Education and Health Disparities of Refugees in the Americas:

Evidence from High Frequency Survey Data

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Overarching Goal:

How can we use open datasets to make information and trends about the global refugee crisis **more accessible**?

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UNHCR Microdata Library
660 Household Surveys

The Americas
83 Surveys
103 variables

“High Frequency Surveys”
46 Surveys
15 Countries
2 Years

Medical Access

Demographics

Educational Access

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Disclaimer: Sample not necessarily representative

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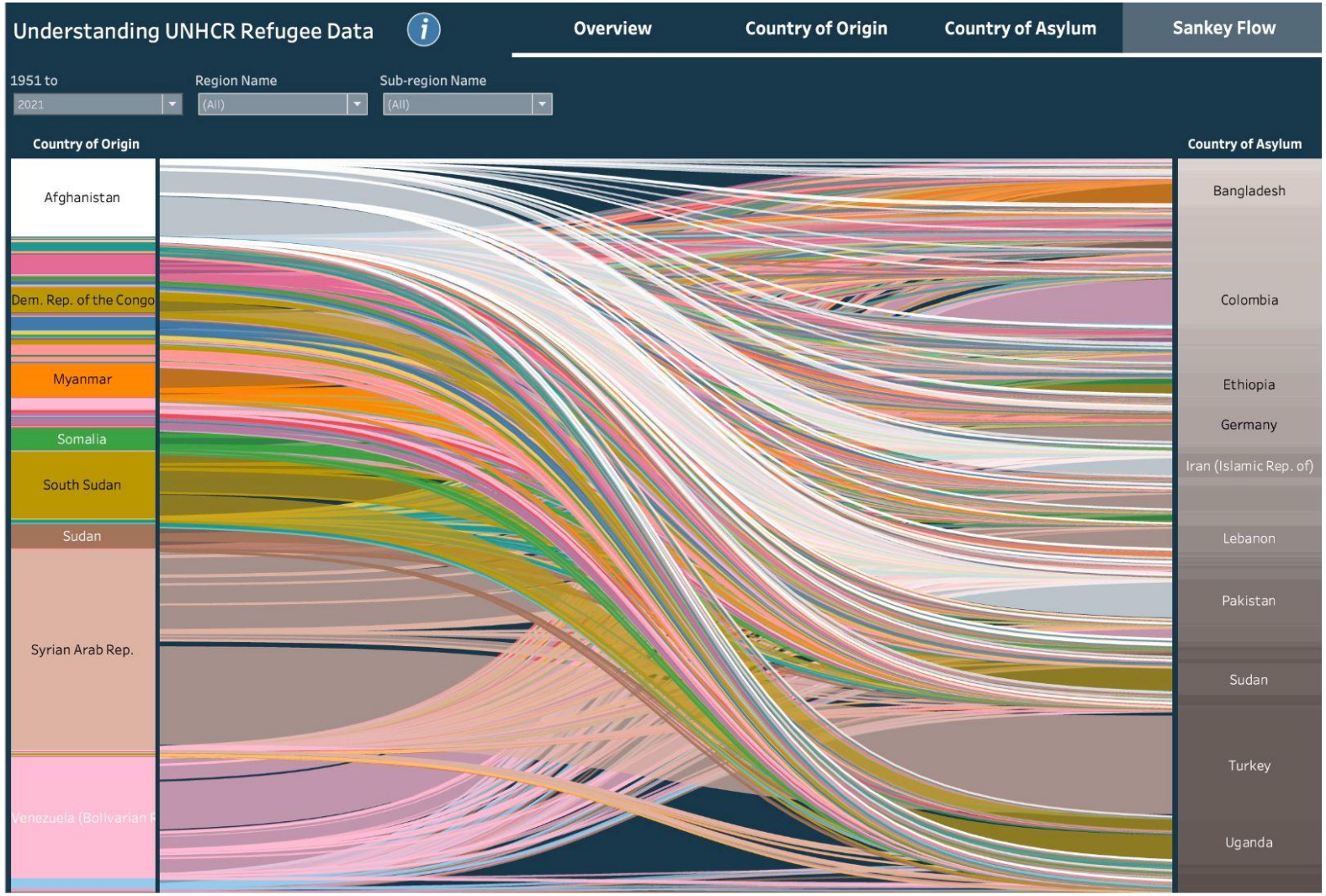
Literature Review:

Fleeing Flows and Intention to Move



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Literature Review:
Fleeing Flows and Intention to Move

- The intertwined population flows pave the complexity of studying the demographics of refugees.

- Refugees and asylum-seekers prefer to remain in their original region after being forcibly displaced (Global Trends Report 2022).

- Refugees' intention to move across countries or stay in an ideal destination is the result of weighing immigration obstacles, individual affection, and development prospects in the new community.

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Literature Review:

Educational Disparities and Responses

Overview	**More than half of the world's 14.8 million school-aged refugee children remain out of formal education (UNHCR Education Report 2022).**
Refugee v.s. National Population	On average, forcibly displaced populations are less likely to attend school than the national population. The disparity are less severe in the Latin Americas.
Situation During COVID-19	Learning activity participation in Latin American countries such as Costa Rica and Mexico still remained considerably high during COVID-19 school closures.
Reasons for Not Attending School	Reasons for refugee children not attending school vary from no official documentation, financial constraints to discrimination.

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Literature Review:

Ideal and the Real: Access to Health Services

Refugees' Health Needs

Vulnerability and Challenges

Regional Disparities in Latin America

Refugees have diverse health needs, including physical and mental health concerns, often differing from host populations due to their tortuous journeys.

Refugees face xenophobia, discrimination, poor living conditions, and restricted access to healthcare, making them highly vulnerable members of society.

Countries like Venezuela, Guatemala, and the Dominican Republic exhibit significant gaps in medical care for refugees, often due to economic turmoil, political instability, and resource constraints.

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Data Preprocessing:

Dataset Merging and Transformation

- Downloaded original datasets from the UN website and uploaded on Github
- Kept the most important variables that we are interested in finding a relationship
- For health related datasets, reorganized and separated datasets into three data files per country:
  - Demographic Data : Including variables of demographic features, intentions to move, application details, education status of children, disabilities, and medical-related risks. For example, Selected key variables: 'Year', 'Quarter', 'CountryOfAsylum', etc and Created a new CSV, “HFS_country_Demo,” focusing on demographic data.
  - Addressing Educational and Medical Challenges:
    Formed two dataframes: "df_notschool" and "df_nomedical."
    Transformed data to long format using pandas.melt for analytical efficiency.
    Documented reasons for lack of school attendance and medic services access.

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Data Preprocessing:
Data Cleaning

- Removed columns with significant number of missing values and are not useful for analysis
  a. Ethnicity: ethnic composition of the refugee population
  b. Disabilityacc_disabilityserv: Disability: difficulty accessing services/Communication services for disability
  c. RiskStay_medical: Risks if staying home/Not being able to access medical services
- Imputing other variables
  a. TotalAdult, TotalMinor
     i. Distribution is not heavily skewed, impute missing values using the median.
  b. CountryOfAsylum
     i. Certain nationalities are only found in specific CountryOfAsylum, used this relationship to impute missing values

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Data Preprocessing:
Data Cleaning (cont.)

- Add Not Applicable for data that is “missing” because it depends on a value for another variable
  a. ChildVirtual and Childinschool
    i. For rows where TotalMinor = 0 , changed value to be Not Applicable instead of NA for clarity (ie has no value because they have no children, not because they didn’t answer the question)
    ii. For rows where TotalMinor > 0, imputed values using most frequent response
- Create Unknown for unanswered questions
  a. Intentionmove, AppliedRefugee, MedicalReceived, RiskYes
    i. Replace NA for unknown for clarity

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Dashboard Exploration

Overview & Purpose

- Insights into demographics, health care and education disparity
- Help visualize survey data, generate accessibility for readers
- Basic information of refugee crisis & issues they face (quarterly trend)
- Policy recommendations & further research

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Dashboard Exploration

Layout & Key features

1. Introduction: background and overview
2. Overview: the total number of asylum seekers, applied refugees, adults, and minors
3. School: different reasons and barriers behind the lack of education
4. Medical: different reasons and barriers behind the lack of healthcare
5. Sankey: the flow of refugees between countries, migration patterns and interconnections between them

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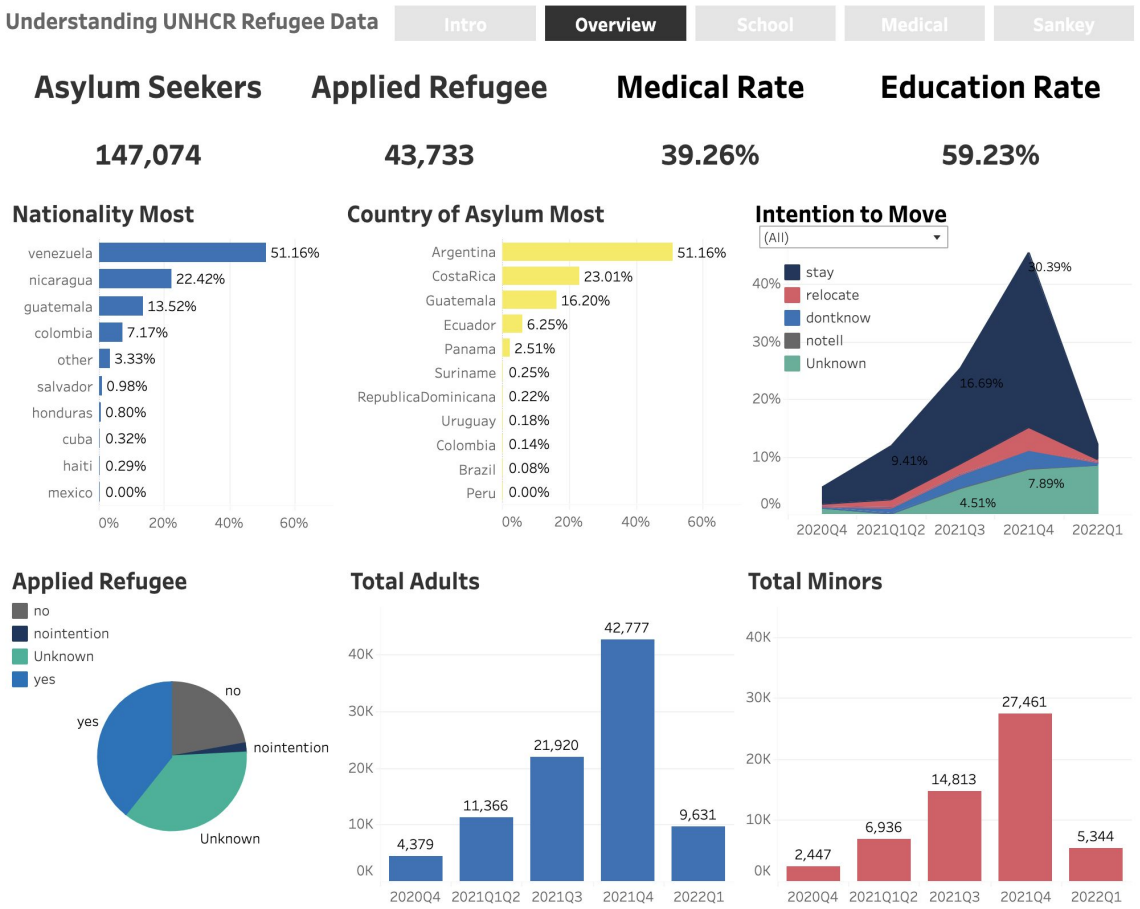

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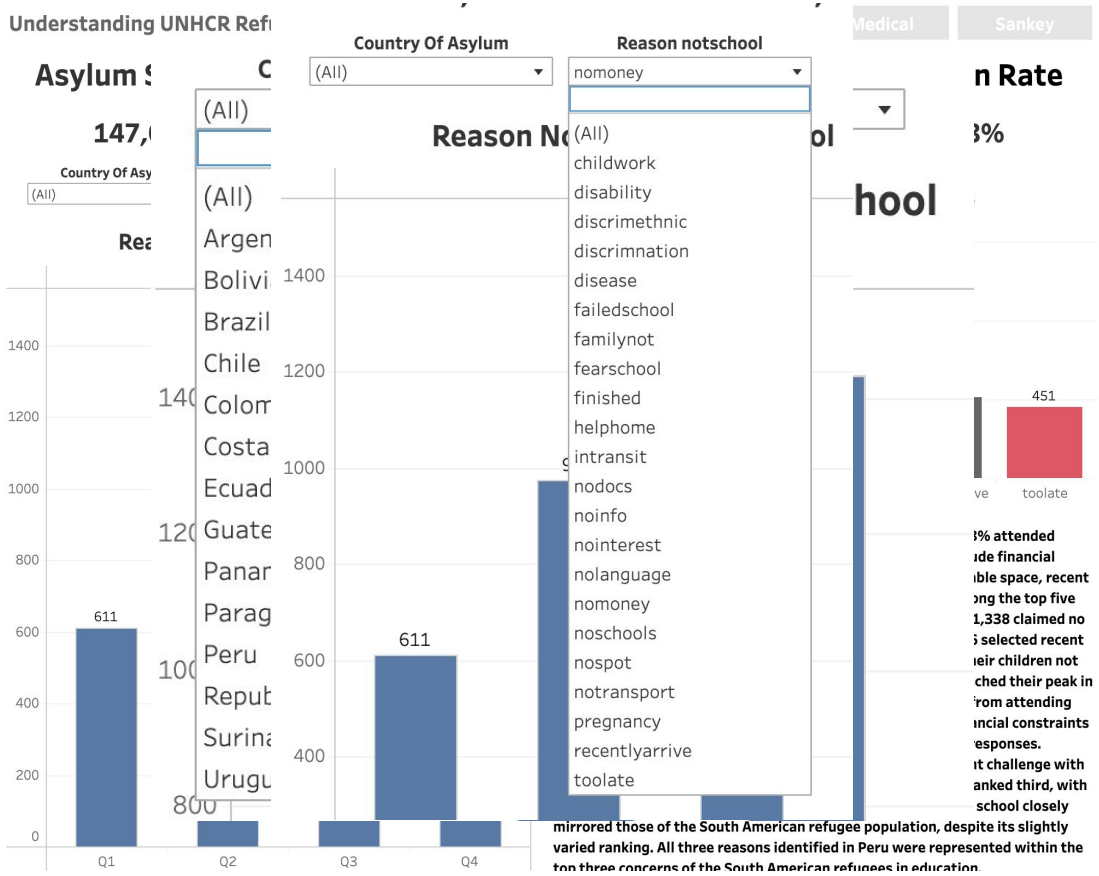

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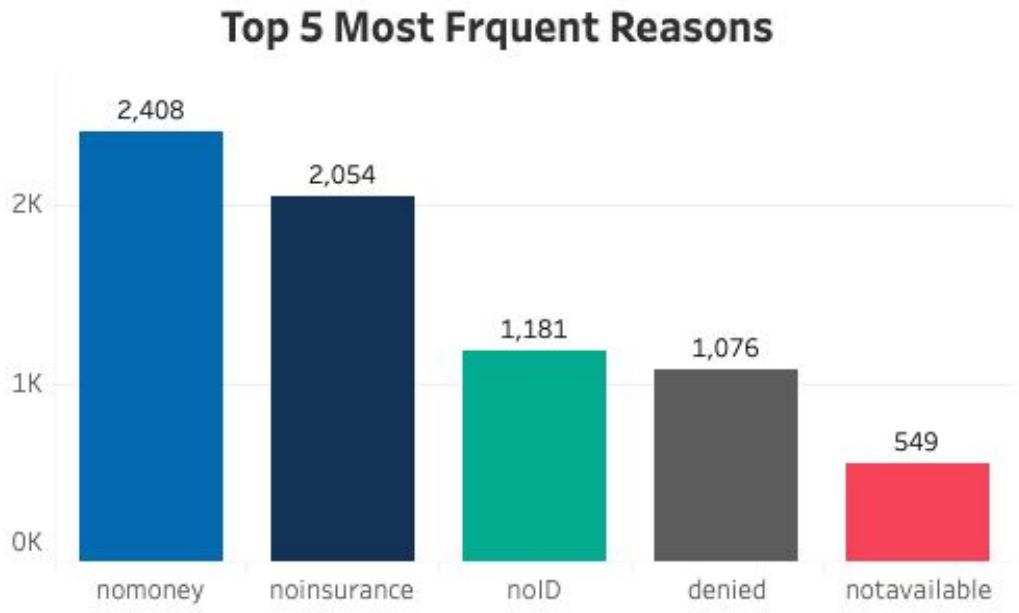

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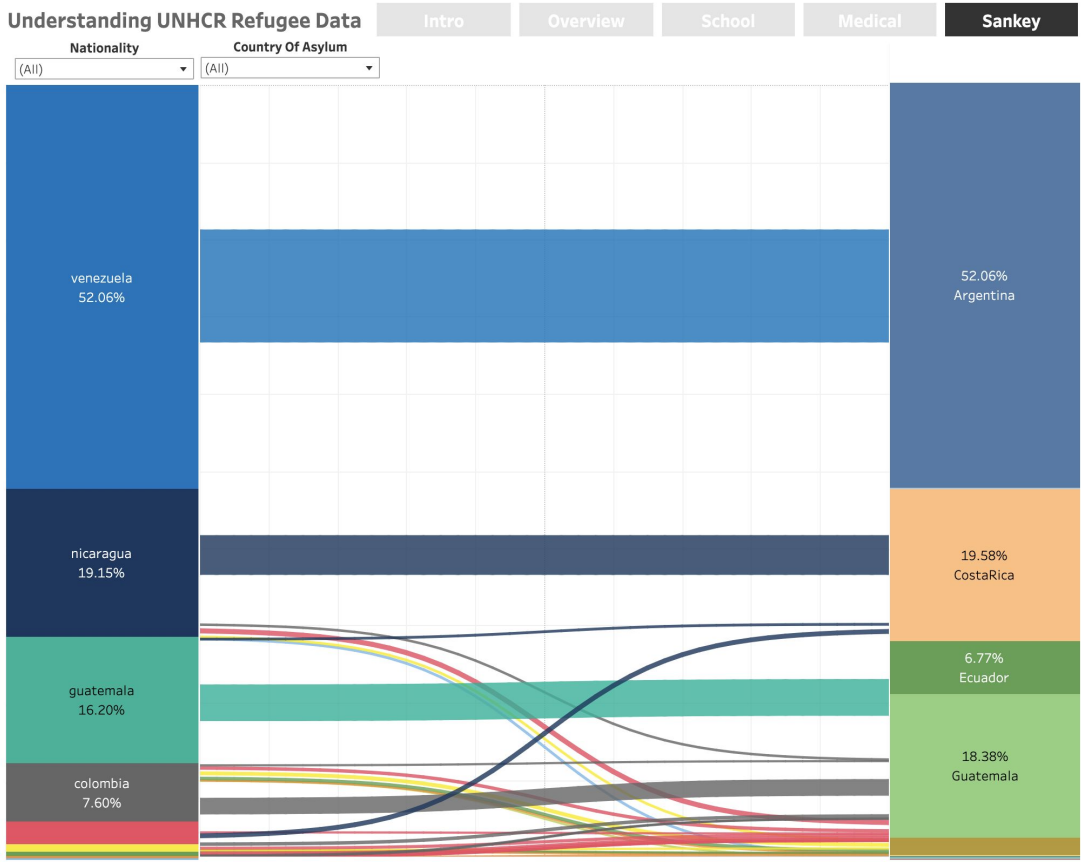

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Key Metrics

1. **Reasons not Attending School**
   a. Financial constraints, absence of essential documentation, limited available space, recent arrival, and arrival after the 18 designated enrollment perioc
2. **Reasons without Medical Care**
   a. Financial constraints, absence of insurance, no legal ID, being rejected by the service, and unavailability to approach
3. **Country of Asylum & Nationality**
   a. Country of Asylum: the country the respondent currently resides in
   b. Nationality: the country the respondent was originally from
4. **Applied Refugee**
   a. Applied Refugee: whether the respondent has applied or plans to apply for refugee status in the country of asylum.

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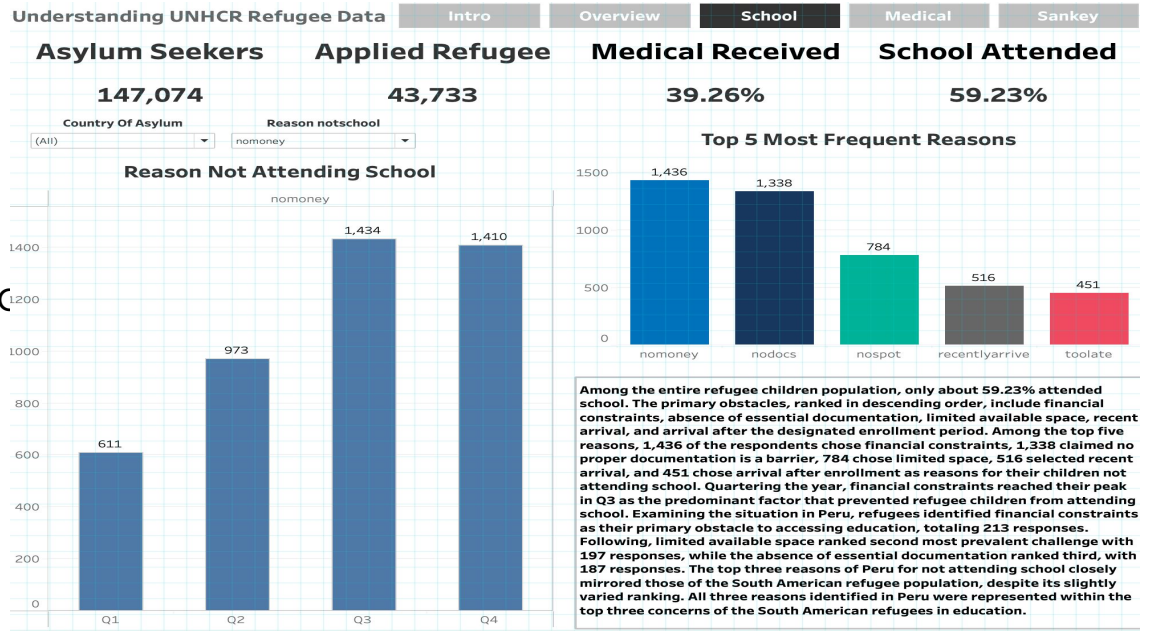
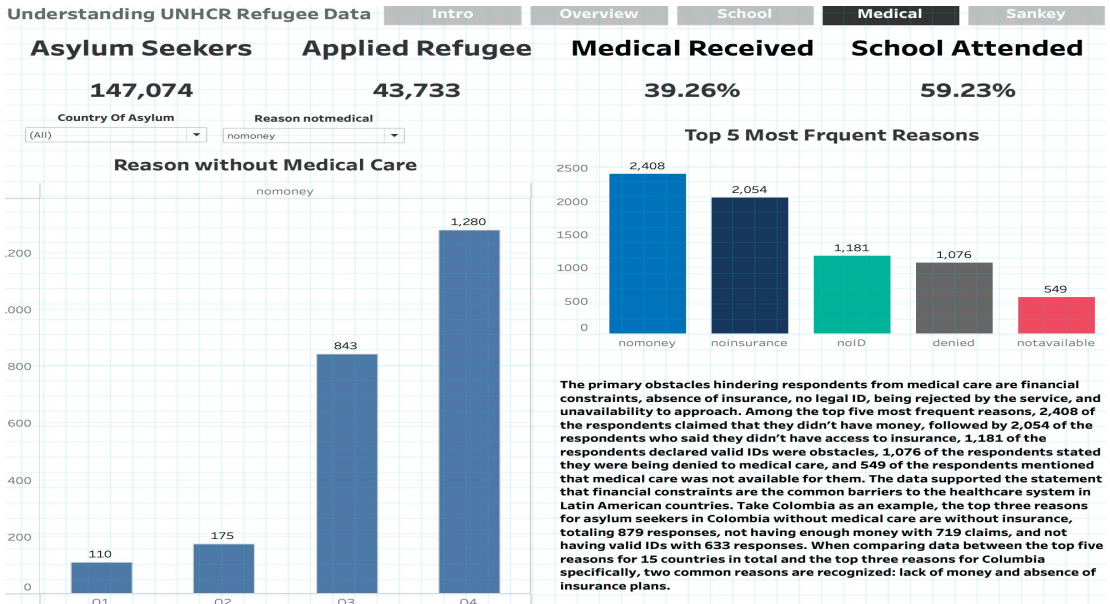
Dashboard Exploration

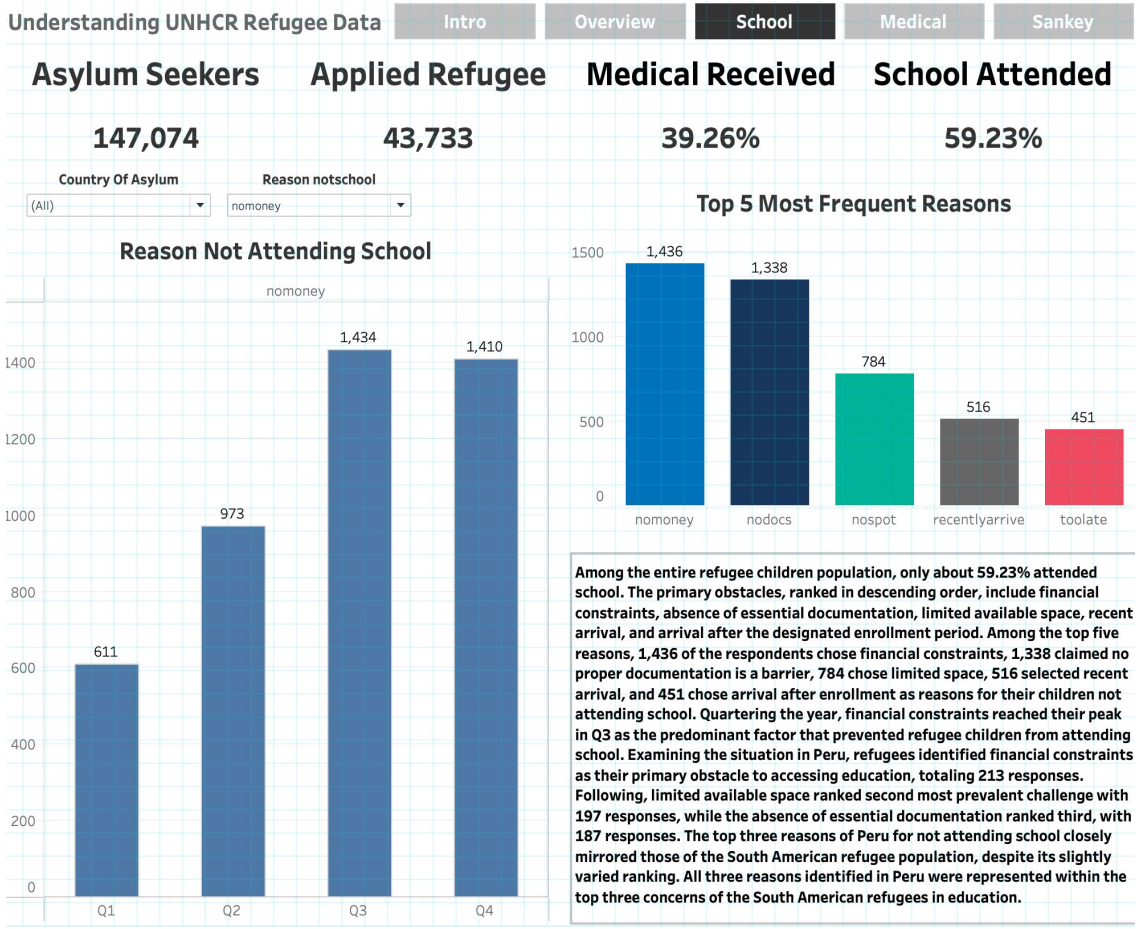




Impact of refugee Movement on Education

1. **Correlation Between Minors and School Attendance**
   a. Significant positive correlation observed.
   b. Increased child numbers linked to higher education likelihood.
2. **Influence of Relocation Intentions**
   a. Intention to relocation negatively affects school attendance.
   b. Stability in asylum country enhances educational opportunities for children.
3. **Trends in Refugee Population**
   a. Similar growth trends in adults and minor population, peaking in 2021 Q4.
   Notable demographic shifts observed in 2022 Q1

Dashboard Exploration



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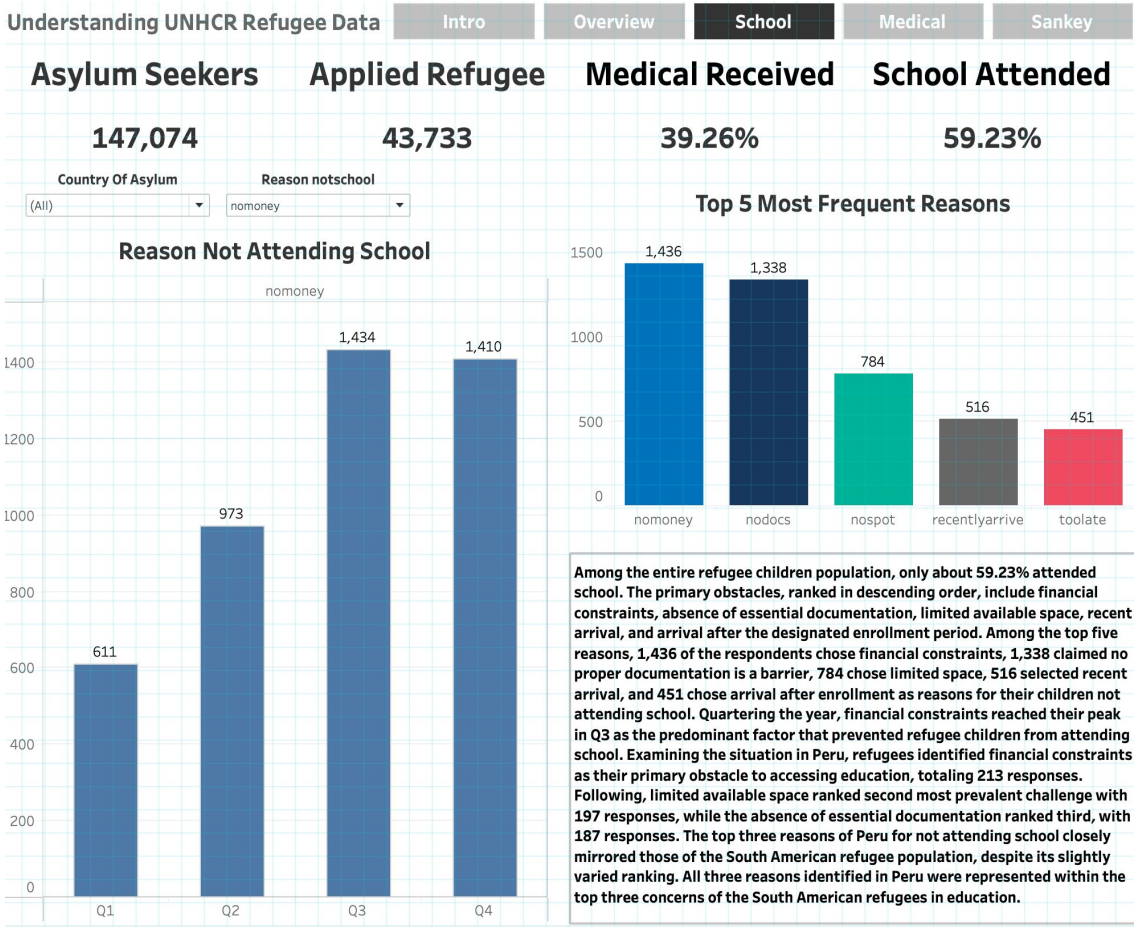
Impact of refugee Movement on Education (count.)

4. **Refugee Application Status**
   a. Varied responses to seeking formal refugee status.
   b. Nearly 40% have applied; about 2% do not intend to seek status
5. **Educational Access Challenges**
   c. Financial constraints, lack of documentation, and limited space as primary barriers.
   d. Situation in Peru reflective of broader South American trends.

Dashboard Exploration



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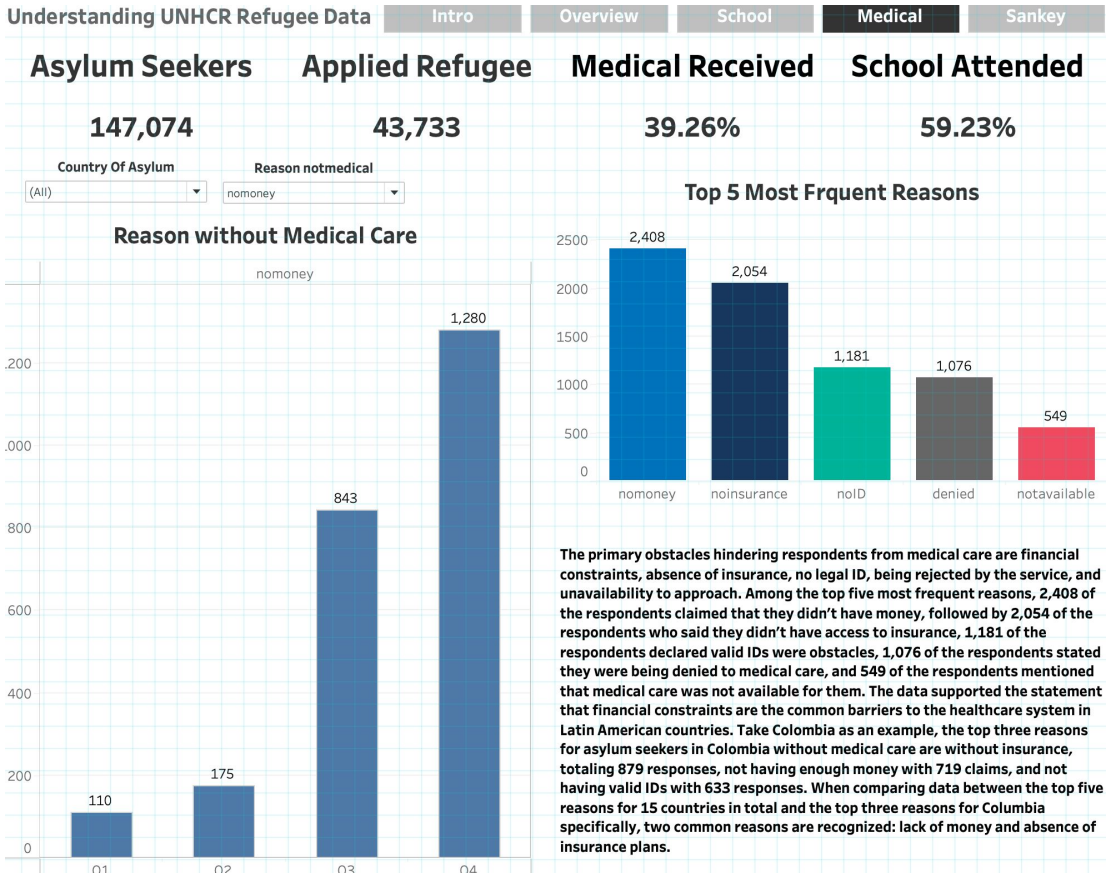
Refugee Demographics and Health Access

1. **Distribution of refugees by Nationality and Asylum Country**
   a. Majority moving to Argentina, followed by Costa Rica and Guatemala.
   b. Notable regional preferences in asylum destinations.
2. **Top countries of Asylum**
   a. Argentina, Costa Rica, and Guatemala as primary choices.
   b. Reflects a trend of choosing neighboring countries.
3. **Healthcare Access Challenges**
   a. Financial constraints and lack of insurance as main barriers.
   b. Colombia's situation aligns with broader Latin American challenges.
   c. Lack of valid IDs also a significant barrier.

Dashboard Exploration



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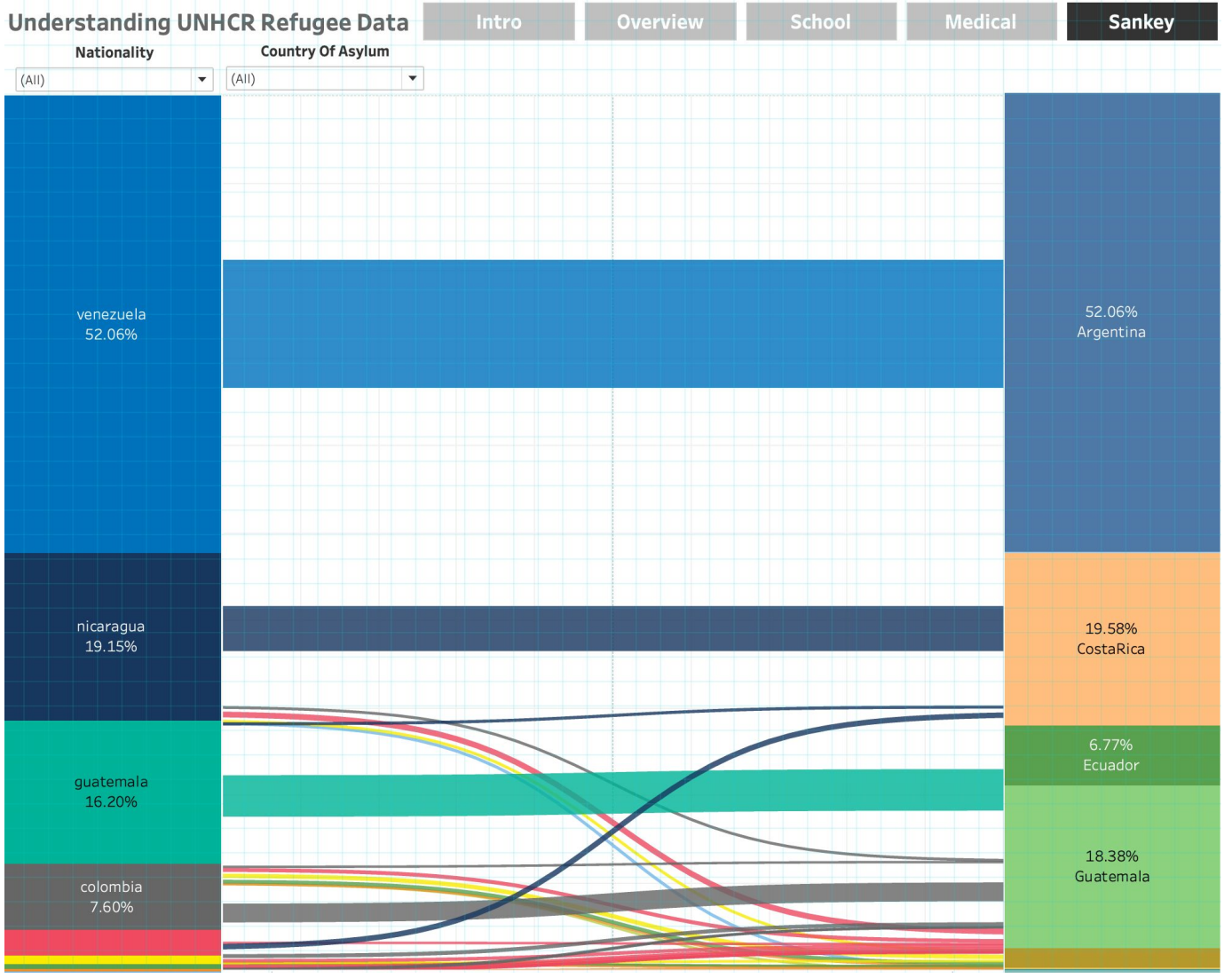
Dashboard Exploration

Sankey Flow

1. Nationality ⇒ country of asylum
2. Clear trend
3. Offer dynamic movement



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Model Exploration

Any correlation between these factors?

Total Minor;
Total Adult;
Intention;
Medical Received;
Attended School;
Applied Refugee;
etc ...

What about these questions?

1. When family members migrate too, does it influence their intention to stay permanently in the country they migrated to?
2. What is the correlation between disability and access to healthcare? (eg. Does disability severity influence access to healthcare)
3. Does the intention to move predict if their children are in school or not?
4. Does the decision to apply for asylum affect whether they access school/medical care?
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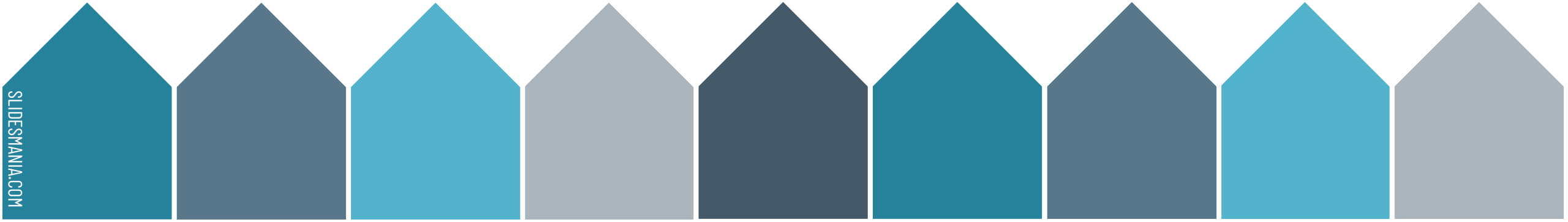

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cor.test(family_size, intention_move, method = Pearson)
R = -0.125, p<.001, the bigger the family size, the less intention to move

glm(attending_school ~ intention_move, family = binomial)
For “Relocate”: b = -0.189; For “Don’t know”: b = -0.432; More uncertain / plan to leave, less educated

glm(high_risk ~ medical_received, family = binomial)
Insignificant

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logit1 <- multinom(Childinschool ~ AppliedRefugee, data = r_un_df)

y.level <chr>	term <chr>	estimate <dbl>	std.error <dbl>	statistic <dbl>	p.value <dbl>	conf.low <dbl>	conf.high <dbl>
yes	(Intercept)	5.1005124	0.3790674	13.4554223	2.860999e-41	4.3575539	5.84347095
yes	AppliedRefugeeyes	19.3413069	0.1791156	107.9822792	0.000000e+00	18.9902468	19.69236695
yes	AppliedRefugeenointention	-1.3178374	0.4603004	-2.8629946	4.196578e-03	-2.2200096	-0.41566531
yes	AppliedRefugeeunknown	-0.7067889	0.4291589	-1.6469165	9.957522e-02	-1.5479249	0.13434713
dontknow	(Intercept)	0.6189210	0.4687590	1.3203397	1.867216e-01	-0.2998296	1.53767172
dontknow	AppliedRefugeeyes	20.9883821	0.3313426	63.3434456	0.000000e+00	20.3389625	21.63780164
dontknow	AppliedRefugeenointention	-1.5350378	0.6730824	-2.2806089	2.257160e-02	-2.8542551	-0.21582044
dontknow	AppliedRefugeeunknown	-0.2003260	0.5348263	-0.3745627	7.079857e-01	-1.2485663	0.84791429
notell	(Intercept)	6.7715198	0.3781342	17.9077151	1.026643e-71	6.0303903	7.51264923
notell	AppliedRefugeeyes	19.2149049	0.1711033	112.3000202	0.000000e+00	18.8795486	19.55026120

logit2 <- multinom(medicalReceived ~ AppliedRefugee, data = r_un_df)

y.level <chr>	term <chr>	estimate <dbl>	std.error <dbl>	statistic <dbl>	p.value <dbl>	conf.low <dbl>
Disagree	(Intercept)	-2.24352571	0.06190698	-36.2402680	1.414375e-287	-2.36486117
Disagree	AppliedRefugeeyes	0.26003629	0.24662820	1.0543656	2.917156e-01	-0.22334610
Disagree	AppliedRefugeenointention	0.24457214	0.10927638	2.2381060	2.521414e-02	0.03039436
Disagree	AppliedRefugeeunknown	0.34916792	0.07651518	4.5633812	5.033629e-06	0.19920093
Undecided	(Intercept)	-0.51505531	0.03134939	-16.4295171	1.175917e-60	-0.57649899
Undecided	AppliedRefugeeyes	0.91310145	0.11182840	8.1652018	3.208983e-16	0.69392182
Undecided	AppliedRefugeenointention	-0.72109540	0.07266844	-9.9230888	3.303708e-23	-0.86352293
Undecided	AppliedRefugeeunknown	0.37285529	0.03939488	9.4645630	2.947911e-21	0.29564275
Agree	(Intercept)	-3.78161687	0.12844885	-29.4406433	1.658827e-190	-4.03337200
Agree	AppliedRefugeeyes	0.88405187	0.38518142	2.2951571	2.172412e-02	0.12911016

CONCLUSION (Key Takeaways)

- Constant growing trend in refugees, driven by economic crises in countries like Venezuela and Nicaragua
- Financial constraints as the main barrier to school & healthcare
- Potential solutions:
  - Education: provide free access to education for refugees
  - Healthcare: establish insurance schemes to reduce the financial barrier to healthcare

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THANK YOU!

The Hive and USA for UNHCR
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