

Does NGO financial assistance improve other struggles?

Shelter, heat, general, personal, and winter needs for Ukrainian Refugees in Moldova, September 2022
by Rebecca Kimble, MD, MPH, 11 Dec 2022

Introduction:

Russian aggression in Ukraine has caused millions to flee to surrounding countries. As winter approaches, many struggle with basic needs despite worldwide attention and NGO assistance. Targeted surveys, conducted in conjunction with the United Nations, hope to better understand their needs.¹ Using the data from one such survey, specifically the “Winterization Rapid Needs Assessment” conducted this past September 2022 in Moldova, I asked the additional question of the role that NGO assistance plays in securing needed non-financial essentials such as shelter, heat, and personal/winter items. Specifically, I speculated that those reporting NGO financial assistance would report less difficulty with other essentials.

A Brief History of Ukrainian-Russian Relations:

The history of the Ukrainian people is as old as history itself. Kyiv is the site of settlements dating to the early Paleolithic era (ca 900,000 BC). It was the seat of the grand prince of the Kyivan Rus’ starting in 880. Throughout time, the region has seen many rulers and has been rebuilt countless times. Sitting at the crossroads of trade, it continues to be the site of conflict and culture in the region.

In the mid-1600s, Ukraine was divided into the Polish Right-Bank and the Left-Bank, or “Little Russia”, loyal to the Russian Tsar. Early in the 1700’s Russia’s Peter I started brutally absorbing the Ukrainian Left Bank into its empire. Poland and the Right-Bank’s conflicts with Russia were numerous and bloody. By 1795, the Russian Empire controlled 80% of Ukraine. Austria absorbed the remaining western territory.

Uprisings continued but were unsuccessful until the aftermath of World War I. The Revolution of 1917 led to the Ukrainian-Soviet War (1917-1921) during which Ukraine claimed fleeting independence. 1922 brought the formation of the USSR and with it, ironically, increased Ukrainian nationalism in the region. However, “collectivization” began under Stalin and led to the Famine-Genocide of 1932-33. An estimated 4.6 million Soviet Ukrainian inhabitants died. Western Ukraine, now under Polish rule, fared little better. Approximately 70,000 Ukrainians were imprisoned in concentration camps between 1919 and 1920. Ukrainian territories under Romanian and Czechoslovak rule also suffered oppression and violence.

¹ ReliefWeb. Moldova: Inter-Agency Winterization Plan. Available at:
<https://reliefweb.int/report/moldova/moldova-inter-agency-winterization-plan-november-2022-march-2023>.
Accessed 12/10/22.

During World War II, the area of Ukraine was German-held by the end of 1941. The Organization of Ukrainian Nationalists (OUN) took the opportunity to again declare independence, causing many to be sent to concentration camps. During the German occupation, 6.8 million people died in Ukraine, including 1.4 million Jews, and 2 million were deported as slave labor. The OUN continued to struggle against all fronts into the 1950s. Despite this, by 1944, Ukraine was once again reoccupied by the USSR. This time, Ukraine was recognized as an independent Soviet state and one of the founding members of the United Nations. Widespread oppression and brutality continued even after the death of Stalin in 1953, as did Ukrainian dissidence.²

Ukraine came into the world's view in 1986 with the Chernobyl nuclear power station meltdown and the declining stability of the Soviet Union. By 1991, by national referendum, Ukraine finally declared independence. Russian interference, however, did not end. The international stage witnessed Ukraine's ongoing struggle in 2004 when the Orange Revolution exposed fraudulent elections. Again, in February 2014, Russian corruption was forcibly removed. This time, Russia retaliated by annexing Crimea,³ marking the start of the Russo-Ukrainian War. In February 2022, Russian troops invaded Ukraine.⁴

It is estimated that 7.9 million refugees have fled Ukraine, and another 8 million have been displaced within country.⁵

NGO efforts in Moldova:

Approximately \$35 million (in USD) has been secured to aid the approximately 130,000 Ukrainian refugees and the 90,000 Moldovan families graciously willing to host them. Activities include monetized assistance, food distributions, and infrastructure improvements. Refugee families are vulnerable to extortion, trafficking, and violence. As temperatures drop in the area, targeted aid and capacity-building are required.⁶ There were over one hundred NGO based agencies working in Moldova with a wide variety of focuses prior to February 2022.⁷ There is no clear way of knowing all the NGOs working within the area currently.

² Encyclopedia of Ukraine.com. History of Ukraine. Available at: <http://www.encyclopediaofukraine.com/display.asp?linkpath=pages%5CH%5CI%5CHistoryofUkraine.htm>. Accessed on 12/10/22.

³ History.com. Ukraine has seen centuries of conflict. Available at: <https://www.history.com/news/ukraine-timeline-invasions>. Accessed on 12/10/22.

⁴ Wikipedia. Russo-Ukrainian War. Available at: https://en.wikipedia.org/wiki/Russo-Ukrainian_War. Accessed on 12/10/22.

⁵ Wikipedia. 2022 Ukrainian refugee crisis. Available at: https://en.wikipedia.org/wiki/2022_Ukrainian_refugee_crisis. Accessed on 12/10/22.

⁶ ReliefWeb. Moldova: Inter-Agency Winterization Plan. Available at: <https://reliefweb.int/report/moldova/moldova-inter-agency-winterization-plan-november-2022-march-2023>. Accessed 12/10/22.

Methods:

The Winterization Rapid Assessment Dataset was created with People in Need, Catholic Relief Services, ACTED⁸, and the United Nations Human Rights Council (UNHRC). Face-to-face interviews and phone calls were conducted between 9/5/22 and 9/13/22 with refugees and the Moldovan families hosting them. The goal was to evaluate the needs of refugees and the families who take them in as winter approaches. All monetary amounts are in the local Moldovan currency, the leu. The data was accessed through ReliefWeb, part of OCHA, the United Nations Office for the Coordination of Humanitarian Affairs.⁹

Data was initially imported as an Excel spreadsheet. Categories of interest were transferred to a separate datasheet for ease of use. Unchanged columns evaluated include: zone, settlement, population_group, HH_vulnerabilities, children, adults, elderly, household, sources_income, income_ngo_charity, issues_bills, general_nfis, personal_nfis, other_winter_needs, shelter_issues, difficulties_heating, and heating_fuel. Columns were added to accommodate combined data. Total_nonNGO_income was calculated as the sum of income_savings, income_rental, income_regular_employment, income_irregular_employment, income_own_business, income_agriculture, income_remittances, income_pension, income_selling_assets, income_support_community, income_illegal_activities, income_other. Total_income combined all income-based columns. Total expenditures were calculated but not used in the analysis. Expenditures for food, utilities, and rent were collected in the survey as percentages of total monthly spending. The latter datasheet was then transferred into RStudio for analysis using the following libraries: dplyr, tidyverse, readxl, modest, ggplot2, boot, and formattable.

The data (n=839) was separated into refugees (n = 328) and non-refugees (n=511). The refugee group was then sorted into two groups: those receiving NGO income (n = 233) and those who were not (n = 95). These groups were compared through data visualization and statistical analysis. Specifically, single and two-sided t-test, chi-square analysis, and data simulation were utilized.

⁷ OSCE Mission to Moldova. Catalogue of the NGOs on the left and right banks of the Dniester/Nistru River. Available at: <https://www.osce.org/files/f/documents/b/9/508874.pdf>. Accessed 12/10/22. ⁸ ACTED. Available at: <https://www.acted.org/en/about-us/>. Accessed on 12/10/22.

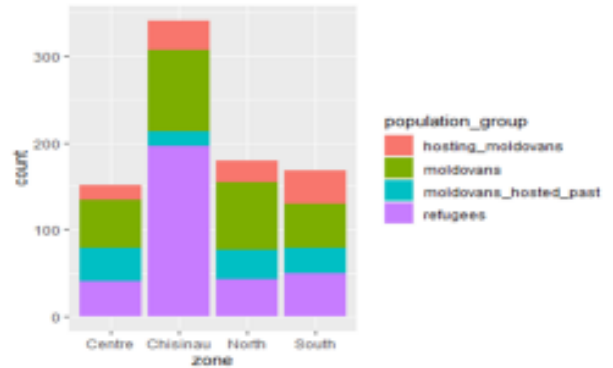
⁹ Moldova: Rapid Winterization Assessment Preliminary Findings. Initially posted 10/5/22. Available at: <https://reliefweb.int/report/moldova/moldova-rapid-winterization-assessment-preliminary-findings>. Initially accessed on 10/11/22

Analysis:

Table 1 shows a total of 911 refugees evaluated, including adults, children, and those over 60y. A total of 328 individual family groups were sampled, with 71% currently receiving some NGO assistance. The groups are similar in total mean income. However, the data included multiple entries labeled “other” but listed a value amount under NGO income. These were included as non-NGO income for this comparison. Notably, those receiving NGO assistance are more likely to have settled in and around Chisinau. (Figure 1)

Table1:

Figure 1. Population by Zone



	Receiving NGO assistance	Not receiving assistance
TOTAL	233	95
Avg number of children*	1.009	0.9789
Adults*	1.159	1.242
Elderly*	0.5107	0.8
People in the household	2.678	3.021
Settled in the city	72%	65%
Percentage noting vulnerabilities	52%	60%
Mean NGO assistance	MDL 3,755.00	MDL 2,200.00
Mean other income	MDL 5,060.00	MDL 8,491.00
Mean total income	MDL 3,649.00	MDL 6,393.00

*per household

The null hypothesis for this evaluation was that receiving NGO assistance did not affect shelter, bills, or other basics needs of daily life. To evaluate this, receiving assistance was made into a Boolean variable based on if “ngo_charity” was listed as a source of income. It is important to note that many reported receiving assistance in addition to other sources of income. All those who reported receiving any “ngo_charity” was counted as “TRUE”, while those who did not list this element were considered “FALSE” (Figure 2).

Figures 3 and 4: Income per NGO assistance, Bar graph

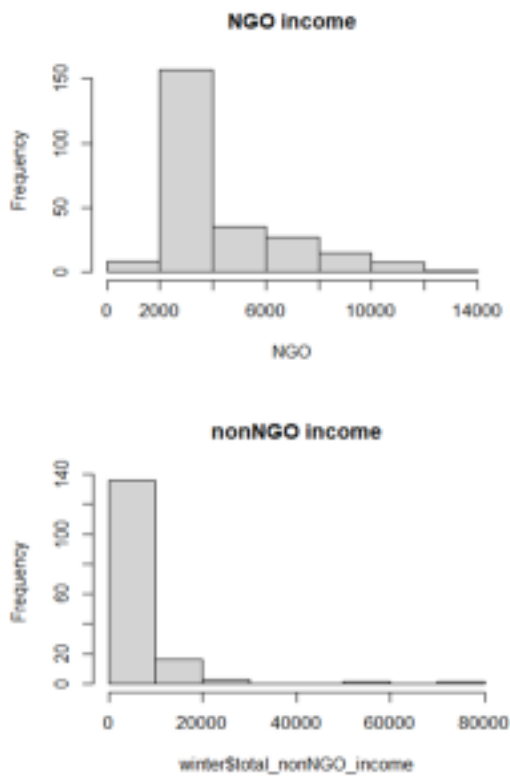
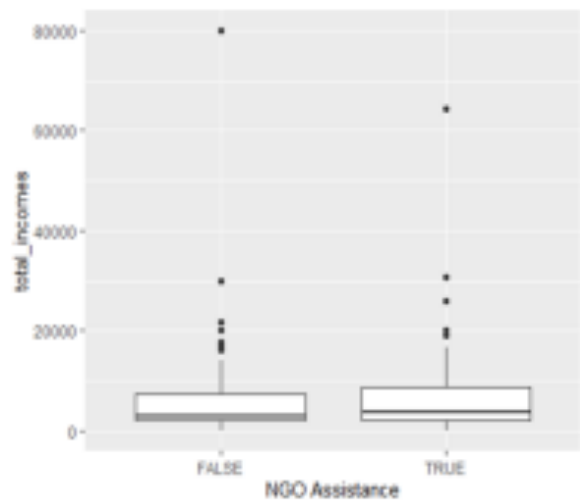


Figure 2. Income per NGO assistance, Boxplot



There is a broader range of incomes for the group not receiving NGO assistance. Those who receive assistance have a mean/median NGO based income of 3649/2200 leu (MDL) monthly. The mean/median non-NGO-based monthly income is 6393/4000 leu. Both have a Poseidon distribution with rare outliers earning considerably more than typical (*Figures 2, 3, 4*). However, the mean income of those receiving assistance is not significantly different from those not (two-sided t-test $p = 0.9951$, CI - 2070, 2083). It appears that increased vulnerabilities, which were defined as traveling with children, the elderly, and those with illness, are more likely in the group without assistance; however, not statistically so (chi-squared test $p = 0.255$). While the proportion of refugees receiving assistance in the city is not significantly different compared to those in the surrounding area (chi-squared $p = 0.7529$), refugees are far more likely to have settled in the city of Chisinau (chi-squared $p < 0.005$, $\chi^2 324$).

Boolean evaluations were created for each of the challenges queried by the survey. Specifically, we evaluated reported shelter issues, challenges paying bills, difficulty obtaining general, personal, and winter supplies, and heating issues.

Table 2:

	Receiving NGO assistance	Not receiving assistance	Chi-squared p value	x-squared
shelter issues	31%	33%	0.79350	0.0685
paying bills	38%	42%	0.54480	0.3667
general supplies	80%	91%	0.02972	4.7256
personal supplies	64%	72%	0.23160	1.4307
winter supplies	73%	80%	0.19440	1.6841
heating issues	86%	69%	0.00105	10.744

Based on a chi-square analysis, those receiving assistance are statistically more likely to have issues with heating ($p < 0.005$), but are no more likely than those not receiving assistance to struggle with other needs. (Figure 5.) NGO assistance correlates with fewer issues obtaining general supplies ($p=0.03$).

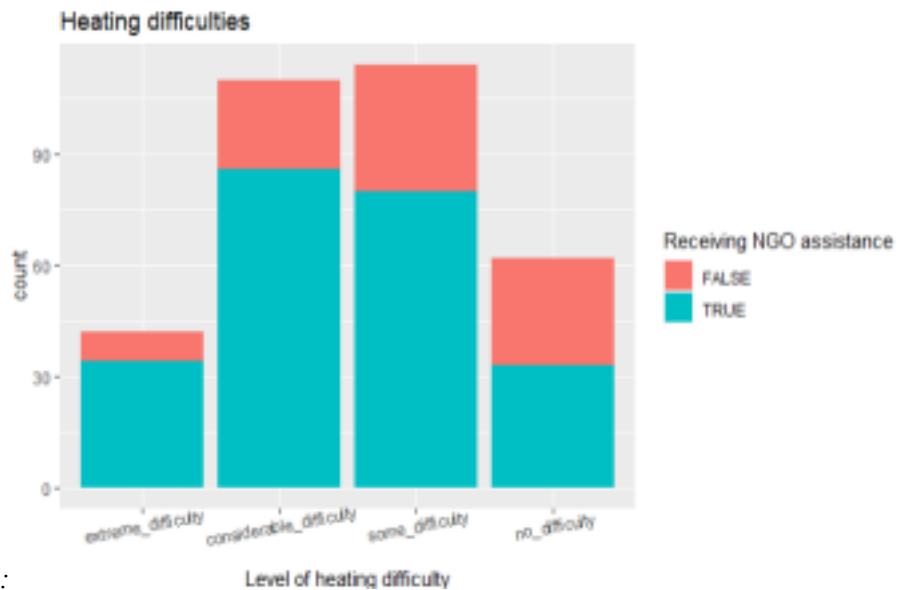


Figure 5:

Because most refugees settled in the city, their source of fuel options may impact their ability to heat their homes. Only 9 of 187 refugees in the city (4.6%) reported using wood as a source of fuel, whereas nearly half of the refugees in other parts of the country (47%) used wood as part or all of their heating fuel. Sixty-nine percent of refugees in the city use gas or electric, compared to only 34% of those in other

regions. Both groups' Chi-square tests showed significant correlations (χ^2 83, $p < 0.005$ and χ^2 19, $p < 0.005$, respectively). Of those living in the city (regardless of NGO status), 87% reported difficulty with heating. While complex, the type of fuel available may contribute to the relationship between receiving assistance and having heating issues. A replication of the data showed the relationship between location and heating challenges is unlikely due to chance, simulation difference of nearly zero (0.0001857528). This was calculated by replicating the percentage chance of heat issues (0.8673469, 0.1326531) for those living in the Chisinau zone ($n=196$) ten thousand times. Regardless of location or income type, refugees reported they spend an average of 43% of their income on food and nearly 20% on utilities, including fuel.

Conclusion:

In summary, most refugees fleeing Ukraine into Moldova this winter received some NGO assistance. Refugees are primarily concentrated in the city of Chisinau. The null hypothesis of NGO assistance being helpful in obtaining other basic life needs could not be rejected. NGO financial assistance is not positively correlated with meeting basic needs as winter approaches. The inverse relationship exists in regards to being able to heat their homes. This is critical as temperatures often drop well below zero in the area.

The reasons for this do not appear to be due to innate differences between those who receive aid. Household make-up, incomes, and underlying vulnerabilities did not differ significantly between the groups. Given the similarities between both groups, it is more likely that additional environmental factors are underlying their struggle. Specifically, I suspect the scarcity of needed goods may affect both groups equally. One of the qualitative elements of the survey asked the respondents to talk about what is affecting their spending, and the inability to obtain basics due to a lack of availability and high prices is stated frequently. Additional and ongoing evaluation is needed to best serve the needs of refugees and those who host them. Specifically, this analysis could indicate that, although financial support is essential, facilitating the delivery of hard goods, especially fuel and food, may yield higher benefits.

At this writing, the conflict in Ukraine continues, and the effect on surrounding countries continues to mount. Moldova suffers from blackouts and civil unrest, including pro-Russian paid protests against the West-leaning president, Maia Sandu. Russian-created unrest has roots in an already poor country being pushed by the realities of war so close to its borders. The New York Times reported today, 12/11/22, that inflation was approaching 35%, gas prices have increased sevenfold, and electricity fourfold over the past year.¹⁰ These tactics sound all too familiar to the games Russia has played in the area throughout the centuries, often with great success.



Elena Lungu lighting a wood-burning stove this month in a village outside Orhei, Moldova. Her family now uses it for heating because it cannot afford to use its gas-fired boiler. Credit...Andreea Campeanu for The New York Times

¹⁰ New York Times. War Next Door Brings Energy Crunch, and Paid Protests, to Moldova. Available at: <https://www.nytimes.com/2022/12/11/world/europe/moldova-russian-ukraine-war.html>. Accessed 12/11/22