

A Survey-Based Approach to Streamlining Nursing Documentation Practices at Hospital Settings

Iszaid bin Idris*

Hospital Bera, Jalan Majlis, 28200 Bandar Bera, Pahang, Malaysia

*Corresponding Author's Email: iszaid_bijaksana@yahoo.com.my

Abstract

Introduction: The meticulous recording of patient information not only facilitates communication among healthcare providers but also plays a crucial role in maintaining patient safety. The manual nature of charting poses a risk of errors and can be time-consuming for nurses. **Objective:** The study aim to explore the perspective of nursing observational charts practice at Pahang's government hospitals in 2023. **Method:** This is a cross-sectional survey conducted among nurses across various hospitals in 2-month duration. After randomisation, nurses meeting the inclusion and exclusion criteria were enrolled in the study. Descriptive and inferential statistics were computed to analyse the data. **Result:** A total of 582 nurses responded, the study found on average, 8.1 ± 2.7 SD standard charts were required during admission, and 3.0 ± 1.9 SD additional charts may required to supplement the standard charts per patient. **Discussion:** The study revealed that the adoption of a combined chart was associated with a 2.2 times improvement in the ease of nursing documentation practices. **Conclusion:** Having all relevant information in one place could reduce the need for nurses to navigate through multiple forms.

Keywords: Observation Chart; Nurses Efficiency; Patient's Documentation; Streamlining Nursing Practice

Introduction

In the dynamic realm of healthcare, the documentation practices of nursing professionals serve as the cornerstone for effective patient care delivery. At present, the worldwide nursing workforce comprises an estimated 28 million individuals, constituting 59% of the total healthcare personnel (World Health Organization, 2020). The meticulous recording of patient information not only facilitates communication among healthcare providers but also plays a crucial role in maintaining patient safety, ensuring continuity of care, and meeting regulatory requirements (Ahn *et al.*, 2021). The nursing observational chart plays a paramount role in shaping the patient care plan, serving as a critical tool for healthcare professionals to monitor and assess various aspects of a patient's condition. It provides a systematic and organized way to record vital information, facilitating timely interventions and informed decision-making (Muinga *et al.*, 2021). The use of observation charts is an essential aspect of patient care, allowing healthcare professionals to monitor and document a patient's vital signs and overall condition over time.

A study shows nurses spend a significant portion of their shift on documentation tasks, with estimates ranging from 20% to 50% of their time (Baumann *et al.*, 2018). One study showed that nurses take more than 6 minutes to record a vital sign per patient (Dall'Ora *et al.*, 2021). While other study reported that the average time spent on documentation per patient is approximately 33 minutes (Gesner *et al.*, 2022). Nurses' observational charts play a crucial role in patient care, but several challenges in their use can create difficulties for healthcare professionals. One study suggest that up to 84% omitted nursing care activities can happen as a result of improper charting and documentation (Saar *et al.*,

2021). This can impact the quality of care as nurse's grapple with the demands of extensive documentation (Gesner *et al.*, 2022).

The manual nature of charting poses a risk of errors and can be time-consuming for nurses, potentially leading to increased stress and burnout (Lorkowski *et al.*, 2021). Additionally, these challenges may affect other stakeholders in the healthcare system (Muinga *et al.*, 2021). For doctors, navigating through complex or disorganized charts may hinder efficient decision-making and coordination of care (Warren *et al.*, 2021). Patients may experience delays or inconsistencies in the delivery of care if nurses encounter difficulties in accessing or updating their charts. From an administrative standpoint, managing and organizing paper-based charts can be resource-intensive and may contribute to inefficiencies in hospital workflows (Uzun & Cerit, 2023).

By engaging nursing professionals in this endeavour, the study aim to explore the perspective of nursing observational charts practice at Pahang's government hospitals in 2023. It does so with the aim of laying the foundation for future improvements in streamlining nursing documentation practices and efficiency. The concept of monitoring patients' vital signs dates back to the early development of modern medicine. However, the formalization of systematic observation and recording started gaining prominence in the late 19th century (DeLaune *et al.*, 2023). Florence Nightingale, a pioneer in nursing and healthcare, emphasized the importance of systematic data collection and analysis in nursing practice (Atan *et al.*, 2021). Her work during the Crimean War in the mid-19th century highlighted the need for careful observation and documentation of patient conditions (Elena & Olga, 2020).

As healthcare practices advanced, so did the tools used for patient observation and nurse's documentation. The early observation charts were often basic, handwritten records that included essential vital signs such as temperature, pulse, respiration rate, and blood pressure (Petrovskaya, 2023). With the growth of healthcare institutions and the standardization of nursing practices in the 20th century, observation charts became more structured and standardized. Printed forms with specific sections for each vital sign and additional notes were introduced (Atan *et al.*, 2021). The late 20th century and early 21st century witnessed significant advancements in healthcare technology (Petrovskaya, 2023). Automated monitoring devices and electronic health records (EHRs) started to replace or complement traditional paper-based nursing observation charts (Lindsay & Lytle, 2022). These technologies allowed nurses for more accurate and efficient documentation of patient data in modern health facility.

Research Methodology

A cross-sectional survey was conducted among nursing volunteers from public hospitals in the state of Pahang, Malaysia. Participants were randomly selected from various wards, departments, and hospitals and were fully informed about the survey. They subsequently agreed to participate by volunteering to complete an online Google Form questionnaire.

The survey material was constructed via extensive review of the current literature. It was validated by experts in the nursing field and piloted, yielding a Cronbach's alpha exceeding 0.70. The inclusion criteria for this study encompassed both male and female individuals at all levels of nursing ranks, including Chief Hospital Nurse Supervisor, Nurse Supervisor, Head Nurse, Trained Nurse, and Community Nurse. Participants were required to have a proficient understanding of either Bahasa Melayu or the English language. Exclusion criteria involved volunteers with less than 6 months of work experience in a hospital setting in Pahang to prevent bias. No personal identification information was collected from the volunteers.

The survey comprised a total of 25 questions, and data collection occurred from 23rd June 2023 to 23rd August 2023, spanning a two-month period. Data were extracted using cloud-based software, specifically Google Sheets with restricted access. The focus of the extraction was on socio-demographic factors (such as age, sex, work position, and years of experience), job profiles (including hospital name and method of documentation), work practices (number of charts, additional charts, time

to register the chart, and time to fill up the chart), and perceptions of newer nursing observational charts using Likert scales.

The collected data from respondents were downloaded and stored using Microsoft Excel version 2007. Subsequently the data were analyzed using Epi Info™ version 7.2. Descriptive statistics were presented graphically, with continuous variables expressed as means (M) with standard deviations (SD) and compared using appropriate parametric tests. Categorical variables were presented as numbers (%) and compared using Fisher's exact test as appropriate. Significance was determined using odds ratios, 95% confidence interval with a significance level of p-value set at less than 0.05 (two-sided).

Ethical Considerations

This research has been registered with the National Medical Research Register under the ID: NMRR ID-24-00386-C5J, dated January 31, 2024.

Result

A total of 582 nurses responded to the survey, with the majority being female (n=571, 98.1%) compared to male (n=11, 1.9%). The average age of the respondents was 36.7 ± 6.1 SD years old, ranging between 25 to 55 years old. The average number of respondents per hospital in this study was 52.9 ± 51.7 SD. It was observed that the majority of respondents were from Hospital Sultan Haji Ahmad Shah in the Temerloh district (n=191, 33%), followed by Hospital Bera (n=86, 15%), Hospital Muadzam Shah (n=68, 12%), Hospital Tengku Ampuan Afzan Kuantan (n=52, 9%), Hospital Kuala Lipis (n=47, 8%), Hospital Jengka (n=41, 7%), Hospital Sultanah Hajjah Kalsom Cameron Highlands (n=30, 5%), Hospital Bentong (n=27, 4%), Hospital Pekan (n=26, 4%), Hospital Rompin (n=13, 2%), and Hospital Raub (n=1, 0%). Table 1 displays the frequency distribution of surveyed nurses at government hospitals in Pahang, Malaysia.

Table 1: Frequency Distribution of Survey Nurses at Government Hospital in Pahang, 2023

Variables	n	%	M	SD
Socio-demographic				
Sex			291	395
Female	571	98.1		
Male	11	1.9		
Age (years)			36.7	6.1
20 - 30	91	15.6		
31 - 40	338	58.1		
41 - 50	135	23.2		
51 - 60	18	3.1		
Experience (years)			13.1	5.9
<5	38	6.5		
5 - 10	197	33.8		
10 - 15	154	26.5		
15 - 20	126	21.7		
>20	67	11.5		
District Hospital			52.9	51.7
Temerloh	191	32.8		
Bera	86	14.8		
Muadzam Shah	68	11.7		
Kuantan	52	8.9		
Kuala Lipis	47	8.1		
Jengka	41	7.0		
Cameron Highlands	30	5.6		
Bentong	27	4.6		
Pekan	26	4.5		
Rompin	13	2.2		
Raub	1	0.2		

The majority of participants in this survey were non-administrator nurses ($n=520$, 89%), including *Juruawat Terlatih* and *Juruawat Masyarakat*, in contrast to administrator nurses ($n=62$, 11%), as depicted in Figure 1(a). Our observations revealed that most hospitals in this study still relied on manual-based observation charts ($n=403$, 69%) rather than digital-based ones ($n=46$, 8%). The remaining respondents employed a combination of both types of observational charts ($n=133$, 23%), as illustrated in Figure 1(b). On average, participants reported 13.1 ± 6.0 SD years of work experience, with a range of 1 to 30 years, as shown in Figure 1(c). Our study found that, on average, 8.1 ± 2.7 SD standard charts were required during admission, as displayed in Figure 1(d). Additionally, an average of 3.0 ± 1.9 SD additional charts may be needed to supplement the standard ones. Furthermore, our investigation revealed that, on average, 6.8 ± 3.1 SD minutes were required to register each chart, while an average of 5.8 ± 3.2 SD minutes were needed to fill out each chart.

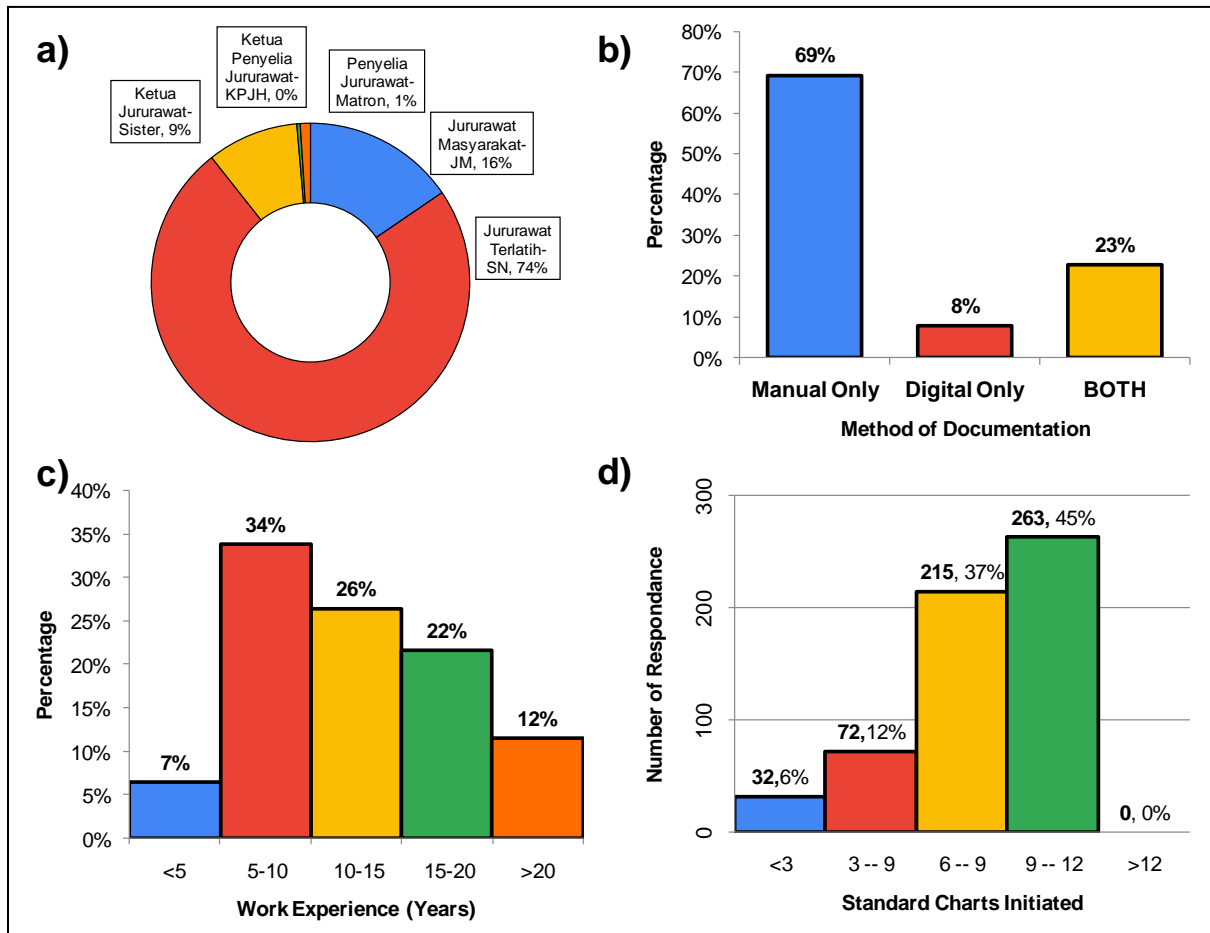


Figure 1: Proportion of a) Group of Nurses, b) Method of Documentation, c) Level of Experiences, and d) Number of Standard Charts Initiated

Amongst basal and previous condition, there were no significant different in respondance's sex, age, experiences, ranks, numbers of forms used and numbers of additional forms used. However, our study showed using a combined chart is associated with a 2.2 times improvement in the attitude of nursing towards documentation practices as shown in table 2.

Table 2: Odd Ratios between Facilitating Factor and Attitude towards Documentation Practice

Facilitating Factor	Attitude towards Documentation Practice		Odd Ratios	95% Confident Interval	p - value
	Favorable	Unfavorable			
Age >35 Years	255	53	1.4	0.9 - 2.0	0.173
Experience >10 Years	280	62	1.2	0.8 - 1.8	0.395
Combining the Charts	158	21	2.2	1.3 - 3.7	0.002*
Less than 8's Forms per Patient	203	80	0.7	0.5 - 1.0	0.073
Less than 3's Additional Forms per Patient	158	42	0.9	0.6 - 1.3	0.509

This study employs a weighted average (w.a) of 3.91, calculated as 35.22/9, which surpasses the threshold indicative of high perception. We found that transitioning to newer charts, particularly consolidating nursing observational charts, demonstrated several advantages, including significant paper conservation (92%), elimination of repeated tasks during form filling (91%), and time savings in recording and assessing changes in the patient's condition (89%). However, lower perception was noted in various aspects such as vital signs assessment, human resource demand reduction, decreased clinical workload, and implementation strategy satisfaction as demonstrated in Table 3.

Table 3: Perception for Combining Nursing Observational Chart

No.	Item	SA (%)	A (%)	UN (%)	D (%)	SD (%)	Mean	Std	Decision
1	Eliminate repeated tasks when filling out the form compared to the previous form	184 (31.62)	285 (48.97)	53 (9.11)	43 (7.39)	17 (2.92)	3.99	0.989	High Perception
2	Facilitate the assessment and recording of vital signs	139 (23.88)	312 (53.61)	67 (11.51)	47 (8.08)	17 (2.92)	3.88	0.962	Low Perception
3	Save more time in recording and assessing changes in the patient's condition immediately	139 (23.88)	326 (56.01)	71 (12.20)	36 (6.19)	10 (1.72)	3.94	0.872	High Perception
4	Conserve more paper usage	181 (31.10)	332 (57.04)	49 (8.42)	16 (2.75)	4 (0.69)	4.15	0.738	High Perception
5	Reduce the requirement for human resources	138 (23.71)	299 (51.37)	92 (15.81)	45 (7.73)	8 (1.37)	3.88	0.903	Low Perception
6	Reduce the number of daily clinical workload in the ward	136 (23.37)	295 (50.69)	99 (17.01)	42 (7.22)	10 (1.72)	3.87	0.872	Low Perception
7	Increase the productivity of daily clinical performance	129 (22.16)	303 (52.06)	103 (17.70)	40 (6.8)	7 (1.20)	3.87	0.738	Low Perception
8	Able to replicate and replace the existing form in all hospitals in Pahang	134 (23.02)	298 (51.20)	95 (16.32)	39 (6.70)	16 (2.75)	3.85	0.903	Low Perception
9	Satisfied with the implementation strategy	121 (20.79)	293 (50.34)	108 (18.56)	45 (7.73)	15 (2.58)	3.79	0.872	Low Perception

Note: N= 582, SA = Strongly Agree; A = Agree; UN= Undecided; D = Disagree; SD = Strongly Disagree. Decision: weighted average (w.a) = 35.22/9 = 3.91. Above w.a considered high perception.

Discussion

The presented study investigates the efficiency of nursing documentation practices through a survey-based approach, focusing on 582 respondents in various government hospitals in Pahang, Malaysia.

The majority of participants were female, and the average age of respondents was approximately 36.7 years. The study also explored the distribution of respondents across different hospitals, with Temerloh district having the highest participation. The findings indicated that manual-based observation charts, utilising pen and paper were still widely used (69%), with a smaller percentage utilizing digital-based charts (8%), and a notable portion employing a combination of both (23%). It is understandable that these hospitals were yet to adopt Hospital Information Systems in their clinical practices.

The finding shows that on average nurses employed more than 8 charts during and another 3 additional charts during admission. A closed examination on the data showed nurses uses more paper per patients to fulfil the duty for documentation and this finding is consistent with other study (Atan *et al.*, 2021). These charts include: Vital sign chart, Temperature chart, Intake-output-feeding Chart, Pain Score chart, Glucose monitoring chart, Morse Fall Score, Braden Skin Score, and Thrombophlebitis Chart. Furthermore, some patient may require additional observational charts such as: foetal kick chart, labor progress chart, pad chart, dengue chart, snake bite chart, Glasgow Coma Scale chart, skin assessment chart, drip regime chart, nursing assessment chart, circulation chart, wound chart, COVID-19 screening chart, and many more. Hence the time to register and to fill-up each individual charts varies between hospitals (Theresia & Reñosa, 2023).

One of the key findings of the study highlighted nurse's perception towards the potential advantages of transitioning to newer, more integrated charts. This can be shown with the nurse's attitude towards their documentation practice. The benefits of such transition include: conservation of paper usage, elimination of repeated tasks during form completion, and time savings in recording and assessing changes in patients' conditions (Muinga *et al.*, 2021). On the other hand, the study has yet to show any relationship between the ease of nursing documentation against respondent characteristics, such as sex, age, experience, and the number of forms used. Combining those charts may provide beneficial to their clinical work process. Nurses were having conflicting opinion regarding combining the chart that it will facilitate recording the vital sign, reduced the workload, reduce human resource, or it will improve productivity (Gesner *et al.*, 2022). Replication between unified observational charts and implementation strategy for all hospital were unfavourable. Our study demonstrate that nurses agree towards transitioning to more integrated charts as it will save more paper wastage apart from save more time by eliminating repeating task in their clinical work process (Saar *et al.*, 2021). We believe the readiness of nurses to takes up such innovative challenges should be acknowledged and be utilised to streamlining nursing documentation practice (Petrovskaya, 2023).

We revealed that the adoption of a combined chart was associated with a 2.2 times improvement in the ease of nursing documentation practices. This emphasizes the potential positive impact of integrating and streamlining documentation processes, providing a practical solution for enhancing efficiency in healthcare settings (Lindsay & Lytle, 2022). A combined chart may be designed to focus on patient-centred care, ensuring that the documentation process aligns with the needs and preferences of both healthcare providers and patients (Lorkowski *et al.*, 2021). If nurses are adequately trained on the use of combined charts and become familiar with the system, they may find it more comfortable and convenient to navigate (Atan *et al.*, 2021). Familiarity with the chart structure and data presentation can contribute to increased efficiency (Muinga *et al.*, 2021). Furthermore, a well-organized and intuitive layout can contribute to ease of use, making it simpler for nurses to input and retrieve information.

The study has several limitations such as the study period is too shorts, and only looked into Pahang states which may or may not be applicable to private health institution or others states. Hence, future study should take into consideration wider time frame and bigger population.

Conclusion

In conclusion, the study contributes valuable insights into the current state of nursing documentation practices in government hospitals in Pahang, Malaysia. The findings underscore the importance of considering the advantages of adopting more integrated charting methods to improve efficiency and address challenges in the documentation process. Combined charts or documentation may facilitate a more streamlined and cohesive workflow for nurses.

Conflict of Interest

The authors declare that they have no competing interests.

Acknowledgement

We would like to thank the Director General of Health Malaysia and Director of Pahang State Health Department for his permission to publish this article. No funding was applicable.

References

- Ahn, J., Jang, H., & Son, Y. (2021). Critical care nurses' communication challenges during handovers: A systematic review and qualitative meta-synthesis. *Journal of Nursing Management*, 29(4), 623–634. <https://doi.org/10.1111/jonm.13207>
- Atan, A. B., Noor Shahidah Binti Ahmad Yatim, & Mahani Binti Abdullah. (2021). Translating Hand Hygiene Practice Into Compliance During Aseptic Wound Dressing. *The Malaysian Journal of Nursing (MJN)*, 13(2), 79–83. <https://doi.org/10.31674/mjn.2021.v13i02.013>
- Baumann, L. A., Baker, J., & Elshaug, A. G. (2018). The impact of electronic health record systems on clinical documentation times: A systematic review. *Health Policy*, 122(8), 827–836. <https://doi.org/10.1016/j.healthpol.2018.05.014>
- Dall'Ora, C., Griffiths, P., Hope, J., Briggs, J., Jeremy, J., Gerry, S., & Redfern, O. C. (2021). How long do nursing staff take to measure and record patients' vital signs observations in hospital? A time-and-motion study. *International Journal of Nursing Studies*, 118, 103921. <https://doi.org/https://doi.org/10.1016/j.ijnurstu.2021.103921>
- DeLaune, S. C., Ladner, P. K., McTier, L., & Tollefson, J. (2023). *Fundamentals of nursing*. Cengage AU.
- Elena, S., & Olga, K. (2020). Crimean war: medical and social characteristics and consequences. *Scientific almanac of the Black Sea countries*, 4(24), 82–89. <https://cyberleninka.ru/article/n/crimean-war-medical-and-social-characteristics-and-consequences>
- Gesner, E., Dykes, P. C., Zhang, L., & Gazarian, P. (2022). Documentation burden in nursing and its role in clinician burnout syndrome. *Applied Clinical Informatics*, 13(05), 983–990. <https://10.1055/s-0042-1757157>
- Lindsay, M. R., & Lytle, K. (2022). Implementing best practices to redesign workflow and optimize nursing documentation in the electronic health record. *Applied Clinical Informatics*, 13(03), 711–719. <https://doi.org/10.1055/a-1868-6431>
- Lorkowski J, Maciejowska-Wilcock I, Pokorski M. Overload of medical documentation: a disincentive for healthcare professionals. *Medical Research and Innovation*. 2021:1-0. https://doi.org/10.1007/5584_2020_587
- Muinga, N., Abejirinde, I. O. O., Paton, C., English, M., & Zweekhorst, M. (2021). Designing paper-based records to improve the quality of nursing documentation in hospitals: A scoping review. *Journal of Clinical Nursing*, 30(1–2), 56–71. <https://doi.org/10.1111/jocn.15545>
- Petrovskaya, O. (2023). Technology and nursing. In *Routledge Handbook of Philosophy and Nursing* (pp. 481-493). Routledge.
- Saar, L., Unbeck, M., Bachnick, S., Gehri, B., & Simon, M. (2021). Exploring omissions in nursing care using retrospective chart review: An observational study. *International Journal of Nursing Studies*, 122, 104009. <https://doi.org/https://doi.org/10.1016/j.ijnurstu.2021.104009>
- Theresia, S. I. M., & Reñosa, M. D. C. (2023). Accelerating COVID-19 Vaccination Amid Natural Disasters in Indonesia. *The Malaysian Journal of Nursing (MJN)*, 14(3), 201-208. <https://doi.org/10.31674/mjn.2023.v14i03.024>

Uzun, L. N., & Cerit, B. (2023). Effect of Digitalization on Nursing Practices using the Lean Approach. *Clinical and Experimental Health Sciences*, 13(3), 450–459. <https://doi.org/10.33808/clinexphealthsci.904203>

Warren, T., Moore, L. C., Roberts, S., & Darby, L. (2021). Impact of a modified early warning score on nurses' recognition and response to clinical deterioration. *Journal of Nursing Management*, 29(5), 1141–1148. <https://doi.org/10.1111/jonm.13252>

World Health Organization. (2020). State of the World's Nursing 2020. Wolters Kluwer Health. <https://www.nursingcenter.com/ncblog/april-2020/who-state-of-the-worlds-nursing-2020>