

Tool developed to identify girls at risk of nutritional deficiency

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Alexandra Pounds, Research Fellow at the University of Stirling's Institute of Aquaculture, in Bangladesh. Credit: University of Stirling

A University of Stirling scientist has led a project which developed a new tool to identify girls in developing countries who are at risk of nutritional deficiency.

Professor Dave Little of the University's Institute of Aquaculture used the resource to discover that [adolescent girls](#) in Bangladesh are particularly vulnerable.

Aquaculture is a fast-growing food production sector in many [low-](#)

[income](#) and food-deficit countries and while these ecosystems produce highly valuable and nutritious aquatic foods, [local communities](#) can still have a [poor diet](#) as a result of changes to the supply and accessibility of fish.

Professor Little said, "Adolescent girls represent a particularly vulnerable group in Bangladesh, with higher nutritional needs relative to [energy requirements](#) than other adult household members, and at the same time likely to have restricted access to food.

"For this group, an optimal diet is critical for their own health and—in the case of early marriage and motherhood—for their infants."

Professor Little led research which has enhanced understanding of factors that are important for explaining the role of fish intake in nutritional well-being. To do this, a metric—a user-friendly tool—was developed which identified adolescent girls at greater risk of nutritional deficiency.

A survey of 300 girls was repeated during dry and wet seasons in order to capture seasonal variations in fish availability. The [observational data](#) enabled researchers to combine risk factors which identify girls who are more likely to have omega deficiency.

It is hoped the cost-effective tool could now be used by development agencies to assess nutritional deficiency in [vulnerable groups](#).

Professor Little worked on the project with partners at the Universities of Glasgow, Aberdeen, Copenhagen and the Noakhali Science and Technology University and the International Center for Diarrhoeal Disease Research in Bangladesh.

Dr. Eleanor Grieve of the University of Glasgow's Schools of Health and

Well-being, who led the paper, said, "The identification of particularly at-risk individuals would improve targeting of timely and cost-effective interventions.

"The use of the metric using a few short questions is cheaper, can be done online, and avoids the complexity and cost of finger prick blood sampling and biomarker measurement based on field samples.

"Application of the metric could enable the development and implementation of better informed and more integrated policies and practices in relation to aquatic food production systems."

The paper, "Adolescent girls in aquaculture ecozones at risk of nutrient deficiency in Bangladesh development and validation of an integrated metric," was published in *BMC Public Health*.

More information: Eleanor Grieve et al, Adolescent girls in aquaculture ecozones at risk of nutrient deficiency in Bangladesh development and validation of an integrated metric, *BMC Public Health* (2023). [DOI: 10.1186/s12889-023-15175-z](https://doi.org/10.1186/s12889-023-15175-z)

Provided by University of Stirling

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