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ASSIGNMENT 2: Case Study of Glynafonshire Health Board

AI ACKNOWLEDGEMENT

I acknowledge that I used Grammarly on 26th August 2020⁶ to check my spellings grammars.

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1.0 Background of The Report

The Glynafonshire Health Board Case highlights inconsistent compliance with handwashing protocols among district nurses, potentially leading to infection spread in community care settings. According to the guideline, nurses have to thoroughly wash their hands both before and after entering a patient's home. Every nurse has received training and passed both written and practical exams. Research found that some nurses were engaged in improper techniques, such as speeding through tasks or failing to wash before or after interaction with patients. Eight patients had life-threatening illnesses, including one that resulted in death. Regular hand hygiene is the basis of infection prevention and control because it lessens the chance of microorganism transfer between patients, healthcare workers (HCW), and the environment (World Health Organisation [WHO], 2022). This case is important since it shows the nurses' knowledge of the technique. This implies that the observed inconsistencies in behavior might not be sufficiently explained by inadequate knowledge or training alone. The case also emphasizes the nurses' significant workload pressure.

Due to personnel shortages brought on by sick absence, there were more patients, longer working hours, and roughly twice as many patients for each nurse as usual. Hospitals in particular are experiencing a substantial staff shortage. This scenario is compounded by rising demand for urgent medical services, changing career choices among potential healthcare workers, and rising dissatisfaction among present hospital personnel (Jennings, 2008). The Load Theory of Attention is used in this section to examine the case's cognitive dimension.

2.0 The Cognitive Load Theory

2.1 Development and Principles of Cognitive Load Theory

The Cognitive Load Theory (CLT) originated from John Sweller's (1988) research on problem-solving strategies for learners. Sweller defines cognitive processing capacity as the cognitive resources required for tackling complicated problems. He proposed that learning can be challenging due to the cognitive burden that students experience when tackling various tasks. In particular, comprehension of the key ideas that the problem is intended to show may be impaired by the mental strain required to find a solution. CLT classifies cognitive burden into three types which are intrinsic, extraneous, and germane. Intrinsic cognitive load is determined by the complexity and type of instructional materials and is connected to the learning objective. It also considers the difficulty of the educational aim and the learner's past knowledge. The fundamental indicator of intrinsic cognitive load is the idea of element interactivity, which is used to calculate the number of independent aspects of educational objectives that must be processed simultaneously (Chen et al., 2014).

2.2 Cognitive Mechanisms and Empirical Evidence

CLT proposes a link between task demands and a person's limited working memory capacity. Task performance is usually efficient when task demands match or exceed

working memory capacity. On the other hand, working memory may get overloaded, and performance could be impacted if task demands surpass this capacity (Sewell et al., 2018). This principle is especially significant for jobs that require the simultaneous assessment of numerous aspects. O. Chen et al. (2023) found that task complexity correlates with element interaction, which informs an investigation into how this interactivity affects cognitive load. Additionally, studies conducted in healthcare settings point to a connection between a person's cognitive load and their productivity at work.

3.0 Theory Relating to Case Study

3.1 Workload, Competing Demands and Cognitive Load

The clinician's everyday responsibilities include making proper decisions, applying technical skills, and maintaining a high level of communication with others. These demanding tasks require focus because they are usually rewarding. However, the work environment might not always encourage maintaining focus, which causes problems for both the patient and the nurse (Kissler et al., 2024). A study by Surendran et al. (2024) shows that the application of cognitive stacking and shifting has demonstrated the dynamic and non-linear aspects of nursing. These responsibilities involve direct patient care as well as indirect responsibilities including ongoing observation, decision-making, and providing patients with emotional support while regulating one's own emotions. Cognitive shift is the term used to describe the continuous shifting of emphasis in nursing practice according to the demands of patients and the circumstances. According to WHO, infection prevention and

control guidelines, workload is regarded as the main cause of low hand hygiene compliance rates. It should be mentioned that increased nursing workload affects more than just patient safety. It also affects the nursing staff because it raises the risk of professional burnout, intention to leave the profession, and turnover related to staffing (Zhang et al., 2019).

3.2 Increased Cognitive Load to Handwashing Performance

The association between workload and non-compliance with hand hygiene can be explained by the impact of cognitive load on the performance of everyday tasks. Despite receiving formal training for a certain amount of time and performing well on tests, nurses continued to make mistakes in practice. This implies that the lack of procedural knowledge cannot be the cause, as these nurses are capable of applying this practice in controlled settings. There are several reasons why nurses disregard handwashing guidelines. These include worker shortages and higher workloads, and gaps in procedural compliance, such as washing hands only when they are visibly dirty. Some nurses rely on wearing gloves as a substitute for practising good hand hygiene because they assume that it protects them from getting infected. Not only that, but the lack of easily accessible handwashing equipment may also make it more difficult to follow the regulations (Amalia et al., 2024).

3.3 Evidence

According to the research findings, self-reported cognitive load measures meet the validity and reliability criteria. Reports show a considerable correlation between

practitioners' poor clinical judgement outcomes and increased cognitive load. When it comes to infection prevention and control, time restrictions have been highlighted in terms of changing gloves and taking off personal protective equipment while providing patient care. Nurses prioritize providing immediate interventions over following the infection prevention and control guidelines in emergency settings. Due to lack of resources and conflicting goals, evidence suggests that nurses and other healthcare workers may purposefully avoid operations (McCauley et al., 2021). Research by Cho and Steege (2021) has linked numerous health and safety problems to nursing fatigue. Moreover, research indicates that nurses' attitudes towards their jobs and their capacity to carry out their responsibilities have a negative impact on nurse weariness. Psychological issues and nursing performance, however, show a significant association among all the consequences of nurse exhaustion in practice.

4.0 Suggestions for New Procedures Based On The Theory

4.1 Point of Care Cognitive Prompts

Particularly in demanding work settings, point-of-care cognitive prompts can increase nurses' regular compliance with hand hygiene. Health professionals can see these reminders as part of their responsibilities by installing hand sanitizer dispensers in visible locations, such as the entrance of the patient's rooms or near medical equipment. Making these dispensers easily available ensures that individuals do not neglect hand hygiene when unnecessary. Another strategy to improve hand hygiene compliance is to place disruptors, such as lights on these dispensers or mild chimes that sound when someone approaches.

These cues operate every day as subtle reminders to sanitize hands before and after interacting with patients. According to the concept of Cognitive Load Theory, these external cues will lessen the significance of the nurse's reliance on inner memory techniques, enabling them to integrate their work with patient care. Adopting such approaches in healthcare settings facilitates compliance and reduces the possibility of forgetting. In this instance, default bias operates subconsciously to avoid the need to deliberately consider the necessity of taking action (Bhattacharjee & Bhattacharya, 2025).

4.2 Workflow Redesign

The World Health Organization (WHO) has released the Multimodal Hand Hygiene Improvement Strategy, which includes a roadmap for implementation and a variety of resources to support guideline adoption. The advice in question conforms with the WHO guidelines for Improved Hand Hygiene Practices in healthcare. It presents a method to increase adherence to hand cleanliness. Five key elements of the approach form the basis of the created model. It develops an adaptable framework for implementing hand hygiene systems in many types of organizations, allowing it to be used in both existing and new initiatives. The five main components include system changes such as ensuring access to alcohol based hand sanitizer, water, soap, and paper towels at the point of care, education and training of experts, ongoing monitoring of practices and feedback, sending reminders about specific hand hygiene safety events, and developing a safety culture across all levels of healthcare organizations (World Health Organization, 2009).

4.3 Integrating These Procedures

It is recommended to use an integrated procedure rather than individual interventions. Workflow modification will reduce unnecessary cognitive load; cognitive prompts help in memory and task completion, and updated staff management and fatigue regulation measures will relieve pressure on nurses. This is consistent with WHO's multimodal strategy, which involves implementing a wide range of changes in the systems, training programs, feedback performance evaluation, workplace reminders and safety culture. The findings of a comprehensive review demonstrate that, while the evidence does not identify a single technique as the most efficient in all situations, numerous interventions have generally worked well. Therefore, measurements of adherence to the suggested approaches, staff workload, and infection-related outcomes need to be taken into account when evaluating them (Price et al., 2018). As a result, the Health Board could evaluate the effectiveness of their action.

5.0 Evaluation and Critique of Theory

5.1 Strengths of Cognitive Load Theory in Explaining The Case

Cognitive Load Theory (CLT) provides a foundation for comprehending how a nurse's knowledge and abilities impact nursing practice. The theory is based on the concept that an individual's knowledge base and ability to efficiently process information are different. Numerous research studies based on CLT in healthcare have found that performance is adversely affected by both excessive cognitive and intrinsic load. Extraneous

load increases as a result of environmental factors and disturbances (Sewell et al., 2018). Accordingly, this perspective suggests that a person's ability to complete a task is influenced by both external factors and their understanding of the problem they are trying to address. Current research extends the use of CLT outside of the educational setting. It has also been used in health and behavior modification programs, which involve significant cognitive load when processing information. It has been demonstrated that the amount of cognitive load would decrease when extraneous cognitive strain is effectively reduced (Baxter et al., 2025).

5.2 Limitations and Alternative Explanations

Regardless of the strengths, CLT is still unable to offer a comprehensive account of the incident. The lack of direct assessment of the nurse's cognitive load is a significant drawback in the situation, and it cannot be concluded that cognitive overload did, in fact, cause handwashing behavior failures. Different forms of cognitive load continue to present significant difficulties because it might be difficult to distinguish between them, according to research by Leppink (2017). Evidence points to a two-way interaction between emotions and cognitive load since high levels of cognitive load can cause stress, anxiety, irritation, burnout, and physical fatigue, all of which can have a negative impact on cognitive load. Lastly, the research also indicates that various concurrent processes, such as physical, cognitive, and emotional ones that either increase or decrease cognitive load, may occur during a period of high cognitive load (Zaphir et al., 2024).

5.3 Evaluation of The Proposed Procedure

The effectiveness of the planned interventions should be carefully examined. Point-of-care prompts and the workflow multimodal design are consistent with the CLT theory, as they have the capacity to reduce the cognitive load of the reminders of hand hygiene and integrate them into the hectic clinical schedules. When procedural opportunities exceeded thirty per hour, hand hygiene compliance significantly decreased. As workloads grew, the number of healthcare worker roles increased, as did the number of hand hygiene tasks assigned to physicians and other workers. As a result, increased effort may increase the complexity and danger of patient care (Chang et al., 2021). According to research by Oner et al. (2025), nurses who put in more than 40 hours a week may be more likely to make medical errors. This is because the scheduling method of shift work results in exhaustion from the heavy workload and the lack of recovery time. Therefore, identifying and preventing employee weariness is the responsibility of a nurse manager (Peršolja, 2023).

5.4 Overall Critical Evaluation

On the whole, Cognitive Load Theory is suitable but isn't enough to explain the Glynafonshire case study. This theory's most useful contribution is to explain the cognitive process by which growing task complexity influences the behaviors of trained individuals. As primary caregivers in hospitals and clinical settings, nurses may have direct patient contact, especially when doctors are unavailable to make the essential treatment decisions. It can be said that nurse burnout has an impact on several aspects of the healthcare process because nurses are crucial to patient care delivery (Li et al., 2024).

6.0 Conclusion and Recommendation

In conclusion, the Glynafonshire case study demonstrates that, in situations where working conditions are difficult, healthcare staff may not necessarily comply in their practice despite completing their training and applying their acquired skills. Although the district nurses completed and passed both the written and practical assessments, incidents of alleged inappropriate hand washing were discovered during the period of staffing shortages, which was associated with long shifts and double the number of patients. The increased workload and cognitive tasks put a cognitive strain on the working memory, which results in below-average performance when safety measures are carried out. This could be explained by the Cognitive Load Theory (CLT).

The development of healthcare programs, materials and displays can benefit from the application of Cognitive Load Theory (CLT). According to CLT, people lack sufficient cognitive resources that can be exhausted by information overload, distracting stimuli in their surroundings, and emotional stressors such as anxiety and stress. To address these challenges, a number of proposals can be made to the Health Board. First, point-of-care cognitive prompts as visual reminders, easy access to hand sanitizer dispensers, and displaying reminders for nurses of the importance of hand hygiene can assist nurses in managing high cognitive loads. Next is including hand hygiene practices into workflow processes related to patient transition. Nurses will no longer have to rely on their own recollection to carry out the relevant procedures. Thirdly, workload and fatigue management strategies must be put in

place by the Health Board. These programs should include adequate staffing and monitoring of overtime hours, sufficient breaks, and emergency measures in the event of a sudden increase in the number of patients. These are recommended that these actions be implemented collectively rather than depending on the capacity of individual nurses to handle demanding workloads.

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