



***Skin Hydration Knowledge's Influence on Post-Hand Hygiene Moisturisation Among Healthcare Workers: Insights from a Melbourne Tertiary Health Service Survey***

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# ***Acknowledgement of country***

We acknowledge the traditional owners of the land on which we meet and pay our respects to their Elders past, present and emerging of the Wurundjeri, Woi-Wurrung, Boon Wurrung, Bunurong and Wadawurrung Countries of the greater Kulin Nation.

We are committed to the healing of country, working towards equity in health outcomes, and the ongoing journey of reconciliation.

# *A Quick Self-Check*



How frequently do you wash your hands?



Are you aware of your skin's hydration level?



If you are aware of your skin's hydration level, what actions would you take?

# Introduction

## Background:

- Representing approximately fifteen per cent of the body's total mass, the skin is our largest organ
- Our skin serves as our primary contact with the world—the interface between us and our immediate environment.
- Hands play a crucial role in helping us care for ourselves and others.
- Skin irritation from frequent hand washing and sanitization often hinders compliance with effective hand hygiene, which is crucial for preventing healthcare-associated infections.
- Intact skin is the first line of defence against infections
- Dry, damaged, and cracked skin can increase the risk of acquiring microorganisms and transmitting them to others including patients.
- “Some healthcare personnel may need to clean their hands as often as 100 times during a work shift to keep themselves, patients and staff safe. A common challenge is keeping the skin on your hands healthy and clean” (CDC, 2024).



# *Factors that Affect Skin Moisture and Cause Irritation*

- Workplace Conditions Affecting Skin Hydration:
  - Contact with detergents, solvents, frequent hand washing
  - Frequent handwashing removes natural oils from the skin, reducing its flexibility and increasing the likelihood of cracking or tearing.
  - Wearing protective gloves on wet hands raises the risk of skin irritation.
  - Water exposure (wet work) as a major cause of occupational skin diseases such as contact dermatitis
  - Prolonged glove use also leads to sweating, which can further irritate and dry out the skin.
  - Using Hot Water and Vigorous Drying with Paper Towels: Hot water depletes skin moisture, and the abrasive texture of paper towels can strip away the protective outer layer of skin cells when rubbed vigorously.



# ***OBJECTIVE***

To explore the relationship between healthcare workers' knowledge of skin hydration and their moisturisation practices before and after hand hygiene.



## *Why is it important to know the skin hydration level?*

- Skin hydration level is important both for everyday skin care, and for making selections among different hand hygiene products.
- Skin hydration level can also reflect skin barrier function. It is disrupted in many dermatologic diseases, including atopic dermatitis and psoriasis; the degree of disruption may correlate with disease activity.
- Healthcare workers who can measure their skin hydration using an easily accessible device can take more interest in their skin condition and manage their skin health more actively.
- To achieve optimal hydration, the objective is two-pronged—to retain moisture in skin that is dehydrated, and boost moisture in skin that is dry.
- The kind of moisture that is required—water or oil—depends on your environment and skin type.

# *Benefits of Measuring Skin Hydration:*



Simple, non-invasive, quick, and safe



Provides readings on skin condition and damage severity



Detects invisible damage from chemical exposure



Enables early intervention and promotes recovery



Supports ongoing monitoring for effective preventive measures

# *Study Population and Procedure*

## **Study populations:**

- Location: Melbourne Tertiary Health Service
- Participants: HCW's from different departments

## **Procedure:**

- Methodology: Across-sectional survey was conducted; briefly described the survey method, including how data was collected and analysed
- The survey was conducted during World health Organization (WHO) Hand Hygiene week in May 2024
- The skin hydration was measured by skillful IP CNC's

# Survey Questions

Department: \_\_\_\_\_

Role: \_\_\_\_\_

Ph No.: \_\_\_\_\_

Q1. Do you regularly wash your hands?

Yes  No

If Yes, how many times a day? \_\_\_\_\_

Q2. Have ever experienced 'dry hands'?

Yes  No

Q3. Is this a barrier for performing hand hygiene/washing hands?

Yes  No

Q4. Would knowing the moisture level of your skin encourage you to moisturise more frequently?

Yes  No



# Information Brochure

## This winter, be a skin superhero...



### Factors that effect skin moisture & cause skin irritation

1. Repeated handwashing with soap and water
2. Using hot water, vigorous drying with paper towel
3. Donning gloves while hands are still wet

### Top tips to keep skin healthy

1. Prioritise the use of hand rub, minimise hand washing.
2. Regular use of skin moisturisers at work and home
3. Stay hydrated

**Seek Advice** If you develop symptoms including dryness, irritation, itching, cracking, and bleeding notify your direct Manager, OHS and Infection Prevention, complete a Riskman. It is important to address these issues early and not leave until split, cracked or weeping.

**Remember: If you cannot perform correct hand hygiene you can't work clinically.**



**Your skin hydration level today is:**



## *How did we measure the skin hydration*

- Skin hydration is generally evaluated using devices that measure capacitance or conductance.
- History of Skin Hydration Measurement:
  - Instruments used since the 1980s in dermatological research
  - Not originally designed for occupational health settings
- For each of the 216 participants, skin hydration was measured at each of the defined points on the forearm three times using the EDS10 Skin Hydration Monitor, an objective measurement device of skin hydration.
- We also evaluated skin hydration of the arm using both tools after applying moisturizers to evaluate interferences from skin care products.
- The skin hydration monitor can provide reasonably reliable and accurate measurements for skin hydration with the strong points of portability and accessibility.

# Interpretation of the skin hydration levels

Value	
1	Extremely dry skin: investigation/action needed as skin condition is very poor
2	Very dry skin; skin condition poor; investigation/action needed
3	Dry skin: skin condition not good; investigation/action may be needed
4	Slightly dry skin; skin condition borderline; good advice may improve; this individual may fall outside normal range
5-8	Normally hydrated skin
9-12	Excessively hydrated skin: may be due to sweating or other factors (e.g., use of moisturiser or hand washing prior to measurement); further acclimitisation may be needed

# Summary of Survey Findings

## Q1: Do you regularly wash your hands?

- Nearly all participants (95%+) indicated they wash their hands regularly, with frequencies ranging from 5 to 100+ times a day, depending on role and work setting.

## Q2: Have ever experienced 'dry hands'?

- A significant majority (80%+) reported experiencing dry hands, highlighting a common issue among healthcare workers due to frequent handwashing.

## Q3: Is this a barrier for performing hand hygiene/washing hands?

- About half of the respondents stated that dry hands act as a barrier to performing hand hygiene, affecting their compliance due to discomfort.

## Q4: Would knowing the moisture level of your skin encourage you to moisturise more frequently?

- Most participants (over 80%) indicated that knowing their skin's moisture level would encourage them to moisturise more frequently, showing a positive link between awareness and motivation.

## Q5: What is the national hand hygiene benchmark?

- Responses varied, with most healthcare workers recognising the 80-100% compliance benchmark, though some reported uncertainty, suggesting a need for clearer communication on hand hygiene standards.

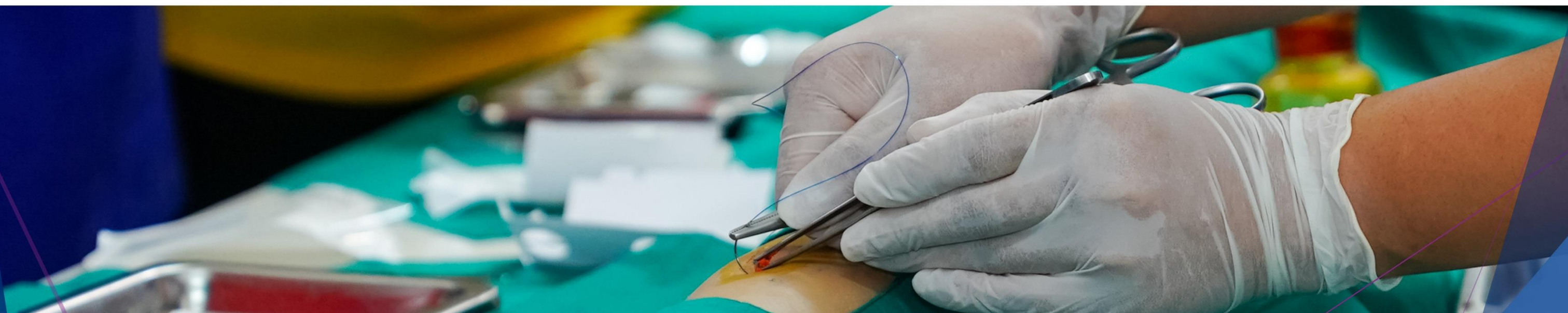
# *Key Insights from Survey on Skin Hydration Awareness*

- **Post-Hand Hygiene Practices:** The percentage of healthcare workers who consistently moisturise after performing hand hygiene routines.
- **Limited Knowledge of Moisturisation Benefits:** Insufficient understanding of the role of moisturisation in supporting the skin barrier and enhancing overall skin health.
- **Barriers to Moisturisation:** Common challenges to regular moisturisation, such as time constraints, lack of access to suitable moisturisers, or skin sensitivity.
- **Impact of Hydration on Skin Health:** The correlation between regular skin hydration practices and reduced incidences of skin issues, such as dryness, irritation, and cracking.
- **Preferred Moisturisation Products:** The types of moisturisers commonly used by healthcare workers and their perceived effectiveness.
- **Frequency of Moisturisation Education:** How often training or educational sessions on skin health and hydration are provided to healthcare professionals.

# *Correlation Between Knowledge and Practice*

Knowledge Gaps Identified:

- **Lack of Comprehensive Understanding:** While many healthcare workers are familiar with the importance of hand hygiene, fewer have an in-depth understanding of the role that moisturisation plays in preserving the skin barrier and preventing conditions such as dermatitis.
- **Impact on Practice:** Only a moderate percentage are aware of how moisturising after hand hygiene helps maintain skin hydration and resilience and the inconsistent moisturisation practices and an increased risk of skin problems.



# *Recommendations for Practice:*

- **Ward-Based In-services and WHO Hand Hygiene Day Activities:** Conduct educational sessions to inform healthcare workers about the importance of moisturisation in supporting the skin barrier and promoting skin health. Additionally, implementing more targeted education and training on the importance of skin hydration and proper moisturisation techniques.
- **Accessible Resources:** Provide readily available moisturisers in all clinical areas, ensuring that moisturisers are readily available in all areas where hand hygiene is performed.
- **Policy Integration:** Incorporate moisturisation practices into existing hand hygiene protocols to emphasise their importance and establish them as a standard part of practice
- **Practice change:** Creating awareness- promote hand hygiene as well as the skin hydration.
- **Posters to promote skin hydration:** Incorporate skin hydration posters that support regular moisturisation practices as part of hand hygiene practices and protocols

# *Conclusion*

**Implications:** If hands are not regularly moisturised, it can lead to skin conditions such as irritant contact dermatitis

**Positive Outcomes from Improved Knowledge:** Healthcare workers who understand the benefits of regular moisturisation are more likely to adopt this practice, leading to better skin hydration and reduced cases of contact dermatitis or irritation.

**Enhanced Skin Barrier Function:** Consistent moisturisation helps maintain the integrity of the skin barrier, preventing it from becoming dry or cracked and reducing the risk of infections or occupational skin diseases.

**Improved Compliance:** Healthier skin reduces discomfort, which supports higher compliance with hand hygiene protocols and overall occupational wellbeing.

**Education and Support:** Continuous education and support for healthcare workers in maintaining skin health while adhering to hand hygiene practices are essential in improving skin hydration along with hand hygiene.



# *Questions and Discussion*

# *Thank You*

- Special thanks to all participants who visited our desk during the WHO Hand Hygiene Week activities, checked their skin hydration levels, and shared their experiences.
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