Drennan, Lisa Nissen.

Arafat, S. M. Y., et al. (2020). "Does COVID-19 pandemic affect sexual behaviour? A cross-sectional, cross-national online survey." Psychiatry Research **289**.

Azzopardi-Muscat, N. and K. Sørensen (2019). "Towards an equitable digital public health era: Promoting equity through a health literacy perspective." European Journal of Public Health **29**: 13-17.

Digital technologies shape the way in which individuals and health systems interact to promote health and treat illness. Their propensity to exacerbate inequalities is increasingly being highlighted as a concern for public health. Personal, contextual and technological factors all interact and determine uptake and consequent use of digital technologies for health. This article reviews evidence on the impact of digital technologies on health equity. Health literacy is presented as a lens through which to approach research and policy on access, uptake and use of digital technologies. In the short term, based on our review of published literature, we conclude that it is likely that digital technologies will increase health inequities associated with increased age, lower level of educational attainment and lower socio-economic status. Geographical inequity may increase as a result of poor infrastructure but may decrease if digital technologies can be effectively widely deployed to compensate for health workforce and health system deficiencies. Programmes to enhance health and digital literacy and monitoring of access, utilization and impact across all groups in society can help to ensure that digital technologies act to reduce rather than reproduce or exacerbate existent health inequalities. © 2019 The Author(s).

Barnes, K. A. (2020). "A meta-synthesis of adolescent psychological help-seeking." Dissertation Abstracts International Section A: Humanities and Social Sciences. Vol. **81**(5-A).

Although adolescents experience psychological difficulty at a rate higher than any other age group, most do not get the support they need. The purpose of this study was to explore perceptions about barriers, facilitating factors, and help-seeking preferences for psychological support among adolescents. This study involved Best, Gil-Rodriguez, Manktelow, and Taylor's conceptual framework pathways to online help-seeking to help explain adolescents' perceptions of factors that influence them seeking support as well as identify pathways for support. A qualitative meta-synthesis design was used to synthesize findings of individual qualitative studies into themes around the central phenomenon of adolescent help-seeking. Data were collected by conducting an exhaustive literature review that initially identified 634 potential records, 16 of which met the specific inclusion criteria. The findings of this study indicate that adolescents identify 2 distinct pathways for support: formal and informal sources. Adolescents in the studies identified preferred informal sources of support as family (most often mothers), and school personnel (most often teachers), and most did not see formal sources as a viable option. Trust emerged as a primary factor in who, if anyone, adolescents chose to seek emotional support from. Other indicators of help-seeking included self-reliance, mental health literacy, stigma, and helper characteristics. Social change implications of this study include encouraging opportunities for schools to promote help-seeking by increasing mental health literacy for both students and staff and collaborating with families and professionals to promote transition to formal services. (PsycINFO Database Record (c) 2020 APA, all rights reserved)

Basch, C. H., et al. (2020). "Public health communication in time of crisis: Readability of On-Line COVID-19 Information." Disaster medicine and public health preparedness: 1-10.

INTRODUCTION: The purpose of this study was to assess the readability of information on the Internet posted about COVID-19 to determine how closely these materials are written to the recommended reading levels. METHOD(S): Using the search term "coronavirus," information posted on the first 100 English language websites was identified. Using an online readability calculator, multiple readability tests were conducted to assure a comprehensive representation would result. RESULT(S): The mean readability scores ranged between grade levels 6.2 and 17.8 (graduate school level). Four of the five measures (GFI, CLI, SMOG, FRE) found that readability exceeded the 10th grade reading level indicating that the text of these websites would be difficult for the average American to read. The mean reading level for nearly all non-commercial and commercial websites was at or above the 10th grade reading level. DISCUSSION: Messages about COVID-19 must be readable at an 'easy' level, and must contain clear guidelines for behavior. The degree to which individuals seek information in response to risk messages is positively related to the expectation that the information will resolve uncertainty. However, if the information is too complex to interpret and it fails to lead to disambiguation this can contribute to feelings of panic.

Bastani, P. and M. A. Bahrami (2020). "COVID-19 Related Misinformation on Social Media: A Qualitative Study from Iran." Journal of medical Internet research. **05**.

BACKGROUND: Background: During outbreaks of diseases a great amount of health threatening misinformation is produced and released. In the web-2 era much of this misinformation is disseminated via social media where information could spread easily and quickly. Monitoring social media content provides crucial insights for health managers to manage the crisis. OBJECTIVE(S): Objective: Given the misinformation surrounding COVID-19 outbreak, this study was aimed to analyze contents of the most commonly used social networks in Iran that is among the affected countries. METHOD(S): Methods: A social media monitoring conducted through a qualitative design to analyze the discussions of social media users about the content related to COVID-19 transferred via Iranian medical faculty members` groups in Telegram and Whats App during Feb 20 to March 20, 2020 emphasizing the misinformation. Discourse analysis was applied and the written dialogues and discussions regarding misinformation about different aspects of the outbreak between medical faculty members all over the country were analyzed. RESULT(S): Results: Cultural factors, demand pressure for information during the crisis, the easiness of information dissemination via social networks, marketing incentives and the poor legal supervision of online contents are the main reasons of misinformation dissemination. Disease statistics; treatments, vaccines and medicines; prevention and protection methods; dietary recommendations and disease transmission ways are the main subjective categories of releasing misinformation regarding novel coronavirus outbreak. Consequences of misinformation dissemination regarding disease include psychosocial; economic; health status; health system and ethical ones. Active and effective presence of health professionals and authorities on social media during the crisis and the improvement of public health literacy in the long term are the most recommended strategies for dealing with issues related to misinformation. CONCLUSION(S): Conclusion(s): This study contributes the management of COVID-19 outbreak trough providing applicable insights for health managers to manage public information in this challenging time.

Baumeister, A., et al. (2019). "Interventions for improving health literacy in migrants." Cochrane Database of Systematic Reviews **4**(09).

This is a protocol for a Cochrane Review (Intervention). The objectives are as follows: \* To assess the effectiveness of interventions for improving health literacy in migrants. \* To assess whether female or male migrants may respond differently to the identified interventions. Such interventions must address health literacy either as a comprehensive construct or at least one of its four health information processing steps (access, understand, appraise, apply). However, we do not aim to equate general health literacy interventions that include a range of activities targeted to all of the four health information processing steps with interventions that aim to improve only one step (e.g. understand). We aim instead to create a comprehensive picture of the effect of health literacy interventions by applying the integrated model as an umbrella framework for a deductive analysis of the four steps of health information processing. We will not restrict this review to specific settings or diseases because we aim to provide an overview of all available interventions for improving health literacy addressing migrant populations. Extending this review with a qualitative evidence synthesis The author team of this effectiveness review will conduct a qualitative evidence synthesis (QES) in parallel: Gender differences in health literacy of migrants: a synthesis of qualitative evidence (Aldin 2019). Since we expect that relatively few studies will explicitly aim to explore if female and male migrants respond differently to a selected health literacy intervention, or even contain data on female and male migrants that can be extracted separately, the QES will supplement the effectiveness review in terms of gender-specific aspects that can affect the health information processing steps. Additionally, it will attempt to identify factors associated with gender and migration that may play a role in the design, delivery and effectiveness of health literacy interventions for female and male migrants, as it may be able to identify other relevant determinants that cannot be explored by quantitative methods. The QES will be linked to the effectiveness review by using the conceptual framework of health literacy developed by Sorensen 2012. The synthesised evidence from the effectiveness review and the linked QES will ultimately validate the applicability of the integrated model by Sorensen 2012 in interventions for improving health literacy in migrants. On the basis of the joint results, we will develop a logic model that includes the identified factors that must to be taken into account in the development and delivery of health literacy interventions for female and male migrants. The author teams will continuously exchange on methodological issues and support each other within the review process.

Beaunoyer, E., et al. (2020). "COVID-19 and digital inequalities: Reciprocal impacts and mitigation strategies." Computers in Human Behavior: 106424.

With more than three billion people in isolation, the status of digital spaces is switching from an amenity to a necessity, as they become not only the main way to access information and services, but also one of the only remaining vectors for economic, educational, and leisure activities as well as for social interactions to take place. However, not all are equals in terms of access to networks or connected devices, or when it comes to the skills required to navigate computerized spaces optimally. Digital inequalities were already existing, yet the COVID-19 crisis is exacerbating them dramatically. On the one hand, the crisis will worsen digital inequalities within the population. On the other hand, digital inequalities represent a major risk factor of vulnerability for exposure to the virus itself, and for the non-sanitary consequences of the crisis. Therefore, this paper aims at exploring the reciprocal impacts of the COVID-19 crisis and digital inequalities, and to propose operative solutions to help fight the nefarious consequences of the crisis. We first describe how digital inequalities are a determinant of health. We then investigate how COVID-19 can potentiate digital inequalities, and how digital inequalities potentiate vulnerability to COVID-19. Finally, in order to contribute to the mitigation of this crisis, we propose a set of multi-layered strategies focusing on actionability that can be implemented at multiple structural levels, ranging from governmental to corporate and community levels.

Borg, K., et al. (2019). "Digital inclusion & health communication: A rapid review of literature." Health Communication. Vol. **34**(11): 1320-1328.

Information and communication technologies can be a valuable tool for enhancing health communication. However, not everyone is utilising the wide suite of digital opportunities. This disparity has the potential to exacerbate existing social and health inequalities, particularly among vulnerable groups such as those who are in poor health and the elderly. This review aimed to systematically identify the common barriers to, and facilitators of, digital inclusion. A comprehensive database search yielded 969 citations. Following screening, seven systematic reviews and three non-systematic reviews were identified. Collectively, the reviews found that physical access continues to be a barrier to digital inclusion. However, provision of access alone is insufficient, as digital ability and attitude were also potential barriers. Social support, direct user experience and collaborative learning/design were identified as key strategies to improve inclusion. These review findings provide guidance for health communication practitioners in designing and implementing effective programmes in the digital environment. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Borgström, Å., et al. (2019). "Young people with intellectual disabilities and social media: A literature review and thematic analysis." Scandinavian Journal of Disability Research **21**(1): 129-140.

Background: The aim of this review is to identify and analyse the research findings in the field of young people with intellectual disabilities and social media. Method: Twelve peer-reviewed papers published in well-established and recognized journals between 2001 and 2017 were identified from electronic database searches (Web of Science, Scopus and Google Scholar), the Internet (Facebook) and correspondence with experts. Results: Six topics were identified through thematic analysis of the texts: opportunities, risk and vulnerability, sexuality, identity, barriers and support. Conclusion: The latest research on young people with intellectual disabilities is characterized by issues of risk, vulnerability and support. The concept of positive risk-taking is suggested for the development of methodological approaches in practice and research. Furthermore, vulnerability, online and offline activities and identity formation should be examined more closely, and there is a call for new research methods in this area, for example observations and netnography. © 2019 The Author(s).

Broder, J., et al. (2017). "Health literacy in childhood and youth: a systematic review of definitions and models." BMC Public Health **17**(1): 361.

BACKGROUND: Children and young people constitute a core target group for health literacy research and practice: during childhood and youth, fundamental cognitive, physical and emotional development processes take place and health-related behaviours and skills develop. However, there is limited knowledge and academic consensus regarding the abilities and knowledge a child or young person should possess for making sound health decisions. The research presented in this review addresses this gap by providing an overview and synthesis of current understandings of health literacy in childhood and youth. Furthermore, the authors aim to understand to what extent available models capture the unique needs and characteristics of children and young people.

METHOD: Six databases were systematically searched with relevant search terms in English and German. Of the n = 1492 publications identified, N = 1021 entered the abstract screening and N = 340 full-texts were screened for eligibility. A total of 30 articles, which defined or conceptualized generic health literacy for a target population of 18 years or younger, were selected for a four-step inductive content analysis.

RESULTS: The systematic review of the literature identified 12 definitions and 21 models that have been specifically developed for children and young people. In the literature, health literacy in children and young people is described as comprising variable sets of key dimensions, each appearing as a cluster of related abilities, skills, commitments, and knowledge that enable a person to approach health information competently and effectively and to derive at health-promoting decisions and actions.

DISCUSSION: Identified definitions and models are very heterogeneous, depicting health literacy as multidimensional, complex construct. Moreover, health literacy is conceptualized as an action competence, with a strong focus on personal attributes, while also recognising its interrelatedness with social and contextual determinants. Life phase specificities are mainly considered from a cognitive and developmental perspective, leaving children's and young people's specific needs, vulnerabilities, and social structures poorly incorporated within most models. While a critical number of definitions and models were identified for youth or secondary school students, similar findings are lacking for children under the age of ten or within a primary school context.

Carrara, A. and P. J. Schulz (2018). "The role of health literacy in predicting adherence to nutritional recommendations: A systematic review." Patient Education and Counseling. Vol. **101**(1): 16-24.

Objective: Synthesize quantitative empirical evidence on the role of health literacy in predicting adherence to dietary recommendations. Methods: A systematic search of 13 online databases resulted in 1498 articles eligible for screening. Of those, 20 met the predefined inclusion criteria and, together with 6 studies retrieved from their reference lists, were included for review. Screening of full-texts, data extraction and quality appraisal were independently performed by two reviewers. Inconsistencies regarding eligibility were resolved through discussion. Results: Of the 26 reviewed articles, 17 involved patients and 9 the general population. Overall, 35 associations between health literacy and various nutrition behaviours were observed. A significant direct positive association was reported in 5 cases, all of them concerning the general population. An insignificant association was reported in 20 cases, 15 of which were related to patients. The remaining associations were negative (n = 2), partially mediated (n = 1) or entirely mediated (n = 7). Conclusion: Health literacy was scarcely determinant of dietary adherence and other nutrition behaviours, especially among patients. Practice implication: Patients' dietary adherence is likely to be unaffected by interventions based on health literacy. Empowering approaches are expected to be more beneficial. (PsycINFO Database Record (c) 2018 APA, all rights reserved)

Caruso, R., et al. (2018). "Health literacy in type 2 diabetes patients: a systematic review of systematic reviews." Acta Diabetologica **55**(1): 1-12.

Aim To summarize, critically review, and interpret the evidence related to the systematic reviews on health literacy (HL) amongst type 2 diabetes mellitus (T2DM). Methods The methodology for this study consisted of a systematic review of systematic reviews, using the PRISMA statement and flowchart to select studies, and searching on PubMed, CINAHL, Scopus, and Cochrane. The search covered the period between January 2006 and June 2016. Results From the 115 identified record by the queries, only six systematic reviews were included, following a quality evaluation using AMSTAR. The included systematic reviews content was analyzed by the independent work of two authors, using a narrative synthesis approach. The findings of this study (i.e., main themes) are areas of consensus and gaps in knowledge. Areas of consensus are HL definition, HL measurement tools, and the relationship between T2DM patient knowledge (or literacy) and his/her HL. The gaps in knowledge were the assessment of the relations between HL and health outcomes and self-efficacy, the gender differences, the effectiveness of interventions to improve HL, the cost-effectiveness study of interventions to improve HL, and the understanding of the influence of organizational environment on HL. Conclusion This review provides a current state of knowledge to address clinical practice and research proposals. HL could be useful to personalize patients' follow-up and it should be routinely assessed in its three dimensions (i.e. functional, interactive and critical) to enhance patients' ability to cope with clinical recommendations. Future research should be mainly aimed to test the effectiveness of evidence-based interventions to improve HL amongst T2DM patients.

Chapman, E., et al. (2020). "Knowledge translation strategies for dissemination with a focus on healthcare recipients: an overview of systematic reviews." Implementation Science **15**(1): 14.

BACKGROUND: While there is an ample literature on the evaluation of knowledge translation interventions aimed at healthcare providers, managers, and policy-makers, there has been less focus on patients and their informal caregivers. Further, no overview of the literature on dissemination strategies aimed at healthcare users and their caregivers has been conducted. The overview has two specific research questions: (1) to determine the most effective strategies that have been used to disseminate knowledge to healthcare recipients, and (2) to determine the barriers (and facilitators) to dissemination of knowledge to this group.

METHODS: This overview used systematic review methods and was conducted according to a pre-defined protocol. A comprehensive search of ten databases and five websites was conducted. Both published and unpublished reviews in English, Spanish, or Portuguese were included. A methodological quality assessment was conducted; low-quality reviews were excluded. A narrative synthesis was undertaken, informed by a matrix of strategy by outcome measure. The Health System Evidence taxonomy for "consumer targeted strategies" was used to separate strategies into one of six categories.

RESULTS: We identified 44 systematic reviews that describe the effective strategies to disseminate health knowledge to the public, patients, and caregivers. Some of these reviews also describe the most important barriers to the uptake of these effective strategies. When analyzing those strategies with the greatest potential to achieve behavioral changes, the majority of strategies with sufficient evidence of effectiveness were combined, frequent, and/or intense over time. Further, strategies focused on the patient, with tailored interventions, and those that seek to acquire skills and competencies were more effective in achieving these changes. In relation to barriers and facilitators, while the lack of health literacy or e-literacy could increase inequities, the benefits of social media were also emphasized, for example by widening access to health information for ethnic minorities and lower socioeconomic groups.

CONCLUSIONS: Those interventions that have been shown to be effective in improving knowledge uptake or health behaviors should be implemented in practice, programs, and policies-if not already implemented. When implementing strategies, decision-makers should consider the barriers and facilitators identified by this overview to ensure maximum effectiveness.

Protocol registration: prospero: crd42018093245.

Chung, R. Y. N., et al. (2020). "Socioeconomic gradient in health and the covid-19 outbreak." The BMJ **369 (no pagination)**.

Comande, G., et al. (2020). "Give more data, awareness and control to individual citizens, and they will help COVID-19 containment."

The rapid dynamics of COVID-19 calls for quick and effective tracking of virus transmission chains and early detection of outbreaks, especially in the “phase 2” of the pandemic, when lockdown and other restriction measures are progressively withdrawn, in order to avoid or minimize contagion resurgence. For this purpose, contact-tracing apps are being proposed for large scale adoption by many countries . A centralized approach, where data 1 sensed by the app are all sent to a nation-wide server, raises concerns about citizens’ privacy and needlessly strong digital surveillance, thus alerting us to the need to minimize personal data collection and avoiding location tracking. We advocate the conceptual advantage of a decentralized approach, where both contact and location data are collected exclusively in individual citizens’ “personal data stores”, to be shared separately and selectively (e.g., with a backend system, but possibly also with other citizens), voluntarily, only when the citizen has tested positive for COVID-19, and with a privacy preserving level of granularity. This approach better protects the personal sphere of citizens and affords multiple benefits: it allows for detailed information gathering for infected people in a privacy-preserving fashion; and, in turn this enables both contact tracing, and, the early detection of outbreak hotspots on more finely-granulated geographic scale. The decentralized approach is also scalable to large populations, in that only the data of positive patients need be handled at a central level. Our recommendation is two-fold. First to extend existing decentralized architectures with a light touch, in order to manage the collection of location data locally on the device, and allow the user to share spatio-temporal aggregates - if and when they want and for specific aims - with health authorities, for instance. Second, we favour a longer-term pursuit of realizing a Personal Data Store vision, giving users the opportunity to contribute to collective good in the measure they want, enhancing self-awareness, and cultivating collective efforts for rebuilding society.

Conley, Q., et al. (2019). "Digital citizenship for all: Empowering young learners with disabilities to become digitally literate." Information Resources Management Association. (2019) **Human performance technology**: Concepts, methodologies, tools, and applications. (pp. 829-850). xxxix.

Digital literacy is important, particularly for young people as they prepare for college and a career in modern society. From computer-based tests used to measure student progress on college applications and online job applications, the transition to college and career requires the use of technology. Individuals must have digital literacy skills to fully participate and contribute on the job and at school. This includes people with disabilities. These young adults have aspirations for jobs and higher education just like others their age and therefore deserve to be taken seriously. This article is a review of literature that explores what it means to be digitally literate, the digital literacy experience for young adults with disabilities, and the implications for education and the workplace. It also proposes instructional solutions to aid in the preparation of young adults for college and career. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Cuan-Baltazar, J. Y., et al. (2020). "Misinformation of COVID-19 on the Internet: Infodemiology Study." JMIR Public Health and Surveillance **6**(2): e18444.

BACKGROUND: The internet has become an important source of health information for users worldwide. The novel coronavirus caused a pandemic search for information with broad dissemination of false or misleading health information.

OBJECTIVE: The aim of this study was to evaluate the quality and readability of online information about the coronavirus disease (COVID-19), which was a trending topic on the internet, using validated instruments and relating the quality of information to its readability.

METHODS: The search was based on the term "Wuhan Coronavirus" on the Google website (February 6, 2020). At the search time, the terms "COVID-19" or "SARS-CoV-2" (severe acute respiratory syndrome coronavirus 2) did not exist. Critical analysis was performed on the first 110 hits using the Health on the Net Foundation Code of Conduct (HONcode), the Journal of the American Medical Association (JAMA) benchmark, the DISCERN instrument, and Google ranking.

RESULTS: The first 110 websites were critically analyzed, and only 1.8% (n=2) of the websites had the HONcode seal. The JAMA benchmark showed that 39.1% (n=43) of the websites did not have any of the categories required by this tool, and only 10.0% (11/110) of the websites had the four quality criteria required by JAMA. The DISCERN score showed that 70.0% (n=77) of the websites were evaluated as having a low score and none were rated as having a high score.

CONCLUSIONS: Nonhealth personnel and the scientific community need to be aware about the quality of the information they read and produce, respectively. The Wuhan coronavirus health crisis misinformation was produced by the media, and the misinformation was obtained by users from the internet. The use of the internet has a risk to public health, and, in cases like this, the governments should be developing strategies to regulate health information on the internet without censuring the population. By February 6, 2020, no quality information was available on the internet about COVID-19.

Curcio, C. and D. Corboy (2020). "Stigma and anxiety disorders: A systematic review." Stigma and Health. Vol. **5**(2): 125-137.

This article provides a systematic review of the research examining the individual associations of public, personal, and self-stigma for anxiety disorders and a range of demographic and cultural factors impacting on help-seeking processes in the context of stigma. An extensive search of the literature was conducted with 18 studies (N = 17,066), examining mainly social and generalized anxiety disorder identified as satisfying the inclusion criteria. Key findings revealed endorsement of weak-not-sick attitudes were strongest for public stigma, increased awareness of anxiety disorders and mental health literacy were associated with reduced negative personal stigma attitudes, and high levels of self-stigma were associated with poorer treatment outcomes. For public stigma, younger age and geographical rurality were revealed as relevant correlates, whereas gender and cultural differences were each identified as factors influencing personal stigma. This is the first systematic review examining anxiety disorders and stigma, with future research needed to continue investigating this understudied relationship and the related variables that ultimately impact on help-seeking processes. (PsycInfo Database Record (c) 2020 APA, all rights reserved)

Davidson, S. (2018). "Digital inclusion evidence review 2018."

Digital technology can offer people of all ages many benefits and opportunities. While the last 10 years has seen increasing internet use among the older population, a substantial group - including the majority of those age 75+ - are not online. This evidence review considers reasons for not using the internet and those who are digitally excluded, for example, for reasons of perceived lack of need, and issues around privacy, scams, fraud and other cyber crime. It points to the benefits for those who do use the internet: help in staying connected or reconnecting with others; accessing services and amenities; getting practical help and information; education and learning; and pursuing hobbies and interests. It uses data from the Office for National Statistics (ONS), Ofcom, the Understanding Society survey, and some Age UK analyses of the English Longitudinal Study on Ageing (ELSA). However, rigorous evidence about the benefits is lacking; and there are gaps in our knowledge on why older people become lapsed users, how to support older people in overcoming barriers and challenges, and how digital technology interfaces need to be modified to improve older users' experience.

Ferguson, G. M., et al. (2019). "Transdisciplinary team science for global health: Case study of the JUS Media? Programme." American Psychologist. Vol. **74**(6): 725-739.

The world's most pressing health problems, such as the childhood obesity pandemic, demand creative new solutions. In this article it is argued that psychological theories, concepts, and methods are ripe for integration with those of other disciplines to synthesize innovative transdisciplinary global health solutions. As a model, the process of blending developmental and cross-cultural psychology with health and media sciences to develop a transdisciplinary intervention for youth and families in Jamaica-the J(amaican and) U(nited) S(tates) Media? Programme-is described. Jamaicans on the island are being inundated by the inflow of U.S. media, and those who have internalized U.S. culture and become "Americanized" via a process called remote acculturation are especially vulnerable to negative health habits promoted by U.S. media and advertising. In response, the JUS Media? Programme teaches critical thinking skills about food advertising (especially U.S.-produced) to decrease unhealthy eating among Americanized youth and families in Jamaica. In this article, first, transdisciplinarity is defined and distinguished from other scientific orientations (uni-, multi-, and interdisciplinarity) using the evolution of scholarship within JUS Media? Programme's transdisciplinary team as an example. Next, the application of transdisciplinary team science to global health problems is explained. As an example, the guiding transdisciplinary model for the JUS Media? Programme is described, and the cultural adaptation process used to design the JUS Media? Programme for Jamaican families is detailed. Finally, there is a reflection on best practices for transdisciplinary team leadership and collaboration. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Fernandez-Gutierrez, M., et al. (2018). "Health literacy interventions for immigrant populations: a systematic review." International Nursing Review **65**(1): 54-64.

BACKGROUND: Health literacy is considered a social health determinant that influences improvement in health, patient empowerment and reduction in inequalities. There is a lack of health literacy interventions for vulnerable social groups (i.e. immigrants), and nurses have shown little familiarity with the concept.

AIM: This study aimed to identify and analyse whether interventions directed at immigrant populations improve the functional (basic reading, writing and arithmetic skills), interactive (social and cognitive skills) and critical (advanced cognitive and social skills in critically analyzing information and making informed decisions) dimensions of health literacy, taking into account the role played by nursing in these interventions.

METHODS: A systematic review of four databases including PubMed, PsycINFO, the Cochrane Library and ERIC was conducted to identify relevant articles published between 2000 and 2015. Thirty-four articles met the inclusion criteria, and nine articles used a validated instrument.

RESULTS: Few specific health literacy interventions for immigrant populations were found. The main findings of the studies showed positive changes in functional health literacy. However, the interventions were less effective in improving interactive and critical health literacy.

LIMITATIONS: Several of the findings of this review were based on studies that had their own limitations. The assessment of the articles was not blinded, and the review was restricted to articles written in Spanish and English.

CONCLUSIONS: The interventions studied were reported as being effective in improving health literacy in immigrants, particularly the functional aspects. Regarding the role played by nursing, this review observed little involvement.

IMPLICATIONS FOR NURSING AND HEALTH POLICY: It is important for educational strategies to include health literacy dimensions. The concept of health literacy should be included as a Nursing Outcomes Classification and in its subsequent validation taxonomy. To promote community health, health literacy must be a prioritized objective of health management and policies.

Fleary, S. A., et al. (2018). "Adolescent health literacy and health behaviors: A systematic review." Journal of Adolescence **62**: 116-127.

OBJECTIVES: To systematically review and synthesize literature on the relationship between health literacy and health behaviors in adolescents.

METHODS: Searches in PsychInfo, PUBMED/MEDLINE, and Educational Resources Information Center (ERIC) were conducted. Studies were included if they reported original data on the relationship between health literacy and a health behavior in adolescents, were written in English, and the population did not have a chronic illness or disability.

RESULTS: Seventeen studies met inclusionary criteria. Definition and measurement of health literacy, and theoretical frameworks varied across studies. Studies investigated the relationship between functional and media health literacy and adolescent health behaviors, thirteen reported significant, linear relationships.

CONCLUSIONS: The results suggest that there is a meaningful relationship between health literacy and adolescents' health behaviors. To fully understand the role of health literacy in adolescents' health decision-making, future research should use comprehensive definitions and measures of health literacy, and integrate health behavior and adolescent development theoretical frameworks in study design.

Freeman, J. L., et al. (2018). "How Adolescents Search for and Appraise Online Health Information: A Systematic Review." Journal of Pediatrics **195**: 244-255.e241.

Objective: To conduct a systematic review of the evidence concerning whether and how adolescents search for online health information and the extent to which they appraise the credibility of information they retrieve. Study design: A systematic search of online databases (MEDLINE, EMBASE, PsycINFO, ERIC) was performed. Reference lists of included papers were searched manually for additional articles. Included were studies on whether and how adolescents searched for and appraised online health information, where adolescent participants were aged 13-18 years. Thematic analysis was used to synthesize the findings. Results: Thirty-four studies met the inclusion criteria. In line with the research questions, 2 key concepts were identified within the papers: whether and how adolescents search for online health information, and the extent to which adolescents appraise online health information. Four themes were identified regarding whether and how adolescents search for online health information: use of search engines, difficulties in selecting appropriate search strings, barriers to searching, and absence of searching. Four themes emerged concerning the extent to which adolescents appraise the credibility of online health information: evaluation based on Web site name and reputation, evaluation based on first impression of Web site, evaluation of Web site content, and absence of a sophisticated appraisal strategy. Conclusions: Adolescents are aware of the varying quality of online health information. Strategies used by individuals for searching and appraising online health information differ in their sophistication. It is important to develop resources to enhance search and appraisal skills and to collaborate with adolescents to ensure that such resources are appropriate for them. © 2017 Elsevier Inc.

Gann, B. (2019). "Digital Inclusion and Health in Wales." Journal of Consumer Health on the Internet **23**(2): 146-160.

As information about health and illness is increasingly (and often exclusively) available in digital form, we face a new public health challenge–digital health inequality. Those who are least likely to be online (including older people and people with disabilities) are exactly those who experience the greatest burden of ill health. Wales has particular challenges in digital inclusion, including social deprivation, an ageing population and poor broadband connectivity in remote rural areas. In response to these challenges, a review of digital inclusion and health in Wales was commissioned in 2018. The review was carried out by the author (Gann) using a mixed methods approach including literature review, stakeholder interviews and case studies. The review identified creative, community based approaches which are showing inspiring ways to build digital access and confidence so people can become active partners in their own health. © 2019, © 2019 The Author(s). Published with license by Taylor & Francis Group, LLC.

Geboers, B., et al. (2018). "Moving towards a Comprehensive Approach for Health Literacy Interventions: The Development of a Health Literacy Intervention Model." International Journal of Environmental Research & Public Health [Electronic Resource] **15**(6): 15.

Low health literacy (HL) is associated with many negative health outcomes, and is a major challenge in public health and healthcare. Interventions to improve outcomes associated with HL are needed. In this paper, we aim to develop a comprehensive HL intervention model. We used a multimethod approach, consisting of (1) a literature review of articles listed in MEDLINE, presenting HL intervention models, (2) online consultation of international HL experts, and (3) two consensus meetings with members (n = 36 and 27) of a consortium studying HL among older adults (50+) in Europe. In our literature review, we identified twenty-two HL models, only a few of which focused explicitly on interventions. Sixty-eight health literacy experts took part in the online survey. The results from all three methods came together in a comprehensive HL intervention model. This model conceptualized interventions as potentially targeting five factors affecting HL outcomes: (1) individuals’ personal characteristics, (2) individuals’ social context, (3) communication between individuals and health professionals, (4) health professionals’ HL capacities, and (5) health systems. Our model is the first comprehensive HL model focused specifically on interventions. The model can support the further development of HL interventions to improve the health outcomes of people with low HL.

Geukes, C., et al. (2018). "Health literacy in people with intellectual disabilities: A mixed-method literature review." Kontakt.

People with intellectual disabilities are exposed to particular challenges within the healthcare system. In particular, elderly people with intellectual disabilities have special needs and require physical activity to prevent age-related diseases. Health Literacy could help people with intellectual disabilities to take participative health-related decisions. To be able to generate knowledge in this area, a literature search was carried out. For this the databases PubMed, Scopus, ERIC, CINAHL, PsycINFO, and Web of Science were searched. The research shows a research gap in the field of health literacy among people with intellectual disabilities. Nevertheless, three categories have been systematized: Barriers for People with Intellectual Disabilities, Health Literacy Promotion for People with Intellectual Disabilities, and Studies concerning the Concept of Health Literacy for People with Intellectual Disabilities. The studies found emphasize the importance of a target group specific health literacy concept for people with intellectual disabilities and a need to involve health professionals and adequate communication. In addition, conceptualisation considerations should take into account the specific skills and social context factors of people with intellectual disabilities. Furthermore, the results show that there is an urgent need for a target group-specific definition and measuring instruments.

Gibson, P. F. and S. Smith (2018). "Digital literacies: preparing pupils and students for their information journey in the twenty-first century." Information and Learning Science **119**(12): 733-742.

Purpose: In a fast-moving world where technology has become intertwined with our daily lives, meaning information is available at our fingertips, information overload (Khabsa and Giles, 2014) is just one of many challenges that this technological overhaul has presented for learners from the primary classroom up to studies within higher education (HE). This paper aims to present skills needed by both pupils and students to navigate their information journey, and discusses how educators can support the acquisition and development of these skills. Design/methodology/approach: Drawing on key literature in the fields of education and academia through the process of systematic review and adopting the analogy of a journey to represent lifelong learning, this bipartite paper explores how both primary school pupils and university students are required to access information in their very own information journeys in this “Information Age”. Findings: The similarities and differences between child and adult learners are considered. This paper shares practical strategies for promoting the smarter use of information – and a shorter journey – for these “travelers” along the way. This paper essentially aims to raise questions in the minds of educators as they help to prepare their learners to learn. Originality/value: This paper offers an interesting insight for teachers and lecturers as the crossover between two sets of learners, primary-age pupils and students in HE, is considered in terms of how we, as educators, can help to provide more effective and efficient information journeys, and therefore promote successful learning. A five-stage model is presented for the information journey. © 2018, Emerald Publishing Limited.

Harbour, P. and L. Grealish (2018). "Health literacy of the baby boomer generation and the implications for nursing." Journal of Clinical Nursing **27**(19-20): 3472-3481.

AIMS AND OBJECTIVES: To investigate the health literacy of the baby boomer generation and what this means for nursing care.

BACKGROUND: Nurses are encouraged to tailor information and education to the individual's level of understanding or health literacy but there may be generational differences in health literacy due to historical, social, and economic contexts. The baby boomer generation, people born between 1946 and 1966, are projected to be high users of health services as they age, therefore nurses' understanding of their health literacy characteristics is important.

DESIGN: Integrative literature review.

METHODS: Database and manual searching for articles occurred in July 2017. Four articles met the criteria. Data were extracted and tabulated, and methodological-quality was assessed.

RESULTS: Three categories of relevance emerged from the analysis of study findings: social demographics may predict health literacy, navigation of the health care system is challenging with low health literacy, and mechanisms to translate information into action remain unclear.

CONCLUSIONS: Although there is limited evidence to guide practice in regard to health literacy for the baby boomer generation, the emergence of the internet may confound nursing assessment of literacy: people from the baby boomer generation may appear to have higher literacy than they actually possess.

RELEVANCE TO CLINICAL PRACTICE: Sociodemographic information may be used for initial screening for health literacy. Creative questions are recommended to overcome possible stigma associated with individual awareness of low literacy. The mechanisms for translating information into action require further investigation.

Harbour, P. and L. Grealish (2018). "Health literacy of the baby boomer generation and the implications for nursing." Journal of Clinical Nursing. Vol. **27**(19-20): 3472-3481.

Aims and objectives: To investigate the health literacy of the baby boomer generation and what this means for nursing care. Background: Nurses are encouraged to tailor information and education to the individual's level of understanding or health literacy but there may be generational differences in health literacy due to historical, social, and economic contexts. The baby boomer generation, people born between 1946 and 1966, are projected to be high users of health services as they age, therefore nurses' understanding of their health literacy characteristics is important. Design: Integrative literature review. Methods: Database and manual searching for articles occurred in July 2017. Four articles met the criteria. Data were extracted and tabulated, and methodological quality was assessed. Results: Three categories of relevance emerged from the analysis of study findings: social demographics may predict health literacy, navigation of the health care system is challenging with low health literacy, and mechanisms to translate information into action remain unclear. Conclusions: Although there is limited evidence to guide practice in regard to health literacy for the baby boomer generation, the emergence of the internet may confound nursing assessment of literacy: people from the baby boomer generation may appear to have higher literacy than they actually possess. Relevance to clinical practice: Sociodemographic information may be used for initial screening for health literacy. Creative questions are recommended to overcome possible stigma associated with individual awareness of low literacy. The mechanisms for translating information into action require further investigation. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Hart, J. L., et al. (2020). "Family-Centered Care During the COVID-19 Era." Journal of Pain and Symptom Management.

Family support is more, not less, important during crisis. However, during the COVID-19 pandemic, maintaining public safety necessitates restricting the physical presence of families for hospitalized patients. In response, health systems must rapidly adapt family-centric procedures and tools to circumvent restrictions on physical presence. Strategies for maintaining family integrity must acknowledge clinicians' limited time and attention to devote to learning new skills. Internet-based solutions can facilitate the routine, predictable, and structured communication, which is central to family-centered care. But the reliance on technology may compromise patient privacy and exacerbate racial, socioeconomic, and geographic disparities for populations that lack access to reliable internet access, devices, or technological literacy. We provide a toolbox of strategies for supporting family-centered inpatient care during physical distancing responsive to the current clinical climate. Innovations in the implementation of family involvement during hospitalizations may lead to long-term progress in the delivery of family-centered care. Copyright © 2020 American Academy of Hospice and Palliative Medicine

Hasan, M. M., et al. (2020). "Promoting China’s Inclusive Finance Through Digital Financial Services." Global Business Review.

While much progress has been made in promoting inclusive finance through the ownership of a basic personal account, billions of people in developed and emerging markets are still underrepresented in financial services. Also, they are unable to contribute to the provision of better access to financial services. The purpose of this study was defined as to explore the contribution of digital financial services (DFSs) in promoting inclusive finance in China. This study presents a theoretical discussion on how DFSs play an important role in promoting China’s inclusive finance. This study uses the systematic review method of qualitative sampling to achieve the goal of this study. Different forces play different roles behind the promotion of inclusive finance. However, DFSs are considered to be one of the most influential forces in the development of inclusive finance in the present world. Many examples of how DFS can improve inclusive finance are discussed in the literature. In addition, different contributions to DFS usage are presented here to achieve the objectives of this study. The contents of the study contributed to a better understanding of the practical impact and implication of DFS tools in transforming the financial sector. In this study, first, a structured review method is followed; second, most important discussion on the contribution of DFS in promoting inclusive finance is presented and third, the relation between the topic and related research is identified. © 2020 International Management Institute, New Delhi.

Hatos, A. (2019). "The impact of digitalization on educational achievement: A literature review from a sociological perspective." Calitatea Vietii **30**(1): 3-16.

There is still a great optimism concerning the impact of ICT (Information and Communications Technology), including CAI (Computer Assisted Instruction) on the effectiveness of education. The article is a brief synthesis, mostly with a sociological leaning, of the current empirical literature devoted to the various ways in which digitalization has an influence upon the results of education. We found that the investigations of educational impact of digitalization follows the trend from the general literature concerning the social effects of ICT which reveals an empirical perspective of multi-layered divisions in which the first and the second levels (or orders) are the most thoroughly researched and theorized while current developments tentatively regard issues of third, fourth and international digital divisions. As a general overview of the domain it can be concluded that as it develops the more and more the initial optimism vanes making space for anguish over the possible socially divisive potential of ICT use in education. The digital revolution in education not only does not solves previous issues but apparently creates new ones as differences in access, in skills and in use patterns are able to increase the various offline gaps between people of different socio-economic backgrounds. © 2019, Editura Academiei Romane. All rights reserved.

Hawkins, M., et al. (2019). "Questionnaire validation practice: a protocol for a systematic descriptive literature review of health literacy assessments." BMJ Open **9**(10): e030753.

INTRODUCTION: Contemporary validity testing theory holds that validity lies in the extent to which a proposed interpretation and use of test scores is justified, the evidence for which is dependent on both quantitative and qualitative research methods. Despite this, we hypothesise that development and validation studies for assessments in the field of health primarily report a limited range of statistical properties, and that a systematic theoretical framework for validity testing is rarely applied. Using health literacy assessments as an exemplar, this paper outlines a protocol for a systematic descriptive literature review about types of validity evidence being reported and if the evidence is reported within a theoretical framework.

METHODS AND ANALYSIS: A systematic descriptive literature review of qualitative and quantitative research will be used to investigate the scope of validation practice in the rapidly growing field of health literacy assessment. This review method employs a frequency analysis to reveal potentially interpretable patterns of phenomena in a research area; in this study, patterns in types of validity evidence reported, as assessed against the criteria of the 2014 Standards for Educational and Psychological Testing, and in the number of studies using a theoretical validity testing framework. The search process will be consistent with the Preferred Reporting Items for Systematic Reviews and Meta-analyses statement. Outcomes of the review will describe patterns in reported validity evidence, methods used to generate the evidence and theoretical frameworks underpinning validation practice and claims. This review will inform a theoretical basis for future development and validity testing of health assessments in general.

ETHICS AND DISSEMINATION: Ethics approval is not required for this systematic review because only published research will be examined. Dissemination of the review findings will be through publication in a peer-reviewed journal, at conference presentations and in the lead author's doctoral thesis.

Hayes, K., et al. (2019). "Factors Influencing the Mental Health Consequences of Climate Change in Canada." International Journal of Environmental Research & Public Health [Electronic Resource] **16**(9): 06.

Climate change is increasing risks to the mental health of Canadians. Impacts from a changing climate may outstrip the ability of Canadians and their health-sustaining institutions to adapt effectively and could increase poor mental health outcomes, particularly amongst those most marginalized in society. A scoping review of literature published during 2000-2017 explored risks, impacts, and vulnerabilities related to climate change and mental health. In this commentary, the authors present a new assessment of evidence from this scoping review and highlight factors that influence the capacity to adapt to the mental health consequences of a changing climate. Findings from this assessment reveal eleven key factors that influence the capacity to adapt: social capital; sense of community; government assistance; access to resources; community preparedness; intersectoral/transdisciplinary collaboration; vulnerability and adaptation assessments; communication and outreach; mental health literacy; and culturally relevant resources. Attention to these factors by Canadian decision makers can support proactive and effective management of the mental health consequences of climate change.

He, et al. (2020). Discrimination and Social Exclusion in the Outbreak of COVID-19, Multidisciplinary Digital Publishing Institute.

This paper is aimed to document the observed social exclusion and discrimination in the outbreak of COVID-19 across the world and inside of China. Discrimination and social exclusion has occurred in various forms, while 25.11% of respondents overseas experienced discrimination in the breakout of COVID-19, and 90% of respondents inside of China exhibited discriminatory attitudes. The discrimination and social exclusion also lead to a range of damaging social outcomes. Thus, this is an urgent call for the inclusiveness in policy and media in the face of this public health emergency.

Heimer, C. A. (2018). "The uses of disorder in negotiated information orders: Information leveraging and changing norms in global public health governance." British Journal of Sociology. Vol. **69**(4): 910-935.

The SARS epidemic that broke out in late 2002 in China's Guangdong Province highlighted the difficulties of reliance on state-provided information when states have incentives to conceal discrediting information about public health threats. Using SARS and the International Health Regulations (IHR) as a starting point, this article examines negotiated information orders in global public health governance and the irregularities in the supply of data that underlie them. Negotiated information orders within and among the organizations in a field (here, e.g., the World Health Organization, member states, government agencies, and international non-governmental organizations) spell out relationships among different categories of knowledge and non-knowledge-what is known, acknowledged to be known, and available for use in decision making versus what might be known but cannot be acknowledged or officially used. Through information leveraging, technically sufficient information then becomes socially sufficient information. Thus it is especially information initially categorized as non-knowledge-including suppressed data, rumour, unverified evidence, and unofficial information-that creates pressure for the renegotiation of information orders. The argument and evidence of the article also address broader issues about how international law and global norms are realigned, how global norms change, and how social groups manage risk. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Hernández, S. M., et al. (2020). A Methodology for Addressing the Second-Level Digital Divide: A Practical Experience.

In this article we describe a methodology, and its evaluation, for achieving technical competence through digital literacy training using self-learning training material. The key component is self-learning in the sense that the targeted population learns digital operational skills without the need of a teacher. This is achieved through the adaptation of the training material to the trained group. As training groups are diverse, e.g., including both populations in developing and developed countries, and varying in age aspects, gender, languages, literacy levels and technological literacy levels, materials and the speed which training takes place has to be adapted to take into account these differences. The methodology involves use of training videos, and use a dual screen approach where training material is shown on one screen and training takes place on a second screen (computer). The approach has been evaluated in both developing countries and developed countries, with training groups of different capabilities and backgrounds (in Kenya, El Salvador, Spain, France and The Netherlands), with promising results.

Hustad, E., et al. (2019). Digital Inequalities: A Review of Contributing Factors and Measures for Crossing the Divide C3 - Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). I. O. Pappas, J. Krogstie, L. Jaccheri et al., Springer Verlag. **11701 LNCS:** 505-519.

This literature review focuses on the digital divide in contemporary technologically and economically advanced societies. Prior research shows that the digital divide entails more than physical accessibility and points to issues of technology acceptance and actual use. Recurring digital divide factors outside socioeconomic characteristics were identified in the articles reviewed. These factors relate to personality traits, motivation and digital skills. The factors can be used as the basis for a personality model for understanding acceptance and use of technology complementing models related to economic and social resources. Furthermore, measures for crossing the divide are traced in the literature and organized in three key intervention domains related to policy, training and design. The findings of this review can be a foundation for further research orienting researchers within the domain. © 2019, IFIP International Federation for Information Processing.

Intahchomphoo, C. (2018). "Indigenous peoples, social media, and the digital divide: A systematic literature review." American Indian Culture and Research Journal **42**(4): 85-111.

Kim, H. and B. Xie (2017). "Health literacy in the ehealth era: A systematic review of the literature." Patient Education and Counseling. Vol. **100**(6): 1073-1082.

Objectives: This study aimed to identify studies on online health service use by people with limited health literacy, as the findings could provide insights into how health literacy has been, and should be, addressed in the eHealth era. Methods: To identify the relevant literature published since 2010, we performed four rounds of selection-database selection, keyword search, screening of the titles and abstracts, and screening of full texts. This process produced a final of 74 publications. Results: The themes addressed in the 74 publications fell into five categories: evaluation of health-related content, development and evaluation of eHealth services, development and evaluation of health literacy measurement tools, interventions to improve health literacy, and online health information seeking behavior. Conclusion: Barriers to access to and use of online health information can result from the readability of content and poor usability of eHealth services. We need new health literacy screening tools to identify skills for adequate use of eHealth services. Mobile apps hold great potential for eHealth and mHealth services tailored to people with low health literacy. Practice implications: Efforts should be made to make eHealth services easily accessible to low-literacy individuals and to enhance individual health literacy through educational programs. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Lanfredi, M., et al. (2019). "Effects of education and social contact on mental health-related stigma among high-school students." Psychiatry Research **281 (no pagination)**.

Poor knowledge and stigma toward people with mental illness negatively affect intentions to seek help among adolescents. The study aimed to assess the impact of three school-based interventions and to explore whether positive changes in attitudes were linked to more favorable changes in desire for social distance and seeking help. A total of 221 upper secondary students were allocated to three interventions: 1. social contact; 2. Mental Health Literacy (MHL) conducted by clinicians; 3. MHL conducted by dis-peer instructors. Measures of knowledge, attitudes, views on empowerment and recovery, willingness to interact, and help seeking were collected. Generalized Estimating Equations and Structural Equation Modeling (SEM) were used to evaluate scores differences between interventions through time, and to test the interrelationships between knowledge, attitudes variables and the two outcomes of interest. Findings showed that all groups improved in knowledge, attitudes, empowerment, willingness to interact, and seeking help. SEM revealed that the increase in knowledge was significantly associated with the General attitudes toward people with mental illness construct that, in turn, was positively associated with willingness to interact and seeking help. Results encourage the use of anti-stigma interventions in order to decrease negative attitudes toward mental illness and improve behavioral intentions among students. Copyright © 2019 Elsevier B.V.

Latulippe, K., et al. (2017). "Social health inequalities and eHealth: A literature review with qualitative synthesis of theoretical and empirical studies." Journal of Medical Internet Research **19**(4).

Background: eHealth is developing rapidly and brings with it a promise to reduce social health inequalities (SHIs). Yet, it appears that it also has the potential to increase them. Objectives: The general objective of this review was to set out how to ensure that eHealth contributes to reducing SHIs rather than exacerbating them. This review has three objectives: (1) identifying characteristics of people at risk of experiencing social inequality in health; (2) determining the possibilities of developing eHealth tools that avoid increasing SHI; and (3) modeling the process of using an eHealth tool by people vulnerable to SHI. Methods: Following the EPPI approach (Evidence for Policy and Practice of Information of the Institute of Education at the University of London), two databases were searched for the terms SHIs and eHealth and their derivatives in titles and abstracts. Qualitative, quantitative, and mixed articles were included and evaluated. The software NVivo (QSR International) was employed to extract the data and allow for a metasynthesis of the data. Results: Of the 73 articles retained, 10 were theoretical, 7 were from reviews, and 56 were based on empirical studies. Of the latter, 40 used a quantitative approach, 8 used a qualitative approach, 4 used mixed methods approach, and only 4 were based on participatory research-action approach. The digital divide in eHealth is a serious barrier and contributes greatly to SHI. Ethnicity and low income are the most commonly used characteristics to identify people at risk of SHI. The most promising actions for reducing SHI via eHealth are to aim for universal access to the tool of eHealth, become aware of users' literacy level, create eHealth tools that respect the cultural attributes of future users, and encourage the participation of people at risk of SHI. Conclusions: eHealth has the potential to widen the gulf between those at risk of SHI and the rest of the population. The widespread expansion of eHealth technologies calls for rigorous consideration of interventions, which are not likely to exacerbate SHI. © Karine Latulippe, Christine Hamel, Dominique Giroux.

Laukka, E., et al. (2019). "Consumer-led health-related online sources and their impact on consumers: An integrative review of the literature." Health Informatics Journal **25**(2): 247-266.

The aim of the review was to describe consumer-led health-related online sources and their impact on consumers. The review was carried out as an integrative literature review. Quantisation and qualitative content analysis were used as the analysis method. The most common method used by the included studies was qualitative content analysis. This review identified the consumer-led health-related online sources used between 2009 and 2016 as health-related online communities, health-related social networking sites and health-related rating websites. These sources had an impact on peer support; empowerment; health literacy; physical, mental and emotional wellbeing; illness management; and relationships between healthcare organisations and consumers. The knowledge of the existence of the health-related online sources provides healthcare organisations with an opportunity to listen to their consumers' 'voice'. The sources make healthcare consumers more competent actors in relation to healthcare, and the knowledge of them is a valuable resource for healthcare organisations. Additionally, these health-related online sources might create an opportunity to reduce the need for drifting among the healthcare services. Healthcare policymakers and organisations could benefit from having a strategy of increasing their health-related online sources.

Liesbeth, D. W. and et al. (2018). "Community-based initiatives improving critical health literacy: a systematic review and meta-synthesis of qualitative evidence." BMC Public Health **18**(40).

Background: Critical health literacy enables older adults to make informed health decisions and take actions for the health and wellbeing of themselves and their community, within their own social and cultural context. A community-based approach has the potential to improve the critical health literacy of older adults and their communities. However, it is not clear how such initiatives consider critical health literacy. Therefore, this study explored how community-based initiatives address the critical health literacy of older adults and their communities. Methods: A systematic literature search was conducted. Two reviewers independently screened titles and abstracts, as well as the quality of the methodological and community-based elements of the studies. In addition, a meta-synthesis was carried out, consisting of a qualitative text analysis of the results sections of the 23 included studies. Results: Two main themes were identified: practices that contribute to the critical health literacy of older adults as well as their communities: 1) collaborative learning, and 2) social support. In these practices we identified reciprocity as a key characteristic of both co-learning and social support. Conclusions: This study provides the first overview of community-based initiatives that implicitly address the critical health literacy of older adults and their community. Our results demonstrate that in the context of one's own life collaborative learning and social support could contribute to people's understanding and ability to judge, sift and use health information. We therefore suggest to add these two practices to the definition of critical health literacy.

Lin, Y. H., et al. (2020). "Google searches for the keywords of "wash hands" predict the speed of national spread of COVID-19 outbreak among 21 countries." Brain, Behavior, and Immunity.

This study hypothesized that national population health literacy might reflect on their keywords searching. We applied Google searches for "wash hands" and "face mask" during January 19 to February 18 as a surrogate of national population health literacy among 21 countries, and examine whether google searches for "wash hands" and "face masks" would protect from increased numbers of confirmed cases of among 21 countries We found the increased google searches for "wash hands" from January 19 to February 18, 2020, correlated with a lower spreading speed of COVID-19 from February 19 to March 10, 2020 among 21 countries (Pearson's correlation coefficient of -0.70, P < 0.001). The result highlights the importance of public awareness of hand washing in preventing COVID-19 disease spreading. Copyright © 2020

Liu, C., et al. (2020). "What is the meaning of health literacy? A systematic review and qualitative synthesis." Family Medicine & Community Health **8**(2).

The objective of this review was to clarify what health literacy represents. A systematic review with qualitative syntheses was performed (CRD42017065149). Studies concerning health literacy in all settings were included. Studies before 15 March 2017 were identified from PubMed, Medline, Embase, Web of Science, Scopus, PsycARTICLES and the Cochrane Library. The included literature either had defined the concept of health literacy or made a detailed explanation of health literacy. A total of 34 original studies met the inclusion criteria, including 13 involved in previous systematic reviews and 21 new studies. Health literacy was commonly conceptualised as a set of knowledge, a set of skills or a hierarchy of functions (functional-interactive-critical). The construct of health literacy covers three broad elements: (1) knowledge of health, healthcare and health systems; (2) processing and using information in various formats in relation to health and healthcare; and (3) ability to maintain health through self-management and working in partnerships with health providers. Health literacy is defined as the ability of an individual to obtain and translate knowledge and information in order to maintain and improve health in a way that is appropriate to the individual and system contexts. This definition highlights the diversity of needs from different individuals and the importance of interactions between individual consumers, healthcare providers and healthcare systems.

Liu, H., et al. (2018). "Assessment Tools for Health Literacy among the General Population: A Systematic Review." International Journal of Environmental Research & Public Health [Electronic Resource] **15**(8): 10.

Health literacy is an important determinant of health, and is one of the key indicators of a healthy city. Developing and improving methods to measure health literacy is prudent and necessary. This review summarizes the findings of published tools for assessing health literacy among the general population to provide a reference for establishing health literacy assessment tools in the future. In this systematic review, PubMed, Embase, and Web of Science were used to search articles regarding tools for assessing health literacy among the general population published up to 10 January 2018. Two researchers independently conducted literature screening, quality assessment of methodology, and data extraction according to preset inclusion and exclusion criteria. The quality assessment of the research was examined with the use of the specifications of the reporting guidelines for survey research (SURGE). Eleven articles met the inclusion criteria. All included instruments in monitoring the health literacy of the general population were presented through the form of questionnaires. The multistage process of making all the scales generally involved the following steps: item development, pre-testing, and evaluation of readability. However, the specific methods were different. Internal consistency for all the instruments was acceptable but with weak consistency among the subscales for some instruments. Most of the identified instruments derived from the definition of health literacy or were based on existing health literacy theory. Approximately 30% of the performed studies provided no description of the important features specified in the SURGE. This review indicates a trend in the increasing tools for assessing the health literacy of the general population by using multidimensional structures and comprehensive measurement approaches. However, no clear "consensus" was observed in the dimensions of health literacy tools.

Lloyd, J. E., et al. (2018). "A paucity of strategies for developing health literate organisations: A systematic review." PLoS ONE [Electronic Resource] **13**(4): e0195018.

INTRODUCTION: People with low health literacy are more likely to delay seeking care and experience adverse outcomes. While health literacy is the product of individuals' capacities, it is also affected by the complexities of the health care system. System-level changes are needed to align health care demands better with the public's skills and abilities. We aimed to identify the evidence base for effective strategies for creating health literate organisations.

METHODS: A systematic review and narrative synthesis of empirical studies was performed. Medline, Embase, PsychInfo and CINHAL databases were searched for empirical studies from OECD countries published from 2008 onwards, focusing on health literacy interventions at the organisational level. Analysis of the findings was informed by the National Academies' five-dimensional framework for the attributes of a health literate organisation, which include: organisational commitment, accessible education and technology infrastructure, augmented workforce, embedded policies and practices, and effective bidirectional communication.

RESULTS: The title and abstract of 867 records were screened according to the selection criteria, leading to full text review of 125 articles. Seven studies were identified in the peer review literature. Adapting health literacy guidelines and tools was the most common approach to addressing organisational health literacy.

CONCLUSION: While the use of health literacy tools proved important for raising awareness of health literacy issues within organisations, these tools were insufficient for generating the organisational changes necessary to improve organisational health literacy.

Maceviciute, E. and T. Wilson (2018). "Digital means for reducing digital inequality: Literature review." Informing Science **21**: 269-287.

Aim/Purpose The aim of this paper is to identify the possibilities for reducing the second and third levels of the digital divide (or inequality) through conscious ap-plication of digital technologies, especially through the promotion of digi-tal means for information, enlightenment, and entertainment. Background This article reviews studies carried out between 2000 and 2017, which in-vestigate the social benefits of digital technology use for disadvantaged user groups and, especially, of their outcomes in terms of increasing digital skills and motivation to use information and communication technologies. Methodology The literature review of the selected texts was carried out using thematic content analysis. The coding scheme was open but based on the theory of three levels of digital divide by van Dijk. Contribution The results of the analysis show the difficulties related to the attempts of reducing the digital divide on the second and third level using only digital interventions, but also reveal the potential of these interventions. Findings The literature review confirms the connection of different levels of digital divide with other relational and structural inequalities. It provides insights into the strengths and weaknesses of digital interventions aimed at the reduction of digital inequalities. Their success depends on the considera-tion of the context and participants needs as well as on carefully planned strategies. Recommendations for Practitioners While planning a digital intervention with the aim of reducing digital ine-qualities, it is necessary to assess carefully the context and the needs of participants. Educational interventions should be based on suitable didactic and learning strategies. Recommendations for Researchers More research is needed into the factors that increase the effectiveness of digital interventions aimed at reducing the digital divide. Impact on Society The paper summarizes and demonstrates the shortcomings and limitations of poorly designed interventions in reducing the digital divide but empha-sizes the possibilities of raising the motivation and benefits for the partici-pants of strategically planned and implemented projects. Future Research We will apply the findings of this literature review in an intervention in the context of Lithuanian towns of different sizes. © 2018 Informing Science: The International Journal of an Emerging Transdiscipline.

McFadden, A., et al. (2018). "Gypsy, Roma and Traveller access to and engagement with health services: A systematic review." European Journal of Public Health. Vol. **28**(1): 74-81.

Background: Gypsy, Roma and Traveller people represent the most disadvantaged minority groups in Europe, having the poorest health outcomes. This systematic review addressed the question of how Gypsy, Roma and Traveller people access healthcare and what are the best ways to enhance their engagement with health services. Methods: Searches were conducted in 21 electronic databases complemented by a focussed Google search. Studies were included if they had sufficient focus on Gypsy, Roma or Traveller populations; reported data pertinent to healthcare service use or engagement and were published in English from 2000 to 2015. Study findings were analyzed thematically and a narrative synthesis reported. Results: Ninety-nine studies from 32 countries were included, covering a range of health services. Nearly one-half of the presented findings related to primary healthcare services. Reported barriers to health service usage related to organisation of health systems, discrimination, culture and language, health literacy, service-user attributes and economic barriers. Promising engagement strategies included specialist roles, outreach services, dedicated services, raising health awareness, handheld records, training for staff and collaborative working. Conclusion: This review provides evidence that Gypsy, Roma and Traveller populations across Europe struggle to exercise their right to healthcare on account of multiple barriers; and related to other determinants of disadvantage such as low literacy levels and experiences of discrimination. Some promising strategies to overcome barriers were reported but the evidence is weak; therefore, rigorous evaluations of interventions to improve access to and engagement with health services for Gypsy, Roma and Traveller people are needed. (PsycINFO Database Record (c) 2018 APA, all rights reserved)

Micheli, M., et al. (2018). "Digital footprints: an emerging dimension of digital inequality." Journal of Information, Communication and Ethics in Society **16**(3): 242-251.

Purpose: This conceptual contribution is based on the observation that digital inequalities literature has not sufficiently considered digital footprints as an important social differentiator. The purpose of the paper is to inspire current digital inequality frameworks to include this new dimension. Design/methodology/approach: Literature on digital inequalities is combined with research on privacy, big data and algorithms. The focus on current findings from an interdisciplinary point of view allows for a synthesis of different perspectives and conceptual development of digital footprints as a new dimension of digital inequality. Findings: Digital footprints originate from active content creation, passive participation and platform-generated data. The literature review shows how different social groups may experience systematic advantages or disadvantages based on their digital footprints. A special emphasis should be on those at the margins, for example, users of low socioeconomic background. Originality/value: By combining largely independent research fields, the contribution opens new avenues for studying digital inequalities, including innovative methodologies to do so. © 2018, Emerald Publishing Limited.

Millington, K. (2020). COVID-19 Health Evidence Summary No.12, IDS.

This daily COVID-19 Health Evidence Summary is to signpost DFID and other UK government departments to the latest relevant evidence and discourse on COVID-19 to inform and support their response. This summary is a result of 3 hours of work and is not intended to be a comprehensive summary of evidence. This summary covers nine publications on disability C19 Twitter chat, disability Inclusive Community Action – COVID-19 Matrix by CBM, a rapid systematic review on school closure and management practices during coronavirus outbreaks including COVID-19, effectiveness of surgical and cotton masks in blocking SARS-CoV-2, a rapid systematic review on facemasks and similar barriers to prevent respiratory illness such as COVID-19, sample pooling as a strategy to detect community transmission of SARS-CoV-2, maintaining HIV care during the COVID-19 pandemic, few clinical trials are done in Africa, and how countries can use digital payments for better, quicker cash transfers. This summary also covers global evidence on tracking COVID-19 cases, online course by LSHTM, and COVID-19 resource hubs that are accessible by the public.

Nanni, M., et al. (2020). "Give more data, awareness and control to individual citizens, and they will help COVID-19 containment."

The rapid dynamics of COVID-19 calls for quick and effective tracking of virus transmission chains and early detection of outbreaks, especially in the “phase 2” of the pandemic, when lockdown and other restriction measures are progressively withdrawn, in order to avoid or minimize contagion resurgence. For this purpose, contact-tracing apps are being proposed for large scale adoption by many countries. A centralized approach, where data sensed by the app are all sent to a nation-wide server, raises concerns about citizens’ privacy and needlessly strong digital surveillance, thus alerting us to the need to minimize personal data collection and avoiding location tracking. We advocate the conceptual advantage of a decentralized approach, where both contact and location data are collected exclusively in individual citizens’ “personal data stores”, to be shared separately and selectively (e.g., with a backend system, but possibly also with other citizens), voluntarily, only when the citizen has tested positive for COVID-19, and with a privacy preserving level of granularity. This approach better protects the personal sphere of citizens and affords multiple benefits: it allows for detailed information gathering for infected people in a privacy-preserving fashion; and, in turn this enables both contact tracing, and, the early detection of outbreak hotspots on more finely-granulated geographic scale. The decentralized approach is also scalable to large populations, in that only the data of positive patients need be handled at a central level. Our recommendation is two-fold. First to extend existing decentralized architectures with a light touch, in order to manage the collection of location data locally on the device, and allow the user to share spatio-temporal aggregates – if and when they want and for specific aims – with health authorities, for instance. Second, we favour a longerterm pursuit of realizing a Personal Data Store vision, giving users the opportunity to contribute to collective good in the measure they want, enhancing self-awareness, and cultivating collective efforts for rebuilding society

Neter, E. and E. Brainin (2019). "Association between health literacy, eHealth literacy, and health outcomes among patients with long-term conditions: A systematic review." European Psychologist. Vol. **24**(1): 68-81.

The objective of this paper is to synthesize and update findings from systematic review on health literacy and health outcomes among patients with long-term conditions, and extend the review to the digital domain. Health outcomes include clinical outcomes, processes of care, and health service use. Data sources are the following: (1) studies which appeared in two previous systematic reviews in 2004 and 2011 whose participants were people with long-term conditions or elderly (n = 54); (2) articles on health literacy and health outcomes identified in an updated 2011-2016 search (n = 26); (3) articles on eHealth literacy and its association with health outcomes (n = 8). Strength of evidence was determined by a qualitative assessment of risk of bias, consistency, and directness. There was a lack of consistent evidence on the relationship between health literacy and clinical outcomes despite the consistent evidence on the association with mortality. There was low to insufficient evidence on the association between health literacy and self-rated health/function and emotional states of anxiety and depression, alongside high evidence on lack of association with quality of life. There was insufficient to low evidence on the association between health literacy and behavioral outcomes (medication adherence, other health behaviors) and finally also low to moderate evidence on the association between health literacy and use of health services such as hospitalization and emergency department. In the eHealth literacy domain, there were few studies reporting association with health behaviors and self-rated health with inconsistent results. In conclusion, it is advocated to examine performed heath literacy and eHealth literacy in large longitudinal studies. (PsycINFO Database Record (c) 2019 APA, all rights reserved)

Nguyen, H. C., et al. (2020). "People with suspected covid-19 symptoms were more likely depressed and had lower health-related quality of life: The potential benefit of health literacy." Journal of Clinical Medicine **9**(4).

The coronavirus disease 2019 (COVID-19) epidemic affects people's health and health-related quality of life (HRQoL), especially in those who have suspected COVID-19 symptoms (S-COVID-19-S). We examined the effect of modifications of health literacy (HL) on depression and HRQoL. A cross-sectional study was conducted from 14 February to 2 March 2020. 3947 participants were recruited from outpatient departments of nine hospitals and health centers across Vietnam. The interviews were conducted using printed questionnaires including participants' characteristics, clinical parameters, health behaviors, HL, depression, and HRQoL. People with S-COVID-19-S had a higher depression likelihood (OR, 2.88; p < 0.001), lower HRQoL-score (B, -7.92; p < 0.001). In comparison to people without S-COVID-19-S and low HL, those with S-COVID-19-S and low HL had 9.70 times higher depression likelihood (p < 0.001), 20.62 lower HRQoL-score (p < 0.001), for the people without S-COVID-19-S, 1 score increment of HL resulted in 5% lower depression likelihood (p < 0.001) and 0.45 higher HRQoL-score (p < 0.001), while for those people with S-COVID-19-S, 1 score increment of HL resulted in a 4% lower depression likelihood (p = 0.004) and 0.43 higher HRQoL-score (p < 0.001). People with S-COVID-19-S had a higher depression likelihood and lower HRQoL than those without. HL shows a protective effect on depression and HRQoL during the epidemic. Copyright © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

O'Sullivan, T. L. and K. P. Phillips (2019). "From SARS to pandemic influenza: the framing of high-risk populations." Natural Hazards **98**(1): 103-117.

The 2003 global outbreak of severe acute respiratory syndrome (SARS) was a wake-up call for health systems in Canada, with realization of occupational health risks faced by health care workers and first responders in public health emergency response. The need for investment in critical social infrastructure-including explicitly articulated plans-became a priority for managing future pandemics. Over the past 15 years, pandemic planning has evolved with the adoption of a whole-of-society approach to disaster risk reduction. There is recognition of the social gradient of risk, which emerges from the interaction between social determinants of health, risk of exposure, and adverse impacts from a pandemic. Additionally, there is better understanding of the benefits of planning according to functional needs, rather than deficit-oriented labelling. In this paper, we reflect on how the framing of vulnerable or high-risk populations has evolved since SARS. Looking to the future, we present the imperative for the creation of institutional space for engagement of high-risk populations in pandemic planning processes, including participatory governance. Innovative consultation strategies are needed to enhance collective asset literacy and ensure planning is adaptive to the changing social fabric. Progressive pandemic planning in the next decade must be inclusive and sensitive to modern definitions of family, varied abilities, cultural practices and gender and sexual diversity, thereby reflecting a whole-of-society approach to disaster risk reduction.

Oliveira, D., et al. (2019). "Is poor health literacy a risk factor for dementia in older adults? Systematic literature review of prospective cohort studies. (Special Issue Geroscience, healthcare and society.)." Maturitas **124**: 8-14.

Increasing evidence suggests a bidirectional relationship exists between levels of health literacy (HL) and cognitive impairment in later life. However, it is unclear whether low levels of HL can lead to a higher risk of dementia. This systematic review explored prospective cohort studies to find out whether HL is a risk factor for incident dementia in older adults. A search was conducted in Medline, PsycINFO, Embase, PubMed and Scopus and 5450 documents were initially retrieved. The grey literature and references of the selected papers were also consulted. Papers were selected and assessed by three researchers independently. Findings were reported in line with the PRISMA guidelines and quality appraisal was conducted using the STROBE checklist. Four studies were included for quality appraisal, data extraction and synthesis, all of which were conducted in the United States between 2014 and 2018. Adjusted analyses showed that in all studies people with low levels of HL had a significantly higher risk of incident dementia over time than people with adequate levels of HL. Low HL or total literacy (financial plus HL) was also a risk factor for mild cognitive impairment in two studies, irrespective of an Alzheimer's disease genotype. There was a statistically significant positive association between total literacy scores and the post-mortem amount of plaques and tangles suggestive of Alzheimer's disease. Our findings suggest that low levels of HL might lead to higher future dementia risk. However, as only a few longitudinal studies have been conducted in this area, further research is needed to establish the role of HL as a key risk factor for dementia. Researchers should use standardized HL-specific measurement tools so that future studies in this area are robust and comparable. Primary health care professionals might wish consider individual's HL when planning and implementing dementia risk reduction in order to improve its long-term effectiveness.

Paakkari, L. and O. Okan (2020). "COVID-19: health literacy is an underestimated problem." The Lancet Public Health **5**(5): e249-e250.

Palmer, S. C., et al. (2019). "Reported Maori consumer experiences of health systems and programs in qualitative research: a systematic review with meta-synthesis." International Journal for Equity in Health **18**(1): 163.

BACKGROUND: Persistent inequities in health experiences and outcomes are observed for Maori compared to non-Maori in Aotearoa New Zealand. We conceptualised factors associated with Maori consumer experiences of health programs and services and characterise how the recommendations arising from qualitative research inform strategies to address inequities.

METHODS: In this systematic review, electronic literature searching was conducted in February 2018. Qualitative studies reporting Maori consumer experiences of health services and programs in Aotearoa New Zealand were eligible. Maori consumer experiences of health services were mapped to the WHO Commission of Social Determinants of Health (CSDH) conceptual framework on health inequities as related to: (i) the socioeconomic and political context; (ii) socioeconomic positioning; or (iii) intermediary factors that increase exposure to health-compromising conditions. Recommendations to improve consumer experiences were mapped to the CSDH framework for tackling social determinants of health inequities as policy directions on: (i) unequal consequences of illness (individual interaction); (ii) risks of exposure to health-damaging factors (community); (iii) exposures to health-damaging factors (public policies); and (iv) mitigating effects of socioeconomic and political stratification (environment).

RESULTS: Fifty-four studies were included. Maori consumer experiences mapped to social determinants of health inequities were most frequently related to direct interactions with health services and programs, particularly patient-clinician interactions (communication, relationships) and cultural competencies of clinicians and the system. Key recommendations by researchers mapped to potential strategies to address inequity were identified at all levels of the political, social and health system from individual interactions, community change, and broader public and system-level strategies. Recommendations were predominantly focused on actions to reduce risks of exposure to health-damaging factors including health literacy interventions, increased resources in cultural competencies and Maori capacity in health service development and workforce.

CONCLUSIONS: Maori consumer experiences of health services and programs are an important informer of variables that impact health inequity. Strategies to tackle health inequities informed by Maori consumer experiences can be drawn from existing empirical research. Future qualitative exploration of how socioeconomic, political and public policies influence Maori consumer experiences of health services and programs could inform a broader range of structural policies to address health inequities.

Palumbo, R. (2017). "Examining the impacts of health literacy on healthcare costs. An evidence synthesis." Health Services Management Research **30**(4): 197-212.

Scholars and practitioners share a significant concern about rising healthcare costs. Health literacy is widely presented as a solution to this momentous issue, paving the way for a more appropriate access to care and therefore, for cost savings. However, to date little is still known about the ultimate effects of better health literacy on healthcare costs. Drawing from the findings of a systematic literature review which ultimately involved 29 papers retrieved from Scopus-Elsevier and PubMed. This manuscript is aimed at shedding light on the relationship between health literacy and healthcare costs. The inadequate ability of patients to understand health information and to navigate the healthcare system was found to be an important predictor of inappropriateness in the access to health care. In addition, people living with problematic health literacy are discouraged to be engaged in the provision of health services and are expected to show poor self-efficacy in dealing with their health-related conditions. From this point of view, poor health literate patients are assumed to be at high risk of exacerbation of their health problems, which in turn contributes in rising healthcare costs. In spite of these findings, both policy makers and practitioners seem to overlook the importance of health literacy. Eventually, the joint intervention on laws, policies, organizational strategies, and practices is crucial to handle the challenges related to limited health literacy.

Parker, S., et al. (2018). "Electronic, mobile and telehealth tools for vulnerable patients with chronic disease: a systematic review and realist synthesis." BMJ Open **8**(8): e019192.

OBJECTIVES: The objective of this review was to assess the benefit of using electronic, mobile and telehealth tools for vulnerable patients with chronic disease and explore the mechanisms by which these impact patient self-efficacy and self-management.

DESIGN: We searched MEDLINE, all evidence-based medicine, CINAHL, Embase and PsychINFO covering the period 2009 to 2018 for electronic, mobile or telehealth interventions. Quality was assessed according to rigour and relevance. Those studies providing a richer description ('thick') were synthesised using a realist matrix.

SETTING AND PARTICIPANTS: Studies of any design conducted in community-based primary care involving adults with one or more diagnosed chronic health condition and vulnerability due to demographic, geographic, economic and/or cultural characteristics.

RESULTS: Eighteen trials were identified targeting a range of chronic conditions and vulnerabilities. The data provided limited insight into the mechanisms underpinning these interventions, most of which sought to persuade vulnerable patients into believing they could self-manage their conditions through improved symptom monitoring, education and support and goal setting. Patients were relatively passive in the interaction, and the level of patient response attributed to their intrinsic level of motivation. Health literacy, which may be confounded with motivation, was only measured in one study, and eHealth literacy was not assessed.

CONCLUSIONS: Research incorporating these tools with vulnerable groups is not comprehensive. Apart from intrinsic motivation, health literacy may also influence the reaction of vulnerable groups to technology. Social persuasion was the main way interventions sought to achieve better self-management. Efforts to engage patients by healthcare providers were lower than expected. Use of social networks or other eHealth mechanisms to link patients and provide opportunities for vicarious experience could be further explored in relation to vulnerable groups. Future research could also assess health and eHealth literacy and differentiate the specific needs for vulnerable groups when implementing health technologies.

Perazzo, J., et al. (2017). "A Systematic Review of Health Literacy Interventions for People Living with HIV." AIDS & Behavior **21**(3): 812-821.

Health literacy significantly impacts health-related outcomes among people living with HIV. Our aim was to systematically review current literature on health literacy interventions for people living with HIV. The authors conducted a thorough literature search following the PRISMA statement and the AMSTAR checklist as a guide, and found six studies that met inclusion/exclusion criteria. The majority of these interventions were designed to improve HIV treatment adherence as well as HIV knowledge and treatment-related skills, with one study focusing on e-Health literacy. Several of the studies demonstrated trends toward improvement in medication adherence, but most did not achieve statistical significance primarily due to methodological limitations. Significant improvements in knowledge, behavioral skills, and e-Health literacy were found following interventions (p = 0.001-0.05). Health literacy interventions have the potential to promote HIV-related knowledge, behavioral skills, and self-management practices. More research is needed to assess the efficacy of interventions to promote a variety of self-management practices.

Pettersson, F. (2018). "On the issues of digital competence in educational contexts – a review of literature." Education and Information Technologies **23**(3): 1005-1021.

In this review focus is on how digital competence in educational contexts has been addressed in international research over the last 10 years in terms of policy, organizational infrastructures, strategic leadership as well as teachers and their teaching practices. The analysis shows that although research on digital competence in educational contexts has increased, knowledge on digital competence related to organizational infrastructures and strategic leadership are sparse. The analysis indicated that most research focuses on the specific competence needed by teachers and therefore tends to neglect the influence of broader contextual conditions in the wider school setting. Based on the review, three suggestions for further research can be provided. Firstly, to address research on organizational infrastructures and digital competent leadership. Secondly, to elaborate on theoretical frameworks that can close the gap between research on policy, organizational infrastructures, strategic leadership as well as teachers and their teaching practices. A third suggestion is for researchers to become involved in the development of new approaches that can enhance digital competence in educational contexts. It can be concluded that digital competence might not benefit from being regarded as an isolated phenomena on the level of single actors. Rather, it can be regarded as an organizational task, influenced and driven by several contextual factors embedded within and across a wider school organization. © 2017, The Author(s).

Picton, I. and A. Teravainen (2017). "Fake news and critical literacy: an evidence review."

(ABS) Findings from a literature review which indicate that children and young people in England do not have the critical literacy skills they need to identify fake news. Covers children and young people's use of social media to access news; practical guidance on teaching digital literacy and where it fits in the national curriculum and the wider impact of fake news on democracy, rights and society.

Poli, A., et al. (2019). "A research tool for measuring non-participation of older people in research on digital health." BMC Public Health **19**(1).

Background: Healthcare services are being increasingly digitalised in European countries. However, in studies evaluating digital health technology, some people are less likely to participate than others, e.g. those who are older, those with a lower level of education and those with poorer digital skills. Such non-participation in research - deriving from the processes of non-recruitment of targeted individuals and self-selection - can be a driver of old-age exclusion from new digital health technologies. We aim to introduce, discuss and test an instrument to measure non-participation in digital health studies, in particular, the process of self-selection. Methods: Based on a review of the relevant literature, we designed an instrument - the NPART survey questionnaire - for the analysis of self-selection, covering five thematic areas: socioeconomic factors, self-rated health and subjective overall quality of life, social participation, time resources, and digital skills and use of technology. The instrument was piloted on 70 older study persons in Sweden, approached during the recruitment process for a trial study. Results: Results indicated that participants, as compared to decliners, were on average slightly younger and more educated, and reported better memory, higher social participation, and higher familiarity with and greater use of digital technologies. Overall, the survey questionnaire was able to discriminate between participants and decliners on the key aspects investigated, along the lines of the relevant literature. Conclusions: The NPART survey questionnaire can be applied to characterise non-participation in digital health research, in particular, the process of self-selection. It helps to identify underrepresented groups and their needs. Data generated from such an investigation, combined with hospital registry data on non-recruitment, allows for the implementation of improved sampling strategies, e.g. focused recruitment of underrepresented groups, and for the post hoc adjustment of results generated from biased samples, e.g. weighting procedures. © 2019 The Author(s).

Rajah, R., et al. (2018). "The perspective of healthcare providers and patients on health literacy: a systematic review of the quantitative and qualitative studies." Perspectives in Public Health **138**(2): 122-132.

AIM: Health literacy (HL) is a multifaceted concept, thus understanding the perspective of healthcare providers, patients, and the system is vital. This systematic review examines and synthesises the available studies on HL-related knowledge, attitude, practice, and perceived barriers.

METHODS: CINAHL and Medline (via EBSCOhost), Google Scholar, PubMed, ProQuest, Sage Journals, and Science Direct were searched. Both quantitative and/or qualitative studies in the English language were included. Intervention studies and studies focusing on HL assessment tools and prevalence of low HL were excluded. The risk of biasness reduced with the involvement of two reviewers independently assessing study eligibility and quality.

RESULTS: A total of 30 studies were included, which consist of 19 quantitative, 9 qualitative, and 2 mixed-method studies. Out of 17 studies, 13 reported deficiency of HL-related knowledge among healthcare providers and 1 among patients. Three studies showed a positive attitude of healthcare providers towards learning about HL. Another three studies demonstrated patients feel shame exposing their literacy and undergoing HL assessment. Common HL communication techniques reported practiced by healthcare providers were the use of everyday language, teach-back method, and providing patients with reading materials and aids, while time constraint was the most reported HL perceived barriers by both healthcare providers and patients.

CONCLUSION: Significant gaps exists in HL knowledge among healthcare providers and patients that needs immediate intervention. Such as, greater effort placed in creating a health system that provides an opportunity for healthcare providers to learn about HL and patients to access health information with taking consideration of their perceived barriers.

Ramsetty, A. and C. Adams (2020). "Impact of the digital divide in the age of COVID-19." Journal of the American Medical Informatics Association : JAMIA. **28**.

Reiners, F., et al. (2019). "Sociodemographic factors influencing the use of ehealth in people with chronic diseases." International Journal of Environmental Research and Public Health **16**(4).

Alongside the growing number of older persons, the prevalence of chronic diseases is increasing, leading to higher pressure on health care services. eHealth is considered a solution for better and more efficient health care. However, not every patient is able to use eHealth, for several reasons. This study aims to provide an overview of: (1) sociodemographic factors that influence the use of eHealth; and (2) suggest directions for interventions that will improve the use of eHealth in patients with chronic disease. A structured literature review of PubMed, ScienceDirect, Association for Computing Machinery Digital Library (ACMDL), and Cumulative Index to Nursing and Allied Health Literature (CINAHL) was conducted using four sets of keywords: “chronic disease”, “eHealth”, “factors”, and “suggested interventions”. Qualitative, quantitative, and mixed-method studies were included. Four researchers each assessed quality and extracted data. Twenty-two out of 1639 articles were included. Higher age and lower income, lower education, living alone, and living in rural areas were found to be associated with lower eHealth use. Ethnicity revealed mixed outcomes. Suggested solutions were personalized support, social support, use of different types of Internet devices to deliver eHealth, and involvement of patients in the development of eHealth interventions. It is concluded that eHealth is least used by persons who need it most. Tailored delivery of eHealth is recommended. © 2019 by the authors. Licensee MDPI, Basel, Switzerland.

Roseberry, J. (2017). "Assimilating digital immigrants into high-access learning environments." Dissertation Abstracts International Section A: Humanities and Social Sciences. Vol. **77**(10-A(E).

As schools have placed an increased emphasis on instructional technology, the amount of money spent on hardware and student devices in classrooms has increased significantly ( Nagel, 2014). Because a dministrators are underestimating the instructional shift required for effective integration of these devices, they are not allocating enough time and resources for teacher professional development (Sawchuck, 2010). This has contributed to a digital divide between teachers in districts across the state, and, even, within grade levels at the same school. The result is an epidemic of classrooms with high access to technology, but low use among educators. The purpose of this study was to explore how two highlyregarded Indiana school districts prepared their middle school teachers to integrate technology. Mixed methods were used to discover how teacher and administrators described their professional development, and how closely these descriptions reflected ten characteristics of effective professional development identified in the literature review. T he study also attempted to operationalize the ISTE-T standards as a method for approximating practices. Data were collected using teacher surveys, classroom observations, and focus groups. Both schools emphasized a standardized format (Gaible & Burns, 2005) for their trainings. While this worked well for introducing new content, this single session approach did not allow for other effective strategies identified in the literature review such as time for reflection (Tillema, 2000), increased teacher voice regarding content (Opfer & Pedder, 2011) , and varied delivery methods (Schrum & Levin, 2013). The descriptions within the ISTE-T Standards were found useful for identifying instructional traits, but the results skewed towards identifying teacher directed learning experiences. As far as the characteristics of effective professional development from the literature review, the study found that these two schools emphasized learning experiences that considered teacher beliefs (Desimone, 2009), were embedded within job responsibilities (Nuthall & AltonLee, 1993) , measured teacher growth (Opfer & Pedder, 2011), and focused on student learning outcomes ( Clarke & Hollingsworth, 2002). (PsycINFO Database Record (c) 2017 APA, all rights reserved)

Russo, S., et al. (2019). "Understanding Patients' Preferences: A Systematic Review of Psychological Instruments Used in Patients' Preference and Decision Studies." Value in Health **22**(4): 491-501.

BACKGROUND: Research has been mainly focused on how to elicit patient preferences, with less attention on why patients form certain preferences.

OBJECTIVES: To assess which psychological instruments are currently used and which psychological constructs are known to have an impact on patients' preferences and health-related decisions including the formation of preferences and preference heterogeneity.

METHODS: A systematic database search was undertaken to identify relevant studies. From the selected studies, the following information was extracted: study objectives, study population, design, psychological dimensions investigated, and instruments used to measure psychological variables.

RESULTS: Thirty-three studies were identified that described the association between a psychological construct, measured using a validated instrument, and patients' preferences or health-related decisions. We identified 33 psychological instruments and 18 constructs, and categorized the instruments into 5 groups, namely, motivational factors, cognitive factors, individual differences, emotion and mood, and health beliefs.

CONCLUSIONS: This review provides an overview of the psychological factors and related instruments in the context of patients' preferences and decisions in healthcare settings. Our results indicate that measures of health literacy, numeracy, and locus of control have an impact on health-related preferences and decisions. Within the category of constructs that could explain preference and decision heterogeneity, health locus of control is a strong predictor of decisions in several healthcare contexts and is useful to consider when designing a patient preference study. Future research should continue to explore the association of psychological constructs with preference formation and heterogeneity to build on these initial recommendations.

Scheerder, A., et al. (2017). "Determinants of Internet skills, uses and outcomes. A systematic review of the second- and third-level digital divide." Telematics and Informatics **34**(8): 1607-1624.

Recently, several digital divide scholars suggested that a shift is needed from a focus on binary Internet access (first-level digital divide) and Internet skills and use (second-level digital divide) to a third-level digital divide in which the tangible outcomes of Internet use are highlighted. A plethora of studies have been conducted to identify determinants of digital divides. Unfortunately, there is a lack of consistency in the terminology used. Moreover, terms are often not theoretically grounded. Therefore, we conducted a systematic literature review of digital divide determinants. The results show that the third-level digital divide was underexposed. The primary focus is on Internet use. More importantly, the identified determinants show that digital divide research is largely limited to sociodemographic and socioeconomic determinants. © 2017 Elsevier Ltd

Seifert, A. (2020). "The Digital Exclusion of Older Adults during the COVID-19 Pandemic." Journal of Gerontological Social Work: 1-3.

Sentell, T., et al. (2017). "Health Literacy in a Social Context: Review of Quantitative Evidence." Health Literacy Research and Practice **1**(2): e41-e70.

Background: Conceptual literature has consistently noted that health literacy exists within a social context. This review examined how the intersection of social context and health literacy has been operationalized in quantitative, empirical research.

Methods: Following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, we searched seven databases, including PubMed and CINAHL (The Cumulative Index to Nursing and Allied Health Literature), using a range of potentially relevant keywords, and we hand-searched bibliographies. Inclusion criteria were quantitative studies of any design in which measurement of health literacy and measurement of social context intersected. We identified 1,052 unduplicated articles; 34 met inclusion criteria.

Key Results: We found three distinct perspectives on the intersection between health literacy and social context. Most common (n = 23) were studies measuring an association between individual health literacy and individual social capital, social support, or social engagement, particularly whether social support varied by health literacy and/or if this relationship mediated health outcomes. Another group of studies (n = 6) took the perspective that being health literate by definition included social context, including access to and/or use of social support as a domain in individual health literacy assessment. Five studies considered the social context of health literacy as an independent property measured beyond the individual level; two measured community-level health literacy and three measured health literacy capacity/concordance in caregiving dyads. The studies showed significant definitional and measurement complexity and overlap. In the most dramatic example, a similar question was used across various studies to measure (1) health literacy, (2) a social support domain in health literacy, (3) social support, and (4) a study outcome distinct from, but associated with, health literacy. Potential useful methods, such as social network analyses, were missing from the literature.

Discussion: Existing quantitative research on health literacy in a social context supports more attention to this topic. This review quantified evidence, revealed gaps, noted limitations, and identified important questions for future research. <b>[Health Literacy Research and Practice</b> . <b>2017;1(2):e41-e70.]</b>.

Plain Language Summary: This study systemically compiles existing quantitative empirical research (34 articles) focusing on the intersection of health literacy in the social context. We find considerable measurement complexity in the current body of work on this topic and identify three distinct perspectives that researchers have taken while considering this topic. This information will be useful for future development of this important research area.

Sentell, T., et al. (2020). "Interdisciplinary perspectives on health literacy research around the world: More important than ever in a time of covid-19." International Journal of Environmental Research and Public Health **17**(9).

As we write our editorial for a health literacy special issue in the midst of the international COVID-19 crisis, we take this opportunity to highlight the importance of individual, community, and population health literacy. We are not only in a "pandemic" but also an "infodemic". Health literacy is more important than ever in the face of these global health threats, which have impacted outcomes across the levels of the socio-ecological model (SEM), including individual health behaviors, family relationships, organizational behavior, state policy-making, national mortality statistics, and the international economy in the span of weeks. Our special issue sought to pull together interdisciplinary threads guided by two principles. The first was defining health literacy as essential skills and situational resources needed for people to find, understand, evaluate, communicate, and use information and services in a variety of forms across various settings throughout their life course to promote health and wellbeing. The second was the idea that enhancing health literacy in populations and systems is critical to achieving health equity. In this time of public health need across traditional borders, the inter-sectoral and international perspectives of special issue articles are more urgent than ever. A greater understanding, appreciation, and application of health literacy can support policy action on multiple levels to address major public health challenges. Health literacy should be built deliberately as a population-level resource and community asset. We have summarized the set of articles in this special issue across the levels of the SEM, hoping their thoughtful considerations and interesting findings will help to support global health and wellness and inspire future research, policy, and practice in this global public health emergency and beyond. Copyright © 2020 by the authors. Licensee MDPI, Basel, Switzerland.

Trung, T., et al. (2020). "How Digital Natives Learn and Thrive in the Digital Age: Evidence from an Emerging Economy."

As a generation of ‘digital natives,’ secondary students who were born from 2002 to 2010 have various approaches to acquiring digital knowledge. Digital literacy and resilience are crucial for them to navigate the digital world as much as the real world; however, these remain under-researched subjects, especially in developing countries. In Vietnam, the education system has put considerable effort into teaching students these skills to promote quality education as part of the United Nations-defined Sustainable Development Goal 4 (SDG4). This issue has proven especially salient amid the COVID−19 pandemic lockdowns, which had obliged most schools to switch to online forms of teaching. This study utilizes a dataset of 1061 Vietnamese students taken from the United Nations Educational, Scientific, and Cultural Organization (UNESCO)’s “Digital Kids Asia Pacific (DKAP)” project and employed Bayesian statistics to explore the relationship between the students’ background and their digital abilities. Results show that economic status and parents’ level of education are positively correlated with digital literacy. Students from urban schools have only a slightly higher level of digital literacy than their rural counterparts, suggesting that school location may not be a defining explanatory element in the variation of digital literacy and resilience among Vietnamese students. Students’ digital literacy and, especially resilience, also have associations with their gender. Moreover, as students are digitally literate, they are more likely to be digitally resilient. Following SDG4, i.e., Quality Education, it is advisable for schools, and especially parents, to seriously invest in creating a safe, educational environment to enhance digital literacy among students.

van Laar, E., et al. (2017). "The relation between 21st-century skills and digital skills: A systematic literature review." Computers in Human Behavior **72**: 577-588.

Innovation starts with people, making the human capital within the workforce decisive. In a fast-changing knowledge economy, 21st-century digital skills drive organizations' competitiveness and innovation capacity. Although such skills are seen as crucial, the digital aspect integrated with 21st-century skills is not yet sufficiently defined. The main objectives of this study were to (1) examine the relation between 21st-century skills and digital skills; and (2) provide a framework of 21st-century digital skills with conceptual dimensions and key operational components aimed at the knowledge worker. A systematic literature review was conducted to synthesize the relevant academic literature concerned with 21st-century digital skills. In total, 1592 different articles were screened from which 75 articles met the predefined inclusion criteria. The results show that 21st-century skills are broader than digital skills – the list of mentioned skills is far more extensive. In addition, in contrast to digital skills, 21st-century skills are not necessarily underpinned by ICT. Furthermore, we identified seven core skills: technical, information management, communication, collaboration, creativity, critical thinking and problem solving. Five contextual skills were also identified: ethical awareness, cultural awareness, flexibility, self-direction and lifelong learning. © 2017 Elsevier Ltd

Visscher, B. B., et al. (2018). "Evidence on the effectiveness of health literacy interventions in the EU: a systematic review." BMC Public Health **18**(1414).

Background: In the last decade, the attention for health literacy has increased in the European Union. This is due to three main reasons. First, reviews have shown that inadequate health literacy is associated with worse health outcomes, higher health care use and expenditure. Second, in all European countries the population is aging and the number of chronically ill people is rising. Improving health literacy in this group can offer greater opportunities to take an active part in society, be independent and improve quality of life. Third, since most research on health literacy has been conducted outside Europe and relatively little is known about the development of health literacy interventions and its effects on outcome measures in European countries. The aim of this systematic review was to assess the evidence on the effectiveness of health literacy interventions in the European Union published between 1995 and 2018.

Waterworth, S. and M. Honey (2018). "On-line health seeking activity of older adults: an integrative review of the literature." Geriatric Nursing **39**(3): 310-317.

Highlights: black small circle Nurses can take the lead in promoting reliable sources of on-line health information acting as knowledge brokers and translators about credible on-line resources. black small circle Nurses should work with older people to reduce barriers and reinforce approaches that can facilitate building on the older person's strengths in managing their health and well-being. black small circle Nurses can assist to reduce negative stereotypes about ageing and internet use. black small circle The findings of the current review may contribute to supporting policies and funding to promote the engagement of older people with the internet. Abstract: The internet is increasingly used to provide health information. Supporting older people to access on-line health information requires understanding their current usage and possible barriers and facilitators. Methods involved searching three databases. Inclusion criteria were: (i) articles published within 10 years; (ii) people aged >65; (iii) explored reasons for older people accessing on-line health information and (iv) in English. Eight articles met these criteria. Older people use on-line health information to learn about a disease, medication, treatment, or healthy living. Factors influencing usefulness of on-line health information included demographics, health status, trust in the information, lack of skills using the internet and attitudes of health professionals. Findings indicate that while older people access on-line health information there are barriers: Low trust, financial barriers, lack of familiarity with the internet and low health literacy levels. Implications for nursing include working in partnership with older people to assist them to identify appropriate on-line information.

Wit, L. d., et al. (2018). "Community-based initiatives improving critical health literacy: a systematic review and meta-synthesis of qualitative evidence." BMC Public Health **18**(40).

Background: Critical health literacy enables older adults to make informed health decisions and take actions for the health and wellbeing of themselves and their community, within their own social and cultural context. A community-based approach has the potential to improve the critical health literacy of older adults and their communities. However, it is not clear how such initiatives consider critical health literacy. Therefore, this study explored how community-based initiatives address the critical health literacy of older adults and their communities.

Wolf, M. S., et al. (2020). "Awareness, Attitudes, and Actions Related to COVID-19 Among Adults With Chronic Conditions at the Onset of the U.S. Outbreak: A Cross-sectional Survey." Annals of Internal Medicine **09**: 09.

Background: The evolving outbreak of coronavirus disease 2019 (COVID-19) is requiring social distancing and other measures to protect public health. However, messaging has been inconsistent and unclear.

Objective: To determine COVID-19 awareness, knowledge, attitudes, and related behaviors among U.S. adults who are more vulnerable to complications of infection because of age and comorbid conditions.

Design: Cross-sectional survey linked to 3 active clinical trials and 1 cohort study.

Setting: 5 academic internal medicine practices and 2 federally qualified health centers.

Patients: 630 adults aged 23 to 88 years living with 1 or more chronic conditions.

Measurements: Self-reported knowledge, attitudes, and behaviors related to COVID-19.

Results: A fourth (24.6%) of participants were "very worried" about getting the coronavirus. Nearly a third could not correctly identify symptoms (28.3%) or ways to prevent infection (30.2%). One in 4 adults (24.6%) believed that they were "not at all likely" to get the virus, and 21.9% reported that COVID-19 had little or no effect on their daily routine. One in 10 respondents was very confident that the federal government could prevent a nationwide outbreak. In multivariable analyses, participants who were black, were living below the poverty level, and had low health literacy were more likely to be less worried about COVID-19, to not believe that they would become infected, and to feel less prepared for an outbreak. Those with low health literacy had greater confidence in the federal government response.

Limitation: Cross-sectional study of adults with underlying health conditions in 1 city during the initial week of the COVID-19 U.S. outbreak.

Conclusion: Many adults with comorbid conditions lacked critical knowledge about COVID-19 and, despite concern, were not changing routines or plans. Noted disparities suggest that greater public health efforts may be needed to mobilize the most vulnerable communities.

Primary Funding Source: National Institutes of Health.

Yaman, F., et al. (2019). "Exploration of parents’ digital parenting efficacy through several demographic variables." Egitim ve Bilim **44**(199): 149-172.

As digital technologies develop, they provide individuals with new opportunities in various areas of daily life. However, these technologies also bring about some potential risks. Through digital technologies, several risks including but not limited to malicious content, cyberbullying, pornography, and sexually-explicit messages can easily reach out to households. The most vulnerable group for such risks is the children. As parents are primarily responsible for the well-being of their children, they have an important role in protecting the children in the digital environment. Parents need to get acquainted with the digital age so that they could protect their children from the risks pertaining to the use of digital technologies. The purpose of this study was twofold: (a) to identify digital parenting efficacy domains and their indicators, and (b) to examine parents’ efficacy levels in terms of some demographic variables through a measure based on the identified indicators. The study was survey research with two phases. In the first phase, based on a literature review and a focus group interview with experts, digital parenting efficacy fields and their indicators were identified. In the second phase, a digital parenting self-efficacy scale was developed and administered to 576 parents in Eskişehir region to explore the participants’ self-efficacy levels based on parenting roles, internet use, income level, occupation, and educational level. The digital parenting competencies and their indicators used in the scale development process consisted of seven dimensions. Through the participation of separate samples of parents, the factorial structure of the scale was examined through exploratory (n=520) and confirmatory factor analyses (n=556). After construct validity steps, indicators were gathered under three factors as digital literacy, digital safety, and digital communication. These indicators did not differ based on parents’ role in the process, internet use, socio-economic status, occupation, and level of education. © 2019 Turkish Education Association. All rights reserved.

Yuen, E. Y. N., et al. (2018). "Health literacy of caregivers of adult care recipients: A systematic scoping review." Health & Social Care in the Community **26**(2): e191-e206.

Caregivers play a vital role in providing support to adults with a chronic condition, or cognitive or physical impairment. Low health literacy in caregivers has the potential to impact adequate care provision, and consequently, care recipient health outcomes. The aim of the study was to systematically review literature related to health literacy of caregivers of adult care recipients, and examine its relationship with care recipient, and caregiver, health outcomes. Electronic databases were searched for relevant English-language publications that assessed health literacy in caregivers. Included studies were abstracted into evidence tables and assessed using an eight-item quality scale. The search identified 2717 new titles and abstracts, with 67 shortlisted for full review. Twelve papers from 2003 to 2015 met the inclusion criteria. The prevalence of limited health literacy in caregivers ranged from 0% to 52.5% depending on the measure and cut-off criteria used. Associations were found between low caregiver health literacy and (i) poorer care recipient self-management behaviours; (ii) increased care recipient use of health services; and (iii) increased caregiver burden. The quality of the studies ranged from fair to excellent. Low health literacy in caregivers differed depending on the measures and scoring criteria used. Evidence to support the relationship between caregiver health literacy and care recipient, and caregiver health outcomes was limited to single studies. Recommendations for further research include: the development of caregiver health literacy measures across different populations; examination of associations between caregiver health literacy and care recipient outcomes; and the development of interventions designed to improve caregiver health literacy.

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Rowlands, G. Digital Health Literacy. Retrieved 21 May 2020, from <https://www.who.int/global-coordination-mechanism/activities/working-groups/17-s5-rowlands.pdf>

## Sample Search

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1 exp coronavirus/ (14036)

2 exp Coronavirus Infections/ (12774)

3 (coronavirus\* or coronovirus\* or coronavirinae\* or Coronavirus\* or Coronovirus\* or Wuhan\* or Hubei\* or Huanan or "2019-nCoV" or 2019nCoV or nCoV2019 or "nCoV-2019" or "COVID-19" or COVID19 or "CORVID-19" or CORVID19 or "WN-CoV" or WNCoV or "HCoV-19" or HCoV19 or CoV or "2019 novel\*" or Ncov or "n-cov" or "SARS-CoV-2" or "SARSCoV-2" or "SARSCoV2" or "SARS-CoV2" or SARSCov19 or "SARS-Cov19" or "SARSCov-19" or "SARS-Cov-19" or Ncovor or Ncorona\* or Ncorono\* or NcovWuhan\* or NcovHubei\* or NcovChina\* or NcovChinese\*).ti,ab. (31585)

4 (SARSCoV2 or SARS-CoV2 or SARSCov19 or SARS-Cov19 or SARSCov-19 or SARS-Cov-19 or Ncovor\* or Ncorona\*or Ncorono\* or NcovWuhan\* or NcovHubei\* or NcovChina\* or NcovChinese\* or SARS2 or SARS-2 or SARScoronavirus2 or SARS-coronavirus-2 or SARScoronavirus 2 or SARScoronovirus2 or SARS-coronovirus-2 or SARScoronovirus 2 or (SARS adj2 coronavirus2)).ab,ti. (215)

5 (((((respirat\* adj2 (symptom\* or disease\* or illness\* or condition\*)) or (seafood or food or outdoor\*)) adj2 Market\*) or pneumon\*) adj10 (Wuhan\* or Hubei\* or China\* or Chinese\* or Huanan\*)).ab,ti. (1265)

6 Middle East Respiratory Syndrome Coronavirus/ (1037)

7 ("middle east respiratory syndrome\*" or "middle eastern respiratory syndrome\*" or MERSCoV or "MERS-CoV" or MERS).ti,ab. (4793)

8 ("severe acute respiratory syndrome" or SARS).ti,ab. (13264)

9 ("SARS-CoV-1" or "SARSCoV-1" or "SARSCoV1" or "SARS-CoV1" or SARSCoV or SARS-CoV or SARS1 or "SARS-1" or SARScoronavirus1 or "SARS-coronavirus-1" or "SARScoronavirus 1" or "SARS coronavirus1" or SARScoronovirus1 or "SARS-coronovirus-1" or "SARScoronovirus 1" or "SARS coronovirus1").ti,ab. (5802)

10 ((outbreak\* or wildlife\* or pandemic\* or epidemic\*) adj1 (Wuhan\* or Hubei or China\* or Chinese\* or Huanan\*)).ti,ab. (108)

11 (coronavirus\* or coronovirus\* or coronavirinae\* or CoV or HCoV\*).ti,ab. (19724)

12 ((corona\* or corono\*) adj1 (virus\* or viral\* or virinae\*)).ab,ti. (618)

13 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 (45425)

14 ((lock adj2 down) or lockdown or lock-down).ab,ti. (347)

15 (social adj2 distanc\*).ab,ti. (1725)

16 Pandemics/ (7832)

17 pandemic.ab,ti. (27729)

18 shielding.ab,ti. (11971)

19 13 and 18 (18)

20 14 or 15 or 16 or 17 or 18 (44191)

21 13 or 20 (81674)

22 (digital adj2 (inequalit\* or literac\* or inclu\* or exclu\* or divid\*)).ab,ti. (1838)

23 "digital inclusion".ab,ti. (32)

24 "digital exclusion".ab,ti. (9)

25 \*"Digital Divide"/ (37)

26 Information Literacy/ or Health Literacy/ or Computer Literacy/ or Literacy/ (8037)

27 Reading/ (22479)

28 (illiterate or illiteracy or literacy or literate or (read\* adj2 (age or level or standard))).ab,ti. (27465)

29 ("digital divide" or "digital literacy" or "health literacy").ab,ti. (8317)

30 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 (52221)

31 21 and 30 (132)

32 limit 31 to (english language and yr="2015 -Current") (74)

33 22 or 23 or 24 or 25 or 29 (9541)

34 (("systematic review" or meta-analysis or (evidence or literature)) adj2 (review or synthesis or summary)).ab,ti. (293404)

35 33 and 34 (471)

36 limit 35 to english language (461)

37 limit 36 to yr="2015 -Current" (338)

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