

**Behavioural factors influencing hand hygiene practices across domestic, institutional, and public community settings: A systematic review**

Bethany A. Caruso<sup>1</sup>, Jedidiah S. Snyder<sup>2</sup>, Lilly A. O'Brien<sup>2</sup>, Erin LaFon<sup>2</sup>, Kennedy Files<sup>2</sup>, Dewan Muhammad Shoaib<sup>1</sup>, Sridevi K. Prasad<sup>1</sup>, Hannah Rogers<sup>3</sup>, Oliver Cumming<sup>4,5</sup>, Joanna Esteves Mills<sup>5</sup>, Bruce Gordon<sup>5</sup>, Marlene K. Wolfe<sup>2\*</sup>, Matthew C. Freeman<sup>2\*</sup>

1 Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA, USA; [bcaruso@emory.edu](mailto:bcaruso@emory.edu) (BAC); [dshoaib@emory.edu](mailto:dshoaib@emory.edu) (DMS); [sridevi.prasad@emory.edu](mailto:sridevi.prasad@emory.edu) (SKP)

2 Gangarosa Department of Environmental Health, Rollins School of Public Health, Emory University, Atlanta, GA, USA; [matthew.freeman@emory.edu](mailto:matthew.freeman@emory.edu) (MCF); [marlene.wolfe@emory.edu](mailto:marlene.wolfe@emory.edu) (MW)

[jedidiah.snyder@emory.edu](mailto:jedidiah.snyder@emory.edu) (JSS); [lilly.obrien@emory.edu](mailto:lilly.obrien@emory.edu) (LAO); Kennedy Files [kennedy.files@emory.edu](mailto:kennedy.files@emory.edu) (KF); Erin LaFon [erin.lafon@emory.edu](mailto:erin.lafon@emory.edu) (EL)

3 Woodruff Health Sciences Center Library, Emory University, Atlanta, GA, USA; [hannah.rogers@emory.edu](mailto:hannah.rogers@emory.edu) (HR)

4 Department of Disease Control, London School of Hygiene and Tropical Medicine, London, UK; [oliver.cumming@lshtm.ac.uk](mailto:oliver.cumming@lshtm.ac.uk) (OC)

5 Water, Sanitation, Hygiene and Health Unit, World Health Organization, Geneva, Switzerland; [estevesj@who.int](mailto:estevesj@who.int) (JEM)

Corresponding author: Bethany A. Caruso; [bcaruso@emory.edu](mailto:bcaruso@emory.edu)

Emory University, Rollins School of Public Health, 1518 Clifton Rd, Atlanta, GA 30322

\*Contributed equally

**S10- CERQual Assesment**

| Summary of review finding                   | Setting              | Barrier/ Enabler | Studies contributing to finding | Mean MMAT Score for Theme | Methodological limitations (Informed by MMAT)* | Coherence*       | Adequacy*        | Relevance*       | Overall CERQual assessment of confidence in the evidence** | Explanation of CERQual assessment                                                                |
|---------------------------------------------|----------------------|------------------|---------------------------------|---------------------------|------------------------------------------------|------------------|------------------|------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>CAPABILITY</b>                           |                      |                  |                                 |                           |                                                |                  |                  |                  |                                                            |                                                                                                  |
| <b>Physical Capability</b>                  |                      |                  |                                 |                           |                                                |                  |                  |                  |                                                            |                                                                                                  |
| <b>Ease/ difficulty of washing hands</b>    | <b>Domestic</b>      | Barrier          | Mitchell 2021                   | 5                         | No concerns                                    | Serious concerns | Serious concerns | Serious concerns | Very Low                                                   | Very small number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                             |                      | Enabler          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             | <b>Institutional</b> | Barrier          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             |                      | Enabler          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             | <b>Public</b>        | Barrier          | Nizame 2019                     | 5                         | No concerns                                    | Serious concerns | Serious concerns | Serious concerns | Very Low                                                   | Very small number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                             |                      | Enabler          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
| <b>Ease/ difficulty of collecting water</b> | <b>Domestic</b>      | Barrier          | Akter 2014<br>Mohamed 2022      | 4                         | Minor concerns                                 | Serious concerns | Serious concerns | Serious concerns | Very Low                                                   | Very small number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                             |                      | Enabler          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             | <b>Institutional</b> | Barrier          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             |                      | Enabler          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             | <b>Public</b>        | Barrier          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |
|                                             |                      | Enabler          | x                               | x                         | x                                              | x                | x                | x                | x                                                          | x                                                                                                |

**S10- CERQual Assesment**

| Psychological Capability |               |         |                                                                                          |   |             |                   |                   |                  |          |                                                                                                                                                           |
|--------------------------|---------------|---------|------------------------------------------------------------------------------------------|---|-------------|-------------------|-------------------|------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Action Knowledge         | Domestic      | Barrier | Akter 2014<br>Biran 2005<br>Didier 2021<br>Hoque 2023<br>Langford 2013<br>Mitchell 2021  | 5 | No concerns | Moderate concerns | Moderate concerns | Serious concerns | Moderate | Number of studies limiting coherence, adequacy, and geographical/population relevance (half in Asia, none in Africa; limited urban).                      |
|                          |               | Enabler | Akter 2014<br>Bauza 2021<br>Ogutu 2022<br>Rahman 2017<br>Sedekia 2022<br>Zangana 2020    | 5 | No concerns | Moderate concerns | Moderate concerns | Serious concerns | Moderate | Number of studies limiting coherence, adequacy, and geographical/population relevance (most Africa/Asia, none in HICs; limited urban).                    |
|                          | Institutional | Barrier | Arendt 2015<br>Kumar 2018<br>Schmidt 2009                                                | 5 | No concerns | Moderate concerns | Serious concerns  | Serious concerns | Very Low | Very small number of studies limiting coherence, adequacy, and geographical/population relevance (most in HICs; most in school settings).                 |
|                          |               | Enabler | Babalobi 2013<br>La Con 2017<br>Green 2005<br>Mbakaya 2019<br>Okello 2019<br>Sebong 2021 | 5 | No concerns | Moderate concerns | Serious concerns  | Serious concerns | Moderate | Number of studies limiting coherence, adequacy, and geographical/population relevance (half in Africa, many regions missing; most in education settings). |
|                          | Public        | Barrier | x                                                                                        | x | x           | x                 | x                 | x                | x        | x                                                                                                                                                         |
|                          |               | Enabler | x                                                                                        | x | x           | x                 | x                 | x                | x        | x                                                                                                                                                         |

| OPPORTUNITY                  |               |         |                                                                                                                                                                                                             |     |                     |                   |                     |                     |          |                                                                                                                                                          |
|------------------------------|---------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------|-------------------|---------------------|---------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical Opportunity         |               |         |                                                                                                                                                                                                             |     |                     |                   |                     |                     |          |                                                                                                                                                          |
| Soap/ Sanitizer availability | Domestic      | Barrier | Afolabi 2022<br>Biswas 2017<br>Didier 2021<br>Greenwell 2013<br>Kalumbi 2020<br>Lanfer 2021<br>Langford 2013<br>Lohiniva 2007<br>Mohamed 2022<br>Sagan 2019<br>Parveen 2018<br>Sultana 2018<br>White 2022 B | 4.7 | Very minor concerns | No concerns       | No concerns         | Very minor concerns | High     | Overall, adequate number of studies supporting theme across multiple settings. Some limitation in geographic relevance (HIC limited; most Africa, Asia). |
|                              |               | Enabler | Biran 2005<br>Biswas 2017<br>Kalam 2021<br>Mohamed 2022<br>Sultana 2018<br>Zangana 2020                                                                                                                     | 4.7 | Very minor concerns | No concerns       | Very minor concerns | Moderate concerns   | Moderate | Limitation in geographic relevance (No HIC; most Africa, Asia).                                                                                          |
|                              | Institutional | Barrier | Al-Naggar 2013<br>Devkota 2020<br>Kumar 2018<br>Melaku 2023<br>Okello 2019<br>Sebong 2021<br>Steenkamp 2022                                                                                                 | 4.6 | Very minor concerns | No concerns       | Very minor concerns | Moderate concerns   | Moderate | Limitation in geographic relevance (No HIC; all education settings).                                                                                     |
|                              |               | Enabler | Jackson 2021<br>Mbakaya 2019                                                                                                                                                                                | 5   | No concerns         | Moderate concerns | Serious concerns    | Serious concerns    | Very Low | Very small number of studies limiting coherence, adequacy, and geographical/population relevance( 1 Us, 1 Africa, all schools).                          |

# S10- CERQual Assesment

|                              |          |         |                                                                                                                                                                                                                                                                                                                   |     |                     |                   |                  |                  |          |                                                                                                                                              |
|------------------------------|----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------|-------------------|------------------|------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Soap/ Sanitizer availability | Public   | Barrier | Babalobi 2013<br>Biran 2012<br>Blum 2019<br>Claude 2020<br>Thorseth 2021<br>Wu 2019                                                                                                                                                                                                                               | 5   | No concerns         | Moderate concerns | Minor concerns   | Serious concerns | Moderate | Number of studies limiting adequacy and geographical/population relevance (all Africa; half IDP).                                            |
|                              |          | Enabler | Neetu 2013<br>Thorseth 2021                                                                                                                                                                                                                                                                                       | 5   | No concerns         | Moderate concerns | Serious concerns | Serious concerns | Very Low | Very limited number of studies limiting adequacy and geographical/population relevance (no HICs; one market, 1 IDP).                         |
| Soap cost                    | Domestic | Barrier | Aberese-Ako 2023<br>Affleck 2012<br>Afolabi 2022<br>Akter 2022<br>Azam 2022<br>Bauza 2021<br>Biran 2005<br>Chidziwisano 2019<br>Biswas 2017<br>Grant 2023<br>Hoque 2023<br>Lanfer 2021<br>Langford 2013<br>Mohamed 2022<br>Nizame 2016<br>Ogutu 2022<br>Scott 2007<br>Parveen 2018<br>White 2022 A<br>Yallew 2012 | 4.9 | Very minor concerns | No concerns       | No concerns      | Minor concerns   | High     | Overall, adequate number of studies supporting theme across multiple settingsLimitation in geographic relevance (No HIC; most Africa, Asia). |
|                              |          | Enabler | Biswas 2017<br>Ogutu 2022<br>Ashraf 2017                                                                                                                                                                                                                                                                          | 5   | No concerns         | Minor concerns    | Serious concerns | Serious concerns | Low      | Number of studies limiting adequacy and geographical/population relevance (No HICs; all rural, per-urban).                                   |

**S10- CERQual Assesment**

|                           |                      |         |                                                                                                                           |   |                  |                   |                     |                  |          |                                                                                                                                        |
|---------------------------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------|---|------------------|-------------------|---------------------|------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Soap cost</b>          | <b>Institutional</b> | Barrier | Devkota 2020                                                                                                              | 2 | Serious concerns | Moderate concerns | Serious concerns    | Serious concerns | Very Low | Number of studies limiting adequacy and geographical/population relevance (only Nepal, only school).                                   |
|                           |                      | Enabler | x                                                                                                                         | x | x                | x                 | x                   | x                | x        | x                                                                                                                                      |
|                           | <b>Public</b>        | Barrier | Blum 2019<br>Nizame 2019<br>Thorseth 2021                                                                                 | 5 | No concerns      | Minor concerns    | Serious concerns    | Serious concerns | Low      | Number of studies limiting adequacy and geographical/population relevance (no HICs; 1 markey; IDPs).                                   |
|                           |                      | Enabler | x                                                                                                                         | x | x                | x                 | x                   | x                | x        | x                                                                                                                                      |
| <b>Water availability</b> | <b>Domestic</b>      | Barrier | Akter 2014<br>Atuyambe 2011<br>Biran 2005<br>Demberere 2016<br>Didier 2021<br>Greenwell 2013<br>Lanfer 2021<br>Sagan 2019 | 5 | No concerns      | No concerns       | Very minor concerns | Minor concerns   | High     | Overall, adequate number of studies supporting theme across multiple settings. Limitation in geographic relevance (most Africa, Asia). |
|                           |                      | Enabler | Dearden 2002<br>Kalam 2021<br>Ashraf 2017                                                                                 | 5 | No concerns      | Moderate concerns | Serious concerns    | Serious concerns | Very Low | Limitation in geographic relevance (No HIC; all Asia).                                                                                 |
|                           | <b>Institutional</b> | Barrier | Xuan 2013<br>Melaku 2023<br>Okello 2019                                                                                   | 5 | No concerns      | Minor concerns    | Serious concerns    | Serious concerns | Low      | Limitation in geographic relevance (No HIC; all schools).                                                                              |
|                           |                      | Enabler | Okello 2019<br>Steenkamp 2022                                                                                             | 5 | No concerns      | Moderate concerns | Serious concerns    | Serious concerns | Very Low | Limitation in geographic relevance (all Africa; all schools).                                                                          |
|                           | <b>Public</b>        | Barrier | Babalobi 2013<br>Claude 2020                                                                                              | 5 | No concerns      | Moderate concerns | Serious concerns    | Serious concerns | Very Low | Limitation in geographic relevance (all Africa; 1 market, 2 IDP).                                                                      |
|                           |                      | Enabler | x                                                                                                                         | x | x                | x                 | x                   | x                | x        | x                                                                                                                                      |

**S10- CERQual Assesment**

|                              |                      |         |                                                                                                                 |     |                     |                   |                  |                   |          |                                                                          |
|------------------------------|----------------------|---------|-----------------------------------------------------------------------------------------------------------------|-----|---------------------|-------------------|------------------|-------------------|----------|--------------------------------------------------------------------------|
| <b>Water supply quantity</b> | <b>Domestic</b>      | Barrier | Aberese-Ako 2023<br>Akter 2014<br>Atuyambe 2011<br>Langford 2013<br>Lohiniva 2007<br>Scott 2007<br>White 2022 B | 4.9 | Very minor concerns | No concerns       | Minor concerns   | Moderate concerns | High     | Limitation in geographic relevance (No HIC; majority Africa).            |
|                              |                      | Enabler | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |
|                              | <b>Institutional</b> | Barrier | Al-Naggar 2013<br>Melaku 2023                                                                                   | 5   | No concerns         | Moderate concerns | Serious concerns | Serious concerns  | Very Low | Limitation in geographic relevance (No HIC; Education settings only).    |
|                              |                      | Enabler | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |
|                              | <b>Public</b>        | Barrier | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |
|                              |                      | Enabler | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |
| <b>Water distance</b>        | <b>Domestic</b>      | Barrier | Dearden 2002<br>Demberere 2016<br>Grant 2023<br>Mohamed 2022<br>Parveen 2018                                    | 4.6 | Very minor concerns | No concerns       | Minor concerns   | Moderate concerns | Moderate | Limitation in geographic relevance (No HIC; Africa/Asia only).           |
|                              |                      | Enabler | Dearden 2002<br>Biswas 2017                                                                                     | 5   | No concerns         | Moderate concerns | Serious concerns | Serious concerns  | Very Low | Limitation in geographic relevance (No HIC; Asia only; rural only).      |
|                              | <b>Institutional</b> | Barrier | Al-Naggar 2013                                                                                                  | 5   | No concerns         | Moderate concerns | Serious concerns | Serious concerns  | Very Low | Limitation in geographic relevance (No HIC; Asia only; University only). |
|                              |                      | Enabler | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |
|                              | <b>Public</b>        | Barrier | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |
|                              |                      | Enabler | x                                                                                                               | x   | x                   | x                 | x                | x                 | x        | x                                                                        |

**S10- CERQual Assesment**

|                                   |                      |         |                                                                            |   |                |                   |                  |                  |          |                                                                                                                                                                                                                      |
|-----------------------------------|----------------------|---------|----------------------------------------------------------------------------|---|----------------|-------------------|------------------|------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water cost</b>                 | <b>Domestic</b>      | Barrier | Mohamed 2022<br>Yallew 2012                                                | 4 | Minor concerns | Moderate concerns | Serious concerns | Serious concerns | Very Low | Study quality concerning; number of studies limiting adequacy and geographic relevance (only Africa).                                                                                                                |
|                                   |                      | Enabler | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   | <b>Institutional</b> | Barrier | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   |                      | Enabler | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   | <b>Public</b>        | Barrier | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   |                      | Enabler | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
| <b>Household infra- structure</b> | <b>Domestic</b>      | Barrier | Atuyambe 2011<br>Biswas 2017<br>Didier 2021<br>Hoque 2023<br>Lohiniva 2007 | 5 | No concerns    | Minor concerns    | Minor concerns   | Minor concerns   | High     | Overall, adequate number of studies supporting theme across multiple settings. Limitation in geographic relevance (mostly rural). Limited number of studies limiting adequacy and geographical/population relevance. |
|                                   |                      | Enabler | Biswas 2017                                                                | 5 | No concerns    | Moderate concerns | Serious concerns | Serious concerns | Very Low |                                                                                                                                                                                                                      |
|                                   | <b>Institutional</b> | Barrier | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   |                      | Enabler | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   | <b>Public</b>        | Barrier | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |
|                                   |                      | Enabler | x                                                                          | x | x              | x                 | x                | x                | x        |                                                                                                                                                                                                                      |

**S10- CERQual Assesment**

|                                      |                      |         |                                                                                                    |   |             |                   |                   |                   |          |                                                                                                                                                   |
|--------------------------------------|----------------------|---------|----------------------------------------------------------------------------------------------------|---|-------------|-------------------|-------------------|-------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Community infra- structure</b>    | <b>Domestic</b>      | Barrier | x                                                                                                  | x | x           | x                 | x                 | x                 | x        | x                                                                                                                                                 |
|                                      |                      | Enabler | x                                                                                                  | x | x           | x                 | x                 | x                 | x        | x                                                                                                                                                 |
|                                      | <b>Institutional</b> | Barrier | La Con 2017<br>Green 2005<br>Kumar 2018<br>Scott 2007<br>Sebong 2021<br>Steiner-Asiedu 2011        | 5 | No concerns | Minor concerns    | Minor concerns    | Minor concerns    | High     | Overall, adequate number of studies supporting theme across multiple settings. Limitation in geographic relevance (mostly LMICs, mostly schools). |
|                                      |                      | Enabler | Jackson 2021                                                                                       | 5 | No concerns | Moderate concerns | Serious concerns  | Serious concerns  | Very Low | Number of studies limiting adequacy and geographical/population relevance (USA only, athlectic raining facility only).                            |
|                                      | <b>Public</b>        | Barrier | Aberese-Ako 2023<br>Scott 2007<br>Yardley 2011                                                     | 5 | No concerns | Minor concerns    | Serious concerns  | Serious concerns  | Low      | Number of studies limiting adequacy and geographical/population relevance.                                                                        |
|                                      |                      | Enabler | x                                                                                                  | x | x           | x                 | x                 | x                 | x        | x                                                                                                                                                 |
| <b>Hand hygiene station location</b> | <b>Domestic</b>      | Barrier | Akter 2022<br>Chidziwisano 2019<br>Hoque 2023<br>Nizame 2013<br>Ashraf 2017<br>Steiner-Asiedu 2011 | 5 | No concerns | Minor concerns    | Minor concerns    | Minor concerns    | High     | Overall, adequate number of studies supporting theme across multiple settings. Limitation in geographic relevance (mostly Asia, all rural).       |
|                                      |                      | Enabler | Biswas 2017<br>Ashraf 2017<br>Tibbels 2022                                                         | 5 | No concerns | Minor concerns    | Serious concerns  | Serious concerns  | Low      | Limitation in geographic relevance (LMIC only).                                                                                                   |
|                                      | <b>Institutional</b> | Barrier | Al-Naggar 2013<br>La Con 2017<br>Green 2005<br>Jackson 2021                                        | 5 | No concerns | Minor concerns    | Moderate concerns | Moderate concerns | Moderate | Limitation in geographic relevance (mostly edcaiton settings).                                                                                    |
|                                      |                      | Enabler | Jackson 2021<br>Okello 2019<br>Pragle 2007                                                         | 5 | No concerns | Minor concerns    | Serious concerns  | Serious concerns  | Low      | Limitation in geographic relevance (LMIC and HIC but limited number; schools and workplace, but limited).                                         |

**S10- CERQual Assesment**

|                                        |                      |         |                                                            |     |                     |                   |                   |                   |          |                                                                                                       |
|----------------------------------------|----------------------|---------|------------------------------------------------------------|-----|---------------------|-------------------|-------------------|-------------------|----------|-------------------------------------------------------------------------------------------------------|
| <b>Hand hygiene station location</b>   | <b>Public</b>        | Barrier | Watson 2020                                                | 5   | No concerns         | Minor concerns    | Serious concerns  | Serious concerns  | Very Low | Number of studies limiting adequacy and geographical/population relevance (IDP only)                  |
|                                        |                      | Enabler | Neetu 2013                                                 | 5   | No concerns         | Minor concerns    | Serious concerns  | Serious concerns  | Very Low | Number of studies limiting adequacy and geographical/population relevance (market only).              |
| <b>Hand hygiene station design</b>     | <b>Domestic</b>      | Barrier | Hoque 2023<br>Mohamed 2022<br>White 2022 B<br>Zangana 2020 | 4.3 | Minor concerns      | Minor concerns    | Moderate concerns | Moderate concerns | Moderate | Limitation in geographic relevance (mostly Africa; LMICs only).                                       |
|                                        |                      | Enabler | White 2022 A<br>White 2022 B                               | 4.5 | Very minor concerns | Moderate concerns | Serious concerns  | Serious concerns  | Very Low | Number of studies limiting coherence, adequacy and geographical/population relevance.                 |
|                                        | <b>Institutional</b> | Barrier | x                                                          | x   | x                   | x                 | x                 | x                 | x        | x                                                                                                     |
|                                        |                      | Enabler | x                                                          | x   | x                   | x                 | x                 | x                 | x        | x                                                                                                     |
|                                        | <b>Public</b>        | Barrier | Mohamed 2022                                               | 3   | Moderate concerns   | Moderate concerns | Serious concerns  | Serious concerns  | Very Low | Low quality and number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                        |                      | Enabler | x                                                          | x   | x                   | x                 | x                 | x                 | x        | x                                                                                                     |
| <b>State of hand hygiene equipment</b> | <b>Domestic</b>      | Barrier | White 2020 B                                               | 4   | Minor concerns      | Moderate concerns | Serious concerns  | Serious concerns  | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance.         |
|                                        |                      | Enabler | x                                                          | x   | x                   | x                 | x                 | x                 | x        | x                                                                                                     |

**S10- CERQual Assesment**

|                                                  |                      |         |              |   |             |                   |                  |                  |          |                                                                                               |
|--------------------------------------------------|----------------------|---------|--------------|---|-------------|-------------------|------------------|------------------|----------|-----------------------------------------------------------------------------------------------|
| <b>State of hand hygiene equipment</b>           | <b>Institutional</b> | Barrier | Melaku 2023  | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                                  |                      | Enabler | Melaku 2023  | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                                  | <b>Public</b>        | Barrier | Blum 2019    | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                                  |                      | Enabler | x            | x | x           | x                 | x                | x                | x        | x                                                                                             |
| <b>Cleanliness of hand washing environ- ment</b> | <b>Domestic</b>      | Barrier | Zangana 2020 | 5 | No concerns | Moderate concern  | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                                  |                      | Enabler | x            | x | x           | x                 | x                | x                | x        | x                                                                                             |
|                                                  | <b>Institutional</b> | Barrier | Kumar 2018   | 5 | No concerns | Moderate concern  | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                                  |                      | Enabler | x            | x | x           | x                 | x                | x                | x        | x                                                                                             |
|                                                  | <b>Public</b>        | Barrier | Wu 2019      | 5 | No concerns | Moderate concern  | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance. |
|                                                  |                      | Enabler | x            | x | x           | x                 | x                | x                | x        | x                                                                                             |

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|                                      |                      |         |                                                                 |   |             |                  |                  |                  |          |                                                                                                                      |
|--------------------------------------|----------------------|---------|-----------------------------------------------------------------|---|-------------|------------------|------------------|------------------|----------|----------------------------------------------------------------------------------------------------------------------|
| <b>Lighting of hand washing area</b> | <b>Domestic</b>      | Barrier | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      | <b>Institutional</b> | Barrier | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      | <b>Public</b>        | Barrier | Watson 2020                                                     | 5 | No concerns | Moderate concern | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance.                        |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
| <b>Damage of resources</b>           | <b>Domestic</b>      | Barrier | White 2022 A                                                    | 5 | No concerns | Moderate concern | Serious concerns | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance.                        |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      | <b>Institutional</b> | Barrier | La Con 2017<br>Melaku 2023<br>Pragle 2007                       | 5 | No concerns | Moderate concern | Serious concerns | Serious concerns | Low      | Limited number of studies limiting coherence, adequacy and geographical/population relevance.                        |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      | <b>Public</b>        | Barrier | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
| <b>Theft of resources</b>            | <b>Domestic</b>      | Barrier | Akter 2014<br>Biswas 2017<br>Ntakirutimana 2021<br>Sultana 2018 | 5 | No concerns | Moderate concern | Moderate concern | Serious concerns | Low      | Limited number of studies limiting coherence, adequacy and geographical/population relevance (3 of 4 in Bangladesh). |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      | <b>Institutional</b> | Barrier | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      | <b>Public</b>        | Barrier | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |
|                                      |                      | Enabler | x                                                               | x | x           | x                | x                | x                | x        | x                                                                                                                    |

**S10- CERQual Assesment**

|                                  |               |         |                                                            |     |                |                   |                   |                  |          |                                                                                                                        |
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| Resources available for purchase | Domestic      | Barrier | Yeasmin 2021<br>Torres-Slimming 2019                       | 4   | Minor concerns | Moderate concern  | Serious concerns  | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance                           |
|                                  |               | Enabler | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
|                                  | Institutional | Barrier | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
|                                  |               | Enabler | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
|                                  | Public        | Barrier | Thorseth 2021                                              | 5   | No concerns    | Moderate concern  | Serious concerns  | Serious concerns | Very low | Limited number of studies limiting coherence, adequacy and geographical/population relevance                           |
|                                  |               | Enabler | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
| Social Opportunity               |               |         |                                                            |     |                |                   |                   |                  |          |                                                                                                                        |
| Role model for behavior          | Domestic      | Barrier | Lanfer 2021                                                | 5   | No concerns    | Moderate concerns | Serious concerns  | Serious concerns | Very low | Number of studies limiting coherence, adequacy and geographical/population relevance                                   |
|                                  |               | Enabler | Yeasmin 2021<br>Langford 2013<br>Sagan 2019<br>Ashraf 2017 | 4.3 | Minor concerns | Moderate concerns | Moderate concerns | Serious concerns | Low      | Number of studies limiting coherence, adequacy and geographical/population relevance (all Bangladesh, Nepal, Pakistan) |
|                                  | Institutional | Barrier | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
|                                  |               | Enabler | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
|                                  | Public        | Barrier | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |
|                                  |               | Enabler | x                                                          | x   | x              | x                 | x                 | x                | x        | x                                                                                                                      |

**S10- CERQual Assesment**

|                              |                      |         |                                                                                     |   |             |                   |                  |                   |          |                                                                                                                                       |
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| <b>Social Pressure</b>       | <b>Domestic</b>      | Barrier | Langford 2013<br>Parveen 2018                                                       | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns  | Very Low | Number of studies limiting coherence, adequacy, and geographical/population relevance                                                 |
|                              |                      | Enabler | Afolabi 2022<br>Harrison 2019<br>Langford 2013<br>Thaivalappil 2022<br>Tibbels 2022 | 5 | No concerns | Moderate concerns | Minor concerns   | Moderate concerns | Moderate | Number of studies limiting coherence, adequacy, and geographical/population relevance                                                 |
|                              | <b>Institutional</b> | Barrier | x                                                                                   | x | x           | x                 | x                | x                 | x        | x                                                                                                                                     |
|                              |                      | Enabler | Green 2005<br>Mbakaya 2019<br>Pragle 2007<br>Schmidt 2009                           | 5 | No concerns | Moderate concerns | Minor concerns   | Moderate concerns | Moderate | Number of studies limiting coherence, adequacy, and geographical/population relevance (3 in HICs, 2 in Africa; School /workplace mix) |
|                              | <b>Public</b>        | Barrier | x                                                                                   | x | x           | x                 | x                | x                 | x        | x                                                                                                                                     |
|                              |                      | Enabler | Blum 2019                                                                           | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance.                                                            |
| <b>Visits by Authorities</b> | <b>Domestic</b>      | Barrier | x                                                                                   | x | x           | x                 | x                | x                 | x        | x                                                                                                                                     |
|                              |                      | Enabler | Ward 2022                                                                           | 5 | No concerns | Serious concerns  | Serious concerns | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance (Urban Nigeria only; COVID-related).                        |
|                              | <b>Institutional</b> | Barrier | x                                                                                   | x | x           | x                 | x                | x                 | x        | x                                                                                                                                     |
|                              |                      | Enabler | Sebong 2021                                                                         | 5 | No concerns | Serious concerns  | Serious concerns | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance (university in Asia only; COVID-related).                   |
|                              | <b>Public</b>        | Barrier | x                                                                                   | x | x           | x                 | x                | x                 | x        | x                                                                                                                                     |
|                              |                      | Enabler | x                                                                                   | x | x           | x                 | x                | x                 | x        | x                                                                                                                                     |

**S10- CERQual Assesment**

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| <b>Social stigmatization/ status</b> | <b>Domestic</b>      | Barrier | Azam 2022<br>Parveen 2018<br>White 2022 B<br>Yardley 2011                                                 | 4.8 | Very minor concerns | Moderate concerns | Moderate concerns   | Moderate concerns | Low      | Number of studies limiting adequacy and geographical/population relevance.             |
|                                      |                      | Enabler | Langford 2013<br>Sagan 2019<br>Scott 2007<br>Tibbels 2022<br>White 2022 A<br>White 2022 B<br>Zangana 2020 | 4.9 | Very minor concerns | Minor concerns    | Very minor concerns | Moderate concerns | Moderate | Number of studies limiting adequacy and geographical/population relevance (all LMICs). |
|                                      | <b>Institutional</b> | Barrier | Kumar 2018                                                                                                | 5   | No concerns         | Moderate concerns | Serious concerns    | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance.             |
|                                      |                      | Enabler | Green 2005<br>Jackson 2021                                                                                | 5   | No concerns         | Moderate concerns | Serious concerns    | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance.             |
|                                      | <b>Public</b>        | Barrier | x                                                                                                         | x   | x                   | x                 | x                   | x                 | x        | x                                                                                      |
|                                      |                      | Enabler | Blum 2019<br>Watson 2020                                                                                  | 5   | No concerns         | Moderate concerns | Serious concerns    | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance.             |
| <b>Informational support</b>         | <b>Domestic</b>      | Barrier | Mohamed 2022                                                                                              | 3   | Moderate concerns   | Moderate concerns | Serious concerns    | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance.             |
|                                      |                      | Enabler | Afolabi 2022<br>Torres-Slimming 2019                                                                      | 5   | No concerns         | Moderate concerns | Serious concerns    | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance.             |
|                                      | <b>Institutional</b> | Barrier | x                                                                                                         | x   | x                   | x                 | x                   | x                 | x        | x                                                                                      |
|                                      |                      | Enabler | x                                                                                                         | x   | x                   | x                 | x                   | x                 | x        | x                                                                                      |
|                                      | <b>Public</b>        | Barrier | x                                                                                                         | x   | x                   | x                 | x                   | x                 | x        | x                                                                                      |
|                                      |                      | Enabler | x                                                                                                         | x   | x                   | x                 | x                   | x                 | x        | x                                                                                      |

**S10- CERQual Assesment**

|                                               |                      |         |                                                                                                                 |   |             |                   |                  |                  |          |                                                                                             |
|-----------------------------------------------|----------------------|---------|-----------------------------------------------------------------------------------------------------------------|---|-------------|-------------------|------------------|------------------|----------|---------------------------------------------------------------------------------------------|
| <b>Tangible/<br/>instrumental<br/>support</b> | <b>Domestic</b>      | Barrier | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
|                                               |                      | Enabler | Biswas 2017<br>Parveen 2018<br>Sultana 2018                                                                     | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns | Low      | Number of studies limiting adequacy and geographical/population relevance (all Bangaladesh) |
|                                               | <b>Institutional</b> | Barrier | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
|                                               |                      | Enabler | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
|                                               | <b>Public</b>        | Barrier | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
|                                               |                      | Enabler | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
| <b>Network<br/>support</b>                    | <b>Domestic</b>      | Barrier | Rahman 2017<br>Parveen 2018<br>White 2022 A                                                                     | 5 | No concerns | Moderate concern  | Serious concerns | Serious concerns | Low      | Number of studies limiting adequacy and geographical/population relevance.                  |
|                                               |                      | Enabler | Dearden 2002<br>Langford 2013<br>Rahman 2017<br>Scott 2007<br>Parveen 2018<br>Thaivalappil 2022<br>White 2022 A | 5 | No concerns | Minor concern     | Minor concern    | Minor concern    | Moderate | Limitid geographical relevance (mostly Africa, Asia).                                       |
|                                               | <b>Institutional</b> | Barrier | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
|                                               |                      | Enabler | Green 2005<br>Schmidt 2009                                                                                      | 5 | No concerns | Moderate concern  | Serious concerns | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance.                  |
|                                               | <b>Public</b>        | Barrier | x                                                                                                               | x | x           | x                 | x                | x                | x        | x                                                                                           |
|                                               |                      | Enabler | Watson 2020                                                                                                     | 5 | No concerns | Moderate concern  | Serious concerns | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance.                  |

**S10- CERQual Assesment**

|                                     |                      |         |                                                                                                                                  |     |                     |                  |                  |                  |          |                                                                                    |
|-------------------------------------|----------------------|---------|----------------------------------------------------------------------------------------------------------------------------------|-----|---------------------|------------------|------------------|------------------|----------|------------------------------------------------------------------------------------|
| <b>Cultural practices and norms</b> | <b>Domestic</b>      | Barrier | Aberese-Ako 2023<br>Hoque 2023<br>Kalumbi 2020<br>Parveen 2018<br>Ward 2022<br>White 2022 B<br>Afolabi 2022<br>Chidziwisano 2019 | 4.8 | Very minor concerns | Minor concern    | Minor concern    | Moderate concern | Moderate | Limited geographical relevance (all Africa, Asia).                                 |
|                                     |                      | Enabler | Thaivalappil 2022<br>Zangana 2020                                                                                                | 5   | No concerns         | Moderate concern | Moderate concern | Serious concerns | Low      | Limited geographical relevance (no Asia).                                          |
|                                     | <b>Institutional</b> | Barrier | x                                                                                                                                | x   | x                   | x                | x                | x                | x        | x                                                                                  |
|                                     |                      | Enabler | Jackson 2021                                                                                                                     | 5   | No concerns         | Serious concern  | Serious concerns | Serious concerns | Very low | Limited number of studies limiting adequacy and geographical/population relevance. |
|                                     | <b>Public</b>        | Barrier | x                                                                                                                                | x   | x                   | x                | x                | x                | x        | x                                                                                  |
|                                     |                      | Enabler | x                                                                                                                                | x   | x                   | x                | x                | x                | x        | x                                                                                  |

# S10- CERQual Assesment

| MOTIVATION            |          |         |                                                                                                                                                                                                                                                                                                                                                                                                   |   |             |                   |                   |                  |      |                                                                            |
|-----------------------|----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|-------------------|-------------------|------------------|------|----------------------------------------------------------------------------|
| Reflective Motivation |          |         |                                                                                                                                                                                                                                                                                                                                                                                                   |   |             |                   |                   |                  |      |                                                                            |
| Perceived health risk | Domestic | Barrier | Azam 2022<br>Parveen 2018<br>Tibbels 2022<br>Thaivalappil 2022                                                                                                                                                                                                                                                                                                                                    | 5 | No concerns | Moderate concerns | Moderate concerns | Serious concerns | Low  | Number of studies limiting adequacy and geographical/population relevance. |
|                       |          | Enabler | Aberese-Ako 2023<br>Affleck 2012<br>Afolabi 2022<br>Akter 2014<br>Curtis 2003<br>Dearden 2002<br>Biswas 2017<br>Didier 2021<br>Kalumbi 2020<br>Lanfer 2021<br>Langford 2013<br>Lohiniva 2007<br>Nizame 2013<br>Norrie 2022<br>Ogutu 2022<br>Rahman 2017<br>Scott 2007<br>Parveen 2018<br>Steiner-Asiedu 2011<br>Tibbels 2022<br>Torres-Slimming 2019<br>Ward 2022<br>White 2022 B<br>Zangana 2020 | 5 | No concerns | No concerns       | No concerns       | Minor cocnerns   | High | Adequate number of studies supporting theme across multiple settings       |

**S10- CERQual Assesment**

|                              |                      |         |                                                                                                                                                                                  |   |             |                   |                  |                  |          |                                                                                                                                                           |
|------------------------------|----------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|-------------------|------------------|------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Perceived health risk</b> | <b>Institutional</b> | Barrier | Al-Naggar 2013<br>Sebong 2021                                                                                                                                                    | 5 | No concerns | Serious concerns  | Serious concerns | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance (asia only; Universities only).                                                 |
|                              |                      | Enabler | Mbakaya 2019<br>Okello 2019<br>Pragle 2007<br>Schmidt 2009<br>Sebong 2021                                                                                                        | 5 | No concerns | Minor concerns    | Minor concerns   | Minor concerns   | Moderate | Adequate number of studies supporting theme across multiple settings, though mostly schools in Asia/Africa.                                               |
|                              | <b>Public</b>        | Barrier | x                                                                                                                                                                                | x | x           | x                 | x                | x                | x        | x                                                                                                                                                         |
|                              |                      | Enabler | Babalobi 2013<br>Blum 2019<br>Watson 2020                                                                                                                                        | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns | Very low | Number of studies limiting coherence, adequacy and geographical/population relevance (Africa/Asia only; IDP camps and market).                            |
| <b>Time Prioritization</b>   | <b>Domestic</b>      | Barrier | Affleck 2012<br>Akter 2014<br>Curtis 2003<br>Dearden 2002<br>Langford 2013<br>Lohiniva 2007<br>Nizame 2016<br>Rauyajin 1994<br>Sagan 2019<br>Parveen 2018<br>Steiner-Asiedu 2011 | 5 | No concerns | No concerns       | No concerns      | Minor concerns   | High     | Overall, adequate number of studies supporting theme across multiple settings. Limitation in geographic relevance (mostly Asia, specifically Bangladesh). |
|                              |                      | Enabler | Dearden 2002<br>Biswas 2017                                                                                                                                                      | 5 | No concerns | Serious concerns  | Serious concerns | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance.                                                                                |

**S10- CERQual Assesment**

|                                       |                      |         |                                                                                                              |     |                |                |                   |                   |          |                                                                                                                                                                                                  |
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|                                       | <b>Institutional</b> | Barrier | Al-Naggar 2013<br>La Con 2017<br>Green 2005<br>Jackson 2021<br>Pragle 2007<br>Schmidt 2009<br>Steenkamp 2022 | 5   | No concerns    | No concerns    | No concerns       | Minor concerns    | High     | Overall, adequate number of studies supporting theme across multiple settings. Limitation in geographic relevance though multiple regions and settings represented (though sometimes only once). |
|                                       |                      | Enabler | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |
|                                       | <b>Public</b>        | Barrier | Blum 2019<br>Mezaache 2021<br>Neetu 2013<br>Nizame 2019<br>Wu 2019                                           | 4.4 | Minor concerns | Minor concerns | Minor concerns    | Minor concerns    | Moderate | Limitation in geographic relevance (mostly Asia, Africa); though multiple settings represented (e.g., Markets, parks, harm reduction centers).).                                                 |
|                                       |                      | Enabler | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |
| <b>Water<br/>Prioritiza-<br/>tion</b> | <b>Domestic</b>      | Barrier | Lohiniva 2007<br>Mshida 2020<br>Ogutu 2022<br>Thorseth 2021                                                  | 5   | No concerns    | No concerns    | Moderate concerns | Moderate concerns | Moderate | Limitation in geographic relevance (all rural Africa).                                                                                                                                           |
|                                       |                      | Enabler | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |
|                                       | <b>Institutional</b> | Barrier | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |
|                                       |                      | Enabler | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |
|                                       | <b>Public</b>        | Barrier | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |
|                                       |                      | Enabler | x                                                                                                            | x   | x              | x              | x                 | x                 | x        | x                                                                                                                                                                                                |

**S10- CERQual Assesment**

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| <b>Willingness to practice hand-washing</b> | <b>Domestic</b>      | Barrier | Affleck 2012<br>Didier 2021<br>Herbst 2009<br>Greenwell 2013<br>Mohamed 2022<br>Rauyajin 1994<br>Parveen 2018 | 4.7 | Very minor concerns | Moderate concerns | Moderate concerns | Minor concerns   | Moderate | Overall, adequate number of studies supporting theme across multiple settings, though variability within theme across settings limiting coherence. |
|                                             |                      | Enabler | Akter 2014<br>Dearden 2002<br>Harrison 2019<br>Herbst 2009<br>Rahman 2017<br>Parveen 2018                     | 5   | No concerns         | Moderate concerns | Moderate concerns | Minor concerns   | Moderate | Overall, adequate number of studies supporting theme across multiple settings, though variability within theme across settings limiting coherence. |
|                                             | <b>Institutional</b> | Barrier | Al-Naggar 2013<br>Green 2005                                                                                  | 5   | No concerns         | Moderate concerns | Serious concerns  | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance.                                                                         |
|                                             |                      | Enabler | Pragle 2007                                                                                                   | 5   | No concerns         | Moderate concerns | Serious concerns  | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance.                                                                         |
|                                             | <b>Public</b>        | Barrier | Thorseth 2021                                                                                                 | 5   | No concerns         | Moderate concerns | Serious concerns  | Serious concerns | Very low | Number of studies limiting adequacy and geographical/population relevance.                                                                         |
|                                             |                      | Enabler | x                                                                                                             | x   | x                   | x                 | x                 | x                | x        | x                                                                                                                                                  |

**S10- CERQual Assesment**

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| <b>Perceived ease or difficulty of washing hands</b> | <b>Domestic</b>      | Barrier | Dearden 2002<br>Norrie 2022<br>Ward 2022<br>White 2022 A<br>Yardley 2011                                 | 5   | No concerns         | Moderate concerns | Moderate concerns | Minor concerns    | Moderate | Overall, somewhat limited number of studies supporting theme across multiple settings, and variability within theme across settings limiting coherence. Number limiting adequacy and relevance. |
|                                                      |                      | Enabler | Biswas 2017<br>Langford 2013<br>Mohamed 2022<br>Simiyu 2020<br>Sultana 2018<br>Ward 2022<br>White 2022 A | 4.7 | Very minor concerns | Moderate concerns | Minor concerns    | Moderate concerns | Moderate | Overall, variability within theme across settings limiting coherence. Relevance limiting (All Africal, Asia).                                                                                   |
|                                                      | <b>Institutional</b> | Barrier | Steenkamp 2022                                                                                           | 5   | No concerns         | Moderate concerns | Serious concerns  | Serious concerns  | Very low | Number of studies limiting coherence, adequacy, and geographical/population relevance.                                                                                                          |
|                                                      |                      | Enabler | Randle 2013                                                                                              | 5   | No concerns         | Moderate concerns | Serious concerns  | Serious concerns  | Very low | Number of studies limiting coherence, adequacy, and geographical/population relevance.                                                                                                          |
|                                                      | <b>Public</b>        | Barrier | Mezaache 2021<br>Nizame 2019<br>Wu 2019                                                                  | 4   | Minor concerns      | Moderate concerns | Serious concerns  | Serious concerns  | Very low | Number of studies limiting coherence, adequacy, and geographical/population relevance.                                                                                                          |
|                                                      |                      | Enabler | Mezaache 2021                                                                                            | 2   | Serious concerns    | Moderate concerns | Serious concerns  | Serious concerns  | Very low | Number of studies limiting coherence, adequacy, and geographical/population relevance.                                                                                                          |

**S10- CERQual Assesment**

|                              |                      |         |                                         |   |             |                   |                  |                  |          |                                                                                        |
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| <b>Influence of religion</b> | <b>Domestic</b>      | Barrier | Azam 2022<br>Sagan 2019<br>Tibbels 2022 | 5 | No concerns | Moderate concerns | Serious concerns | Serious concerns | Very low | Number of studies limiting coherence, adequacy, and geographical/population relevance. |
|                              |                      | Enabler | Afolabi 2022                            | 5 | No concerns | Serious concerns  | Serious concerns | Serious concerns | Very low | Number of studies limiting coherence, adequacy, and geographical/population relevance. |
|                              | <b>Institutional</b> | Barrier | x                                       | x | x           | x                 | x                | x                | x        | x                                                                                      |
|                              |                      | Enabler | x                                       | x | x           | x                 | x                | x                | x        | x                                                                                      |
|                              | <b>Public</b>        | Barrier | x                                       | x | x           | x                 | x                | x                | x        | x                                                                                      |
|                              |                      | Enabler | x                                       | x | x           | x                 | x                | x                | x        | x                                                                                      |
|                              |                      |         |                                         |   |             |                   |                  |                  |          |                                                                                        |

**S10- CERQual Assesment**

| Automatic Motivation          |          |         |                                                                                                                                                                                                                                                                                                                 |   |             |               |             |                |      |                                                                                |
|-------------------------------|----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------|---------------|-------------|----------------|------|--------------------------------------------------------------------------------|
| Internal motivation/<br>habit | Domestic | Barrier | Aberese-Ako 2023<br>Affleck 2012<br>Akter 2014<br>Atuyambe 2011<br>Azam 2022<br>Curtis 2003<br>Dearden 2002<br>Didier 2021<br>Kalumbi 2020<br>Langford 2013<br>Lohiniva 2007<br>Nizame 2013<br>Nizame 2016<br>Rauyajin 1994<br>Parveen 2018<br>Thaivalappil 2022<br>Tibbels 2022                                | 5 | No concerns | Minor concern | No concern  | Minor concern  | High | Overall, adequate number of studies supporting theme across multiple settings. |
|                               |          | Enabler | Affleck 2012<br>Bauza 2021<br>Biran 2005<br>Chidziwisano 2019<br>Curtis 2003<br>Dearden 2002<br>Biswas 2017<br>Didier 2021<br>Greenwell 2013<br>Kalumbi 2020<br>Lando 2018<br>Langford 2013<br>Mitchell 2021<br>Sagan 2019<br>Sedekia 2022<br>Parveen 2018<br>Sultana 2018<br>Thaivalappil 2022<br>Yardley 2011 | 5 | No concerns | No concerns   | No concerns | Minor concerns | High | Overall, adequate number of studies supporting theme across multiple settings. |

**S10- CERQual Assesment**

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|-------------------------------|---------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|------------------|------------------|------------------|------------------|-----------------------------------------------------------------------------------------------------------|
| Internal motivation/<br>habit | Institutional | Barrier       | Al-Naggar 2013<br>Kumar 2018<br>Schmidt 2009                                                                                            | 5            | No concerns    | Moderate concnrs | Serious concerns | Serious concerns | Low              | Number of studies limiting adequacy and geographical/population relevance (mostley educaitional settings) |
|                               |               | Enabler       | Arendt 2015<br>Devkota 2020<br>Jackson 2021<br>Neetu 2013<br>Okello 2019<br>Pragle 2007                                                 | 5            | No concerns    | Moderate concnrs | Moderate concnrs | Moderate concnrs | Moderate         | Theme represented cohrently and adequately though geographical/population relevance limited.              |
|                               | Public        | Barrier       | Blum 2019<br>Mezaache 2021<br>Thorseth 2021<br>Wu 2019                                                                                  | 4.2          | Minor concerns | Moderate concnrs | Moderate concnrs | Moderate concnrs | Low              | Number of studies limiting adequacy and geographical/population relevance                                 |
|                               |               | Enabler       | x                                                                                                                                       | x            | x              | x                | x                | x                | x                | x                                                                                                         |
| Barrier                       |               | x             | x                                                                                                                                       | x            | x              | x                | x                | x                | x                |                                                                                                           |
| Feeling of cleanliness        | Domestic      | Enabler       | Afolabi 2022<br>Biran 2005<br>Curtis 2003<br>Demberere 2016<br>Ogutu 2022<br>Scott 2007<br>Parveen 2018<br>White 2022 A<br>Zangana 2020 | 5            | No concerns    | Minor concerns   | Minor concerns   | Minor concerns   | High             | Overall, adequate number of studies supporting theme across multiple settings.                            |
|                               |               | Institutional | Barrier                                                                                                                                 | Schmidt 2009 | 5              | No concerns      | Serious concnrs  | Serious concerns | Serious concerns | Very low                                                                                                  |
|                               | Enabler       |               | Schmidt 2009                                                                                                                            | 5            | No concerns    | Serious concnrs  | Serious concerns | Serious concerns | Very low         | Number of studies limiting adequacy and geographical/population relevance (UK school only)                |
|                               | Public        | Barrier       | x                                                                                                                                       | x            | x              | x                | x                | x                | x                | x                                                                                                         |

# S10- CERQual Assesment

|                                                                                                                                            |                                   |               |                                                     |     |                  |                   |                   |                   |          |                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------|-----------------------------------------------------|-----|------------------|-------------------|-------------------|-------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------|
| Feeling of cleanliness                                                                                                                     |                                   | Enabler       | Blum 2019<br>Mezaache 2021<br>Neetu 2013<br>Wu 2019 | 4.2 | Minor concerns   | Serious concners  | Serious concners  | Moderate concerns | Low      | Number of studies limiting adequacy and geographical/population relevance (varied countries and locations, but ideas not saturated) |
|                                                                                                                                            | Domestic                          | Barrier       | Dearden 2002<br>Ward 2022                           | 5   | No concerns      | Moderate concern  | Serious concerns  | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance                                                           |
|                                                                                                                                            |                                   | Enabler       | Biran 2005<br>Langford 2013                         | 5   | No concerns      | Serious concerns  | Serious concerns  | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance                                                           |
|                                                                                                                                            | Like/ dislike of handwash product | Institutional | Barrier                                             | x   | x                | x                 | x                 | x                 | x        | x                                                                                                                                   |
| Enabler                                                                                                                                    |                                   |               | Randle 2013<br>Schmidt 2009                         | 5   | No concerns      | Serious concerns  | Serious concerns  | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance                                                           |
| Public                                                                                                                                     |                                   | Barrier       | Mezaache 2021                                       | 2   | Serious concerns | Serious concerns  | Serious concerns  | Serious concerns  | Very low | Number of studies limiting adequacy and geographical/population relevance                                                           |
|                                                                                                                                            |                                   | Enabler       | Blum 2019<br>Mezaache 2021<br>Wu 2019               | 4   | Minor concerns   | Moderate concerns | Moderate concerns | Serious concerns  | Low      | Number of studies limiting adequacy and geographical/population relevance                                                           |
| * No or very minor concerns / minor concerns / moderate concerns / serious concerns                                                        |                                   |               |                                                     |     |                  |                   |                   |                   |          |                                                                                                                                     |
| ** Is this synthesis finding "a reasonable representation of the phenomenon of interest?". Score categories: high, moderate, low, very low |                                   |               |                                                     |     |                  |                   |                   |                   |          |                                                                                                                                     |