Background

The deliverable of this capstone project was a report for the hospital directors of two secondary care hospitals in El Alto, Bolivia: Los Andes Hospital (hospital 1) and Corea Hospital (hospital 2). These two hospitals participated in the Nutricion Inmunologia y Diaerrea Infantil (NIDI) study which was a collaborative study between Emory University, Universidad Mayor de San Andres of La Paz, Bolivia and a local NGO in La Paz. Findings presented here were one component of this report and were presented to the hospitals in March of 2015.

What Led to this Project?

This specific project stemmed from observations made during data abstraction for another analysis. During data abstraction and data entry, it was noticed that there was a large proportion of children diagnosed by nurses as overweight and obese at one of the hospitals. Because of this unexpected observation, an additional analysis was completed to assess the quality of nursing diagnoses of infant growth at their well care visits.

Methods

Study Population: 459 infants age 6-12 months in age who attended one of two secondary care hospitals in El Alto, Bolivia between May 2013 and June 2014 who were not participants in the NIDI study, and who had a range of 1-7 visits; each visit was counted as long as it had height, weight and a growth diagnosis. Infant height, weight, date of birth, sex and charted growth diagnoses were abstracted via chart reviews and recorded by hand into a table during the summer of 2014. Data was double entered and reorganized using Excel.

Data Collection and Management: Infant height, weight, date of birth, sex and charted growth diagnoses were abstracted via chart reviews and recorded by hand into a table during the summer of 2014. Data was double entered and reorganized using Excel.

Data Analysis: Height-for-age and weight-for-height z-scores were recalculated from charted height, weight and age data using a WHO macro. Using z-scores, scores were recalculated from charted height, weight, date of birth, sex and charted growth diagnoses.

Results

<table>
<thead>
<tr>
<th>Hospital 1</th>
<th>Hospital 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td><strong>395</strong></td>
</tr>
<tr>
<td><strong>Percent</strong></td>
<td><strong>Percent</strong></td>
</tr>
<tr>
<td>Stunting (weight-for-height)</td>
<td><strong>13</strong> (3%)</td>
</tr>
<tr>
<td>Normal</td>
<td><strong>382</strong> (97%)</td>
</tr>
<tr>
<td>Overweight &amp; Obese</td>
<td>11 (3%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>395</td>
</tr>
</tbody>
</table>

Discussion

Frequent erroneous diagnoses by nurses of infant growth regarding stunting, wasting, overweight and obese were found.

Tendency to over diagnose males as being too small (stunted and wasted) and over diagnose females as being too large (overweight or obese) (data not shown).

Growth diagnosis error rates in another anthropometry study at the same hospitals were also high (25% of stunted infants and 10% of wasted infants were misdiagnosed as normal).

Nurses cite understaffing, a lack of quality measurement tools, inaccurate growth reference materials and a lack of quality training and tools as reasons for their errors.

Conclusion & Recommendations

A large amount of errors were made in diagnosing infant growth.

These errors may be due to a combination of factors including understaffing, lack of staff training, incorrect reference materials, and other errors made by nurses.

The diagnosis of differential misdiagnoses by sex should be investigated further.

More support for nurses and periodic quality audits may reduce misdiagnoses and ultimately improve infant growth outcomes.

References


Acknowledgements

Acknowledgments to the participating hospitals, Hospital Los Andes and Hospital Corea who graciously allowed the NIDI study and this additional sub-study to take place in their facilities. Special thanks to the archives department. Much thanks to the Emory infrared team, especially Rachel Bose, Paula Retakoles & Aria Anafi. Additional thanks to the NIDI study staff team in Bolivia for assistance with getting access to the archives and in providing any necessary meeting rooms.

Contact Information:
Katherine Zielke, BS, RN, MPH (c)
Katherine.Zielke@emory.edu
Pan American Health Organization & World Health Organization.
http://data.unicef.org/nutrition/malnutrition.

Weight-for-height z-score < -2 (WHO standard)
Weight-for-height z-score < -2 (WHO standard)
Weight-for-height z-score = 2 (WHO standard)
Weight-for-height z-score = 2 (WHO standard)
Weight-for-height z-score = 3 (WHO standard)
Weight-for-height z-score = 3 (WHO standard)