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The role of the traditional nurse versus the nurse in the 21st century

Milana-Mazal MAZOR¹

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Abstract: There are differences in the features of nursing, in light of the transformations that took place, such as the tasks of clinic nurses in contrast to hospital nurses. This is also mirrored in the tasks of the 20th century nurse in comparison to the nurse of the 21st century; the standards of nursing are essentially the same but have been streamlined over the years with the introduction of various supporting technologies into the world of nursing. This article reviews the role of the nurse and its evolution over time and explores the differences between the nursing profession in the past, present, and future.

Keywords: health policy; involvement of nurses, nursing education, health justice strategies, nursing association;

¹ Faculty of Economics and Business Administration, Alexandru Ioan Cuza University

NURSING PROFESSION IN THE PAST

The nursing profession commenced in England in the city of Liverpool and was established by William Rathbone (Agius, 1998). The Queen's Institute was responsible for training district nurses from 1890 to 1970 and the standard for admission was the completion of a three-year training program as a state registered nurse (RN). These nurses were recruited by the Liverpool Establishment and used to come to the same shared railroad station as the bus drivers and ticket clerks in order to get their uniforms. The nurses' uniform included: a gabardine cap and coats, a starched apron, and a collar.

From a testimony by Sylvia Thomas, a liaison and district planning nurse, from *A District Nurse's Tale* in the 1960s: "There were specific instructions regarding home visits by the nurses at the patient's home, the apron must be folded in a specific way as well as the coat, which had to be placed on a clean piece of newspaper in case of "unwanted visitors" that can be a sanitary problem (Thomas, n.d.). The nurses' salary was set at predetermined rates. Most of the district nurses walked (who were also issued bus tickets) or cycled to their workplace. The nurses carried 2 bags, a general breastfeeding bag (which can be boiled), and the contents of various devices including Enema equipment, rubber catheters, and creams, which were stored in separate cotton bags. The devices had to be boiled in a pot before and after use on the patient's stove. In addition, the accessories bag consisted of a nail brush, a box of soap, a hand towel, a thermometer, a spatula, and scissors for cutting nails; they often carry in addition a box of biscuits for baking that can be baked at the patient's home (Thomas, n.d.). The nurse's agenda began with visits to diabetic patients, who had to endure the inconvenience of repeatedly using needles and syringes. The equipment had to be boiled regularly and stored in glass jars with alcohol. The needles often cause a complication in the treatment due to repeated use and dulling of the needle. The nurses were clearly instructed to strictly follow the doctors' orders. The supervisor was responsible for planning and providing treatment. It was not uncommon for the doctor and the supervisor to make joint decisions for medical treatment. In some cases, the training was only practical training, but already in the 1960s district nurses received training and were qualified for the position equivalent to the level of an academic degree (Thomas, n.d.).

The story of Jackie Barnes, who at the age of 17 started as a cadet nurse in Huddersfield in 1959. From there she qualified in the hospital for several years before practicing as a practical nurse for 27

years in Didsbury. During her time as a nurse and years after retirement, she joined the Royal College of Nursing (RCN) council and was the first nurse to be on the council. She wrote and published many of her stories as a nurse, and also gave a series of lectures on vaccines and vaccine treatments. Jackie asserts: "Being a cadet nurse included studying anatomy, physiology, arranging flowers in departments, preparing cotton wool, and folding gauze for use for bandaging. For all these, the nurses were paid 2.19 shillings per month plus boarding/pension and accommodation." The nurses' day started at 7:30 a.m. by arranging beds, at the level of the bed wheels that were in the same direction, beds arranged to perfection. It was important to talk to the patients of the ward, even though it was not always easy and some situations were even discouraging, but the expectation was that the nurses knew the name of the patients, and the diagnosis and treatment the patients received in the ward where they worked. The nutritional menu is taken very seriously and carefully considered so that patients receive an appropriate balance (usually small portions). The nurses' curfew started at 10:00 p.m. Twice due to the situation with the patients, they were late for boarding, "But not later than 11:00 p.m." (Burns, n.d.). "Some things changed dramatically in the treatment, the nurses had to take urine samples and test them as well as disinfect and boil Needles that over time have dulled" (Burns, n.d.). "Iodine was a preferred antiseptic, penicillin powder was for wounds and burns with a heating bulb, the leg of the bed was raised with wooden blocks and patients with leg or hip fractures had metal splints for weeks which they would raise themselves with an overhead crane. There was a regular examination to see that the patients were not suffering from pressure sores, and if so, the nurse would have been sent directly to the main office for a reprimand" (Burns, n.d.). In 1974, Jackie became a nurse at Barlow Medical Center. The center was a place that gave importance to future practice and employed Jackie that year as a nurse intern, she earned £88.42 and stayed there for 27 years. Her role at first was nurse/receptionist, And the job included dressings, giving injections to patients, Giving injections for travelers, and baby clinic. Over time Jackie rose to specialist nurse status - one of only 12 nurses in Manchester were accredited by the United Kingdom Central Council for Nursing, Midwifery and Health Visiting. Jackie helped develop training practice at Manchester Metropolitan University and ran the course as a guest lecturer. She has written extensively on vaccines and adjuvant vaccines and

has written a guide on the pneumococcal (bacterial pneumonia) vaccine (Burns, n.d.).

The story of Alan Finnegan is a special inspirational story, from studying as a nurse in a hospital he moved to military nursing, and from there he entered the world of academia. He was quoted as saying: "The nursing profession should also be a consultant, a teacher, a researcher, a role model, a team player, and an advocate for the patient..." (Finnegan, n.d.). Alan enjoyed a long and varied career. After qualifying as a Registered General Nurse in 1984 at North Manchester General Hospital, he went on to obtain a Certificate of Training in Mental Health Nursing in Birmingham. and then joined the British Army in 1987. Alan is currently one of the councilors of the RCN. Alan was interested in working with a variety of people and in a variety of roles, The change from one health service to another was particularly appealing to him. Alan believes that the role of nurses should be: caring, compassionate and reliable. "Many patients look to the nurses as their advocates. the person they are building a relationship with, respect them regardless of faith, affiliation or culture" (Finnegan, n.d.). He continues by saying that during the past century, the fundamental elements of nursing have not changed and that certain nurses are essential members of the professional team, who are responsible for patient care. "Some of the nursing practices of 100 years ago showed incredible strength, resilience, flexibility, leadership skills, and courage. Nurses today have similar characteristics demonstrated by colleagues who treated patients with the Ebola virus and disease outbreak in Sierra Leone" (Finnegan, n.d.). Finnegan has had a 30-year career as a military nurse/officer combined with clinical practice and extensive military employment with academics and operational tours. In his last year, he received the badge of honor of a senior military nurse within the framework of the NHS (United Kingdom National Health Service) Foundation from the University of Birmingham, who was entrusted with receiving the soldiers who were wounded in Iraq and Afghanistan. Alan was appointed as a nursing professor at the Ministry of Defense which provided an opportunity to advance the nursing profession in the UK. Today Alan works full-time in the academy, at the University of Chester, and testifies that this is the most rewarding thing, enjoying his work and hoping to produce outputs from it that can bring about change. From: Alan Finnegan - Ready to celebrate 100 Years, Royal College of Nursing, North West, Nursing past, present, and future, From hospital nursing to military nursing to the world of academia- at the University of Chester.

THE ROLE OF NURSING IN THE PRESENT (BEFORE THE CORONAVIRUS AND POST COVID-19 EPIDEMIC)

According to the HRSA, 2021 (Health Resources and Services Administration) in 2018 there were close to 4 million nurses (Wakefield, M., et al., 2021). There are practical nurses, who support the medical staff and perform basic tasks (Training of 12-18 months in a school/college). Some qualified nurses provide preventive, primary, and acute care in collaboration with other professionals. They are required to pass a certification test after college, in a school, which grants a certificate, in a college, or a university (Knecht, 2014). There are more than 50 registered nurse certifications, including ICU, oncology, rehabilitation, and more. Besides them, there are the APRN (advanced practice registered nurse), who have at least a master's degree, in addition to the initial nursing studies and obtaining the license, Required for every registered nurse. They may even continue to higher ranks. in their ability to provide the public with preventive care, Prescribe medications, and schedule tests when necessary. They treat diseases, diagnose them, advise in the field, and help in dealing with chronic diseases (Frey & Chiu, 2021).

Nurses frequently deal with patients who have had difficult situations in life, including not only practical difficulties but also societal pressures, trauma, hunger, or homelessness. Additionally, they are essential for long-term caregiving and caregiver support (Dahlin & Coyne, 2019; Pawlow et al., 2018). They are increasingly developing new types of expertise while transitioning to new roles and alternative models of nurse-led care (Pittman, 2019). They help develop new ways to keep people connected for medical care and services such as Telehealth and home care (Wakefield et al., 2021), and assist in the transition to more leadership roles in which they serve as partners in collaboration with other health care workers, as well as coordination with other workers in settings that are not in health care field settings to focus and improve overall health (Dyess et al., 2016). Over the next few decades, nurses will encounter new difficulties as their skills and tasks change. When compared to the present, the nursing profession will seem substantially different in 2030. Nurses will be required to care for the changing population as it ages and changes in health status, as well as the distribution of people across different ages and socioeconomic groups. Over a million RNs from the baby boom generation, who have a plethora of

knowledge and expertise, will retire over this decade (Regulatory News Service) (Wakefield et al., 2021).

Timeline of global context over the years as we can (see in Figure 1) (Educator blog, 2018).

1945: II World War ends.

1946: "Baby Boom" begins.

1964: With limited career options, women choose nursing. The first cohort of Baby Boomers is reaching adulthood.

1981: Boomer RNs dominate the profession. The average age of a nurse is 38. Generation X is coming of age. With more career options, fewer choose nursing.

2000: Millennials - According to research, those who are looking for a sense of purpose in their lives are starting to enter the nursing profession.

2004: The growth of millennial nurses begins to rise.

2008: Baby boomer nurses begin to retire.

2010: Experts in the Scarcity Project.

2017: Research shows Millennials are twice as likely to be RNs than Boomers when choosing a career. The shortage crisis is considered "avoidable".

As the world's population ages (see Figure 2), the percentage of sick people will increase mainly elderly people who need treatment, which calls for intricate and intensive nursing care. Additionally, given the diversity of the population in terms of race, ethnicity, and other characteristics, nurses will need to be skilled at giving compassionate, culturally relevant care. (The National Academies Press, 2001).

How nurses interact with patients seeking medical attention will be impacted by modifications to care delivery models and new technological applications. Additionally, nurses will need to take on new responsibilities to help fill the dwindling primary care staff, offer care for rural populations, provide more health and preventative care in community-based settings, which helps to enhance maternal health outcomes (Edmonson et al., 2017).

Consequences of the COVID-19 epidemic

In recent years the world has been dealing with the consequences of the Corona epidemic, in which there was a daily increase in the numbers of sick and dead people reported. Nurses go to work every day and often do extra shifts, to take care of patients despite the risk they are taking (a job that is already high-risk). They are at the head of the crisis, many times without personal or psychological protective equipment to promote their mental health and sustainability (De Kock et al., 2021). They work in emergency rooms, hospitals, schools, and

emergency medical centers. All of this significantly affects the nursing profession, Similar to the First World War.

In a year designed to honor and elevate the nursing profession - (The International Year of the Nurse and the Midwife, 2020) nurses have been positioned in unconceivable surroundings by the Corona pandemic. In the coming years, a stronger, more diverse workforce will be required, intended for the treatment, to promote the health and sustainability of nurses, the patients, the communities and dealing with injustice in the field, Definitions, and areas of focus to address the systemic inequities that harm overall health. Thanks to a great acceleration in technological progress there will be a need for nursing expertise and skills to support others (Wakefield et al., 2021).

The COVID-19 pandemic has worsened and amplified the effects of institutional racism, discrimination, and poverty in the majority of cases of expanding health disparities. (Benfer et al., 2019). A growing number of people in the general public also require mental health services as a result of high rates of stress, trauma, anxiety, and depression brought on by issues like drug abuse, gun violence, and the ongoing effects of the COVID-19 epidemic. (Wakefield et al., 2021).

Lessons learnt during the pandemic highlighted deficiencies in nursing education, particularly in the areas of health equity, technology, and public health preparedness for catastrophes (Leaver et al., 2022). These teachings were codified in prominent US nursing foundations, which set the educational guidelines for the profession of nursing. Consequently, the need for emergency response research by scientists and nurses became clear. It was highlighted that strong academic-practice collaborations are essential for quick communication, adaptability, and reactions to changing circumstances. To prepare students and practicing nurses to manage emergencies and epidemics as well as the needs of vulnerable groups in the future, nursing education and practice must seek cooperation with each other. (Leaver et al., 2022). Undoubtedly, future nursing education will look different from its pre-pandemic profile.

One study asserts that the COVID-19 pandemic has caused disruptions to nursing education, potentially impacting students' learning experiences and perceived abilities upon graduation. In an online survey, the first new nursing graduates of COVID-19 at two Italian universities were asked about their personal profiles, their learning experiences from the previous academic year, and their perceived abilities. One month after graduation, information

about their employment status and workplace was also gathered, and the results were compared to those of a similar group of new graduates from the pre-epidemic period in 2018–2019. The NCC-Nurse Competence Scale, which measuring nurses' abilities, was placed next to an initial work plan in the survey along with individual responses (Palese et al., 2022). In the year following their clinical placement in both COVID-19 patient units and non-Covid-19 units, 320 recent graduates took part in the study. The results showed that there were no discernible statistical differences in individual variables or perceived ability across the groups. Compared to new graduates employed in non-COVID-19 units, fewer COVID-19 units' employees had a transition plan. The perception of skills in the 'helping role' element was meaningfully lesser among the COVID-19 graduates than among the pre-COVID-19 generation, although it was significantly higher among those in the 'quality assurance' and 'therapy interventions' causes (Palese et al., 2022). Most of the initial cohort of COVID-19 graduates worked in COVID-19 units without any clinical background or established preparations for transition., according to the study's findings, which sparked a moral discussion about:

- (a) The value of education for graduate nurses during difficult times with few clinical placements.
- (b) The responsibility of administrators and nurse supervisors to facilitate secure transfers for recent graduates.

Despite the deep clinical placement correction, the new generation of COVID-19 graduates reported abilities akin to those of the generation before COVID-19, indicating that the pandemic might have aided in streamlining the clinical learning procedure (Palese et al., 2022).

- 51 is the average age of registered nurses (see Figure 3).
- According to data, there will be 9.3% more male RNs in 2021 than there were in 2016, 9.5% in 2015, 8.5% in 2014, and 6.4% in 2013.
- 'Other' and 'two or more races' are among the categories that comprise 19% of RN respondents who identified as minorities.
- Registered Nurses' median pre-tax income increased from \$64,000 in 2016 to \$71,000 in 2021 (see Figure 4).
- Of RNs, 41.7% stated that their first nursing license in the US was obtained with a BSN; this percentage was 40.9% in 2016, 38% in 2015, and 34.9% in 2014 (see Figure 5).
- 55% of RNs' major places of employment were hospitals.

- In 2020, the median age of LPNs and VNs was 52, one year higher than in 2017.
- In the LPN/VN workforce, the proportion of men climbed from 8.1% in 2016 to 8.8% in 2020. Compared to their RN colleagues, LPNs and VNs had a higher percentage of racial diversity, with roughly 28.8% of them identifying as such.
- A professional or practical certificate was mentioned by 82.1% of LPNs and VNs as their entry-level training for their first US nursing licensure.
- In 2020, 26.9% of LPN/LVN physicians said that, as opposed to 32.1% in 2016, their main position in the nursing profession was in a nursing home or extended care setting.
- The pre-tax median yearly salary for LPNs and VNs grew from \$41,100 in 2016 to \$45,500 in 2020.

The tenets of nursing care remain unchanged to this day

- Adapt hospitalized skills to home nursing.
 - Complete awareness of the nursing and social needs of the patient and family • Building and preserving positive relationships.
 - Teaching family members to care for the patient in between nursing visits.
 - Cooperating and communicating with staff members of other community health and well-being services.
 - Seizing every chance to inform and educate the patient and his family about health issues.
- From 'General Principles of Standard Practice for District Nursing' Queens Institute of District Nursing - 1996 edition (Agius, 1998).

THE FUTURE DEVELOPMENT OF THE NURSING PROFESSION

The future of nursing is undoubtedly broad, as problem solvers, generating changes and innovating, nurses are ready to leverage the new digital health technologies flooding the world market. These new health solutions include mobile applications (apps), Telemedicine tools, wearable devices, and sensors. To empower patients to take more control over their health (Patricio et al., 2020). Digital health technologies and their potential to change the approach to care, also how their use in combination with nursing practice has the potential to reshape the health system ecosystem. Nurses already have the means to use expanded data and accelerate research that examines new treatment models. This advancement in theory will inform nursing education, influence nursing practices, and change health policy. (Strodel et al., 2021).

The adaptation of nurses in the face of uncertainty and constantly coping by learning and experiencing to develop and adapt themselves started with Florence Nightingale (1856–1853), who gained notoriety for her courage while serving as a nurse administrator and instructor during the Crimean War. When faced with the challenge, she permanently altered public and internal perceptions of the nursing profession (Hektor, 1992).

When we fast-forward to the present, we witness comparable innovations in nurses everywhere. Challenges including global warming, mass migration, rising disease rates, and technological and information resource advancements are upending and will continue to upend nursing and health systems globally. Nurses are expected to take more initiative and embrace technology which is an unstoppable and inevitable force. Technological progress will affect the lives of nurses educationally, professionally and in the future (Smart et al., 2020). This requires diligence, passion, creativity, and a modicum of risk-taking, in addition to the capacity for adaptation and leadership in the fields of nursing and health. We have witnessed that in recent years when certain regions have faced health workforce shortages, Governments and health systems have begun to rely more and more on health workforce migration, to replenish the depleting workforce (Reed et al., 2022). Globally, nurses are adjusting to a variety of obstacles, including uncertain times, aging populations, expanding globalization, and epidemics. These are just a few of the issues that nurses are facing as they work at the forefront of healthcare.

In order to address inequality, researchers recommend using indicators of health equity to track health and health services. Health outcomes can be improved and healthcare costs can be decreased by identifying and addressing societal needs (Reutter & Kushner, 2010; Rosas et al., 2022).

According to Schroeder & Lorenz (2018) nurses represent the largest group of healthcare professionals in the United States. Currently, 3.6 million nurses are assigned to provide holistic care to patients. All over the world, nurses make up the largest group of healthcare providers. Nurses are an essential resource for ensuring safety and providing effective care to the entire population. Nurses spend more time dealing with patients than any other healthcare professional because they deal with serious illnesses. The care of specialist nurses reduces the distress and burden of those facing death and even the ability to offer support for the patients and their families in physical, social, unique psychological, and spiritual aspects (Schroeder &

Lorenz, 2018). The incorporation of nurses into interdisciplinary health teams enhanced institutional management by offering a patient-centered, humanistic perspective. Their expertise has grown significantly and now encompasses information management, therapeutic technology, and clinical communication (Conejero-Ferrer, 2016).

The Future of Nursing 2021–2031: Charting a Path to Achieve Health Equity study, which examined the significant contributions of nursing to addressing social determinants of health (SDOH) and health equity in the United States, was funded in 2019 by the Robert Wood Johnson Foundation (RWJF Foundation). This research coincided with other RWJF-sponsored National Academy of Medicine reports and initiatives aimed at creating a stronger culture of health. The World Health Organization designated 2020 as The International Year of the Nurse and the Midwife, and the report was released at the close of that year. That year, a committee made up of scientists' academics was constituted., Engineering, and Medicine together with Mary K. Wakefield and David R. Williams, co-chairs of the committee who took part and participated in three meetings in central town halls and a series of visits to various sites in Seattle, Chicago, and Philadelphia and its surroundings; and three more public meetings, recordings and more (whose resources are accessible online¹) and create a report.

In the report itself, some recommendations can form an excellent basis for creating a strong system of health for every country, city, and community in the world.

Below, are the committee's recommendations from a report prepared by Mary K. Wakefield and David R. Williams, co-chairs of the Committee on the Future of Nursing 2020-2030 (Wakefield & Williams, 2021).

The Committee recommendations

1. A common strategy should be developed by all national nursing organizations in 2021 to address social contributing factor of health and achieve health equity. All nursing practices should have specific priority in this agenda, along with leadership, education, and involvement in health policy. In order to lead the agenda-setting process, the Health Council for Nursing, the Council of Public Health Nursing Organization, and other related organizations must collaborate and draw on their unique domain of expertise. The Federal Nursing Service Council and the National Coalition of Ethnic Minorities and Nurses Associations are two national nursing organizations that should identify and share relevant skills. Implementation of

this agenda should include a timetable and pertinent criteria to assess effects, with cooperation from the government, nursing homes, and healthcare and other funding organizations.

2. State and federal government agencies, health organizations, care and public health, taxpayers, and foundations must take major action by 2023 to ensure that the nursing workforce, regardless of practice environment, addresses social determining factor of health and health equity more completely.

3. Evidence-based structures, systems, and interventions supporting nurses' health and well-being were put in place by nursing education programs, employers, nursing leaders, licensing boards, and nursing organizations up until the year 2021. This was especially true when nurses assumed new roles to advance health capital.

4. All organizations, including state and federal entities and employer organizations, should allow nurses to practice the full scope of their education and training by removing barriers like professional and commercial barriers as well as bureaucratic, red-tape obstacles like regulations, legal rules, and other procedures. This will help nurses fully address societal health needs and improve access, quality, and value of healthcare.

5. Local, private, and public health agencies must set up flexible and sustainable payment mechanisms to support nurses working in the health and public health fields, such as school nurses, social workers, and nurses who work with health equity and social determinants of health.

6. To support initiatives centered on social determinants of health and health equity, all public and private health systems should incorporate nursing expertise in planning, creating, analyzing, and applying data using a variety of digital platforms, including artificial intelligence and other cutting-edge technologies programs for nursing education, including ongoing training. Additionally, the authorities and the National Council of Nursing Councils ought to make sure that nurses are equipped to deal with the social determinants of health and achieve health equity.

7. In order for nurses to address social injustices, Federal agencies, and other significant players both inside and outside the nursing profession must strengthen and safeguard the nursing workforce when responding to public health crises like the COVID-19 pandemic and natural disasters, including those caused by climate change.

8. The Agency for Health and Quality Services Research, the National Institutes of Health, the Centers for Medical Medicine, the Center for Disease Control and Prevention, health

management, resources and services, the Director for Children and Families, The Director of Community Living, and private non-profits and foundations should arrange a meeting of representatives from nursing, public health, and health services to advance an agenda and support research and an evidence foundation that describes the impact of nursing interventions, including multi-health partnerships on environmental health, health equity, and nurses' health and well-being (Wakefield, M., Williams, D. R., & Le Menestrel, S., 2021).

The Tasks of Nurses in the Future

We live in an uncertain world today where bad news stories about new civil wars, a surge in the number of migrant and refugee crises, acts of terrorism, violence, epidemics, outbreaks, and natural disasters are all too often. The delivery of healthcare, transportation, and technology are all changing quickly in our world at the same time. This problem is shared globally and is undoubtedly not exclusive to the United States (Shaffer, 2019).

In addition to being essential in delivering healthcare and guaranteeing that everyone has access to it, nurses also have the capacity to significantly improve global health and the underlying objectives (Wilson et al., 2016), relating to the development, as supporters, managers, Guides, health service providers, as educators and researchers (Halcomb et al., 2020).

Due to the fact that their training and experience are based on providing care for the complete person and the whole family in a community setting, nurses frequently have unexploited potential to assist people in leading the healthiest lifestyles. (Wakefield et al., 2021). This potential is hardly frequently used, though. In order for nurses, especially RNs, to effectively utilize their skills and knowledge, all practicing locations—hospitals, primary care settings, rural and underserved areas, homes, community groups, nursing homes, and schools—need to have supportive environments (Weston, 2022). All nurses require the freedom to practice their complete education and training, especially while collaborating with other healthcare professionals. They must fully engage in advancing health equity. However, limiting laws and institutional regulations frequently obstruct them in this regard. In order to address the core causes of poor health, increase access to treatment, and foster more egalitarian communities, policymakers and health systems must pull everyone up and remove the obstacles that nurses encounter (Weston, 2022).

Training of Nurses for Nursing in the Future

The contradiction and conflict that exists today between the value of nursing as a profession and the social, institutional, political, organizational, and financial recognition that nurses get is another issue that has to be addressed. The essence of nursing, her identity is incongruent with her stigmatized societal image (Calvo, 2011).

Exposing the nurses to the community helps them to know its needs, which change over time, depending on age, Depending on the variety of populations, and their health status, just like the role of nurses (Rosa et al., 2020). There is the pressure exerted on them that may also endanger them, they suffer from lack of sleep, lack of physical activity, and work in a physically very difficult job that requires them to bend down and lift a patient, which may cause them to slip, for her to fall into standing injuries, including spinal muscle injuries, which can ultimately lead to low personal achievement at work and possibly to the end of the job for good. It is estimated that attrition rates in the United States are 35% to 45% (Sinsky et al., 2021)

Certain observable issues, such as low pay, irregular hours, attrition, and inadequate workspace or equipment, typically prejudice the nursing profession (Crojethovic, 2011).

Collière (1993) more than twenty years ago, described the relevance of the nurse's role: "*The nurses ensured the continuity of life, and helped us deal with life and death in treatment, in an undervalued socio-cultural background*".

According to a survey conducted in 2021, (Pogoy & Cutamora, 2021) 87% of nursing practitioners were afraid to come to work. As of early 2021, twenty-three states and Washington D.C. grant full authority to the Practical Brethren (Strodel, et al., 2021). Technological means, Cell phones, and apps offer nurses the opportunity to communicate with patients remotely. However, not everyone uses them, only those who have access to computers (Waizinger et al., 2022). And even if the innovative measures are successfully implemented in a particular place, they often spread slowly, if at all. Diffusion of innovations is a major challenge throughout the entire industry, including in medical treatment (Scarborough & Kyratsis, 2022). Medical organizations can help with this and make it easier for nurses.

All public and private health systems should incorporate nursing expertise in planning, creating, analyzing, and applying data to support initiatives focused on social determinants of health and health equity, using a variety of digital platforms, artificial

intelligence, and other cutting-edge technologies (Wakefield et al., 2021).

All organizations, including state and federal entities and employer organizations, should allow nurses to put their full education and training into practice by removing barriers that prevent them from better addressing social needs and social factors that affect health, as well as improving access to high-quality and worthwhile health services. Professional, commercial, legal, and other barriers, as well as governmental and private regulatory constraints, restrictive policies, and practices, are examples of these obstructions (Weston, 2022).

Nurses are in the right situation to design, adopt, and adapt to new technologies and leverage data on SDOH (social determinants of health) to recognize and respond to the requirements of populations, personalizing treatment, and reducing health disparities (Patricio et al., 2020). Carefully, the health care system is expanding beyond the traditional walls, including hospitals and clinics. By utilizing cutting-edge technology like telehealth and artificial intelligence, nurses can link to health networks, visit patients in their homes and other locations, and increase community health and well-being. Nurses need to be aware of how to employ new technologies to lessen inequality rather than increase it, as they have a major stake in the creation, implementation, and evaluation of new treatment tools (Patricio et al., 2020). Tables 1 examines the advantages, challenges, and implications of technology for the nursing profession. Moreover, the nurses of the coming decades are also anticipated to have an advanced and cutting-edge awareness of social needs, SDOH, and physical condition equality, independent of the context in which they work or their degree of schooling (Wakefield et al., 2021). Nurses should also have the skills necessary to put this information into practice. In order to achieve universal health coverage, the WHO has underlined the significance of observing fair service coverage across socioeconomic and education levels (Wakefield et al., 2021).

By integrating material on SDOH into their curricula, nursing schools can help nurses become aware of the social, financial, and ecological aspects that effect wellbeing (Jordan et al 2021). Furthermore, in order to support all citizens, schools must make sure that nurses have a significant impact based on pertinent community encounters and that they assess different perspectives and cultures. Nurses need to update and reinforce this content throughout their careers through continuing education (Patricio et al., 2020).

Programs for nursing studies, including continuing studies, the provision of authority, or official recognition and the National Board of Nursing must realize health equity, make sure nurses are well equipped to address the social determining factor of wellbeing (Wakefield et al., 2021).

It is also critical to prepare nurses to handle public health emergencies and disasters. At the forefront of crises, whether in a hospital's intensive care unit (ICU), the community, testing sites, or emergency shelters, nurses play a crucial role in maintaining public health and safety as well as helping individuals and families deal with the pandemic. Liu and colleagues, 2020). To ensure that nurses are properly safeguarded during such disasters and are able to deliver high-quality care to the community, significant reforms to infrastructure and laws are required. (Ulrich et al., 2020).

In order for nurses to meet the needs of patients and communities in the best way possible in the wake of public health events like the COVID-19 pandemic, natural disasters, and more, the nursing profession should support and safeguard the nursing workforce (Patricio et al., 2020). Other important parties, both inside and outside the health system, must prioritize this and create a multi-system architecture that can react quickly (Weston, 2022).

Major 16 Patterns in Nursing That Will Forge Healthcare in the Future

The healthcare industry is always changing. The patterns that hospitals and nurses must be aware of are changing throughout time as a result of new care methods, technological advancements, and current world events (The Altus teams, Aug. 2, 2022).

Pattern #1: The insufficient supply of nurses will persist- According to estimates from the World Health Organization (WHO), there are 29 million nurses worldwide. However, that amount is still insufficient considering the quantity of patients and their needs. There is a global nursing shortage as a result, and by 2035, 6 million more nurse positions must be filled in order to meet the demands of all patients and their needs. The demand for nurses online in 2022 will also cause this number to rise. A large number of baby boomers are getting close to retirement age, COVID-19 has made it more difficult for new nursing candidates to receive training, and as nurse burnout increases, more nurses are leaving the healthcare sector altogether. The global nursing scarcity and the Corona pandemic will have a lasting impact on the health-care sector in the years to come.

Pattern #2: The demand for nurses will keep rising- The scarcity of nurses is still having an

impact on the healthcare sector, thus there will be more nursing posts available. As one-third of the current nursing workforce approaches retirement age, a sizable number of new nursing roles may shortly become available. The experience levels of these roles will vary, enabling a wide spectrum of candidates to join the field. In addition to the surge of work brought on by nurses retiring, more possibilities are opening up around the country as healthcare companies expand their facilities to accommodate a rising population.

Pattern #3: The Use of online nursing schooling has increased- Due to the great demand for nurses, the field enjoys high job stability and a significant desire for additional education. As a result, more universities and colleges now offer online degree programs in nursing. Online learning offers a new avenue for nurses to complete a degree while working a full-time job, access higher education on their terms, and learn even while following pandemic instructions and limitations.

Pattern #4: Higher education, with a focus on BSN degrees, is required for nurses- The popularity of online nursing schooling has raised the bar for nurses in hospitals as well as made higher education more accessible than ever before. The preference of healthcare organizations for nurses with at least a BSN encourages nurses to pursue higher education. The number of nursing positions that will become available in the upcoming years has also increased the demand for highly educated nurses. The degree of knowledge and expertise required of new nurses entering the workforce is expected to be equal to that of seasoned professionals. This indicates that they require additional schooling to launch their careers. For nursing practitioners who want a position in leadership, further education, such as Doctor of Nursing Practice (DNP) programs, is increasingly becoming more essential.

Pattern #5: The development of telemedicine- Due to COVID-19, there was a change in how U.S. citizens interacted with healthcare in 2020, and a significant 20% of medical visits were carried out digitally. According to various reports, telemedicine's financial output is expected to increase by 2023. The increased use of telemedicine has made it possible to provide more accessible patient care, telehealth, and chatbot choices, as well as automated nursing responsibilities. Patients can access their doctors and medical information from home thanks to telehealth technology's durability, giving them greater control over their care and a sense of security in their own homes. Online portals can be used to enter test results, requests for

prescription refills, and appointment requests. Furthermore, telemedicine devices can be used to schedule online consultations with doctors or nurses, which can save a great deal of time for both patients and medical professionals. The introduction of chatbot services is similar in that it gives patients more control over the care they receive. Patients can look up for local specialists, make appointment reminders, and set reminders for taking their medications.

Pattern #6: Touring nurses- The last few years have shown how important it is for society to have traveling nurses to meet a range of demands. We saw thousands of nurses pour into COVID-19 hot zones to help with the growing number of patients. There was a 30% increase in demand for traveling nurses between January and August of 2021. Higher pay rates, more travel options, and the chance to work in a variety of work environments have all contributed to the notable rise in the number of traveling nurses. Additional nurses are becoming interested in the field as a result of increased nurse travel around the nation to assist new patients, which will keep this trend alive in the medium run.

Pattern #7: Expanding career options and specialization- The needs for healthcare are becoming increasingly intricate. As a result, the variety of specializations available to nurses is growing. Nurses can select a career route that suits them, given that there are specialties in around 100 fields, including pediatrics, cardiac care, and intensive care. A nurse with a specialty is in greater demand than one without due to the increased complexity of healthcare. The job options for nurses are nearly limitless as the world population increases and more research and technical developments are made.

Pattern #8: Self-Attention for Nurses- Sometimes nurses forget to look after themselves. Self-care is intentional action that supports our mental, emotional, and spiritual well. Errors, fatigue, and burnout brought on by a lack of self-attention can be costly for patients, nurses, and the healthcare system as a whole. Because of the stress of the pandemic and the increased workload, many nurses have disregarded their personal needs even more. During periods of excessive stress, self-care should not decrease but rather grow. As more information about the physical and mental strain of nursing becomes available, healthcare administrators throughout the globe are stepping up to recognize and address self-care as a real commitment. It's time for hospitals where nurses work and nurses themselves to put their own health first. Every nurse should define self-care differently, according to their own needs.

A self-care plan needs to be clear, quantifiable, achievable, and time-bound.

Pattern #9: Climb in Nursing informatics- Hospitals have been implementing systems that properly maintain electronic medical records ever since the American Recovery and Reinvestment Act required them to do so. They also require personnel who can accurately read, comprehend, and handle this new data. A new nursing specialty has flourished in response to this expanding demand and will experience significant expansion through 2022. To effectively use EMRs, nurse informatics (NI) merges nursing with them. Nurse informatics will become more necessary as the use EMR increases in hospitals. As many as 75,000 nurse informatics jobs in the U.S. alone will be required in the ensuing years, according to the Advance Healthcare Network for Nurses. For many years to come, this will remain among the top nursing trends.

Pattern #10: Rising income and benefits- Companies want to provide income that retains their nurses happy and is equal to the quantity of labor they provide due to the long-lasting consequences of global pandemics, the high levels of stress experienced during shifts, and the shortage of nurses. A nurse has the option to switch to another hospital if s/he is not unsatisfied with her/his existing contract. Hospitals are designing their treatment around patient satisfaction, and they cannot provide good quality patient care without nurses. In the coming decades, nurses who speak multiple languages other than English will be in high demand as well.

Pattern #12: Rising use of virtual simulation- Healthcare facilities can now use technology to enhance virtual simulation training thanks to advancements in technology. Both new and experienced nurses can benefit from more intensive training as a result of this. Virtual simulations can present a range of various scenarios, expose them to circumstances where they must exercise critical judgment, and address problems where there is not enough room for all the nurses to train in one area.

Pattern #13: Rising popularity of holistic care- As patients gained more knowledge, they began to assume more responsibility for their health. After witnessing the profound physical and psychological effects of COVID-19, patients are becoming more interested in addressing all aspects of their health rather than just the current issue. Consequently, there is a growing demand for nurses who provide holistic treatment and who can help patients determine the underlying reasons of their physical issues. The need for trained nurses with experience

managing medical procedures and providing care will only grow in the coming decades.

Trend #14: Raising the age of retirement for Nurses- In the nursing profession, the retirement age is rising. Those who worked as nurses continued to do so well into their 60s, starting when the economy began to slow down. Nurses are still working despite the current nursing shortage in an effort to assist patients. As people get older, nurses are switching from physically difficult jobs to desk work, yet they can still assist patients. With 8 million nurses around the world are expected to be over the age of 65 by 2030 and 35 percent of nurses being over the age of 50, this trend is expected to continue as more motivated nurses enter the workforce.

Trend #15: Operating more sophisticated technology- Every day, new medical technologies are unveiled. Nurses need to be proficient with these devices in order to provide better patient care. New technology is always being created with the needs of patients and physicians in mind, with the goal of improving accuracy and expediting administration. It is expected of nurses to record and gather patient data using computer equipment, such as laptop carts, and to look up treatment options when needed. There's a growing trend of wheeled intuitive workstations.

Trend #16: Males entering the nurse workforce will rise- Ten percent of nurses in the U.S. in 2011 were males. The overall number of males has increased by sixfold since the early 1980s. Healthcare businesses will continue to concentrate on luring men into the nursing profession in 2022 and beyond due to the global nursing shortage.

CONCLUSIONS

The social health trends, technologies, and politics discussed in this article are fraught with many challenges that give nurses fresh chances for practice and cooperation. As new challenges arise, nurses will need to continue to develop health solutions for individuals as well as communities and further their understanding of how social issues, economic factors, technological advancements, environmental factors, and systemic barriers affect the health and well-being of the societies and patients they serve.

In addition, there is a need to continue to investigate the operation of nursing centers and nursing education and to provide references for researchers to better understand the situation and the developing trends in this field in evidence-based teaching, and to investigate the questions surrounding the

complexity and ambition in nursing pedagogy. A new research is in demand that would allow for future development in nursing education and teach them about the current state of the economy and leadership, the application of new network technologies in the teaching process in nursing education/nursing studies, and the organization's capabilities in undergraduate nursing management. In order to provide an adequate response to the quality of nursing education, a master's degree in nursing should include innovative teaching methods as well as strategies to improve students' clinical ability. The complexity and demands of the nursing role have changed greatly over time. The goal should be to determine the tasks and knowledge relevant to the nurses of the future while identifying the continuing education needs of nurses and describing expected changes in the profession. Leveraging the results of the studies to give an accurate description of the work of a nurse in her/his various roles and to support nursing services would strive for future nurses to improve the health of individuals, their community, and society.

REFERENCE LIST

- [1] Agius, M. G. (1998). MMDNA-Malta Memorial District Nursing Association. *maltese medical journal*, 10 (2), <https://www.um.edu.mt/library/oar/bitstream/123456789/202/1/mmj100233.pdf>
- [2] Benfer, E. A., Mohapatra, S., Wiley, L. F., & Yearby, R. (2019). Health justice strategies to combat the pandemic: Eliminating discrimination, poverty, and health disparities during and after COVID-19. *Yale journal of health policy, law, and ethics* 19(3), 122-171 https://openyls.law.yale.edu/bitstream/handle/20.500.13051/5966/Benfer_v19n3_122_171.pdf?sequence=2
- [3] Booth, R. G., Strudwick, G., McBride, S., O'Connor, S., & Solano López, A. L. (2021). How the nursing profession should adapt for a digital future. *The BMJ*, 373, n1190. <https://doi.org/10.1136/bmj.n1190>
- [4] Burns, J. (n.d.). a trip down memory lane-Ready to celebrate 100 Years-Royal College of Nursing-North West- *Nursing past, present, and future*, 6 <https://www.rcn.org.uk/news-and-events/news/-/media/df6542f1b4b846468a76ac76064b2310.ashx>
- [5] Calvo Calvo, M. Á. (2011). Imagen social de las enfermeras y estrategias de comunicación

- pública para conseguir una imagen positiva. *Index de Enfermería*, 20(3), 184-188. (In Spanish) <https://dx.doi.org/10.4321/S1132-12962011000200010>
- [6] Collière, M. F. (1993). Identificación de la práctica de los cuidados en la [mujer] consagrada. Colliere MF. Promover la vida De la práctica de las mujeres cuidadoras a los cuidados de enfermería. Madrid: Interamericana McGraw Hill, 33-58. (In Spanish)
- [7] Conejero-Ferrer, P. (2016). El rol de la enfermera coordinadora de asistencia ventricular en España: el futuro ya ha llegado. *Cirugía Cardiovascular*, 23, 62-67. <https://doi.org/10.1016/j.circv.2016.06.006> (in Spanish)
- [8] Crojethovic, M. (2011) Microcosmos Hospitalario. Redefiniendo las reglas en los hospitales del Gran Buenos Aires. <http://observatorioconurbano.ungs.edu.ar/wp-content/uploads/documentos/Microcosmos-Hospitalario-Maria-Crojethovic.pdf> (Source in Spanish)
- [9] Dahlin, C., & Coyne, P. (2019). The palliative APRN leader. *Annals of Palliative Medicine*, 8 (supplement 1). 10.21037/apm.2018.06.03
- [10] De Kock, J. H., Latham, H. A., Leslie, S. J., Grindle, M., Munoz, S. A., Ellis, L., Polson, R. & O'Malley, C. M. (2021). A rapid review of the impact of COVID-19 on the mental health of healthcare workers: implications for supporting psychological well-being. *BMC public health*, 21(104). <https://doi.org/10.1186/s12889-020-10070-3>
- [11] Dyess, S. M., Sherman, R. O., Pratt, B. A., & Chiang-Hanisko, L. (2016). Growing nurse leaders: Their perspectives on nursing leadership and today's practice environment. *OJIN: The Online Journal of Issues in Nursing*, 21(1) <https://doi.org/10.3912/OJIN.Vol21No01PPT04>
- [12] Edmonson, C., McCarthy, C., Trent-Adams, S., McCain, C., & Marshall, J. (2017). Emerging global health issues: A nurse's role. *OJIN: The Online Journal of Issues in Nursing* 22(1). <https://doi.org/10.3912/OJIN.Vol22No01Man02>
- [13] Educator blog. (2018). *How the nurse "shortage" evolved* <https://www.atitesting.com/educator/blog/knowledge/2018/10/17/how-the-nurse-shortage-evolved>
- [14] Finnegan, A. (n.d.). From hospital nursing to military nursing to the world of academia- at the University of Chester *Ready to celebrate 100 Years-Royal College of Nursing-North West- Nursing past, present, and future*, 10 <https://www.rcn.org.uk/news-and-events/news-/media/df6542f1b4b846468a76ac76064b2310.ashx>
- [15] Frey, M. B., & Chiu, S. H. (2021). Considerations when using telemedicine as the advanced practice registered nurse. *The Journal for Nurse Practitioners: JNP*, 17(3), 289-292. <https://doi.org/10.1016/j.nurpra.2020.11.011>
- [16] Halcomb, E., Williams, A., Ashley, C., McInnes, S., Stephen, C., Calma, K., & James, S. (2020). The support needs of Australian primary health care nurses during the COVID-19 pandemic. *Journal of nursing management*, 28(7), 1553-1560. <https://doi.org/10.1111/jonm.13108>
- [17] Hektor, L. M. (1992). Nursing, science, and gender: Florence Nightingale and Martha E. Rogers. [PhD dissertation] University of Miami. <https://www.proquest.com/openview/2ecfa5c313b3e04734ad67e9a5fe8ea9/1?pq-origsite=gscholar&cbl=18750&diss=y>
- [18] Jordan, K., Lofton, S., & Richards, E. A. (2020). Strategies for embedding population health concepts into nursing education. *School of Nursing Faculty Publications* 35. <https://docs.lib.purdue.edu/nursingpubs/35>
- [19] Knecht, P. (2014). *Demystifying job satisfaction in long-term care: The voices of licensed practical nurses* [dissertation in nursing]. The Pennsylvania State University. https://etda.libraries.psu.edu/files/final_submissions/9503
- [20] Leaver, C. A., Stanley, J. M., & Goodwin Veenema, T. (2022). Impact of the COVID-19 pandemic on the future of nursing education. *Academic medicine: journal of the Association of American Medical Colleges*, 97(3S), S82-S89. <https://doi.org/10.1097/ACM.00000000000004528>
- [21] Liu, Y. E., Zhai, Z. C., Han, Y. H., Liu, Y. L., Liu, F. P., & Hu, D. Y. (2020). Experiences of front-line nurses combating coronavirus disease-2019 in China: A qualitative

- analysis. *Public health nursing (Boston, Mass.)*, 37(5), 757–763. <https://doi.org/10.1111/phn.12768>
- [22] McCarthy, N. (2020, March 18). *The countries with the highest density of nurses*. Statista Infographics. <https://www.statista.com/chart/21163/nurses-per-1000-inhabitants/>
- [23] OECD (2022), Nurses (indicator). 10.1787/283e64de-en (Accessed on 19 November 2022)
- [24] Palese, A., Brugnolli, A., Achil, I., Mattiussi, E., Fabris, S., Kajander-Unkuri, S., & Danielis, M. (2022). The first COVID-19 new graduate nurses' generation: findings from an Italian cross-sectional study. *BMC nursing*, 21(1), 1-14. <https://doi.org/10.1186/s12912-022-00885-3>
- [25] Patricio, L., Sangiorgi, D., Mahr, D., Čaić, M., Kalantari, S., & Sundar, S. (2020). Leveraging service design for healthcare transformation: toward people-centered, integrated, and technology-enabled healthcare systems. *Journal of Service Management*, 31(5), 889-909. <https://doi.org/10.1108/JOSM-11-2019-0332>
- [26] Pawlow, P., Dahlin, C., Doherty, C. L., & Ersek, M. (2018). The hospice and palliative care advanced practice registered nurse workforce: results of a national survey. *Journal of Hospice & Palliative Nursing*, 20(4), 349-357.
- [27] Pittman, P. (2019). *Activating nursing to address unmet needs in the 21st century*. https://hsrc.himmelfarb.gwu.edu/cgi/viewcontent.cgi?article=1962&context=sphhs_policy_facpubs
- [28] Pogoy, J. M., & Cutamora, J. C. (2021). Lived experiences of Overseas Filipino Worker (OFW) nurses working in COVID-19 intensive care units. *Belitung Nursing Journal*, 7(3), 186–194. <https://doi.org/10.33546/bnj.1427>
- [29] Reed, S., Schlepper, L., & Edwards, N. (2022). *Health system recovery from Covid-19: International lessons for the NHS*. The report, Nuffield Trust. <https://www.nuffieldtrust.org.uk/files/2022-03/health-system-recovery-final-pdf-1-.pdf>
- [30] Reutter, L., & Kushner, K. E. (2010). Health equity through action on the social determinants of health: taking up the challenge in nursing. *Nursing Inquiry*, 17(3), 269–280. <https://doi.org/10.1111/j.1440-1800.2010.00500.x>
- [31] Rosa, W. E., Schlak, A. E., & Rushton, C. H. (2020). A blueprint for leadership during COVID-19: minimizing burnout and moral distress among the nursing workforce. *Nursing Management*, 51(8), 28–34. <https://doi.org/10.1097/01.NUMA.0000688940.29231.6f>
- [32] Rosas, L. G., Rodriguez Espinosa, P., Montes Jimenez, F., & King, A. C. (2022). The role of citizen science in promoting health equity. *Annual review of public health*, 43, 215-234. <https://doi.org/10.1146/annurev-publhealth-090419-102856>
- [33] Scarbrough, H., & Kyratsis, Y. (2022). From spreading to embedding innovation in health care: Implications for theory and practice. *Health Care Management Review*, 47(3), 236-244. <https://doi.org/10.1097/HMR.0000000000000323>
- [34] Schor, A. & Bar-Yosef, M. (2017). Comparison of role perception between nurses in the community and hospital nurses. *Health promotion in Israel - Israeli magazine for education and health promotion*, 6,27-33(Hebrew). https://www.health.gov.il/UnitsOffice/HD/PH/HealthEducation/Documents/6th/100_6Edition.pdf
- [35] Schroeder, K., & Lorenz, K. (2018). Nursing and the future of palliative care. *Asia-Pacific journal of oncology nursing*, 5(1), 4-8. https://doi.org/10.4103/apjon.apjon_43_17
- [36] Shaffer, F. A. (2019). Overview and Summary: Past, Present, and Future: Nurses Address the Times of Our Lives. *OJIN: The Online Journal of Issues in Nursing*, 24(2). 10.3912/OJIN.Vol24No02ManOS
- [37] Sinsky, C. A., Brown, R. L., Stillman, M. J., & Linzer, M.J. (2021). COVID-related stress and work intentions in a sample of US health care workers. *Mayo Clinic Proceedings: Innovations, Quality & Outcomes*, 5(6), 1165-1173. <https://doi.org/10.1016/j.mayocpiqo.2021.08.007>
- [38] Smart, D., Ross, K., Carollo, S., & Williams-Gilbert, W. (2020). Contextualizing Instructional Technology to the Demands of Nursing Education. *Computers, informatics, nursing: CIN*, 38(1), 18–27. <https://doi.org/10.1097/CIN.0000000000000065>
- [39] Smiley, R.S., Ruttinger, C., Oliveira, C.M, Hudson, L.R., Allgeyer, R., Reneau, K.A.,

- Silvestre, J.H. Alexander, M. (2021, April 1). *The 2020 National Nursing Workforce Survey: Sciencegate*. Journal of Nursing Regulation. Retrieved November 19, 2022, from [https://www.sciencegate.app/document/10.1016/s2155-8256\(21\)00027-2](https://www.sciencegate.app/document/10.1016/s2155-8256(21)00027-2)
- [40] Strodel, R., Dayton, L., Garrison-Desany, H. M., Eber, G., Beyrer, C., Arscott, J., Rubenstein, L. & Sufrin, C. (2021). COVID-19 vaccine prioritization of incarcerated people relative to other vulnerable groups: An analysis of state plans. *PLoS One*, 16(6), <https://doi.org/10.1371/journal.pone.0253208>
- [41] The Altus teams. (2022, August 2). *Top 16 nursing trends that will shape healthcare in 2022*. Altus, Inc. <https://www.altus-inc.com/blog/nursing-trends-that-will-shape-healthcare>
- [42] The National Academies Press. (2001). *Preparing for an aging world: the case for cross-national research*. Washington, DC <https://doi.org/10.17226/10120>.
- [43] Thomas, S. (n.d.). A District Nurse's Tale in the 1960s. *Ready to celebrate 100 Years-Royal College of Nursing-North West- Nursing past, present, and future*, 4 <https://www.rcn.org.uk/news-and-events/news/-/media/df6542f1b4b846468a76ac76064b2310.ashx>
- [44] Ulrich, C. M., Rushton, C. H., & Grady, C. (2020). Nurses confronting the coronavirus: Challenges met and lessons learned to date. *Nursing Outlook*, 68(6), 838-844. <https://doi.org/10.1016/j.outlook.2020.08.018>
- [45] Waizinger, O., Shpigelman, M., Shental, R., Yunis, B., Shimoni, P., Od Cohen, Y., & Kagan, I. (2021). Diabetes nurse practitioners in the shadow of the COVID-19 pandemic: Challenges, insights, and suggestions for improvement. *Journal of Nursing Scholarship*, 00, 1–9. <https://doi.org/10.1111/jnu.12754>
- [46] Wakefield, M., Williams, D. R., & Le Menestrel, S. (2021). *The future of nursing 2020-2030: Charting a path to achieve health equity*. National Academy of Sciences. <http://sadir.ws/bitstream/handle/123456789/781/The%20future%20of%20Nursing%202030.pdf?sequence=1&isAllowed=y>
- [47] Weston, M. J. (2022). Strategic Planning for a Very Different Nursing Workforce. *Nurse leader*, 20(2), 152-160. <https://doi.org/10.1016/j.mnl.2021.12.021>
- [48] Wilson, L., Mendes, I. A. C., Klopper, H., Catrambone, C., Al-Maaitah, R., Norton, M. E., & Hill, M. (2016). 'Global health' and 'global nursing': Proposed definitions from The Global Advisory Panel on the Future of Nursing. *Journal of advanced nursing*, 72(7), 1529-1540. <https://doi.org/10.1111/jan.12973>

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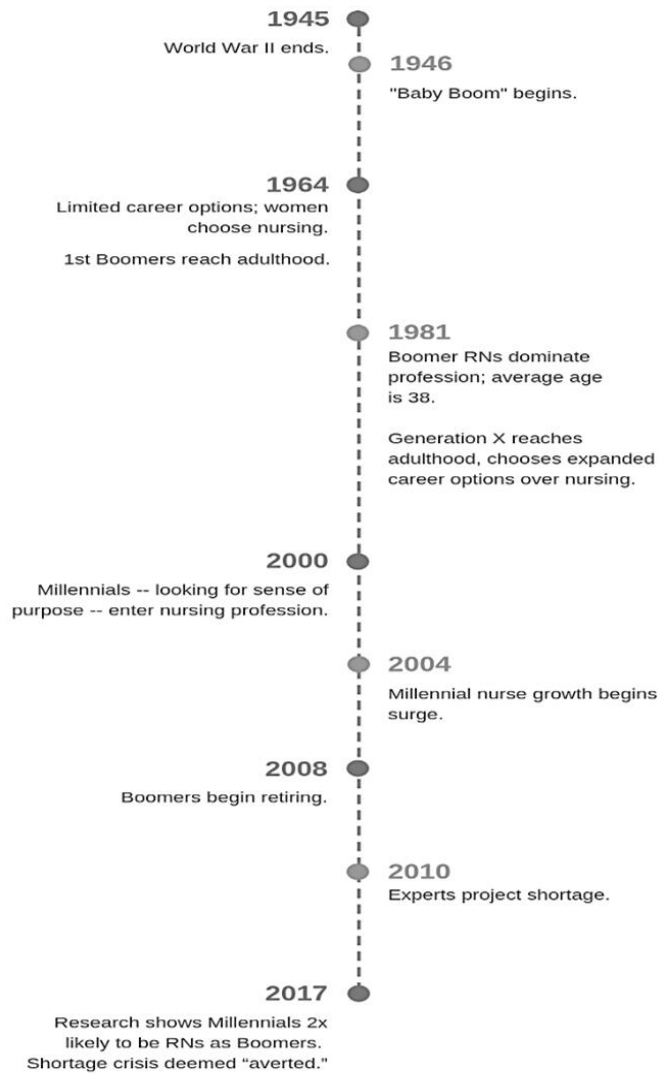


Figure 1
How the nurse "shortage" evolved
Source: Educator blog, 2018

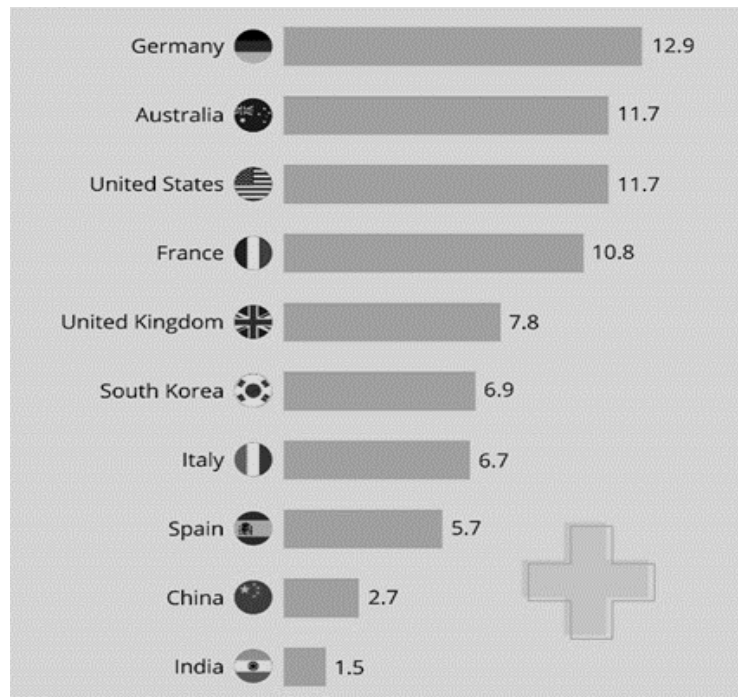


Figure 2
The countries with the highest density of nurses
 Number of nurses per 1,000 inhabitants in selected countries (2018 or most recent year data available)
 Source: McCarthy, N. (2020), March 18

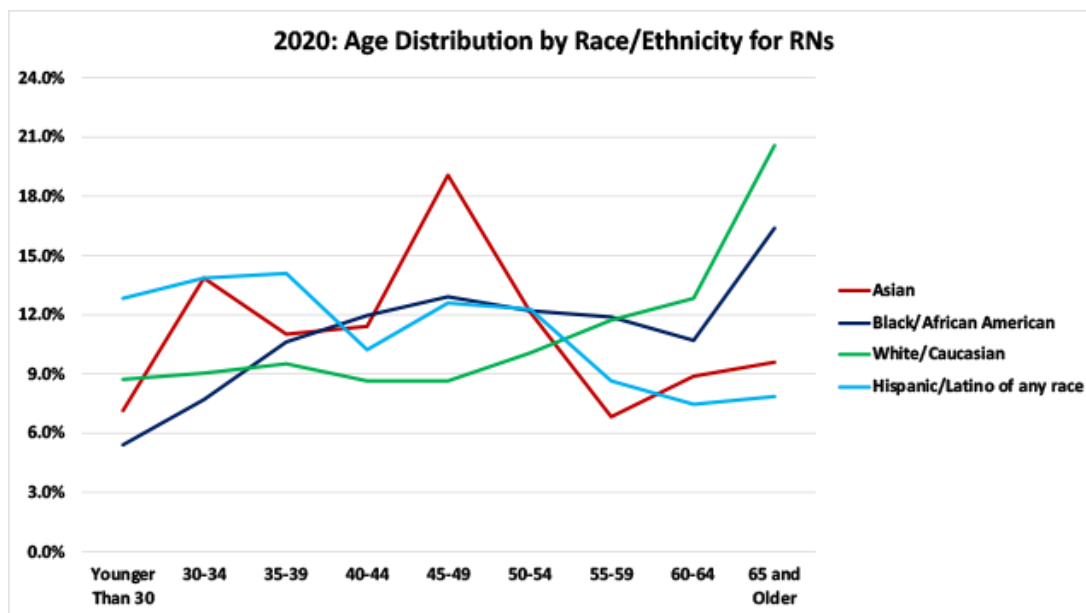


Figure 3
2020 National Workforce Study, Registered Nurses (RN) 2020, distribution by age, by race/ethnicity for registered nurses
 Source: Smiley, R.S., Ruttinger, C., Oliveira, C.M, Hudson, L.R., Allgeyer, R., Reneau, K.A., Silvestre, J.H. Alexander, M. (2021, April 1).

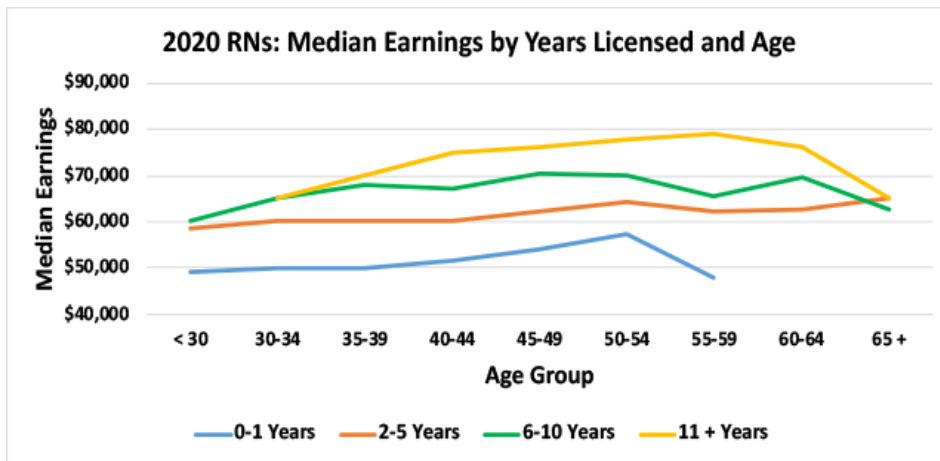


Figure 4

Median earnings by license year and age

Source: Smiley, R.S., Ruttinger, C., Oliveira, C.M, Hudson, L.R., Allgeyer, R., Reneau, K.A., Silvestre, J.H. Alexander, M. (2021, April 1).

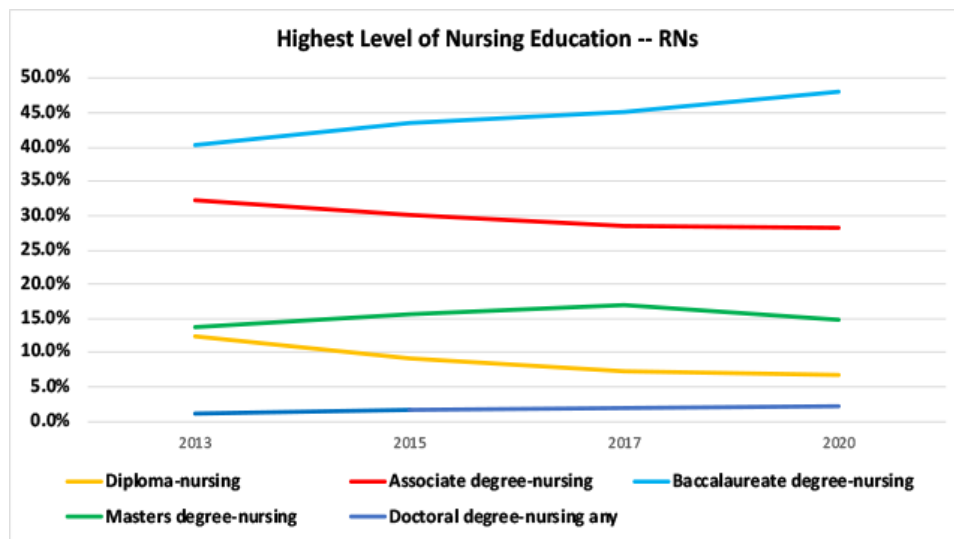


Figure 5

Levels of Nursing Education

Source: Smiley, R.S., Ruttinger, C., Oliveira, C.M, Hudson, L.R., Allgeyer, R., Reneau, K.A., Silvestre, J.H. Alexander, M. (2021, April 1).

LIST OF TABLES

Table 1
Advantages, challenges, and consequences of selected digital technologies in the domain of nursing

Digital technologies	Instances of potential gains	Instances of present-day challenges	Upcoming implications
Artificial intelligence and data handling	The identification of infection epidemic outbreaks and responses can be enhanced by applying big data analytics to support contact tracing and population health response.	Artificial intelligence (AI) algorithms may get embedded with biases from existing datasets. Techniques can unintentionally restrict the involvement of nurses in the creation of these systems since the systems are highly sophisticated. These systems' judgments should be ethical and held accountable, and there are privacy and transparency issues that should be considered as well.	AI-based nursing in primary and critical care needs more research. Professional accountability policies are necessary. There are additional educational prerequisites for data analytics and artificial intelligence.
Technologies for the computerization of machines, such as robots and drones	Robots can help persons who suffer from cognitive, sensory, and motor disabilities, ill people, injured, as well as caretakers and the medical staff.	To ensure success, technologists, researchers, service providers, and users must work in tandem.	Both purposefully and inadvertently, cutting-edge technologies that integrate robotics and artificial intelligence will transform nursing practice and its professional culture. Nursing must be included in the co-design and development of these technologies in order for them to support practice. A cost-benefit analysis is necessary for developing complex health technologies that take resources from the earth.
Technologies for supporting living or "smart homes"	The motion monitoring system in homes might assist in customizing care for elderly people who suffer from Alzheimer.	Privacy outcomes: Finding appropriate gadgets is difficult due to the variety and turnover of different technologies. There are also financial and practical obstacles	Given their professions and in collaboration with patients, nurses ought to be part of the AI system's conception, creation, and deployment.

<p>Clinical decision-making supporting tools</p>	<p>Technologies are able to identify infectious diseases and take the proper action.</p>	<p>Nurses who are overly alert develop alert fatigue and resort to workarounds. The impact and repercussions in some healthcare settings (such as emergency rooms) are unknown due to a lack of rigorous research.</p>	<p>The planning, development, and implementation of new clinical technologies should incorporate nurses. When creating systems that enhance decision-making and workflow rather than disrupt them, nurses should be consulted about their usability.</p>
<p>The implementation of electronic-health-records (EHRs)</p>	<p>In comparison to paper-based records, nursing documentation is superior in terms of data extensiveness and organization, including readability.</p>	<p>Faults in documentation in terms of quantity and quality are a result of time constraints, bad system, or interface design, among other things.</p>	<p>A supportive digital work culture, as well as devoted time and resources, are required for nurses. Integrating AI-driven clinics will assist in looking for intended and unforeseen outcomes by integrating EHRs to help with decision-making. EHRs should be redesigned by nursing leadership to lessen the load of recordkeeping.</p>
<p>Cellular health</p>	<p>Applications for patient guidance can enhance immediate results.</p>	<p>Perceiving the inadequacy of clinical decision support, mobile applications can support patients in terms of price and dependability. There could be worries about how employing mHealth Apps would affect nursing's professional image, especially in hospital settings</p>	<p>The use of mobile devices in clinical practices requires the development of policies and a professional culture. These should be incorporated with EHRs and other associated technologies where appropriate.</p>
<p>Telehealth and telemedicine</p>	<p>In order to lessen isolation and preserve the safety of residents and nursing staff, these have been shown to be helpful in nursing homes during infectious disease outbreaks, such as the COVID-19 pandemic.</p>	<p>The technical proficiency and unfavorable attitudes of nurses about telemedicine, as well as their worries about data protection and confidentiality, can be an obstacle.</p>	<p>Nurses should support co-designing innovative virtual models of care and telehealth technologies with patients and colleagues.</p>

Personalized and precision healthcare	Nurses can provide more individualized care by using a treatment plan that is tailored to the needs of each patient.	Precision health advancements may be threatened by the speed of technological changes and equity issues connected to technology access.	In order to use their genomic health data for individualized and precise healthcare, nurses should fight for patients' and their families' fair access to this information.
Social media networks and online information (internet)	Various sources of health information can assist patients and nursing students while facilitating nursing processes.	It might be harmful or unsafe to rely on the quality and dependability of online health information, especially information posted on social media.	The proper use of social media and online health resources should be taught to nurses, and they should encourage patients to use these tools to increase their self-management.
Virtual and enhanced reality	Virtual reality instruction can enhance nursing knowledge and can be applied as a clinical intervention or therapy method in both pediatric and adult populations.	It can lead to simulation sickness, which includes lightheadedness and vision problems.	Nurses and educators should create affordable hardware and software that can work with currently available mobile, internet, and other digital technologies.

Source: Booth, R. G., Strudwick, G., McBride, S., O'Connor, S., & Solano López, A. L., 2021