WASH Environments in preschool settings
Presenter: Isaac Akinwumi (Covenant University)

in collaboration with
Victor Akpan, Daniel Bassey, and Rose Omole (Covenant University)
Alex Akinwumi (Obafemi Awolowo University Hospital)
Laura Abramovsky and Britta Augsburg (IFS)
Melanie Luhrmann and Juan Pablo Rud (Royal Holloway, University of London)

funded by the Royal Academy of Engineering (FoDSF\1920\2\100001)
Preschool WASH in Nigeria

Preschool settings have been overlooked so far in the Nigerian WASH strategy, and evidence is scarce (Afolabi et al., 2018, looked at 18 daycare centres)

Yet:

• Investments in early childhood health environments yield particularly high and lasting returns (Currie et al., 2017)
• Encouraging international evidence on the impact of interventions targeting handwashing infrastructure and hygiene in preschools
• Reach children at an age where healthy behaviours are learned for the first time
• Nigeria faces large and rising daycare demand for children under age 5
• Daycare centres support mothers to be able to go (back) to work
Female work and the demand for daycare

**Secondary education by state**
% of women aged 15-49 with a secondary education or higher

- **Education**
  - 38.2% (56%) of Nigerian (Ogun) women aged 15-49 have secondary education or higher
  - Nigeria has a large and well educated potential female labour force

- **Employment and occupations**
  - 67.5% (82%) of Nigerian (Ogun) women aged 15-49 are currently employed
  - More than half of Nigerian women work and hence need childcare assistance
  - Daycare demand in Nigeria is likely to rise further

Source: Nigeria Demographic and Health Survey 2018 (NPC and ICF, 2019)
Our study

Pilot study to contribute to the scarce evidence on daycare settings (in Nigeria)

• How good are WASH conditions?
• Do they differ between formal and informal daycare centres?
• Have WASH settings changed due to the COVID pandemic which highlighted the need for good hygiene?

→ Survey in 70 daycare centres including measurements of air and water quality in the field in end of Oct to Dec 2020
Our study

...complemented by survey of home WASH settings in households with small children

• How good are WASH conditions at home in families with small children?
• Is there a link between WASH settings and children’s health?
• Have WASH settings changed due to the COVID pandemic through raised awareness of hygiene?

→ Survey of 200 mothers and their (mostly under age 1) children during vaccination days in the state hospital including height and weight measurements
→ Fieldwork completed in the second half of Dec, so not the focus today’s talk
Study design of daycare centre fieldwork

- 70 formal and informal daycare centres across 7 locations in Ado-odo/Ota and environs in Ogun state
- 5 formal and 5 informal daycare centres visited per location
- Fieldwork delayed due to Covid, Nigeria’s EndSARS protest, issues with equipment shipping etc.
WASH standards across daycare centres

Handwashing stations and hand hygiene
• 44% have fixed handwashing stations
• 44% have mobile places such as a bucket
• 12% have no place for handwashing within the dwelling
• 81% have soap or another cleaning agent for handwashing

→ Better standards than in schools, but below DHS 2018 average standards in home settings in Ogun (86% with fixed handwashing station)

Sanitation
• In 67% of daycare centres children use a toilet
• In 34% they use a kid’s potty
WASH settings across daycare centres

Drinking water
• In 71% of centres, children bring their own water
• 56% of centres use tap water

General hygiene
• 76% of the daycare centres report that they are cleaned several times per day
• 24% are cleaned once per day
WASH settings in formal vs. informal daycare

Formal versus informal daycare centers:

Overall, we find better

• Hand hygiene standards and
• Safer waste management practices
• Higher interviewer-assessed cleanliness

in formal daycare centers
Formal centres are more likely to have fixed handwashing stations.
Informal centres are more likely to have no facilities or none in the dwelling.
• Formal centres are more likely to provide soap or an alcoholic rub
Interviewer assessment of centre cleanliness

How would you rate the physical cleanliness of the daycare centre?

- Clean: 57% for formal centres, 20% for informal centres
- Somewhat clean: 29% for formal centres, 26% for informal centres
- Dirty: 14% for formal centres, 54% for informal centres

- Formal centres are assessed as cleaner
Water & Air Quality

Water quality (pH, EC, temp., total dissolved solids, total organic compounds & Others) → satisfactory water quality throughout (<WHO thresholds & >Nigerian standard for drinking water quality)

Yet: concerns about air quality, especially particulate matter concentration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Daycare centres</th>
<th>Formal Daycare</th>
<th>Informal Daycare</th>
<th>Range</th>
<th>WHO guideline values</th>
<th>WHO guideline reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO (ppm)</td>
<td>0.745</td>
<td>1.03</td>
<td>0.46</td>
<td>0-4.5</td>
<td>10</td>
<td>WHO (2010)</td>
</tr>
<tr>
<td>PM$_{2.5}$ (μg/m$^3$)</td>
<td>16.65</td>
<td>17</td>
<td>16.3</td>
<td>7-57</td>
<td>25</td>
<td>WHO (2005)</td>
</tr>
<tr>
<td>PM$_{10}$ (μg/m$^3$)</td>
<td>78.35</td>
<td>82.2</td>
<td>74.5</td>
<td>12-452</td>
<td>50</td>
<td>WHO (2005)</td>
</tr>
</tbody>
</table>
Observation: WASH standards in daycare centres overall seem reasonably high

→ May this be a recent development due to heightened awareness of the importance of hygiene due to COVID?
• We asked how provisions changed during the pandemic
Reported changes during the pandemic

Handwashing stations and hand hygiene
• 34% installed a fixed place for handwashing
• 43% provided a mobile place for handwashing
• 67% of the centers started providing alcohol-based rub

Sanitation
• 9% installed a toilet/latrine
• 91% were trying to make sure that everybody uses the toilet

This implies: Insufficient hand hygiene standards in daycare centres pre-pandemic
• only 10% had a fixed place for handwashing
• Much less emphasis on handwashing with soap or alcohol rub
→ Positive changes in WASH following the pandemic outbreak
Do formal daycare centres react differently to Covid-19?

Changes in hand hygiene due to Covid-19

- Installed fixed place for handwashing: 25% formal, 12% informal
- Provide mobile place for handwashing: 17% formal, 31% informal
- Provide waste bins: 1% formal, 3% informal
- Provide/use soap: 16% formal, 21% informal
- Provide/use alcohol-based rub: 41% formal, 33% informal

- Formal centres are more likely to install fixed handwashing stations
- ... and to provide and use alcohol-based rub
Challenges arising from the pandemic

Results from part II of our study:

- 33% of surveyed mothers reported not working during the pandemic
- 39% reported a decline in working hours
Challenges arising from the pandemic

The fraction of households
- having three square meals every day dropped from 85 to 59%
- who never have 3 square meals a day increased from 5 to 12%

Financial pressures and lack of work may reduce demand for daycare in the short run
Conclusions

In a small pilot study we find
Generally encouraging WASH standards and infrastructure in daycare centres
• With higher standards in hand hygiene, more fixed handwashing stations and higher cleanliness in formal daycare centres

But:
• indications that these have increased strongly since the outbreak of the pandemic,
• ... and were insufficient before

→ Is this positive trend sustainable beyond the pandemic?
Suggestive implications for policy

1. Children’s health is better and U5 mortality lower when growing up in good WASH environments
2. Large returns to improved early child health environments
3. High and rising demand for daycare due to high female labour force participation
4. Recent substantial improvements in WASH during the pandemic

→ time-critical opportunity for policies & interventions to support its sustainability (and reduce differences in standards between formal and informal daycare)
For more information, please contact us

Isaac.Akinwumi@covenantuniversity.edu.ng  
Melanie.Luhrmann@rhul.ac.uk

“I believe that investing in our children's development from the earliest age is the single most important contribution we can make to the health and wellbeing of our citizens, their capacity and the future prosperity of our state.”

- Jay Weatherill

“The question is not whether we can afford to invest in every child; it is whether we can afford not to.” - Marian Wright Edelman