



Katy's children play on the new floor of their home in Petén.

A floor equals health

The impact of concrete floors on the lives of families in Guatemala

Study prepared by Habitat for Humanity Latin America and the Caribbean, 2025

Production notes

This publication was prepared by Habitat for Humanity Latin America and the Caribbean based on an impact evaluation of the 100,000 Floors to Play On initiative in Guatemala, the data for which was collected between March and November 2025.

Authorship

Katrina Lisnichuk, Monitoring, Evaluation, Accountability and Learning Manager, Habitat for Humanity Latin America and the Caribbean.

Work team

Nidia Luz Luna Lemus, Monitoring, Evaluation, Accountability and Learning Coordinator, Habitat for Humanity Guatemala
Jesús Sáenz, Monitoring, Evaluation and Accountability Specialist, Habitat for Humanity Latin America and the Caribbean.

Coordination and oversight

Rodrigo Vargas Ruiz, Monitoring, Evaluation, Accountability and Learning Associate Director, Habitat for Humanity Latin America and the Caribbean.

Photographs and testimonials

Habitat for Humanity Guatemala.

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Glossary of abbreviations

AO	Area Office
ATT	Average Treatment Effect on the Treated
DiD	Differences in Differences
GTQ	Guatemalan Quetzales
HFH	Habitat for Humanity
HFH LAC	Habitat for Humanity Latin America and the Caribbean

MEAL	Monitoring, Evaluation, Accountability and Learning
OECD	Organization for Economic Cooperation and Development
PSM	Propensity Score Matching
TA	Thematic Analysis
ToC	Theory of Change

Foreword

At Habitat for Humanity Guatemala, we firmly believe that housing is the starting point for transforming lives. An adequate home not only offers protection from inclement weather, but also creates essential conditions for the health, wellbeing and integrated development of families.

In Guatemala, thousands of families continue to inhabit homes with dirt floors, a reality that often goes unnoticed but the consequences of which are profound. This type of flooring favors bacteria, parasites and insects that can cause respiratory, gastrointestinal and skin diseases, which most frequently affect children and elderly people, decrease the overall wellbeing of families and generate additional health care expenses that directly impact these households' already limited income.

The **"100,000 Floors to Play On"** initiative, promoted by Habitat for Humanity International, arises from the success of the **S3 Floors pilot program**, developed in Guatemala in 2021 and carried out in partnership with Cementos Progreso, FICEM, Habitat for Humanity Guatemala, the Cement and Concrete Institute of Guatemala and the Network of Indigenous Entrepreneurs. It seeks to replace dirt floors with concrete floors, fostering family development by creating safer and healthier living spaces.

Since 2022, Habitat for Humanity Guatemala has installed a total of **11,634 floors**, 60% of which have been financed with its own resources and 40% of which were made possibly through donor contributions, including international partners, private sector foundations and Rotary Clubs and other civil society organizations.

The initiative is involved with various advocacy forums that have invited the private sector, civil society and other

key players to join in. As a result of these efforts, 100,000 Floors to Play On has become a recognized response to the problem, so much so that Guatemala's **current administration (2024-2028) has incorporated it into its national "Mano a Mano" Program to Address Poverty**, the purpose of which is to eventually declare Guatemalan communities free of dirt floors.

The results of this impact evaluation confirms that improving flooring is not just a structural change; it is a direct investment in the quality of life of families. The study reveals a significant reduction in the presence of illnesses within the home, as well as a decreased need for medical attention and medication. This not only improves health, but also eases the economic burden on households, allowing them to allocate their resources to other essential needs.

These impacts have been possible thanks to the joint efforts of the communities, partners, donors and volunteers who believe in the power of collaboration to generate lasting change. Each floor installed represents much more than just concrete: it symbolizes dignity, hope and new opportunities for the future.



Delorean Randich
National Director
Habitat for Humanity Guatemala

Executive Summary

The 100,000 Floors to Play On Initiative seeks to replace 100,000 dirt floors with concrete ones in vulnerable homes throughout Latin America and the Caribbean between 2022 and 2028. As of October 2025, a total of 9,156 floors were installed in Guatemala, benefiting families mainly through complete subsidies under HFH Guatemala's Program for Attention to Extreme Poverty (PAEP). This impact evaluation focuses on families in the departments of Petén and Alta Verapaz, where dirt floors were replaced with polished concrete. Baseline and endline data were collected from one beneficiary group and one comparison group per community, and focus groups were held between March and October 2025.

The purpose of this evaluation was to learn about the impact that installing floors has on economic development, health and wellbeing, and education. Its results are intended for the general public, as well as program and advocacy leaders, the initiative's own implementers and donors, and the communities with which we work.

A mixed method approach was used to measure impact. Quantitatively, we conducted baseline surveys with a beneficiary and a comparison group, followed by endline surveys three months after the floors were installed in beneficiaries' homes. Using differences in differences (DiD) and propensity score matching (PSM) calculations, we then compared these scores. We also held various focus groups and processed the qualitative data mainly through thematic analysis (TA).

What this evaluation measures

Economic development

- Resources needed to survive (financial capital)
- Quality of housing infrastructure
- Investment in housing improvements
- Sick leave from work or school

Health and wellbeing

- Presence of illness
- Number of people affected by illness
- Medical attention and/or medications
- Satisfaction with housing
- Satisfaction with floor

Education

- School absences
- Hours of play inside the home
- Level of educational development

Who, and from where, was the target population?



Head of household
Male,
44 years old



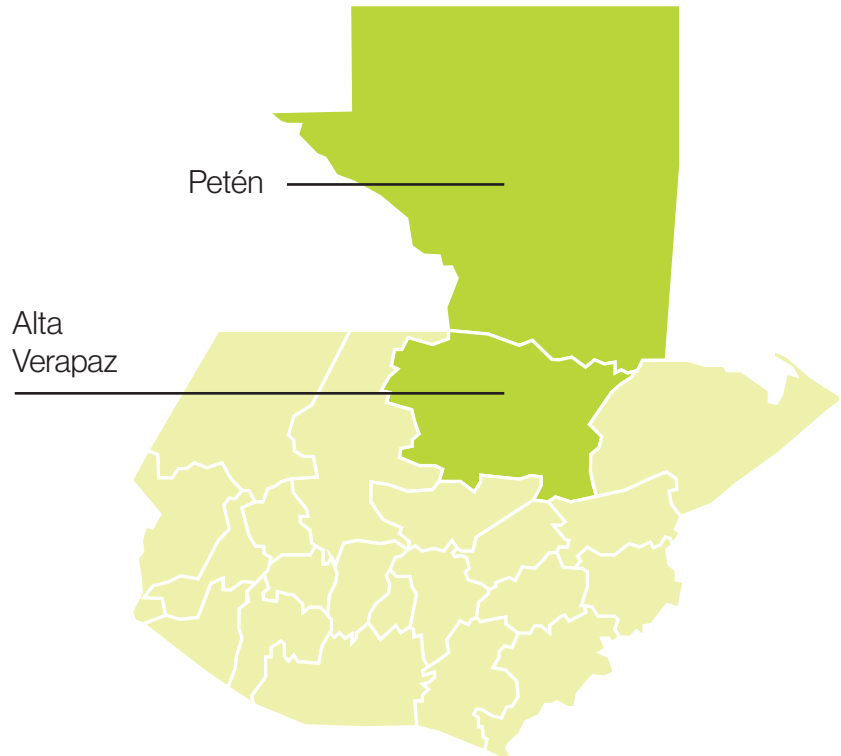
Incomplete
elementary school



5 members
2 under 12



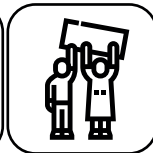
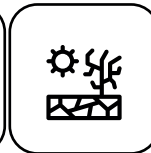
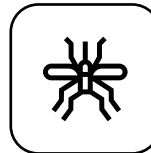
GTQ 1,414
monthly family
income



Vulnerable housing conditions beyond just a dirt floor

Vulnerable context

Between March and September 2025 (the measurement period) the communities evaluated experienced climatic shocks (heavy rains and drought), dengue fever outbreaks, teachers' strikes and road closures.



What does it mean to live on a dirt floor, and what impact does it have on people's health, education, and economic development when it is replaced with a concrete floor?

Dust continually spreads throughout the home. Women spend more time on cleaning and experience frustration because their belongings, furniture, and appliances are difficult to keep clean. They also feel anxious about their home's appearance.

Children and adolescents feel unmotivated, tired from the heat, the dust, and the mud produced when it rains, and disincentivized to help clean or do chores

Furniture and electronics deteriorate, and people are unmotivated to purchase good quality furniture or to improve their home because these investments will quickly become ruined.

Dirt floors often have holes due to rain, humidity and wear and tear. They make easy homes for mice and other vermin. This leads to accidents, foot problems, bites, stings and more serious health issues

The money spent on cleaning products, water, bleach, brooms, etc. increases when families must keep clothing free of dust and mud. Women are more worried and fatigued, and have less time for productive activities. The yarn used for weaving becomes dirty, and they earn less from their textiles

Children have little motivation to do their homework because their notebooks get very dirty. This, in turn, leads to lower grades in school, which can cause continual anger and frustration

Younger children more frequently get sick with flu and because they are in constant contact with the dust and humidity caused by a dirt floor. Because they get dirtier, they also come down with other illnesses such as diarrhea and vomiting

Summary of evaluation results

Infrastructural quality increased by 18% when families installed a concrete floor

Thanks to the new floor, the average investment in housing improvements increased by 6%

Thanks to their new floor, family members missed 44% fewer days of school and/or work and their financial capital increased by 17%.

Thanks to the new floor, the need for medical attention decreased by 46%

And health care expenses decreased by 39%

Thanks to the new floor, indoor play increased by 14% and school absences decreased by 7%



Floricelda weaving in her home in Alta Verapaz.

Introduction

The 100,000 Floors to Play On initiative is a regional effort developed by Habitat for Humanity Latin America and the Caribbean in conjunction with partners from civil society organizations, governments and the private sector. Its goal is to replace that same number of dirt floors with concrete ones within five years (2022 - 2028). The initiative is carried out differently in each country and community, depending on the partnerships through which it is implemented.

As of January 2026, a total of 9,732 concrete floors were installed in conjunction with HFH Guatemala's program for people living in extreme poverty. These beneficiaries received a full subsidy for the cost of their floor. This impact evaluation focuses on communities in Alta Verapaz and Petén.

The first step was to establish household profiles and baseline information through two groups of surveys, one with a beneficiary group (who would receive a floor) and one with a comparison group (who would not receive one). Three months after the floors were installed, endline data were collected to establish a before and after comparison for the two groups. Finally, in November 2025, qualitative digital interviews were held with both beneficiary and non-beneficiary families in each municipality.

Based on this mixed-method approach, combined with the quantitative methods of difference in differences (DiD), propensity score matching (PSM), and a triangulation of qualitative data, a methodology was established to measure the impact of concrete floors in the areas of economic development, health and wellbeing, and education.

Description of the Initiative

In Latin America and the Caribbean, approximately 50 million people live on a dirt floor. With approximately 884,000 homes¹ that feature this condition, Guatemala has the third highest presence of dirt floors in the region (27% of the country's total housing as of 2018). Dirt floors are notoriously hotbeds of infection, harboring parasites, bacteria and insects that cause diarrhea, respiratory diseases, anemia, immunodeficiency, malnutrition, Chagas disease, skin rashes and other health concerns.

The initiative's target population includes families in the region who live in homes with a floor made of dirt or otherwise in very poor condition. The focus is on households headed by women and those with children under six years of age, elderly adults and/or people with disabilities.

The initiative's Theory of Change (ToC) was designed in January 2023 in collaboration with subject-matter experts and is summarized as follows

If...

we install adequate floors in the homes of those who currently have a dirt floor or one in very poor condition, and strengthen their housing-related technical and safety skills as well as community organization and disaster preparedness...

Then...

They will not only improve their housing conditions but ensure they have fewer disruptive illnesses, more financial capital, fewer school absences, and increased hours of play within the home.

Therefore...

People will thrive by living with dignity, security and resilience.

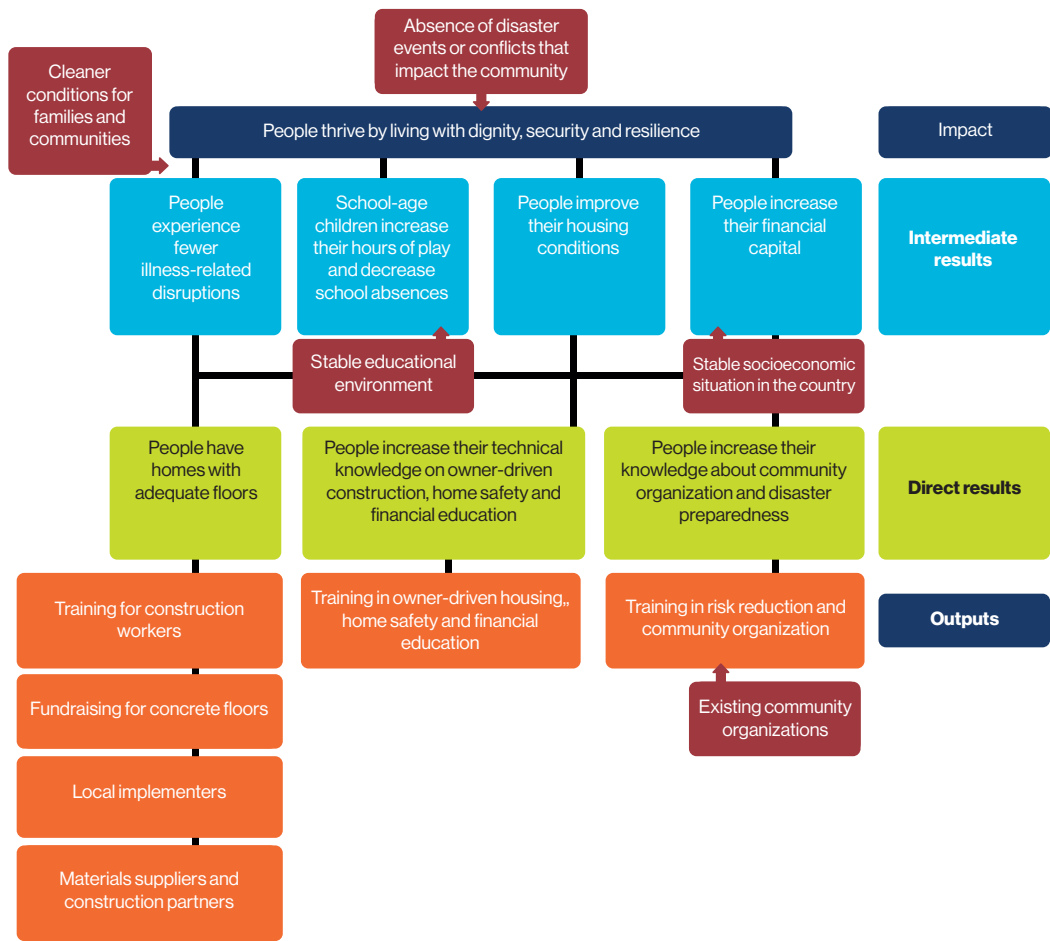
1 According to data from the XII National Population Census and the VII National Housing Census conducted by the National Institute of Statistics (INE) in 2018



Mercedes Cu Cahuec and her children in their home in Alta Verapaz.

The below diagram shows the logic of this ToC and its accompanying assumptions.

Figure 1. Theory of Change for the Initiative 100,000 Floors to Play On



This evaluation focuses solely on the relationship between installing an adequate floor and people's quality of life in the areas mentioned in the ToC. It does not include results related to training and community strengthening.

Quantitative baseline and endline data were collected between March and September 2025. During this period, the communities studied were affected by a significant dengue fever outbreak, nation-wide public education strikes, roadblocks and other adverse climactic events such as

drought (during the baseline measurement) and heavy rains (between the baseline and endline measurements.² The results must therefore be judged in the light of these events, especially since they are linked to the ToC assumptions.

2 Source: The National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) (online); the Ministry of Agriculture, Livestock and Food (MAGA) / Vice-Ministry of Petén Affairs (VIPETÉN); DataExport / the General Directorate of Protection and Road Safety (Provia); the Guatemalan News Agency (AGN); The Municipality of San José, Petén; the National Coordinator for Disaster Reduction (CONRED); Diario de Centro América (DCA); the Municipality of Tactic; and the Government of Petén.

Purpose of the evaluation

This evaluation is summative, and focuses on the OECD's "contribution or impact" criterion. In other words, it measures impact (the differences between two groups with the same characteristics that either did or did not receive a floor). This determines the extent to which the results obtained are due to the new floor. Qualitative data is then used to deepen, triangulate and help explain the results.

The importance of this evaluation is that it seeks to understand the effects that installing a concrete floor has on economic development, health and wellbeing and education. This not only promotes reflection on the initiative and provides evidence of its impact, but will also lead to other knowledge products that can further expand and strengthen 100,000 Floors to Play On and inform decisions on how to continually improve how it is rolled out.

Conceptual framework for the evaluation

The main hypothesis of this evaluation is that there is a relationship between installing concrete floors and the three areas highlighted in the ToC: economic development, health and wellbeing and education. This hypothesis is supported by academic studies on housing. These studies, along with Habitat's principles and priorities in the region, helped further determine the specific areas the evaluation would address.

Mitchell and Macció (2015), for example, showed that poor housing conditions have a negative impact on the educational performance of school-age children, due to the fact that inadequate housing does not create an optimal educational environment, including an appropriate space to study inside the home. Installing concrete floors creates conditions that are substantially more adequate for completing school-related tasks. A recent impact evaluation by HFH Dominican Republic confirmed that children who received a concrete floor played inside the home an average of two hours more per day and missed 15% fewer classes, which in turn improved their chances of cognitive development and psychomotor skills due to the type of play that usually takes place on the floor (HFH LAC, 2024).

A home's level of habitability also effects the economic development of families, since worse housing conditions tend to correlate with lower-income households that have greater difficulty improving their standards of living (Mitchell and Macció, 2015). Likewise, thanks to an adequate floor, families in the Dominican Republic reported 20% greater financial stability and a savings of 79% in health-related expenses (HFH LAC, 2024).

Regarding health and wellbeing, in a study developed by the University of Berkeley and the World Bank, Cattaneo et. al. (2023) affirmed there is a relationship between an adequate floor and the health and wellbeing of families. Their study showed that those who have higher quality floors have fewer respiratory and gastrointestinal diseases than those whose floors are in poor condition.

Research also suggests that people with higher quality floors have better mental health and greater satisfaction with their housing and quality of life (Cattaneo, et.al., 2023; HFH LAC, 2024). This confirms that making this seemingly minor improvement to homes enhances the development of those who live within them.

Evaluation questions and indicators

This evaluation uses the impact OECD criterion, which refers to the effects observed in the population and the extent to which these are attributable to the intervention. It does not, however, inquire into the possible adverse effects produced.

To define each indicator, a series of quantitative indicators were proposed, each with a corresponding series of statements and/or questions. These can be found in Annex 1. Figure 1 summarizes the above-mentioned indicators, groups them by area and shows the research questions used.

Figure 2. Summary of the indicators used to measure impact



Economic development



Financial capital



Health care expenses



Perception of housing infrastructure



Illness-related absences from work or school



Investment in housing

Health and wellbeing



Hours of play inside the home



School absences



Perceived educational development

For each of these areas, we explored two main questions:

- What is the impact of the initiative?
- How are the changes explained?

Stakeholder engagement

The evaluation areas correspond to those mentioned in the initiative's ToC, the creation of which included participation from HFH LAC technical staff. These areas—economic development, health and wellbeing and education—were then validated with other AO departments involved, as well as Habitat colleagues who are implementing the initiative on a national level. The measurement instruments were designed by HFH LAC and validated by key members of HFH Guatemala, while the survey population and data collection was defined and implemented by HFH Guatemala's MEAL team with the advice and support from HFH LAC. Data analysis and processing was implemented by HFH LAC.

Ethical considerations

One of the most significant challenges of this evaluation was to properly manage the expectations of the communities involved in the comparison groups. It was crucial to constantly and clearly inform them that the survey did not imply that any individual benefit would be awarded.

The ethical complexity of this situation lies in the need to ensure equity and impartiality in the process of selecting the comparison groups, while also respecting the fundamental ethical principles of equality and beneficence for all participants involved in the study. Therefore, it was imperative to approach this challenge in a careful and thoughtful manner, considering the possible impacts on both the beneficiaries of the initiative and participants in the comparison groups.



Feet and a bed that is dust and dirt free in Angelina's home in Alta Verapaz.

To address these concerns, initial meetings were held with community leaders and authorities, with whom we identified potential participants from the community, ensuring informed and voluntary participation. We also continually built respectful and considerate ties with the communities and worked through the appropriate coordination and collaboration bridges. In addition, the organization's community outreach and resource development strategy prioritizes medium-term attention for participants in the comparison group.

Because the surveys included the respondents' personal data, an informed consent was required in each case before the instrument could be used. This step also ensured that the respondent was an adult inhabitant of the household in question. Data processing and the disclosure of information was done in a confidential manner.

Evaluation design and methodology

This evaluation uses a mixed-method design. The methodologies used for the quantitative and qualitative analysis are explained below.

Quantitative analysis

The difference-in-differences (DiD) method is a quasi-experimental technique used to estimate the causal effect of an intervention on a specific group, and was used for the quantitative analysis. Unlike randomized experiments, where

participants are randomly assigned to treatment and control groups (in this case, a beneficiary and a comparison group), the DiD method does not require randomization. Rather, it is based on examining changes in the outcomes experienced by two groups over time.

The DiD method consists of a double difference: first, the result obtained from the beneficiary group before receiving the floor (BG0) is subtracted from the result from the beneficiary group after receiving the floor (BG1). This calculation is then repeated with the comparison group. Finally, the results of the comparison group are subtracted from those of the beneficiary group to obtain the value of the impact generated by the intervention (Hernández and Mata, 2015).

$$\text{DiD} = (\text{BG1} - \text{BG0}) - (\text{CG1} - \text{CG0})$$

This method generates a counterfactual estimate of the change in the beneficiary group, assuming that this group would maintain the same trend as the comparison group in the absence of the intervention (parallel trend principle). To make this possible, the model assumes that the two groups have similar characteristics with no significant statistical differences in their means and no different contextual disruptions.

For example, when comparing the difference in the rate of respiratory disease before and after the beneficiary group received new floors with the difference in the rate of respiratory disease in the same period for the comparison group, it can be assumed that the new floors had a causal effect in reducing respiratory disease in the beneficiary group.

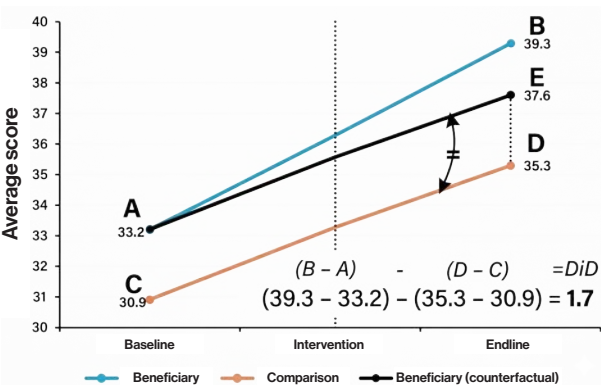


Figure 3. Example of a DiD calculation

It is also not necessary that data used for the study be from a panel group. In other words, the same individuals do not necessarily need to be measured; it is sufficient that the groups share similar characteristics. For this evaluation, the variables related to gender, age, head of household's education level, family income, and type of floor, roof and walls were tested to ensure that there were no statistical differences between the two groups.

For certain variables, the propensity score matching (PSM) technique (Rosenbaum and Rubin, 1983) was used. Like the DiD method, PSM is a quasi-experimental technique used to estimate the causal effect of an intervention on a specific group. Like DiD, it works with a beneficiary and comparison group and does not require randomization. Rather, it is based on matching and examining changes in the outcomes of interest between the beneficiary and comparison group at a particular point in time (in this case, three months after the intervention), allowing the assumption that the difference in outcomes between two matched individuals is due to the intervention.

Because the PSM technique matches beneficiaries with

non-beneficiaries according to how statistically similar they are, it corrects for selection bias. It then calculates impact by averaging the differences before and after the intervention for each variable and each statistical pair. First, a logistic regression model is used to estimate the probability that a person will be a beneficiary, based on his or her sociodemographic characteristics (e.g., education, gender, household size, etc.) pre-intervention.

This probability is known as the propensity score. The idea is that two people with the same score are very similar to one another. Using the propensity score, the PSM technique pairs each beneficiary with a person in the comparison group who has the most similar score (this is the "nearest neighbor" method). This process creates a new matched data set where the two groups are statistically equivalent in each of the observed characteristics. Cases in the comparison group that are not a good match are discarded. For this evaluation, 100 beneficiary households were matched with 100 comparison households.

Once the two groups have been formed, the difference between the average outcomes of each variable (e.g., school absences, financial capital, etc.) between the matched beneficiary and comparison groups is calculated three months after the intervention. This calculation shows the impact of the intervention, known as the average treatment effect on the treated (ATT). If it is statistically significant, the change can be attributed to the intervention.

To select respondents, households that had received a new floor in specific communities were identified, along with comparison groups that featured the same demographic, socioeconomic, geographical and housing-related characteristics. The Alta Verapaz communities included in this evaluation were Pancinic (beneficiaries) and Nuevo Chojol de Tactic (comparison); and in Petén, Corozal de San José (beneficiaries) and Dos Aguadas de San Andrés (comparison). Figure 4 shows how their approximate location.

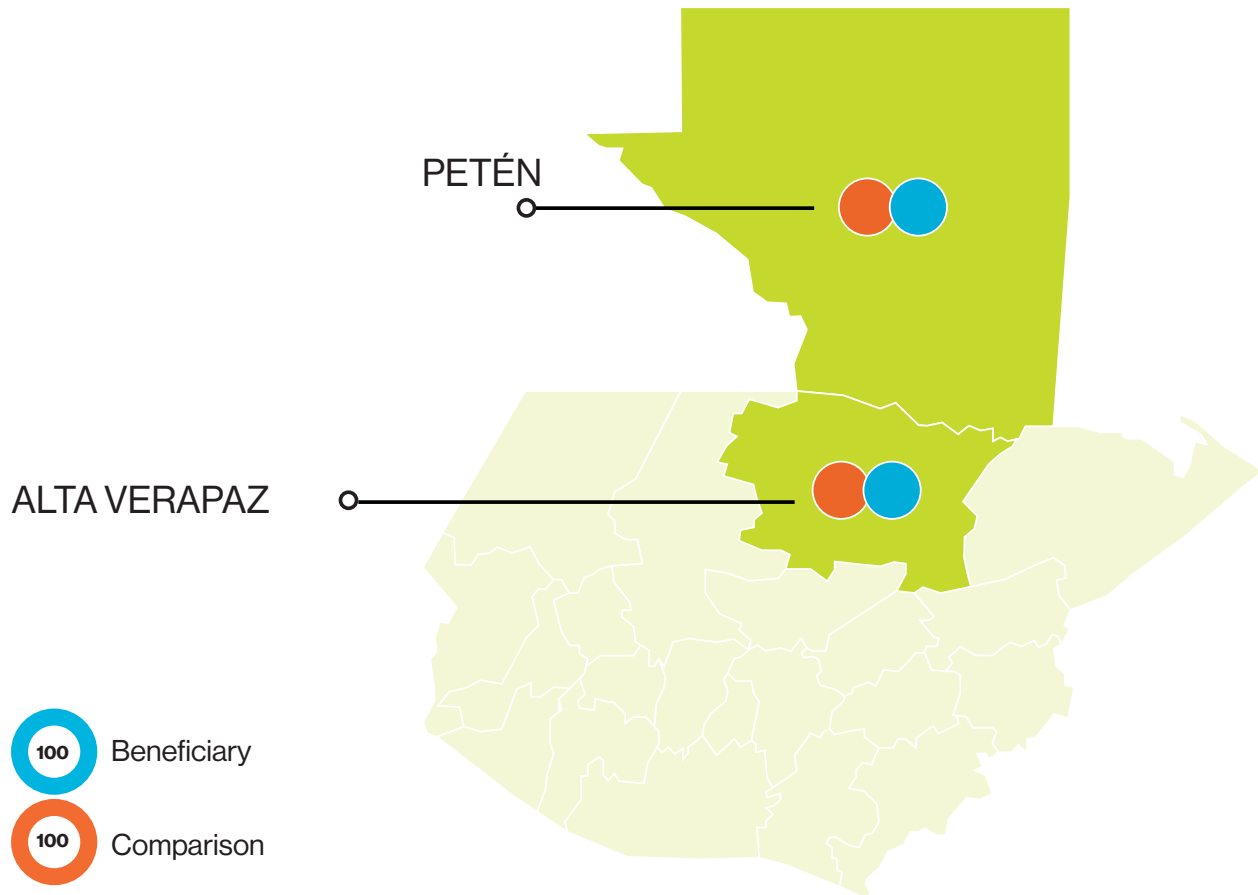


Figure 4. Distribution of the surveyed population

The Survey 123 platform was used to collect data from both the beneficiary and comparison group. The platform is divided into two sections: the respondent profile, which records the general conditions of participating families, the baseline measurement (before the floor is installed) and the endline measurement (after the floor is installed), for each area of evaluation (economic development, health and wellbeing and education).

A plan was used to process and analyze the quantitative data, and was executed using the R program. Depending on the indicator, either the DiD or PSM were executed in both absolute values and percentages, and statistical differences were calculated.

The indicators that used DiD included:

- 01 Health care expenses
- 02 Presence of illness
- 03 Number of sick people
- 04 Medical attention and/or medication
- 05 Satisfaction with floor
- 06 School absences
- 07 Hours of play inside the home



The impact results in percentages for each indicator was obtained by dividing the DiD calculation by the baseline result for the beneficiary group, **multiplied by 100**. This resulted in the percentage of impact for the beneficiary compared to their initial state (baseline).

The indicators calculated with PSM included:

- 01 Investment in housing
- 02 Financial capital
- 03 Housing infrastructure
- 04 Satisfaction with housing
- 05 Absences from work or school



The percentage impact calculation for these indicators was obtained by dividing the ATT (impact value) by the comparison group's endline result, multiplied by 100. This showed the percentage of impact for the beneficiary group against the comparison group three months after the intervention.

Qualitative analysis

The purpose of including a qualitative analysis is to triangulate with quantitative data and explain the changes and related impact. The interview guide was therefore organized into the same three areas as the quantitative analysis: economic development, health and wellbeing, and education.

For data collection, a focus group was held in each beneficiary community, taking into account the following criteria:

01 Geographical representation (by community).

02 A sociodemographic profile was compiled, seeking a representation of cases in terms of the sex and age of the heads of household and the presence of children under 12 years of age.

Based on these criteria, 20 people participated: 15 women and 5 men. Data was collected, processed and analyzed through the following steps:

01 Interviews at community meeting sites followed a question guide and were recorded (audio only) and documented on-site⁴ using a transcription guide for each question (per community).

02 An automatic audio transcription of the interviews was generated using Google Pinpoint and was later reviewed by the evaluator.

03 Data was categorized

⁴ An HFH Guatemala staff member was responsible for this preliminary on-site systematization to safeguard information in case the audio was partially or totally inaudible.



Sulmi and her daughter in their home in Petén.

04

Deductive coding was performed (based on the categorization).

05

The coding was adjusted inductively after analyzing and coding all of the interviews, allowing for a better disaggregation and explanation of the initial categories.

06

Thematic analysis (TA) was used to describe the specific manifestations in each case analyzed (Braun and Clarke, 2006).



Katy and her children in their home in Petén.

Findings from the evaluation

Geographical and contextual characteristics

The Tactic municipality is located in the southern part of the department of Alta Verapaz, bordering Salamá, in Guatemala's sub-tropical rainforest. It spans roughly 85 square kilometers and has an average altitude of 1,465 meters above sea level. The climate is humid and temperate and represents a large water recharge area. The municipality has a rating of 0.524 on the Human Development Index (HDI), lower than the National HDI of 0.640 (HDI, 2016). This means that the municipality has a low level of human development.

The municipality of San Andrés, located in northern Petén, is bordered to the north by the Mexican state of Campeche and to the south by the municipality of San José, Petén. It sits 111 meters above sea level on the shores of Lake Petén Itzá, and has a territorial extension of 8,874 square kilometers, making it the largest municipality in the country. A total of 97.3% of its territory pertains to a protected area established by Decree 5-90: the Maya Biosphere Reserve (MBR). Agriculture is the main source of employment for people in the region. The climate is predominantly hot and humid. In rural areas, basic services are limited; although most communities have electricity, they do not have piped-in water or drainage systems, which increases the rate of gastrointestinal diseases and increases vulnerability to *Plasmodium vivax* (malaria). In recent years, the municipality has also shown an increase in internal migrants from other departments of the country.

Photo: CIB

The period from March to September 2025 exposed both Petén and Alta Verapaz to multifactorial shocks with significant economic, health and logistical impacts. In Petén, this was mainly in relation to water and sanitation vulnerability, caused by a moderate to severe drought that began in March and was aggravated by a prolonged heat wave with no rain throughout the month of August, which adversely affected agriculture (INSIVUMEH, 2025a; MAGA, 2025). These problems were exacerbated by a severe forest fire season in May (CONRED, 2025b; 2025c) and a serious health crisis involving a Red Alert for dengue fever in areas such as San José, in addition to reports of acute malnutrition in the northern region in September (Governor's Office of Petén, 2025; SIINSAN / MSPAS, 2025).

Meanwhile, Alta Verapaz faced shocks caused by systemic disruptions and a high climatic impact from rainfall. It was the department most heavily affected by the 2025 rainy season, registering the highest number of emergencies (378) in the country (Canal Antigua / CONRED, 2025). This impact was mainly due to floods and landslides that affected communities (including Tactic) and caused the Chixoy River to overflow and cut off access by farmers and transporters in Cobán and Chisec throughout the month of September, leading CONRED to issue soil saturation alerts (Municipality of Tactic, 2025; Prensa Comunitaria, 2025b; CONRED, 2025e). Additionally, both departments suffered severe educational standstills between May and July due to a nation-wide strike by public educators (STEG), coupled with disruptions caused by a tropical heat wave that lasted until the end of September (Prensa Comunitaria, 2025a; DCA, 2025; Prensa Libre, 2025). Road blockades also occurred on key routes from the start of the evaluation period (DataExport / Pro-vial, 2025).

Sociodemographic characteristics and economic conditions of the study population

Diagram 1 shows the social, demographic, family composition and economic characteristics by beneficiary and comparison group.

Diagram 1. Sociodemographic and economic characteristics of the head of household by beneficiary and comparison group, in percentages, n=200.



As shown there is a nearly symmetrical relationship in the distribution of variables for the beneficiary and comparison groups, which aligns with the premise that both constituencies must be statistically comparable for the DiD method to apply. In general, for both groups a higher percentage of heads of household were male; however, in the comparison group there was a greater difference between both sexes (71% and 29%); although there were no statistical differences between these groups, there were highly significant statistical differences at 1% in the sex of the head of household between departments, since in Petén 82% of families reported a male head of household, while in Alta Verapaz this value was 50%.

As for the other variables, a more even distribution was observed, starting with age, where the majority (31% of the beneficiary and 34% of the comparison group) were in the 18 to 35 age range, followed by the 35 to 45 range. In terms

of educational level, 77% of the beneficiary group and 82% of the comparison group had not completed primary school. Regarding income, 74% of the beneficiary group and 71% of the comparison group reported an income of less than GTQ 2,000 per month, which is equivalent to half or less of the monthly minimum wage⁵, and 25% of the heads of household of the beneficiary group and 17% of the comparison group reported one or more disabilities.

It is worth noting that significant statistical differences were found at 5% between the income of families with female heads of household compared to those with male heads of household.

⁵Based on a minimum monthly non-agricultural salary of GTQ 3,500 for economic district 2 (encompassing Alta Verapaz and Petén) for the year 2025.

Beneficiaries (n=100)

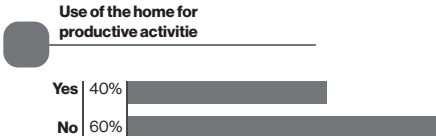
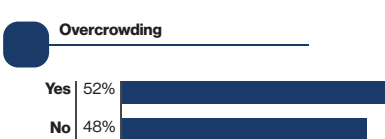
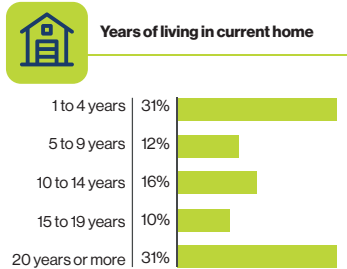
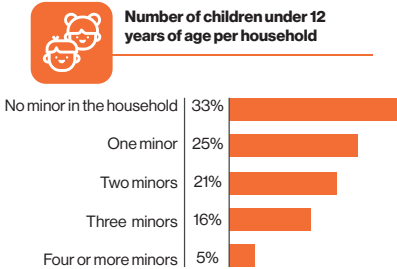
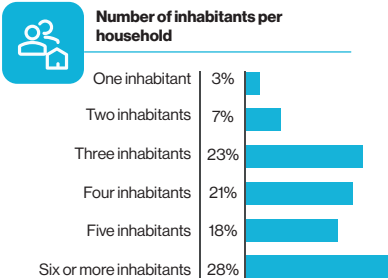


Diagram 2. Household characteristics and activity by beneficiary and comparison group, in percentages, n=200

Comparison (n=100)

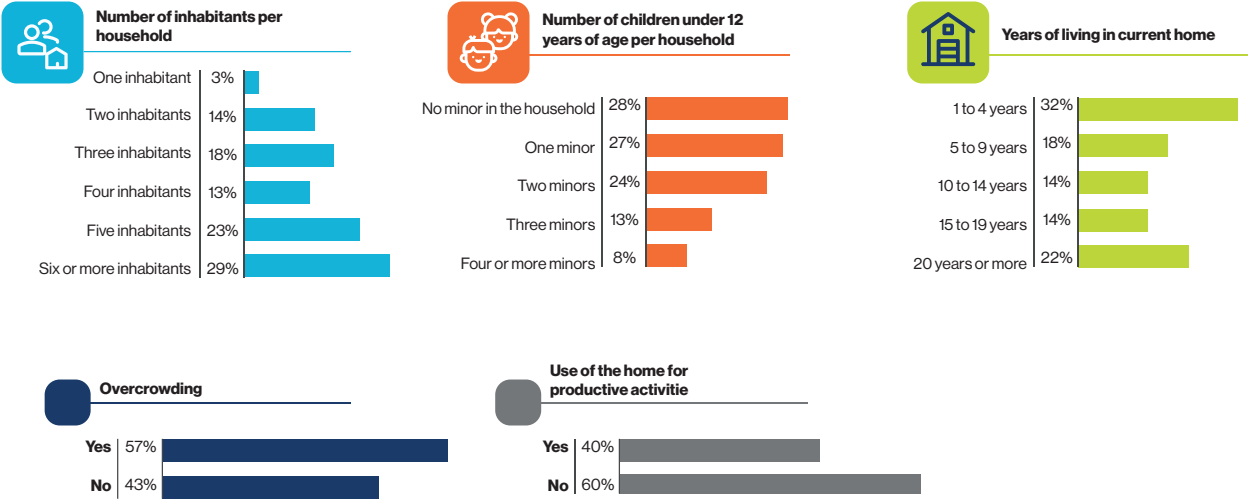


Diagram 2 shows additional symmetrical behavior between the beneficiary and comparison group.

Regarding the number of people per household, 46% of the beneficiary group and 52% of the comparison group had 5 or more inhabitants. For the number of children under 12 years of age, the majority (67% of the beneficiary group and 72% of the comparison group) had at least one member under 12 years of age. This is a very important aspect of this evaluation, since one of the areas of measurement is directly related to the educational development of children under 12.

In terms of how long people have lived in their current home, the population was divided into three groups. The first was relatively new to their home (have lived there between 1 and 4 years); the second had been in their home between 5 and 19 years, and the third had been there for 20 years or more.

Finally, the majority of the population reported issues with overcrowding (more than three inhabitants per bedroom), and as for the use of the home for productive activities, approximately 40% of the population reported using their home for work. This latter point is also significant, since the measurement category of economic development is based on the hypothesis that improving housing quality also improves financial capital and links housing directly to productive space.

Housing characteristics of the study population

Below are the characteristics related to housing and access to basic services, disaggregated by beneficiary and comparison group.

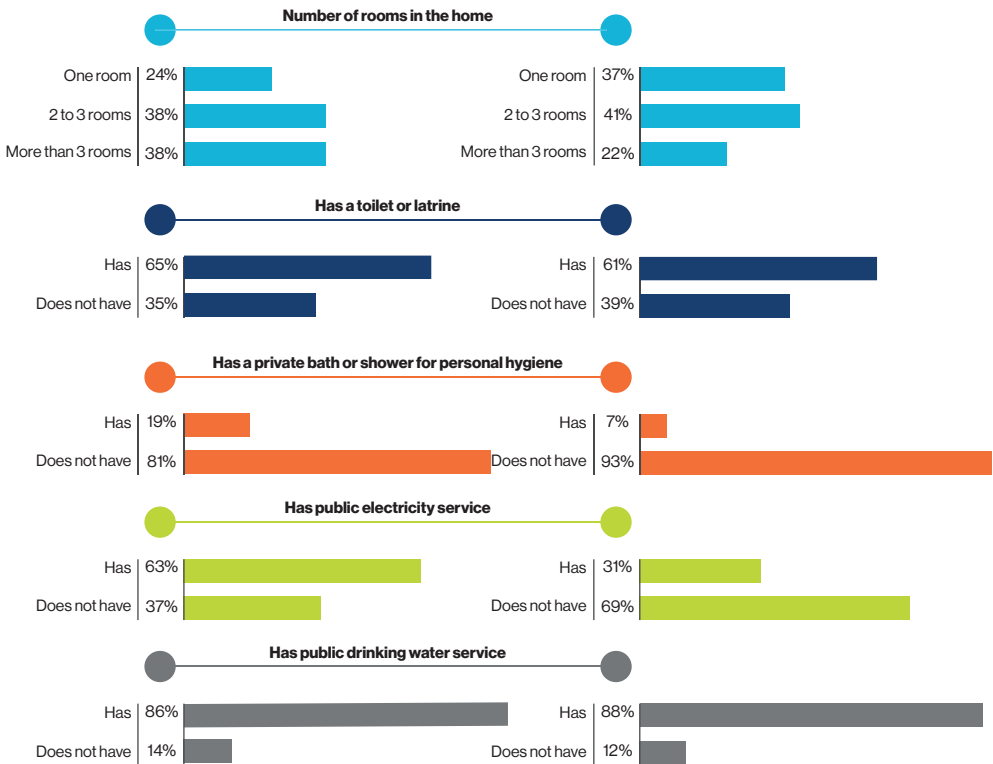
Diagram 3. Characteristics of housing and accessibility to basic services by beneficiary and comparison group, in percentages, n=200

This diagram shows symmetrical behavior between the groups in all variables except the number of rooms per household and access to public electricity service.

In terms of the number of rooms, the beneficiary group shows a more favorable situation than the comparison group, with 13% fewer households with only one room and 16% more households with three rooms. In terms of sanitation, both groups show that a majority of households have a toilet or latrine, but the minority (19% for the beneficiary and 7% for the comparison group) have access to a room in which to bathe or shower.

Beneficiary (n=100)

Comparison (n=100)



Measuring Impact: 100,000 Floors to Play On, Guatemala, 2025

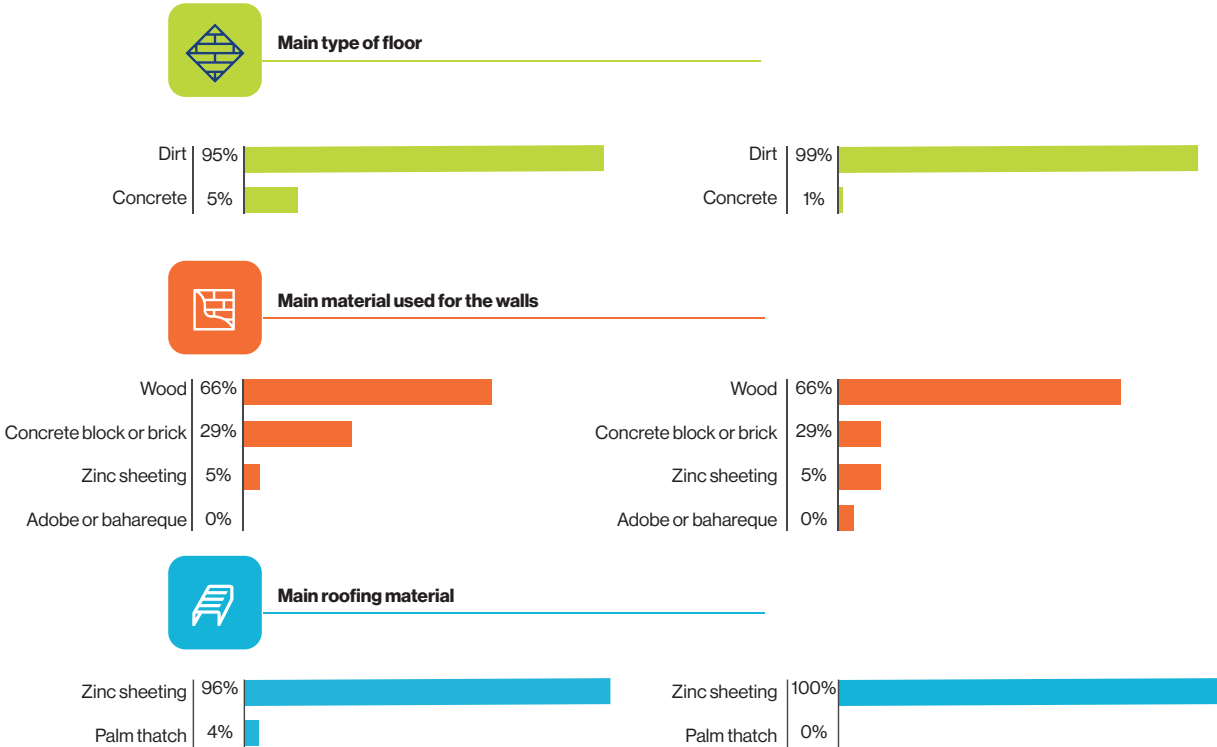
In terms of electricity, the beneficiary group showed a more favorable situation than the comparison group, with 32% more people reporting access to the public power grid. In terms of drinking water hookup, both groups reported a very similar situation, with the vast majority (86% for the beneficiary group and 88% for the comparison group) having access to the public water system.

In terms of housing materiality, the diagram shows symmetry between the beneficiary and comparison group. For both groups, nearly 100% of households reported having a floor almost entirely made of earth. 66% of the beneficiary group and 74% of the comparison group had wood walls, and nearly 100% of both groups had roofs almost entirely made of corrugated zinc.

Diagram 4. Characteristics of housing materials by beneficiary and comparison group, in percentages, n=200

Beneficiary (n=100)

Comparison (n=100)





Angelina and Leopoldo in their home in Alta Verapaz.

Health and wellbeing indicators

The following indicators were used to measure the impact on health and wellbeing:

- 01** Presence of illness in the home⁶
- 02** Number of people affected by illnesses
- 03** Medical attention and/or medications
- 04** Satisfaction with floor
- 05** Satisfaction with house

Respiratory, diarrheal and skin diseases

This evaluation used three measurements to analyze the impact of an adequate floor on respiratory, skin and diarrheal diseases. First, we analyzed the number of households in which at least one member became sick in the previous month. This indicator is called “presence of illnesses in the household.” Its maximum score is 3 (at least one member suffered one of the three types of illness), and its minimum is 0 (no member suffered any of the three types of illness). Next, we calculated the average number of household members who became ill in the previous month to determine the “average number of people affected” indicator. Finally, we calculated the number of households where at least one member required medical attention or medication in the previous month, with a

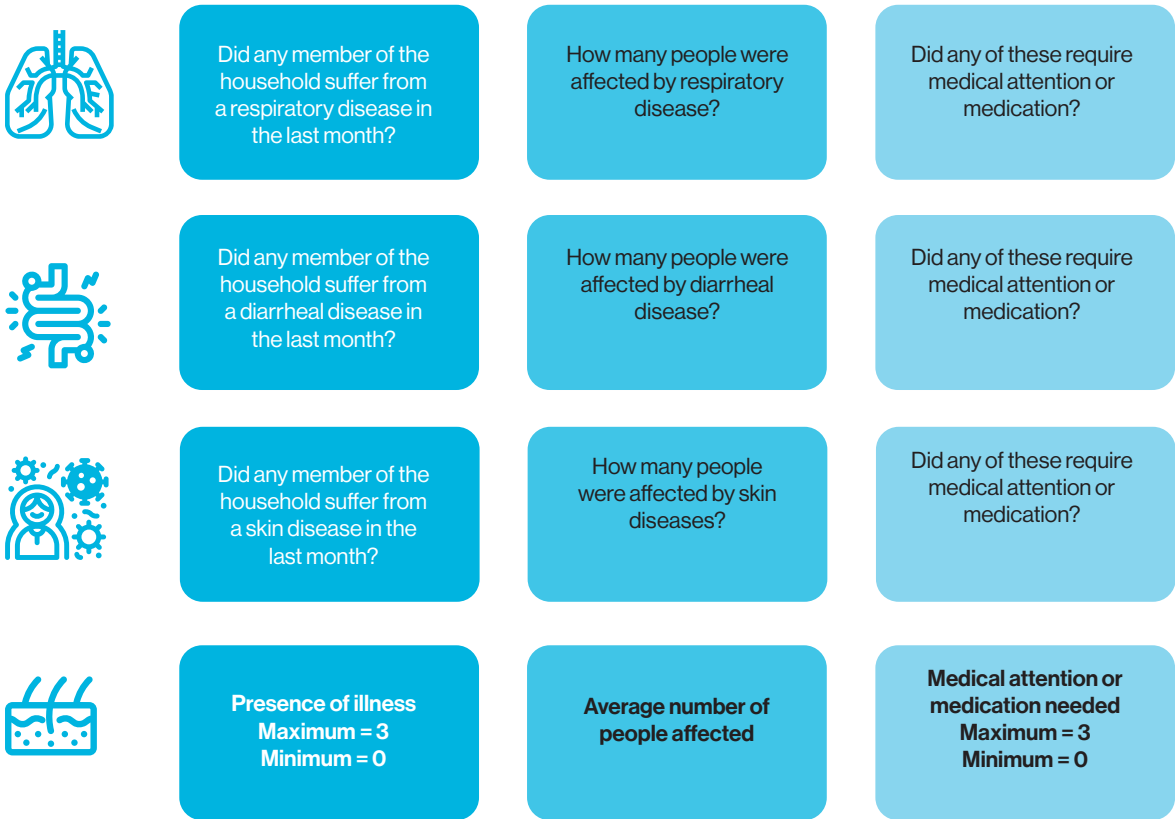
⁶ All illness-related measurements refer to respiratory, diarrheal and skin diseases.

Measuring Impact: 100,000 Floors to Play On, Guatemala, 2025

maximum score of 3 (at least one member required medical attention for all three types of illnesses) and a minimum score of 0 (no member required medical attention for any of the 3 types of illnesses). Finally, to assess the impact of an adequate floor on household illnesses, we used the presence of illness in the household indicator, the average number of people affected indicator and the medical attention or medications indicator.

The following figure shows the relationship between the three indicators and how the questions used for this measurement were organized.

Figure 5. Indicators used to measure household illness by type.



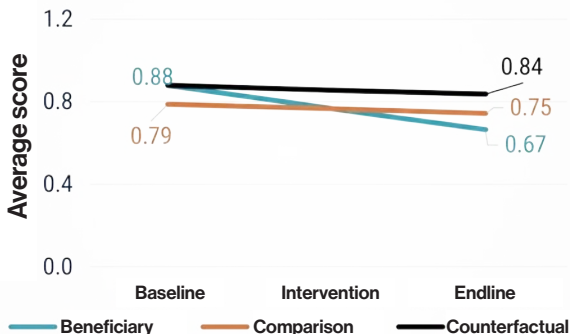
The results for the presence of illness in the household indicator shows that the beneficiary group went from 0.88 points before the new floor was installed to 0.67 points after. The comparison group also reduced its rate of illness, from 0.79 points to 0.75 points.

The DiD calculation indicates that the impact of a concrete floor on reducing household illness was 0.17 points, or a 19% lower occurrence compared to not having received it.

Disaggregating this outcome by type of disease, diarrheal diseases had the greatest reduction, followed by respiratory diseases and, lastly, skin diseases.

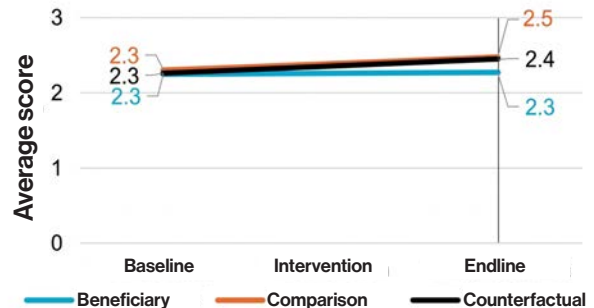
With respect to the average number of people affected by illness, the beneficiary group remained more or less stable at 2.3 before and after the intervention; however, the comparison group increased its average from 2.27 to 2.48. The DiD calculation for this indicator was 0.17, or 7% fewer people affected by illness compared to not having received a new floor.

Diagram 5. Presence of illness by beneficiary and comparison group before and after the intervention, and counterfactual calculation.



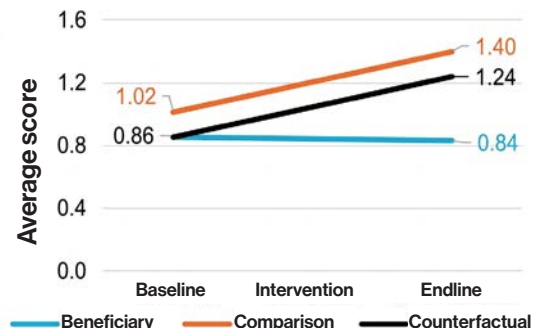
Measuring Impact: 100,000 Floors to Play On, Guatemala, 2025

Diagram 6. Average number of household members who became sick in the previous month by beneficiary and comparison group before and after the intervention, and counterfactual calculation.



Finally, the amount of medical attention and/or medication for the beneficiary group before the intervention was 0.86 and 0.84 after the intervention, while the comparison group increased its score from 1.02 to 1.40 points. As shown in Diagram 7, had those in the beneficiary group not received a floor, their need for medical attention and/or medication would likely have increased rather than decreased.

Diagram 7. Medical attention and/or medication needed in the previous month by beneficiary and comparison group before and after the intervention, and counterfactual calculation.



Measuring Impact: 100,000 Floors to Play On, Guatemala, 2025

The DiD calculation shows that the need for medical attention and/or medication dropped by 0.40 points thanks to an adequate floor, a 46% reduction compared to not having received one. This difference is statistical at 10%.

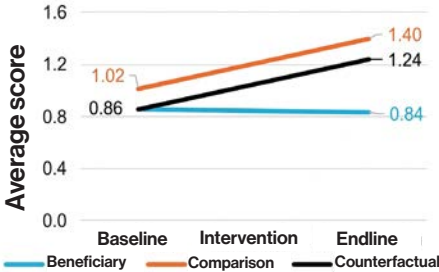
Disaggregating these results by type of disease, families experienced the greatest reduction in the need for medical attention or the purchase of medication for diarrheal diseases, followed by skin diseases and respiratory diseases.

Wellbeing

The most direct measurement included in this evaluation is a family's level of satisfaction with their floor, with a minimum score of 0 and a maximum score of 3. The beneficiary group scored 1.61 before the new floor and 2.84 after; the comparison group started with a score of 1.57 and dropped to 0.88.

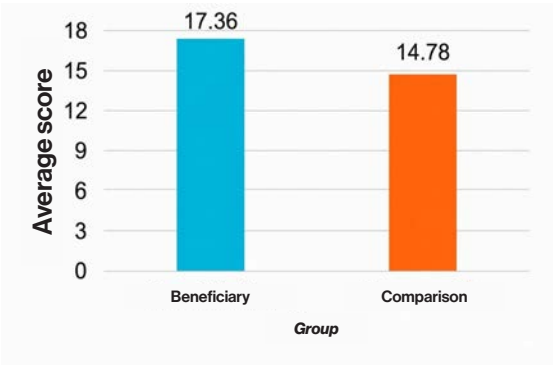
The DiD calculation for this indicator shows an impact of 1.96 points, or a two-point increase in families' satisfaction with their floor, going from not very satisfied to very satisfied.

Diagram 8. Satisfaction with floor by beneficiary and comparison group before and after the intervention, and counterfactual calculation



An increased satisfaction with one's floor also increased the level of satisfaction with their housing. This was measured by the HFH LAC qualitative indicator "relevance of building interventions," which assesses spatial needs, materials, costs, safety and other factors. Of a maximum score of 28, the beneficiary group reported 17.36 points, while the comparison group reported 14.78, resulting in a highly relevant impact with statistical significance at 1%. The difference in increased satisfaction between the two groups was 17%, with both groups hovering at mid-level for this category.

Diagram 9. Satisfaction with housing by beneficiary and comparison group, post-intervention.



In qualitative terms, health improvements included experiences such as less foot pain and fewer accidents caused by holes in the floor (especially among elderly people), less coughing and flu due to less contact with soil and moisture, and, in the case of children, fewer rashes, fungal infections and diarrhea, as less germs and dirt entered their mouths and their clothes and hands were cleaner. Families also described having fewer run-ins with mice, which commonly made nests on the dirt floor.

Last but not least, families mentioned the effects that a new floor had on their moods, with women being particularly happier because their children no longer had to play on a dirt floor and their house looked nicer, cleaner and tidier. In the area of wellbeing, families mentioned being able to rest more since the new floor required less time and effort for tasks such as cleaning the house, washing clothes and other household chores. General motivation also increased, which in turn generated a cycle of care and hygiene in the home, including mopping and waxing the floor and using air fresheners to keep the rooms smelling nice. For teenagers, the floor became a refuge from the heat after school, as they could lie down and feel the coolness of a smooth, clean and dry surface.



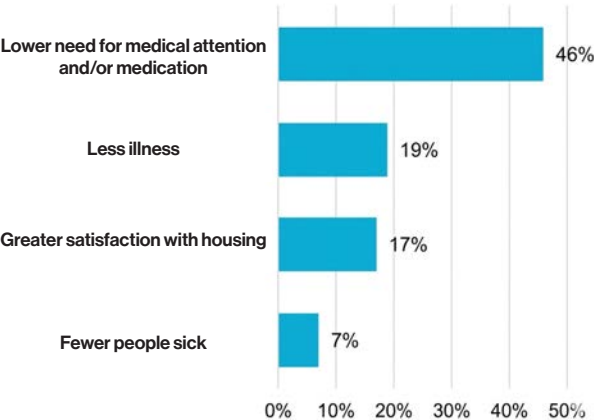
“Now, even our children are more motivated to help with cleaning the floor because it’s easier to sweep, move things around, and slide furniture; the floor is smooth and doesn’t kick up dust like it used to”.

Participant in the Petén focus group

Summary of results in health and wellbeing

The results for health and wellbeing, ordered by depth of impact, show that the most significant change was the decrease in the need for medical attention and/or medications, which was directly related to a decrease in the presence of illness and the number of people affected by illness. In terms of wellbeing, installing a new floor not only improved people's satisfaction with their floor, but also caused a 17% increase in their overall satisfaction with their home. This indicator measures how families perceive the quality, design, safety, materiality and aesthetics of their home, and in turn affects self-esteem, anxiety, depression and overall satisfaction with life (Hu, Zhang & Gong; Gutiérrez et al., 2022)

Diagram 10. Impact on health and wellbeing, by percentages



Concepción showcases the textiles she produces in her home in Petén.

Economic development indicators

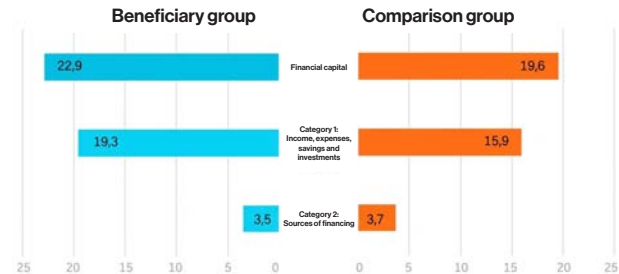
The indicators used to measure economic development were:

- 01** Financial capital
- 02** Physical capital in the housing infrastructure category
- 03** Investments in housing improvements or repairs
- 04** Health care expenses
- 05** Illness-related absences from work or school

Financial capital

The indicator used to measure financial capital was developed by HFH LAC and refers to the amount of financial resources available for a household to survive on. It is divided into two categories: a) income, expenses, savings and investments; and b) sources of financing. The first category measures how much of the household income covers basic needs, savings, and investments, such as home improvements. The second category measures the level of access families have to sources of financing such as banks, cooperatives, social aid organizations, personal loans, etc.

Diagram 11. Average amount of financial capital and related categories by beneficiary and comparison group, post-intervention.



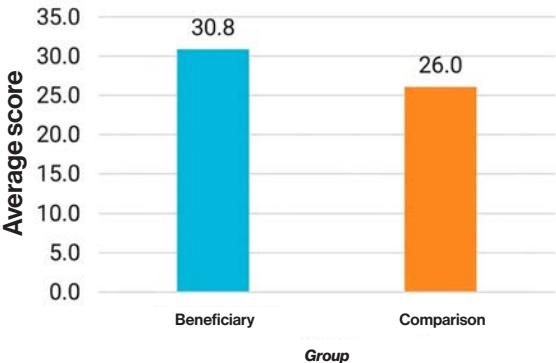
The results show that after the intervention, the beneficiary group scored an average of 22.9 points in the financial capital category, while the comparison group averaged 19.6 points (both groups remaining at the mid-level for this indicator). This shows that the new floor increased the beneficiaries' financial capital by 3.3 points, equivalent to a 17% increase compared to not having received one. These results are statistically significant at 1%, thus show substantial impact.

Disaggregating the financial capital results, the category of income, expenses, savings and investments most clearly explains the positive impact of a concrete floor financial capital, since the beneficiary group scored an average of 3.4 points, which equates to 21% higher than the comparison group. The impact on the financing sources category, had mildly favorable results, with the comparison group reporting an average of 3.7 points, or 0.16 points less than the beneficiary group.

Physical capital: Housing infrastructure category

The indicator used to measure physical capital was developed by HFH LAC and refers to the level of basic infrastructure and production-related assets needed to strengthen livelihoods. It consists of two categories. For the purposes of this evaluation, we only took into account the housing infrastructure category, defined as a families' perception of the cost, quality, adequacy and appearance of their home.

Diagram 12. Average score for the housing infrastructure category by beneficiary and comparison group, post-intervention.

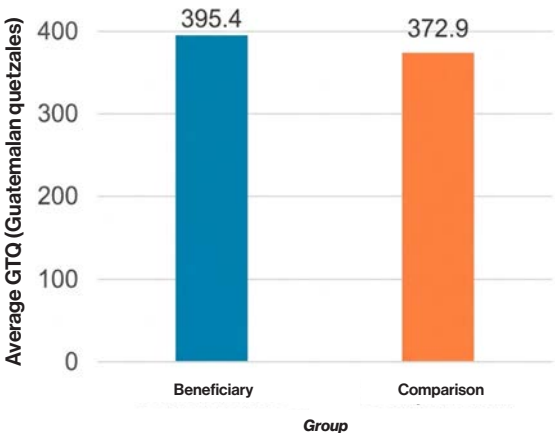


After the floors were installed, the beneficiary group reported 30.8 points in their perception of the cost, quality, adequacy and appearance of their home, while the comparison group reported 26.0 points. Thus, the impact of having a concrete floor compared to not having received one was 4.8 points, or 18%, more, with statistical relevance at 1%. Both groups fell into the mid-range for this indicator.

Investment in housing

This indicator refers to the amount of money (in GTQ) invested in housing improvements during the previous three months. Its results show that after the intervention, the beneficiary group invested GTQ 395.40, while the comparison group invested GTQ 372.90, resulting in a difference of GTQ 22.43, or 6% more. This is relevant, considering that the majority of the population under study earns less than GTQ 2,000 per month.

Diagram 13. Average GTQ invested in housing improvements in the previous three months by beneficiary and comparison group, post-intervention.



Health care expenses

This indicator corresponds to the sum of all expenses (in GTQ) related to respiratory, skin and diarrheal diseases in the previous month, including the cost of medical attention and/or medication.

Diagram 14. Average GTQ spent on health care in the previous month by beneficiary and comparison group before and after the intervention, and counterfactual calculation

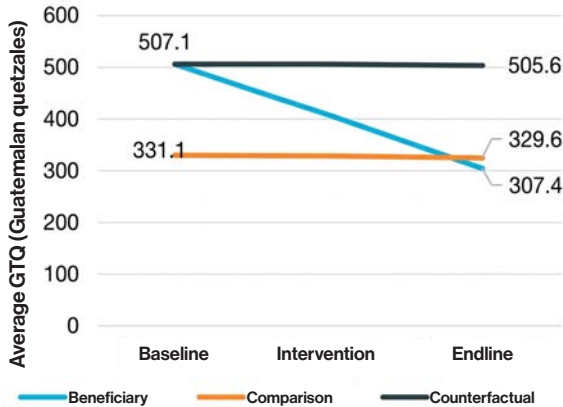


Diagram 14 shows that the beneficiary group decreased its health-related expenditures before and after the intervention, dropping from GTQ 507.10 to GTQ 307.40. The comparison group also decreased spending, although to a lesser extent (from GTQ 331.10 to GTQ 329.60).

The diagram also shows what would have happened if the beneficiary group had not received a new floor (the counterfactual calculation), showing that they would have spent an average of GTQ 505.60 on health care expenses. Thanks to the new floor, these expenditures averaged just GTQ 307.40.

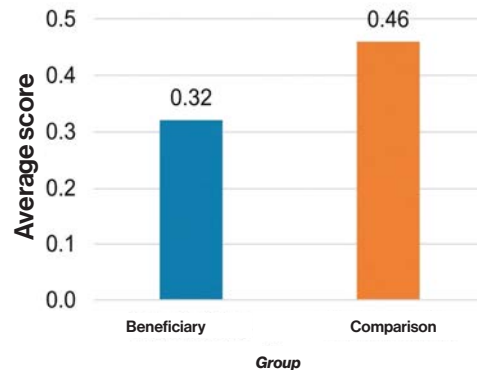
The DiD calculation shows an impact of GTQ 198.20, or a 39% reduction in health care expenses due to a new floor. This is equivalent to a roughly 14% impact on the study population's average monthly income. Skin diseases showed the greatest reduction in expenditures, followed by diarrheal and respiratory diseases.

Absences from work or school

This indicator refers to the number of households in which at least one member was absent from work or school due to one of the three types of illnesses analyzed. The maximum value was 3 (at least one household member missed work or school in the previous month due to one of these illnesses) and the minimum value was 0 (no household member missed work or school due to these illnesses).

The results show that after the new floor, the beneficiary group missed an average of 0.32 days of work or school due to illness, while the comparison group missed 0.46 days, resulting in an impact of 0.15, or 44% fewer illness-related absences thanks to an adequate floor. Respiratory diseases showed the greatest decrease, followed by skin diseases and diarrheal diseases.

Diagram 15. Illness-related absences from work or school by at least one household member by beneficiary and comparison group, post-intervention.





In qualitative terms, the improvement in perceived quality of infrastructure was explained by a new sense of order, cleanliness and safety that the new floor provides, going from being a constant source of discouragement, frustration and accidents due to factors such as trip hazards and mice, to being a catalyst for other improvements, such as new furniture or extending the concrete floor to other rooms in the house alongside those covered by Habitat.

In addition to this motivation, there was also a reduction in health care costs because children became sick less often.

“Before, we spent more on medicine and going to town to see a doctor, because the children got sick more often with the flu, cough, fever and diarrhea.”

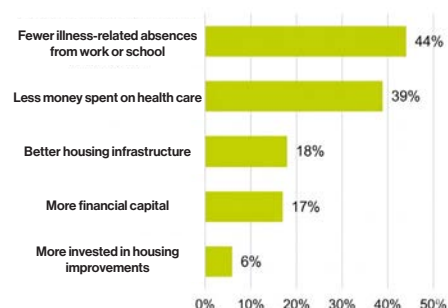
Expenses decreased not only because people were healthier, but also because they spent less on cleaning products and supplies to keep the house clean.

Finally, because concrete floors reduce the presence of dust, mud and humidity, women spent less time on cleaning that felt futile (i.e., “it wasn’t even worth cleaning, because everything would get dusty again very quickly”) and more time on productive activities such as weaving, tending to animals or cooking. Additionally, thanks to their home’s new level of hygiene, the value of women’s hand-woven textiles increased (for the 40% of the study population who reported using their home as a production site), as both the yarns and final product was cleaner than with a dirt floor.

Summary of results in Economic development

In conclusion, by reducing health-related expenses, increasing school attendance and production opportunities, and improving housing infrastructure, people tended to have more financial resources to live on, especially due to improvements to their income, savings, spending and investments. All of this, in turn, helped them to invest more in housing improvements, initiating a small cycle of economic development.

Diagram 16. Impact on economic development, by percentages

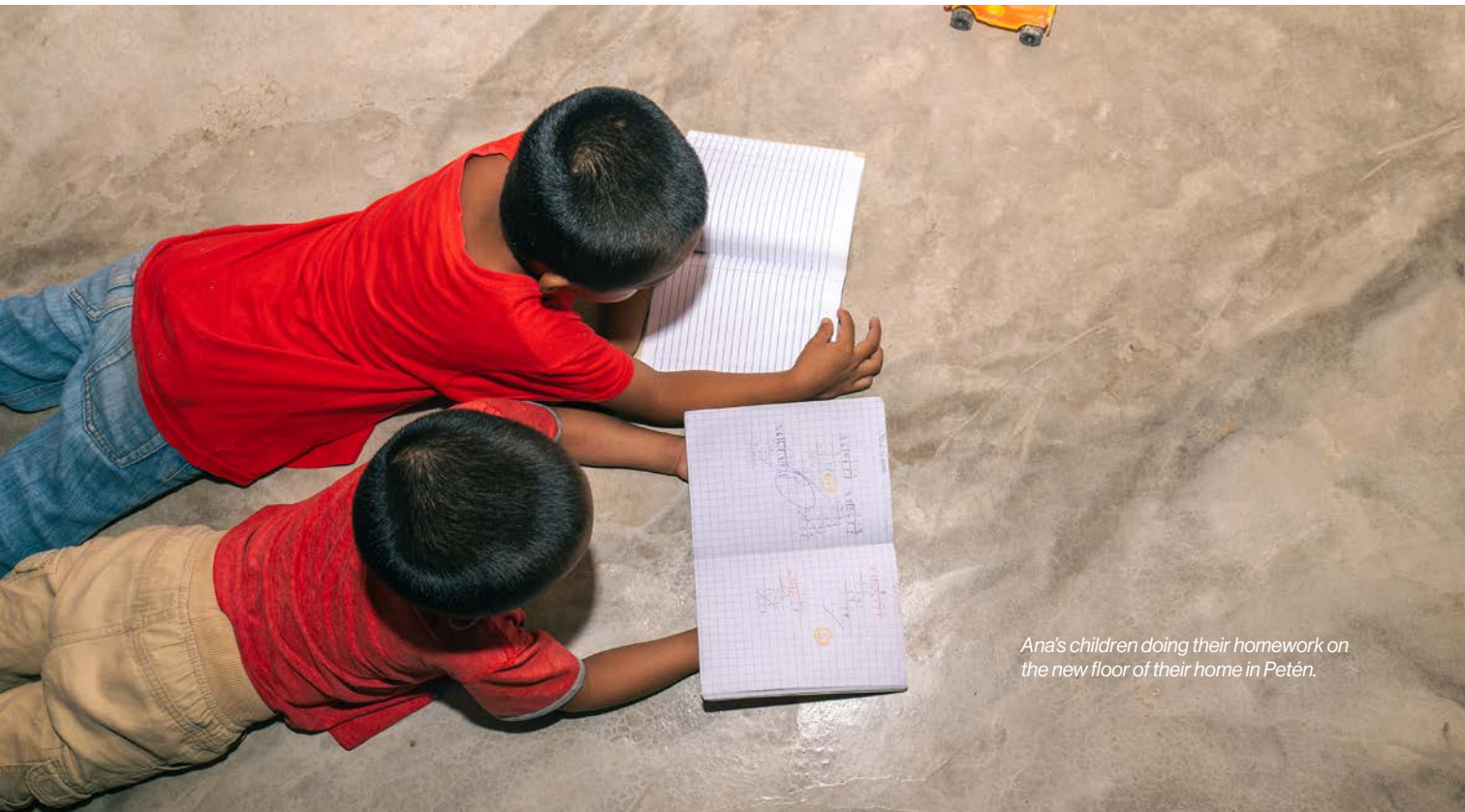


Education indicators

Three indicators were used to measure the impact of a concrete floor on education. The first was school absences, defined as the number of days that children in the household missed school in the previous month. The second was hours of play inside the home, meaning the number of hours that children under 12 years of age spend playing indoors each day. The third was perceived educational development, based on statements related to homework, motivation, grades, concentration and learning.

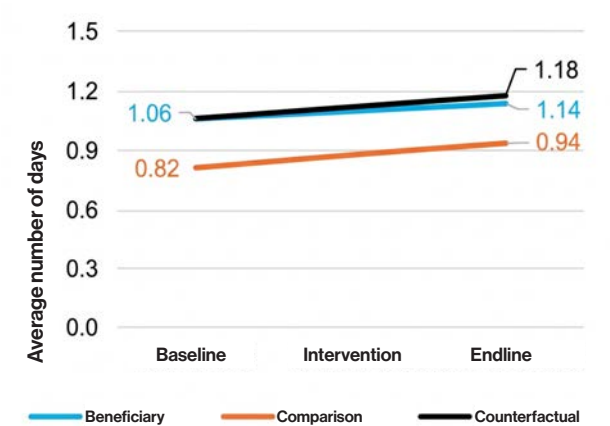
The results of the school absences indicator show that children in the beneficiary group increased their school absences from an average of 1.06 days to 1.14 days. The comparison group also increased their absences, from an average of 0.82 days to 0.94 days.

The DiD calculation shows, however, that, thanks to the new floor, the beneficiary group missed an average of 0.04 fewer days of school than the comparison group, equivalent to 7%. It is important to note that both groups experienced interruptions from teacher strikes and heavy rains during the study period, which would explain why both groups showed an increase in this category. Even so, the beneficiary group achieved greater stability compared to not having received a floor.



Ana's children doing their homework on the new floor of their home in Petén.

Diagram 17. Average number of school absences in the previous month for children under 12 by beneficiary and comparison group before and after the intervention, and counterfactual calculation.

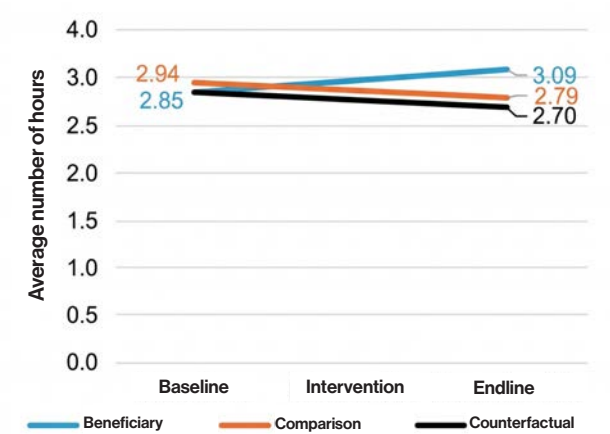


With respect to hours of play inside the home, the beneficiary group reported an average of 2.85 hours per day before the intervention, which increased to 3.09 after the intervention.

The comparison group, on the other hand, reported 2.85 average hours per day at baseline, which then decreased to 2.70.

The DiD calculation shows an impact of 0.39 hours per day, or an increase of 14%. This equates to approximately three more hours of play inside the home per week.

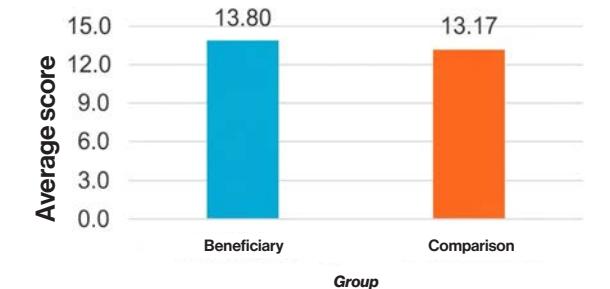
Diagram 18. Average daily hours of indoor play for children under 12 by beneficiary and comparison group before and after the intervention, and counterfactual calculation.



Finally, after the intervention the perceived educational development indicator scored 13.80 points for the beneficiary group and 13.17 points for the comparison group, with a maximum score of 20 points.

Using the PSM method, this translates to an impact of 0.63 points, or a 5% greater improvement for the beneficiary group as a result of having received a floor.

Diagram 19. Perceived educational development by beneficiary and comparison group, post-intervention.





Magdalena and her children in their home in Petén.

In terms of qualitative data, respondents reported greater concentration, attention and time spent on homework. Children felt less frustrated and received better grades because their papers and books were no longer soiled with dirt and mud, which before the new floor had been a common reason for anger and resignation, often to the point of avoiding homework altogether.

For children who were still crawling, a new floor not only affected how they crawl—impacting aspects such as their speed and motor skills—but also how much time they could spend playing with toys inside the home, sheltered from heat, rain or humidity.

“Now the little ones are happier because we can put them down on the cement floor to play.”

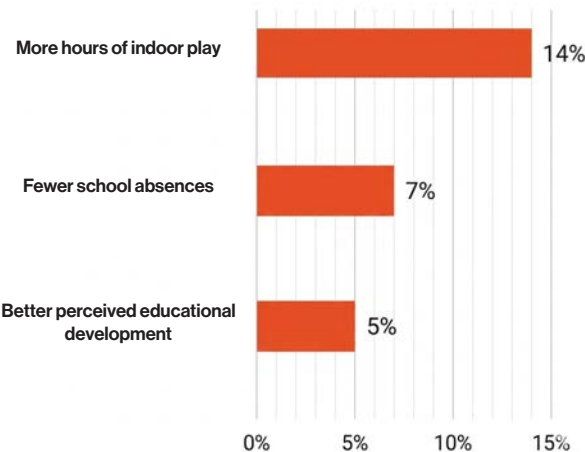
Participant in the Alta Verapaz focus group

Summary results in education

The education category, measured from self-reporting on school absences, hours of indoor play, and perceived educational development of children under 12 years of age shows that the depth of impact was minor when compared to that of health and wellbeing or economic development.

This coincides with the initiative's ToC, which positions the educational environment as the last link in the chain, recognizing that a concrete floor, by improving health and wellbeing conditions, also improves educational development, either because children are sick less often so attend classes more, or because the comfort and safety of an adequate floor allows them to play and do their homework more effectively.

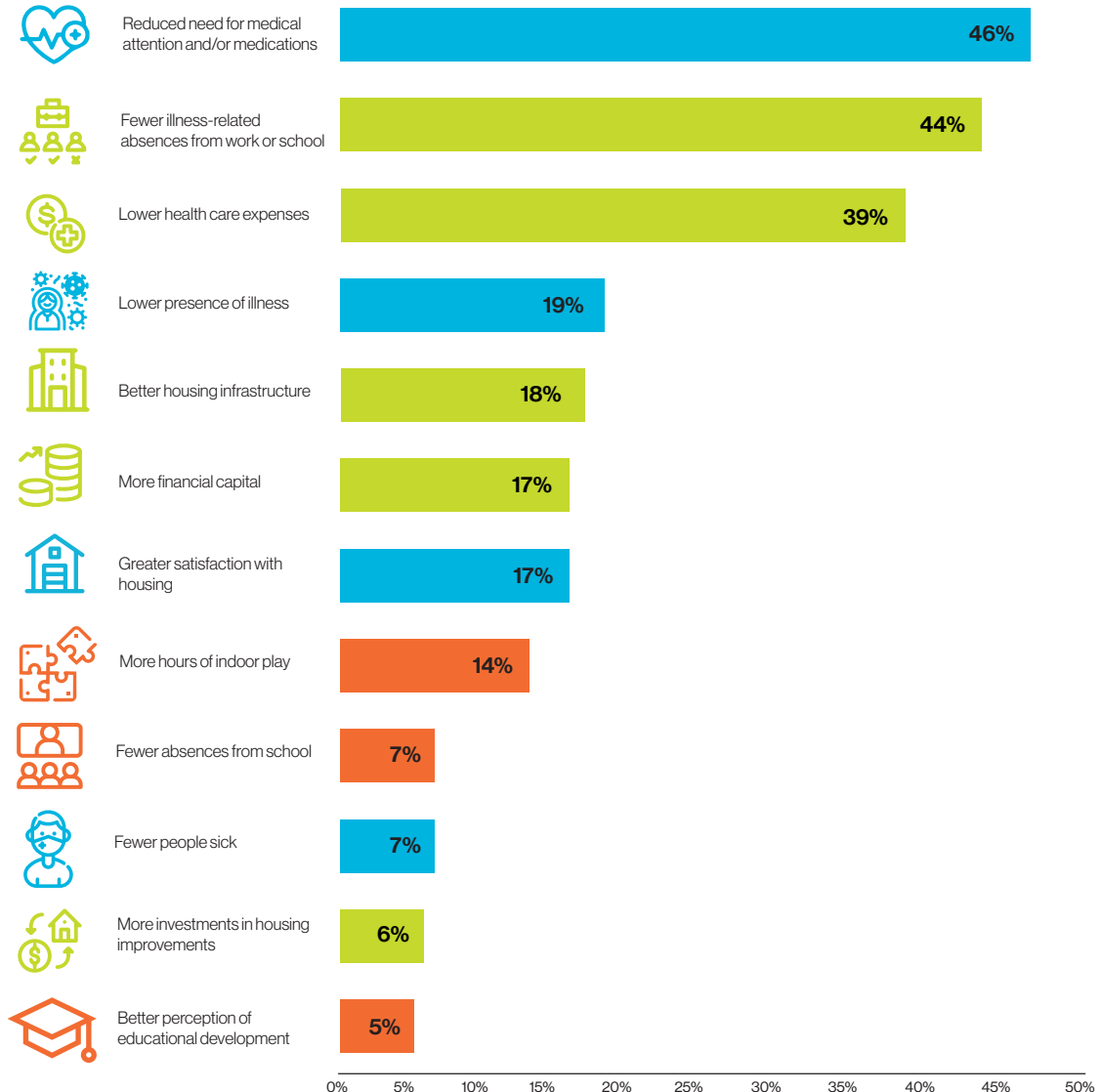
Diagram 20. Impact on education, by percentages.



Thus, these less profound impacts are not inconsistent with the ToC hypothesis, and the impact on educational development will most likely require more time and other data collection methods to be better shown.



Diagram 21. Summary of overall impact when comparing beneficiaries and non-beneficiaries of concrete floors in Guatemala



Conclusions

This impact evaluation conclusively shows that replacing dirt floors with polished concrete is a high-impact intervention that goes beyond just improving housing infrastructure. An adequately constructed concrete floor acts as a fundamental catalyst that drives significant and measurable improvements to the health, wellbeing, economic development and education of beneficiary families in Petén and Alta Verapaz, Guatemala. However, it is also important to note that results should always be viewed through the lens of the context in which they were measured. In this case, the communities studied experienced unfavorable events that increased their vulnerability during the measurement period, including teachers' strikes, road closures and climatic events such as droughts and floods. Even so, favorable impacts were observed in absolute terms: in most indicators, the beneficiary group improved in the areas expected and decreased in ways that corresponded to the reality of the context. The main impacts of an adequate floor are described below.

From a health and wellness perspective, the results are particularly compelling. A new floor reduced families' need to spend money on medical attention and/or medication by 46%, and eliminated 19% of illnesses, while those that still persisted affected an average of 7% fewer people. In terms of wellbeing, as a result of improved flooring, families' satisfaction with their home improved by 17%, an impact that is directly related to other aspects of mental health, such as self-esteem, depression, anxiety and quality of life in general.

The economic development category also showed a clear and direct relationship with health-related improvements. The significant reduction in the need for medical attention and/or medication is consistent with the fact that the group that

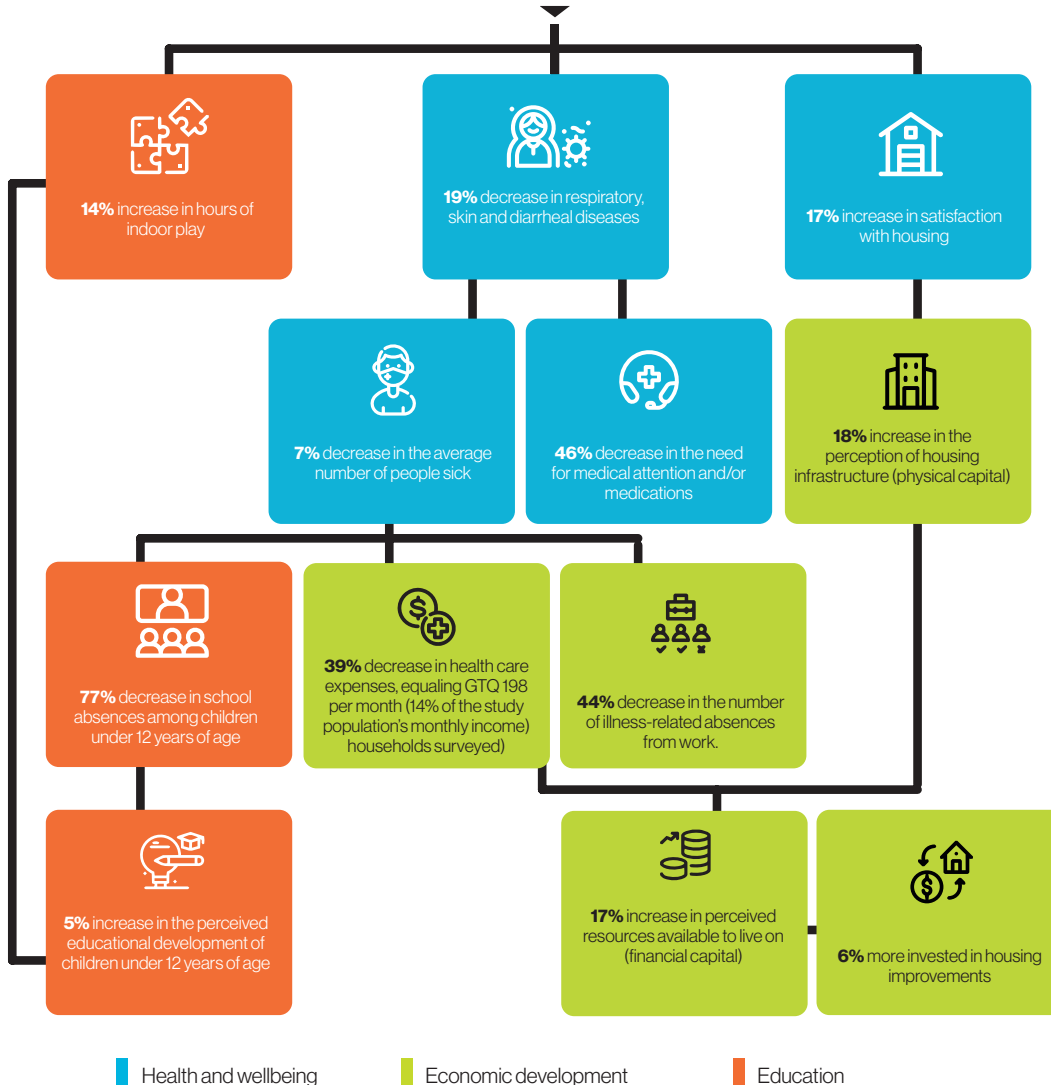
received a new floor decreased its illness-related expenses, while the control group spent roughly the same amount. Thanks to an adequate floor, families reduced their health care expenses by 39%, equivalent to 14% of their average monthly income. Given what the families in our study groups earn, this is not a minor impact. This savings, in turn, explains the 17% improvement in the amount of financial resources families had to survive on, as well as the 6% more they were able to invest in home improvements. An adequate floor is an infrastructural component that, thanks to its positive impact on health and wellbeing, not only allowed families to set more money aside for the future but also increased their access to opportunities to earn more income or improve educational outcomes by reducing illness-related absences from work or school by 47%.

In terms of education, the evaluation confirms that a concrete floor creates a new and safe space in which to play and learn within the home. Quantitatively, this translated to a 17% reduction in school absences and a 14%, or three-hour-per-week, increase in indoor play time for children under 12. This also explains the 5% improvement in how families perceived educational development, observing things like greater motivation, concentration, task execution, grades and overall learning.

The results of this evaluation therefore concludes that an adequate floor in Petén and Alta Verapaz of Guatemala is synonymous with better health, and that this positive impact on people's quality of life was likely the main catalyst for the changes observed in economic development and education.

Figure 6. Summary of the relationship between the impact results for each category

Thanks to an adequate floor, the beneficiary group showed the following differences from the comparison group.



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Annex 1

Economic development

Indicator	Category	Variables
Investment in housing improvements: The amount invested in local currency for housing repairs in the last three months.		How much have you spent on housing improvements or repairs in the last three months? (local currency).
Livelihoods- physical capital: Level of basic infrastructure and production-related assets needed to strengthen livelihoods.	Housing infrastructure: Cost, quality, adequacy and appearance of home.	• You can cover all household expenses, as well as other basic needs. • Your house and the land where it is located are legally registered. • Your house is beautiful. • Your house is big enough for everyone who lives there. • You can be sure that your family will be able to live in its house for a long time. • Your house has a toilet or bathroom. • Your house helps improve your family's quality of life. • Your house meets the needs of your family and its surrounding environment. • Your house has access to potable water. • Your house has access to electricity. • Your house is adequately priced. • Your house was built using adequate construction methods. • Your house was built with adequate materials. • Your house is of good quality.
Livelihoods- financial capital: Amount of financial resources available to survive on.	Income, expenses, savings and investments: How much of the household income goes toward basic needs, savings and investments.	• Your household income is enough to buy basic foodstuffs. • Your household income is enough to cover clothing-related needs. • Your household income is enough to cover the cost of education. • Your household income is enough to cover the cost of electricity and water. • Your household revenue is enough to cover phone bills. • Your household income is enough to keep you going. • The members of your household who are able to work have a steady job. • Your household revenue is enough to put money into savings. • Your household revenue is enough to cover rent or the mortgage on your home. • Your household income is enough to invest in the purchase of a new home. • Your household income is enough to invest in home maintenance.

Indicator	Category	Variables
	Financing sources: Access to financing from banks, cooperatives, social aid organizations, personal loans, etc.	- Your household has access to loans from banks, cooperatives, mutuals, etc. - Your household has access to loans from social welfare organizations - Your household has access to private loans from individuals
Illness-related absences from work or school: This is the average score of households where at least one member missed work or school due to illness. The minimum value is 0 (no type of illness caused any member to be absent) and the maximum value is 3 (all three types of illness caused the absence of at least one member)	Absences due to respiratory diseases	Did any of the family members who had these illnesses miss work or school because of them?
	Absences due to skin diseases	Did any of the family members who had these illnesses miss work or school because of them?
	Absences due to diarrheal diseases	Did any of the family members who had these illnesses miss work or school because of them?

Health and wellbeing

Indicator	Category	Items
Relevance of the construction intervention for the community: Degree to which people in the community are satisfied with the intervention, the technical assistance provided, and the quality of the services and infrastructure, and how the intervention has strengthened local capacities to navigate construction processes and improve the community or neighborhood.	Satisfaction with housing: Families' level of satisfaction with their housing in terms of spatial needs, materials, costs, safety, etc.	- The size of your home meets your family's spacial needs. - You are satisfied with the cost of improving or purchasing your home. - Your house was built with good quality materials. - You are satisfied with the amount of water available to your household. - You are satisfied with the distance from your home to the nearest water supply. - Your house is beautiful.
Satisfaction with floor: Degree of satisfaction with the floor of their home. The minimum level is 0 (not at all satisfied) and the maximum value is 3 (very satisfied)		How satisfied are you with your floor?

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Indicator	Category	Items
Presence of diseases in the household: The average occurrence of illness per household in the previous month, with a minimum value of 0 (no illness affected the household) and maximum value of 3 (all 3 types of illnesses affected the household). The three types of illness are respiratory, diarrheal.	Respiratory diseases	Has any member of your household had a respiratory disease such as asthma, bronchitis, sinusitis, pharyngitis, pneumonia or allergies in the last month?
	Skin diseases	Has any member of your household had any skin conditions such as allergies, rashes or itching in the last month?
	Diarrheal diseases	Has any member of your household had diarrhea in the last month?
People affected by illness: The average number of people who became sick with each type of illness in the last month.	People affected by respiratory diseases	How many people in your household have been affected by a respiratory disease in the last month?
	People affected by skin diseases	How many people in your household have been affected by a skin disease in the last month?
	People affected by diarrheal diseases	How many people in your household have been affected by a diarrheal disease in the last month?
Medical attention and/or medication: The average amount of medical attention and/or medication required in the past month. The minimum value is 0 (no illness required attention) and the maximum value is 3 (all 3 types of illnesses required attention).	Medical attention for respiratory diseases	Did any of these respiratory diseases require medical attention or medication?
	Medical attention for skin diseases	Did any member of your household require medical attention or medication for skin diseases?
	Medical attention for diarrheal diseases	Did any member of your household require medical attention or medication for diarrhea?

School absences and hours of play inside the home

Indicator	Items
Hours of play inside the home: The approximate number of hours per day that children under 12 years of age spend playing indoors.	Approximately how many hours per day does (Child's name) play inside the home?
School absences: The number of days that children under 12 years of age missed in the last month.	How many times has (Child's name) missed school in the last month?
Perception of educational development: The average level of educational development perceived by adults for each child under 12 years of age. The minimum score is 0 and the maximum score is 20. Educational development is understood as a combination of motivation, task completion, grades, concentration and general learning.	• (Name) shows interest and motivation to learn. • Normally, (Name) completes his or her homework without much prodding. • In general, do you think that (Name) gets good grades in school? • (Name) finds it easy to concentrate on his or her studies and homework at home. • Do you believe that (Name) is learning what he/she is being taught in his/her school grade?

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