

# Malnutrition in the Jordan Valley: Evidence of an Impending Health Crisis

Long term anemia  
can lead to  
delayed growth  
and impaired  
neurodevelopment.

## OBJECTIVE

The objective of this policy brief is to highlight the prevalence and determinants of anemia among children 1-12 years in the Jordan valley

## INTRODUCTION

The Jordan Valley comprises approximately 30% of the land area of the West Bank, State of Palestine, and is home to an estimated 60,000 Palestinians. The ongoing Israeli occupation creates widespread consequences for Palestinians in the area, including movement restrictions, limited access to potable water, poverty, persistent threats of forced relocation and home demolitions, and lack of minimal human security measures. These factors have a significant impact on healthcare quality and access, affecting

the overall health status of the population.

Limited access to land and resources have resulted in increased food costs and have increased the risk of housing over-crowding and the emergence of improper infrastructure. These conditions predispose this population to higher levels of food insecurity and therefore potentially higher rates of malnutrition and other health problems compared to other Palestinians living in the occupied territories.

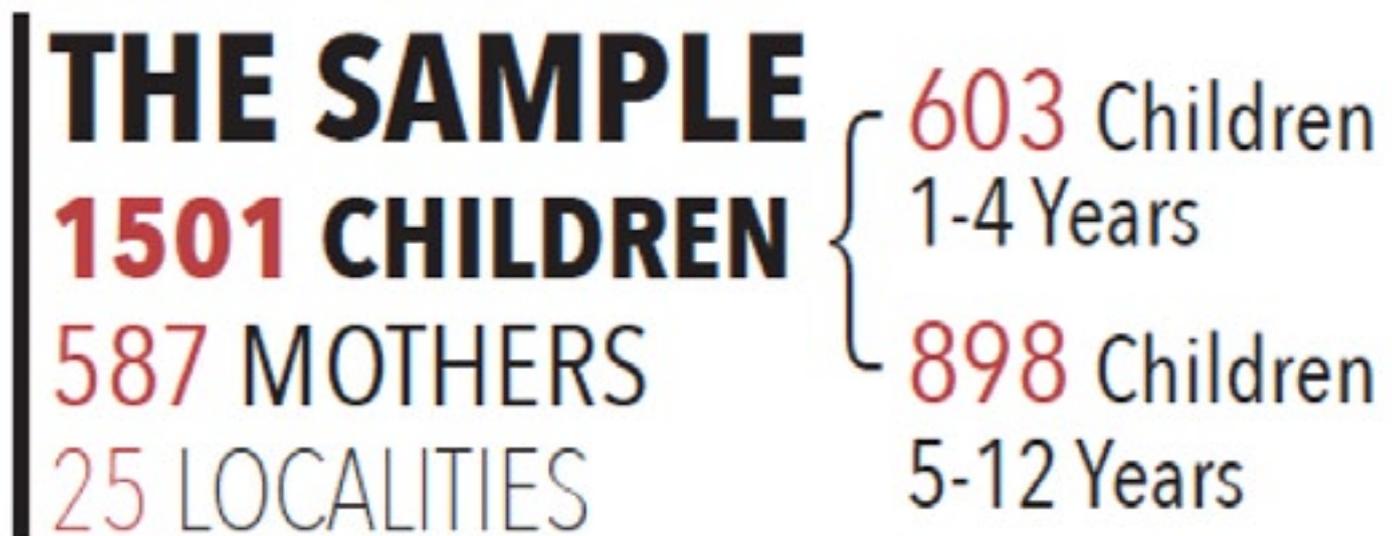
Although many local and international organizations are focusing their developmental work on the Jordan valley, there is significant lack of updated information regarding the nutritional status and parasitic infections among children living in Jordan Valley to guide policy. In

2014, the Palestinian National Institute of Public Health in partnership with the Ministry of Health conducted a study to examine the prevalence of malnutrition and intestinal infections among children living in Jordan Valley Area and their mothers.

## METHODOLOGY

The Palestinian National Institute of Public Health (PNIPH) conducted a household survey from November 2014–March 2015. The study sample consisted of 1,501 children (1-12 year old) from 587 households randomly selected from 25 Jordan Valley localities of the Jericho, Nablus, and Tubas districts. In addition to

anthropometric measures, we used clinical data derived from two stool samples and blood samples to determine the prevalence and distribution of malnutrition and intestinal infections among children. Classifications for outcome variables are based on WHO cut-off levels.



## RESULTS AND FINDINGS

### Sample characteristics

More than 67% of the households in our survey were living below the poverty line with monthly income below 2,000 New Israeli Shekels (NIS). Approximately one-fifth of the households have been exposed to some form of forced displacement by the Israeli military in the past (n=103), while 13.3% (n=78) have been exposed to multiple threats of forced displacement.

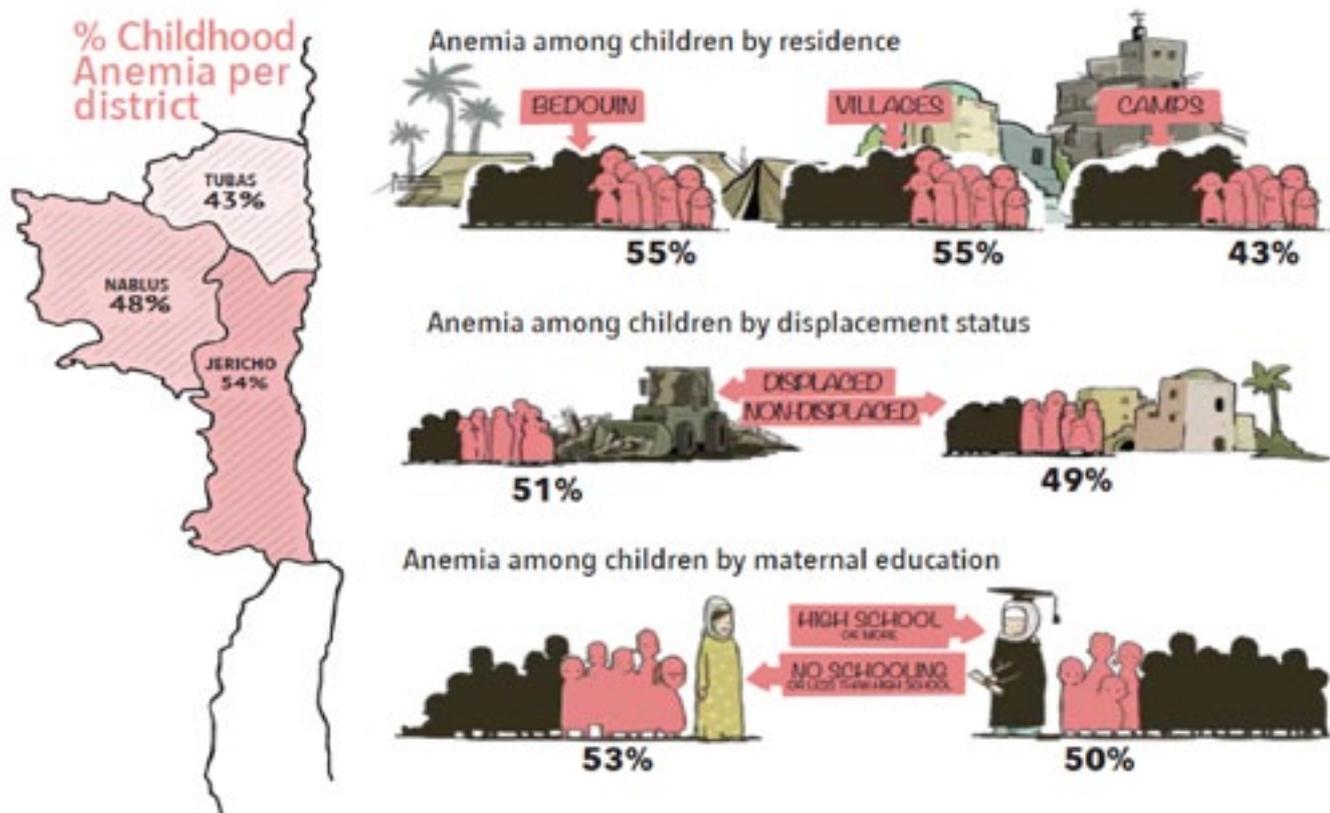
### Anemia

Around 52% of the children had anemia, 57% among the under 5 and 48% among children 5-12 years. According to the WHO, a prevalence of anemia greater than 40% at the population level is of serious public health concern.

Alarming, the prevalence of anemia among children under 5 had was more than 2.5 fold the prevalence of anaemia in the West Bank (21.5%).<sup>1</sup> The prevalence of anemia in our sample was higher than the global rate. Globally, the percentage of children with anemia is estimated to be 18.1%.<sup>2</sup>

Children whose mothers had progressed beyond a high school education had lower prevalence of anemia compared to their counterparts suggesting that improving the educational status of mothers may prove to be a useful long-term strategy in fighting anemia. Children of anemic mothers were also more likely to be anemic compared to children with mothers who were not anemic.

**1 in 2 children in the Jordan Valley had anemia; which is double the national prevalence in Palestine.**



## Stunting

The prevalence of stunting and in the study sample was 11.3% (28% of the cases were severe stunting); 16.1% among children under 5, and 8.1% among those 5 and older. .

Children residing in Bedouin communities in Jordan valley had a higher prevalence of stunting compared to children in villages and camps. Similarly, children in households exposed to any form of forced displacement had higher prevalence of stunting than children who had never been forcibly displaced.

In addition, children whose mothers had no schooling or less than a high school education had higher rates of stunting than children whose mothers had a high school education or more. Moreover, children who were stunted were more likely to have confirmed moderate or

severe anemia, report a form of physical, mental, or psychological disability in the six months prior to the survey, be overweight/obese, live in a household with lower monthly income.

## Overweight/obesity

The rates of overweight and obesity among children in the Jordan Valley are similar to overall rates in the occupied Palestinian territories. Based on a recent national survey, the rate of overweight in children under 5 to be 8.2%.<sup>4</sup> In our study, 6.3% of children were overweight and 2.9% were obese.

## Wasting

1.7% of children under 5 suffered from wasting. Wasting have long-term effects on linear growth, including stunting. Wasting increases the risk of disease and death for children under 5.

The prevalence of stunting in the Jordan Valley in the under 5 population was more than double the stunting rate among Palestinian children in the west Bank (16.1% vs 7%), respectively

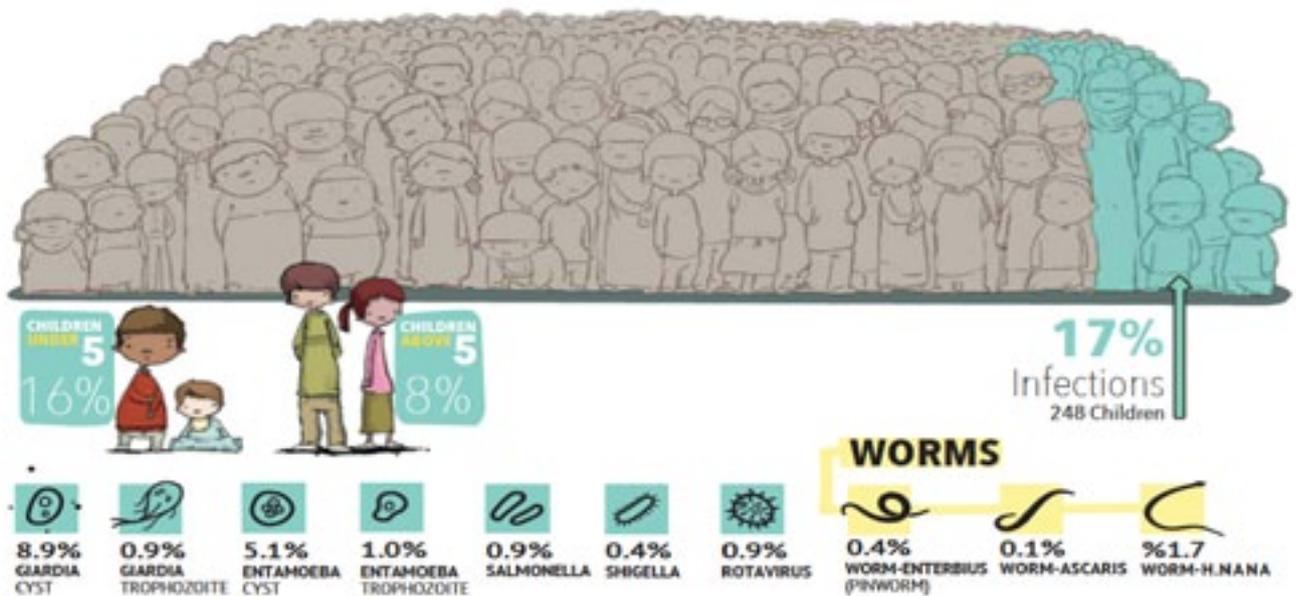
# Stunting

Stunting: Low height-for-age as compared to the global median for children of the same age.



# Intestinal Infections

Any intestinal infection defined as any positive reading for any parasitic or worm infection



## Parasitic infections

Poor access to potable water and improper management of sewage and solid waste in the Jordan Valley create a greater vulnerability for intestinal infections, including parasitic and worm infections.

In our examination of intestinal infection rates, 9.6% of children reported suffering from an infection in the year prior to the survey. 16.5% tested positive for a parasite and/or worm in the stool. Of these infections 8.9% of the children in the sample tested positive for Giardia cyst. 10.5% of children under 5 and 7.8% of children 5 and older tested positive, double the rate of adolescent Giardia infection in the northern West Bank.<sup>5</sup>

Children whose mothers have no formal education are significantly more likely to have a Giardia cyst infection, which in turn increases the risk of parasitic infection generally. Additionally, these mothers are shepherding households in an area with poor sewage and waste management, making it challenging to foster the type of sanitary environment necessary for the prevention of infectious disease. Children in the Nablus district, children in households exposed to forced displacement, and Bedouin children are significantly more likely to have a Giardia cyst infection, which could result from either an irregular water supply and/or improper sewage management.

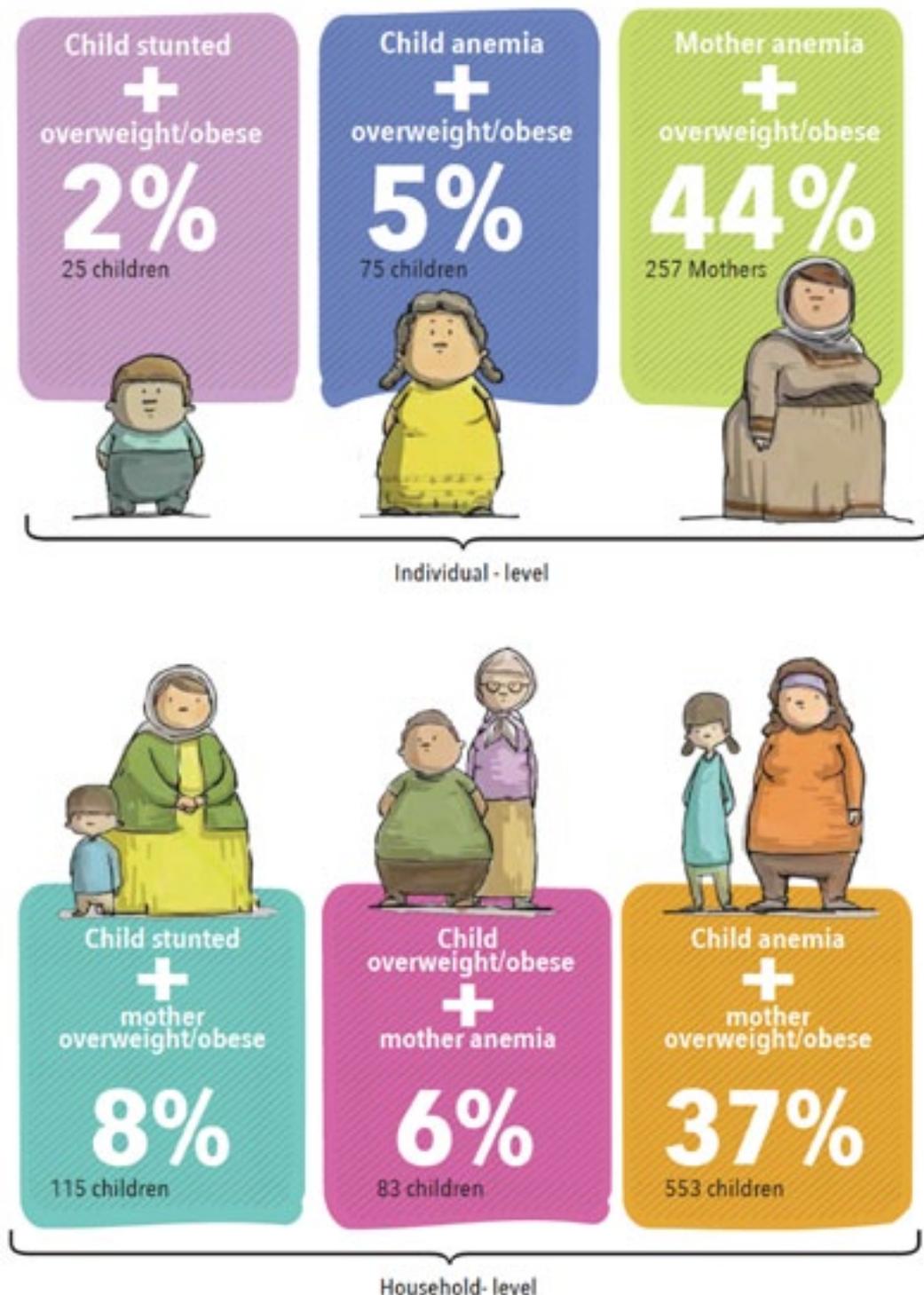
## Double burden

1.7% of children in the sample were both stunted and overweight or obese, and 5% were both anemic and overweight or obese.

In the total sample, 7.7% of children were stunted and had a mother who was overweight or obese, while 36.8% of children were anemic and had a mother who was overweight or obese. In

terms of double burden at the household level, of the 587 total households in our study, 265 (45%) included children who were anaemic and children who were overweight/obese, while 66 households (11.2%) included children who were stunted and children who were overweight/obese.

## Double Burden of Malnutrition



## CONCLUSION

Access to basic nutrition is a fundamental right for all. Urgent action is needed to reach the international sustainable development goals. Without good nutrition, the foundations of economic, social and cultural life are undermined.

Our study on the prevalence and determinants of malnutrition in the Jordan Valley found rates of anaemia and stunting among children to be of serious concern, as current trends could have a potentially devastating impact on public health

The nutritional status of children has serious consequences in the short and long term. Obesity and being overweight increases the likelihood of non-communicable diseases and its impact on health and quality of life.

Special attention needs to be dedicated to improving the health of the Jordan Valley children who have higher prevalence of malnutrition including anemia, and stunting and similar rates of overweight or obesity compared to national figures.

The coexistence of malnutrition and obesity among members of the same household presents an important challenge for the Palestinian public health system. The prevalence of double burden sheds light on a nutrition problem affecting the children in the Jordan valley.

The high prevalence of malnutrition along with the social determinants of health at the Jordan

Valley, demand special attention to the future risk of development of non-communicable diseases, including; cardio-vascular diseases, blood pressure, diabetes and cancer.

Ineffective screening and early detection for anemia are lacking in Jordan Valley where high rate of mothers were unaware of their children anemic status. Despite the presence of routine government iron supplementation program, high percent of anemia still shown among women who take iron supplements.

As the majority of the Jordan Valley comprises Israeli-controlled Area C, Palestinians in the region are disproportionately confronted with an increasingly aggressive, systematic, and ongoing campaign of Israeli settlement development, forced displacement, and natural resource confiscation, making access to agricultural resources and the development of a robust economy nearly impossible. Therefore, it is no surprise that the stunting and anemia rates in the Jordan Valley are greater than those in the rest of Palestine. Additionally, over two-thirds of the Jordan Valley population lives in poverty (<2,000 NIS per month), according to PCBS.

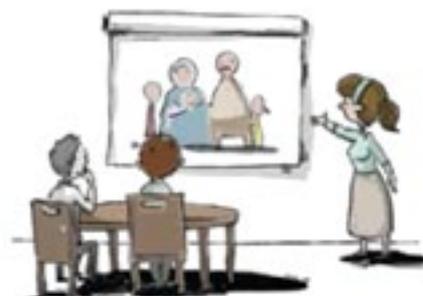
Ultimately, a political solution is necessary in the Jordan Valley and in the occupied Palestinian territories in order to address the structural barriers—including the persistent exposure to violence meted out by the Israeli occupation—that make full achievement of health difficult at best and unattainable at worst. Concerted and coordinated efforts by both governmental and nongovernmental organizations to holistically address the proximate and distal causes of malnutrition and obesity in this population is warranted.



## POLICY IMPLICATIONS

Existing policies are proving to be inadequate and need to be revised to tackle these phenomena.

- Given the increasing rates of anemia and stunting in the Jordan Valley, it is imperative that governmental and nongovernmental organizations cooperate to address the root political and socioeconomic causes of malnutrition among children and their mothers in the Jordan Valley; otherwise the potential impact of interventions will be muted.



Governmental and civil society organizations ally to address the root political causes of malnutrition.

- In cooperation with the Ministry of Health, primary health providers in the Jericho area should focus on interventions to proactively prevent and reduce anemia in the district, including the active provision of iron supplementation. Food supplementation could also be a potentially effective intervention in the Jordan Valley.



Regular health screenings.

- Maternal education is an important predictor of child malnutrition, highlighting the need to educate families on the early signs of malnutrition. As noted, interventions targeting women, including awareness campaigns on proper nutrition and other chronic disease prevention, should be tailored to address the root causes of malnutrition in this population.



Promote targeted maternal education.

- Rigorous research to better understand the efficacy of interventions to prevent malnutrition in the Palestinian population more broadly should be encouraged to inform future evidence-based and context specific policies.



Improve research on the role of family food environments.

## REFERENCES

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Infographics

Basel Naser. Masna' Al Rusum Al-Mutaharrikah-

Ramallah

[info@almasna.me](mailto:info@almasna.me)

Ramallah Office Gaza Office  
Ministry of Health Building, 1st Floor  
UNDP Building, 5th Floor  
Qadora Street Gaza, Palestine  
Ramallah, Palestine  
Al-Bireh, PO Box 4284

Tel: +970 2 296 6842/7 Tel: +970 8  
2822033/2862997

Fax: +970 2 296 6852 Fax: +970 8  
2845409 Email:

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