ACCESS TO HEALTHCARE SERVICES AMONG SYRIAN REFUGEES IN TURKEY

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ABSTRACT

The Syrian population influx has dislocated a significant number of people (6.7 million of people outside the Syrian borders, 6.5 million of people among the different provinces of Syria). The biggest group among this moving population between borders has integrated into the Turkish society, and economy. From the macro and micro perspectives, the health system integration is significantly graded by the Syrian population. We will focus on the early age group, among the refugees, as their health vulnerabilities, and health improvements will create much larger effects throughout their lifetime. What we aim in this paper is to bring forward an objective micro-level outcome that will allow us to measure two things that was crucial in the life cycle of the refugee population: the war effect which will create a push factor for them to start moving, and an integration effect which will measure the time-continuous, and time-discrete increase in their health outcomes, as a result of relatively cost-free integration into a more developed health system. The Demographic Health Survey (DHS) 2018 data that we utilize gives us an empirical advantage for identification for two reasons; it differentiates the health outcome of children, in multi-child families depending on where they were born, which we will call an intra-Syrian effect, and it allows us to compare the situation of the Syrian children vis-a-vis the average child health outcomes in the society they are integrating into (what we call the inter-Syrian effect). The results suggest that Syrians remain underneath the Turkish average, for many early child development, and vital health access, however, after integration significant positive developments occur, in terms of compensating for the negative war effect, and in terms of the second effect (integration/adaptation effect) that they have started to converge to the Turkish average, as they have spent more years in Turkey.

Keywords: Forced migration; refugees; health care system; health care demand; health care access; health resilience; child mortality; antenatal care; postnatal care

Jel Classification: D12, I11, I12, I14, I18, R23

1. INTRODUCTION

Turkey has been faced with the most significant influx of people since its inception, in a period that was following April 2011. With the Syrian war, the displaced population from Syria started arriving

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to Turkey in the second half of 2011, with increased numbers in 2012 and 2013, and the greatest increase from the start of 2014 to the end of 2015. What distinguished the Turkish experience is that a very significant group was provided a very open policy in the dimension of health, providing automatic access to the secondary part of the public health system starting 2014. What this research plans to identify is the additional health value of the access plan that has been provided to the Syrian population, with respect to the earlier Syrian health averages. Our aim is to analyze the added-value of health integration in the dimensions of access, consistent and timely care, and health outputs.

Although general data is available on the health applications of the Syrian population, one issue is that the demographic characteristics of the Syrian population is significantly different than the Turkish population, and their health needs as a refugee population might be significantly different than the host populations. Although the overall application profile looks similar to the Turkish average (Mipatrini et al., 2019), the secondary system integration occurring much before means that the proportion of application that occurs in the secondary level is much higher for the Syrian refugee population compared to the Turkish group. Because the Syrian population is significantly younger than the Turkish population, this means that application numbers overestimate the needs, whereas the displacement and the characteristics of a refugee population means that the application numbers themselves could possibly underestimate the needs (Mipatrini et al., 2019).

Among their total applications, the applications that are occurring in the natal and obstetric codes take a special importance, with 500,000 live births occurring in the Turkish healthcare system for the Syrian subset. The meaning of care at this level can be crucial for refugee integration for multiple reasons. Not only is the mother-child health situation during, and after birth conditions are considered very important health vulnerability context that needs to be focused on, but also the early child development of the refugee population is crucial to both creating opportunities of future refugee integration, and for allowing the countries to face certain long-established challenges, in supplementing health for this specific high vulnerability population that has moved from a different health context, and is used to utilizing different health systems. The important contribution of the paper is to quantify both the oft-mentioned challenge of integrating a population that has suffered a prolonged negative shock, and also to quantify the health effect of integrating into a new health system for the arriving populations. The novel approach allows us to conclude that the Syrians in the early age group have indeed suffered on average from a sizeable war-shock, and their time in Turkey has indeed started a protracted period of improvement for this same group, in large part due to the extensive, easily accessed and cheap healthcare protection that is afforded to them.

This article is organized as follows. Section 2 summarizes the current literature on the subject, for the region and globally. Section 3 describes the data structure, and the uniqueness of the

Demographic Health Survey (DHS) 2018 data survey undertaken in Turkey, to pose specific questions that are important for researchers especially specialized on the questions of refugee health integration, and understanding the war fallout effect on health levels of the refugee population. Section 4 presents our empirical framework, starting with a description of differences in Syrian births based on the country they live in and then specifying our estimating equations. Section 5 presents baseline estimates of Turkey-Syria differences in crucial health outcomes and discusses the mechanisms through which access within a health system affect children's health outcomes. Finally, Section 6 concludes.

2. LITERATURE REVIEW

This section explains literature examining the effects of forced migration on migrants' own health, particularly on children's health outcomes. For instance, Bundervoet et al. (2009) examines the effect of the civil war in Burundi on war exposed children's health outcomes, particularly on early childhood malnutrition. The paper uses a nationally representative household survey data for 1998 and an event data on military conflicts from 1994 to 1998. They use a kernel-weighted local polynomial regression of height for age z-scores on the duration of military conflicts. They find a negative relationship between the number of months of civil war exposure and childrens' average height for age z-scores. They include all provinces in the regressions and exploit time variation of the conflict and regional variation across different provinces which were not associated with civil war. They examine the war's causal effect on war exposed children's height by employing cohort of birth fixed effects, province of residence fixed effects, and province specific time trends. Empirical results provide evidence that war exposed children have a negative effect of the war with lower height for age z-scores. Using the same empirical identification setting, Akresh et al. (2011) uses Rwandan household survey data from 1992 and data on the date and geography of conflicts and investigates the impact of the civil war on the health outcome of children under five years old. They show that war exposed children are negatively affected with height-for-age z-scores lower than children born in the same period in a non-war region in the country. Guerrero-Serdán (2009) also uses a very similar empirical design and states that 2003 civil war in Iraq has a significant negative effect on the nutritional outcomes of war exposed children. Children born in regions exposed to intense military conflict have a lower height compared to children raised in less conflict areas. In another study, Akresh et al. (2012), employing the 1998-2000 Eritrea–Ethiopia civil war, estimates the impact on internally displaced children's health outcome. They use a proxy (internally displaced population in regions as a share of the regions' population before war conflicts) to determine the intensity of the civil war in regions and suggest that war exposed children in Eritrea who were born during the military conflicts and reside in war regions have lower height-for-age z-scores than children who were born during the conflicts but in a non-war region. The authors, employing a household survey data, make an important contribution in the related literature by appropriately measuring children's

geographic location during the military conflict. Moreover, as opposed to the existing studies that report differential gender impact of civil war (i.e. Bundervoet et al., 2009), they find that both boys and girls living in war exposed regions have negative effects that are similar in magnitude. Minoiu et al. (2012) also documents the effect of the 2002–2007 civil war on children's health outcome in Côte d'Ivoire. The authors use household survey data collected pre and post war period and during the war period, and data on geographic location and date of civil war. Controlling for province and birth-cohort fixed effects, they identify both temporal and spatial variations to measure the impact of civil war on children's health included in war cohort. The results suggest that children living in refugee affected regions have a lower height-for-age z-scores than children who were born during the same period but lived outside the war regions. Maystadt et al. (2019) reports an association between forced migrants and the level of food insecurity measured as the prevalence of chronic undernutrition for children under five years old between 2001 and 2016 by world region. The analysis employs Demographic Health Survey and the World Bank. The results show that food insecurity increases as refugee population becomes more intense in host countries.

Studying child health effect of civil war, Winfred et al. (2009) claims that child health outcomes, particularly mortality rates, are the major indicators of the overall social wellbeing and social welfare and therefore examines the effects of civil war on child health in Angola. This study uses a survey data collected in Angola (South-Western Africa region) in 2004, two years after the end of civil war and employs an event-history approach to investigate under five mortality rates for three groups of population; people who had to move due to civil war, immigrants not related to civil war and nonmigrant people. The authors find that under five mortality rate is higher in families who were forced to move due to violent conflicts; both short-run and long-run mortality effects indicate that children in forced migrants are disadvantaged relative to the other groups of people. Verwimp et al. (2005), likewise, states that refugee children in Rwanda has higher mortality outcomes relative to nonrefugee children. Interestingly, in some cases, girls are more affected than boys due to bad living conditions. The authors can not test this gender differential with lack of data but gives a potential explanation suggesting that food and health related resources are mostly devoted to the survival of boys rather than girls by Rwandan families. Similarly, Guha-Sapir et al. (2004), O'Hare et al. (2007), Hamill et al. (2000) emphasize the short-run effects of forced migration on child health and report mortality disadvantage of under five children of displaced populations due to military conflicts compared to the host population. In the related literature, findings on the effects of civil wars on child mortality are less conclusive in the long run. For instance, Singh et al. (2005a) compares forced migrants and host population in Uganda and Sudan and reports no differences in under five mortality rate between the two groups. In his follow up study, Singh et al. (2005b) investigates the long term effects of forced migration on child health outcomes in Arua District, Uganda and Yei River District, Sudan and shows that women who did not migrate in a situation

of civil war and women who were sent back to their home countries before the age of 15 had their children with the highest under-five mortality rates relative to women who were currently refugees and women who were sent back to their home countries after the age of 15. Similarly, Hynes et al. (2002) finds better child health indicators for migrants relative to the host population. Khawaja (2004) and Madi (2000) report infant and child mortality among Palestinian refugees and find that refugees have a health advantage compared to their counterparts in host population. Hargreaves et al. (2004) investigates rural South Africa region and finds that there is no difference in infant mortality between former Mozambican migrants and southern African native population; the study however reports that there is a difference in childhood mortality rates four years following the migration of refugees in the host country. Overall, forced migration to a large extent is an important source of an increase in the incidence of serious diseases and mortality rates affecting migrant's own health status.

3. DATA

Demographic Health Survey (DHS) 2018 in Turkey collects data for the Syrian mothers and Turkish mothers alike on the same dimensions. The main data we will concentrate on is the part of the sample including 1,050 Syrian mothers with 2,915 live births who have multiple children, while some residing in Syria and some of the children they have residing in Turkey. For identification the multiple country birth at the level of household is crucial. This study uses data from Turkey Demographic and Health Survey 2018 (TDHS) which is the sixth TDHS since 1993, and eleventh of the national demographic surveys which have been carried out since 1968 every five years by Hacettepe University Institute of Population Studies (HUIPS). Differently from the previous surveys, TDHS 2018 covers two samples: Turkey sample and Syrian migrant sample. And, it is nationally representative.

Two questionnaires are applied in TDHS 2018: The Household Questionnaire and the Individual Questionnaire. The household questionnaire collects information on background characteristics of household members or visitors such as age, gender, educational attainment, marital status, and relationship to the head of household and information on the dwelling unit, and on the ownership of a variety of consumer goods. The individual questionnaire that covers women of age 15-49 collects information on topics of basic characteristics such as migration history, birth history and fertility preferences, knowledge and use of contraceptive methods, antenatal and postnatal care, breastfeeding and nutrition, immunization, early childhood development, marriage history and marriage

characteristics, women's work history, husband's background characteristics, women's status, and anthropometric measurements of women and children (HUIPS, 2019)[1] .

TDHS 2018 collects information on 13,367 children born to 5,074 mothers, and among these births 2,755 were under-five years old at the time of the survey. TDHS 2018 Syrian migrant sample data covers information on 6,135 children born to 1,684 mothers, and among these births the number of children under-five years old is 1,962 at the time of the survey.

The outcome variables used in this study are timing of antenatal care, facility delivery, postnatal care of mother, stunting of the child, infant mortality and under-five mortality. For each variable, the questions are used to collect information on what population it covers, and how it is constructed and they are explained in Table 1 and Table 2. Among the dependent variables, anthropometric measures are the most objective ones since they are retrieved by the measurer with the help of an interviewer. However, the share of missing cases is higher for anthropometric variables than for the other dependent variables. Valid height-for-age measurements are taken for 76% of eligible children, valid weight-for-height measurements are taken for 75% of eligible children, and valid weight-for-age measurements are taken for 78% of eligible children. Other variables are based on the respondent's statements. A certificate or report is not necessary for recording an event. Hence, informal events are also covered in the survey data.

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[1] Comprehensive information related to maternal and child health is collected in DHS series, which are periodic and cross-sectional studies. One field is immunization and/or nutritional status of children under age 3. For instance, Solis-Soto, Paudel and Nicoli (2020) analyze the relationship between vaccination and nutritional status of children under 2 years of age using recent DHS conducted after 2013 from 16 countries.

Table 1. Data Variables and Questions

Variable	Question	Covered Population	Variable Values
Timing of antenatal care	*How many months pregnant were you with .... when you first received antenatal care?*	Last born child in last five years prior to the survey	1=Antenatal Care Took Place in First Trimester 0=Antenatal Care Did Not Take Place in First Trimester
Facility delivery	*Where did you give birth to ....?*	Children under-five	1= in public/city/training hospital, maternity house, other public sector, university hospital, migrant health center, private hospital/clinic, private doctor or other private sector 0= if at home (woman's home or other home) or other
Postnatal care of mother	Facility delivery: *How much time elapsed between birth and your first examination?* *Who examined you?*[2]	Children under-five	1= Care Received in first 41 days after birth. 0=If the type of health provider is missing, it is treated as no check performed.
Anthropometric measures Stunting Underweight Wasting	The Weight and Height Measure of Woman and Her Living Children That Were Born In Study Period.	Children under-five	Stunting is Designated On The Height-Per-Age Distribution[3] Underweight Designation Is Measured On the Weight-Per-Age Distribution[4] Wasted Designation is Measured on the Weight-Per-Height Distribution[5]
Infant and under-5 mortality	How old was ...... when he/she died?	All children	1=Age of Death Less Than 12 months 0=Otherwise (For Infant Mortality) 1=Age of Death Less Than 60 months 0=Otherwise (For Under Five Mortality)
Covariates			
Household Wealth Index	What is the household level of income? What are the household-agricultural assets? What Is the Residential Area/Agricultural Area of Ownership	All Families	Three PCAs (Principal Component Analysis) were produced, one for a set of indicators common to both urban and rural areas, which did not contain number of farm animals or agricultural land area. Two other PCAs were produced, one for urban areas and one for rural areas, both of which contained number of farm animals by type and agricultural land area.
Education Level	What is the level of highest education he/she has received?	All parents Mother (V106) Father (MV106)	Critical Values: Higher than secondary education (women: V106 = 3; men: MV106)
Literacy Level	Does he/she have ability to read?	All parents Mother(V155) Father(MV155)	Critical Values: Read a whole sentence (women: V155 = 2; men: MV155 = 2) Read part of a sentence (women: V155 = 1; men: MV155 = 1) Cannot read at all (women: V155 = 0; men: MV155 = 0)

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[2] The type of provider is verified to ensure that it is a health provider. All categories of health providers are considered including traditional birth attendants.

[3] Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age (stunted).

[4] Children whose weight-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are classified as underweight.

[5] Children whose weight-for-height Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered thin (wasted). WHO growth standard reference population (WHO 2006) is used as the reference population.

4. ESTIMATION STRATEGY

In this section, we define the estimands we seek to identify using a statistical model of neighborhood effects. We then describe the research design we use to identify these parameters and the key identification assumptions underlying our analysis. First, we underline our identification strategy.

We estimate place effects using a statistical model motivated by the early-childhood exposure effects documented in Chetty and Hendren (2018). Let h_i denote a child's income (or other outcome) in adulthood, measured at age T. We model h_i as a function of three factors: the health system in which the child comes up, disruption costs of moving across neighborhoods, and all other non-neighborhood inputs such as family environment and genetics.

In this critical setup, the outcome variable that is our focus will be estimated for our 0-5-year-old dataset, belonging to both gender groups. We plan to estimate a few crucial access variables, and a few health and nutrition outcomes, assuming that they will be negatively correlated with the onslaught of the `local` war effect, and positively correlated with the timing of the integration into the Turkish health care system. However, we also need to list a couple of empirical assumptions, which, if true, will strengthen the empirical identification of the effects.

Crucial Model Assumption 1:

Selection effects do not vary when the Syrian family crosses the Syria-Turkey border in a child`s lifetime.

Crucial Model Assumption 2:

There is only one unidirectional move for every family, from Syria to Turkey, that occurs once in the child`s lifetime, with no reverse travel.

Under these assumptions, the identification of switching to the Turkish health care system is captured as follows:

In Syria, the best linear predictor of the health situation of the children (h) is specified as:

$$h_{ij} = \alpha_m + \theta_j + \beta_m \times H_{s,t}$$

where α is the individual health creating characteristics at a certain age, θ_i is the family level characteristics that determine the level of the child`s health and $H_{s,t}$ is the characteristics of the macro health system that the individual will be integrating.

The exposure effect is defined basically as following:

$$\gamma_m = \beta_{m+1,T} - \beta_{m,S}$$

, which is the incremental health effect of integrating into the Turkish health system compared to the Syrian health system. The graphical representation of the yearly integration effect is represented in Figure 1-5.

The breakdowns of these two health system integration parameters state that the groups compare individuals who migrate at age m, with its health situations in Syria when their age was m-1, m-2, m-3, and m-4, and with its health situations in Turkey, which is the ages of m+1, m+2, m+3, and m+4. By these comparisons we aim to identify the aggregate war effect, influencing the health situation of the Syrian children while they are still in Syria, when their health system level depreciates, which is defined by $\Delta H_{s,t} \leq 0$ when $t \leq m$. The instantaneous effect of integrating into the Turkish health system is given by $\Delta H_{s,t} \leq 0$ when $t = m$. The integration effect measuring the process of integrating into the Turkish health system is given by $\Delta H_{s,t} \leq 0$ when $t \geq m$.

In the first part of the analysis, we will focus on intra-Syrian comparison, where among the Syrian child-mother dataset, we will distinguish among these coupled groups, based on when in the child`s life span the move to Turkey has occurred. As the survey has been conducted on children from 0-5 years old, all the children at some time t have integrated into the Turkish health system. In the final part of the analysis, we will compare the Syrians with the health situation of Turkish people and health access in the same age group. We believe that the analysis will allow us to pinpoint when the groups have diverged in these critical dimensions of early life health outcomes, and when and if they ever converge.

Those who entered at age one were denoted in our analysis as the base group. This approach allows for the identification of critical ages-of-entry and trend breaks in the relationship between age-of-entry and outcomes. Also, to disentangle the benefits of "entry at age zero", and to reach conclusions relating to how Syrians are doing with respect to Turkish people, we follow a dual identification strategy. We look at just the Syrian dataset at the start, comparing ages at entry, keeping other variables that determine health outcomes, and health access constant, and after that we compare the Syrian group in different age-of-entry-groups with Turkish groups in the same age group, in terms of access variables, delivery characteristics and health outcomes.

The important point is that pregnancy conditions and antenatal and postnatal care is a very significant part of the demand of the Syrians from the Turkish health care system. The reasons for this preponderance is plentiful; the Syrian group is a significantly younger population compared to the

Turkish population, and a significant amount of births have occurred within Turkey`s borders (600,000 births by the end of 2018). It constitutes at least 20 percent of the health demand for the Syrian group, so understanding how well this part of the Turkish health care system has worked for Syrians is a crucial proxy, for how well the Turkish health system is performing for the general Syrian population. The results give us an idea about the degree of access, variety of access and the health outcomes, and future development limitations. Because the timing gives us ideas about the time spent in Syria with the t-1, t-2, t-3, t-4 periods, as well as time spent in Turkey which is denoted by t, t+1, t+2, t+3, t+4. The advantage for our methodology is that we can sketch the shock effects identified during the time spent in Syria, and the shock effects identified during the time spent in Turkey.

5. EMPIRICAL RESULTS

Figure 1-a, in terms of the intra-group comparison, is showing the importance of integration in terms of increasing the number of antenatal care (ANC) visits by significant amounts consistently after the Syrians cross the Turkish border, and have ability to integrate into the Turkish health care system. In terms of both antenatal and postnatal care (PNC), both Figure 1-a and Figure 3-a shows a significant improvement for the Syrian population, compared to their situation before the war, and before their integration into the Turkish health care system. These figures are supportive of the Turkish health policy to give free-for-all antenatal and public hospital access to the Syrians that have crossed the border, with significant process-of-care improvement, and significant health integration of the Syrian population through this getaway. We also note that the survey questions on timing of ANC and PNC come from a different part of the DHS survey, with smaller data size. As such, t-2 effects cannot be identified cleanly, and are left outside in our analysis (see Figure 1-a and Figure 3-a).

Figure 1. Timing of Natal Care a-Intra-Syrian Population Comparisons b-Syria/Turkey Comparisons
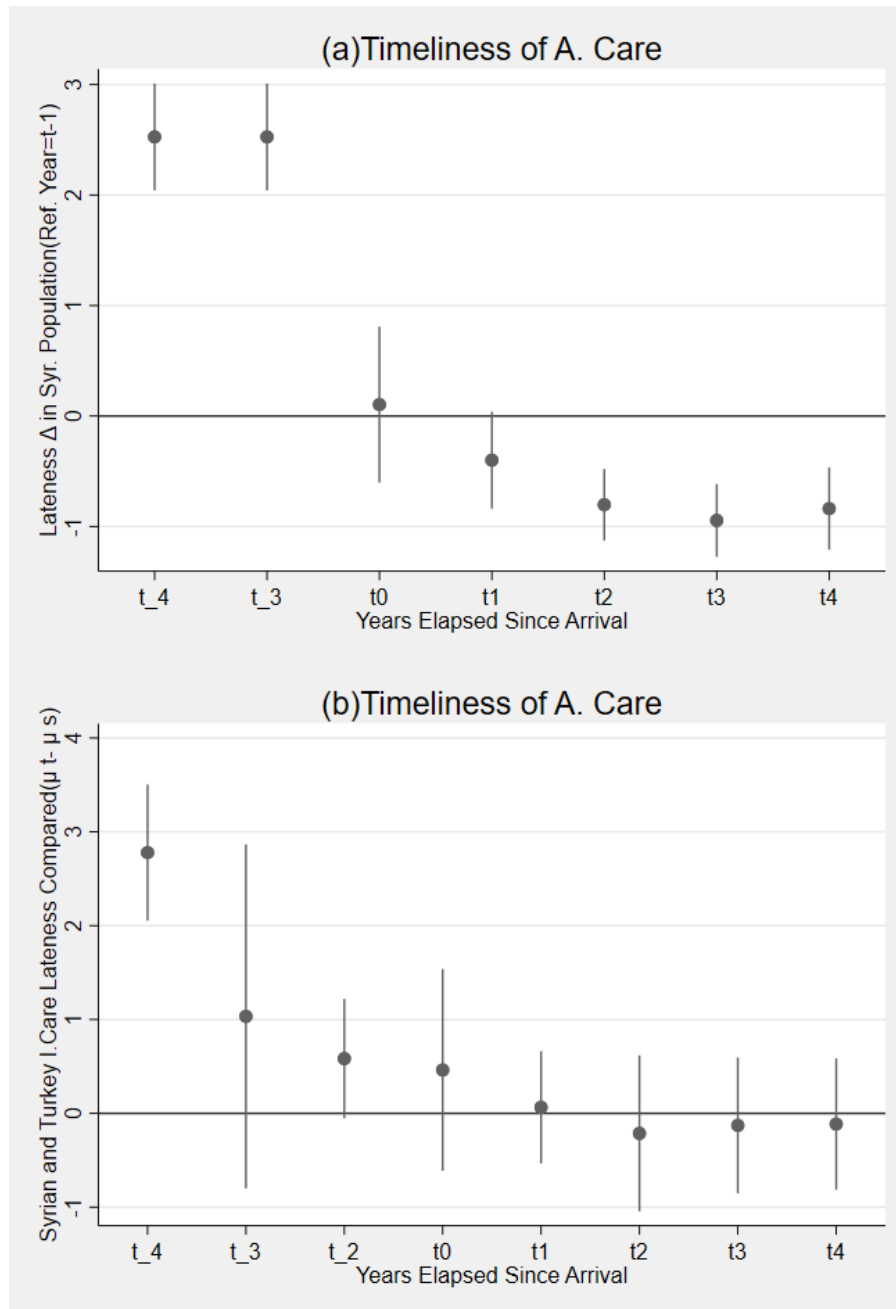

Figure 1-b, which allows us to compare the developments in the Syrian population with the Turkish counterpart, suggests that in terms of timeliness of the first antenatal care, in terms of months delayed, the significant divergence between the Turkish value and the delayed Syrian value has significantly converged in the initial integration period (time t_0), and the process is furthered as the time spent in Turkey increases.

Figure 2-a suggests that, similarly in the critical time period before the Turkey move, the time period of t-2, 2 years before the move to Turkey, was the first period of adverse shock. The health facility access in the case of pregnancy were significantly curtailed, largely as a result of the health system and society entering a period of prolonged crisis at the end of 2011. In the year of Turkish integration (t_0), a significant improvement has happened in access to health facilities, but the continuing improvement in the values after this period suggests that significant integration occurs after the initial year of arrival. The comparison figure in 2-b suggests that the significantly divergent situation in the start between the Syrian population and the Turkish population in this health parameter, is cut, by stages, so at the end, the difference at the end of the integration process (t+4) turns to be insignificant.

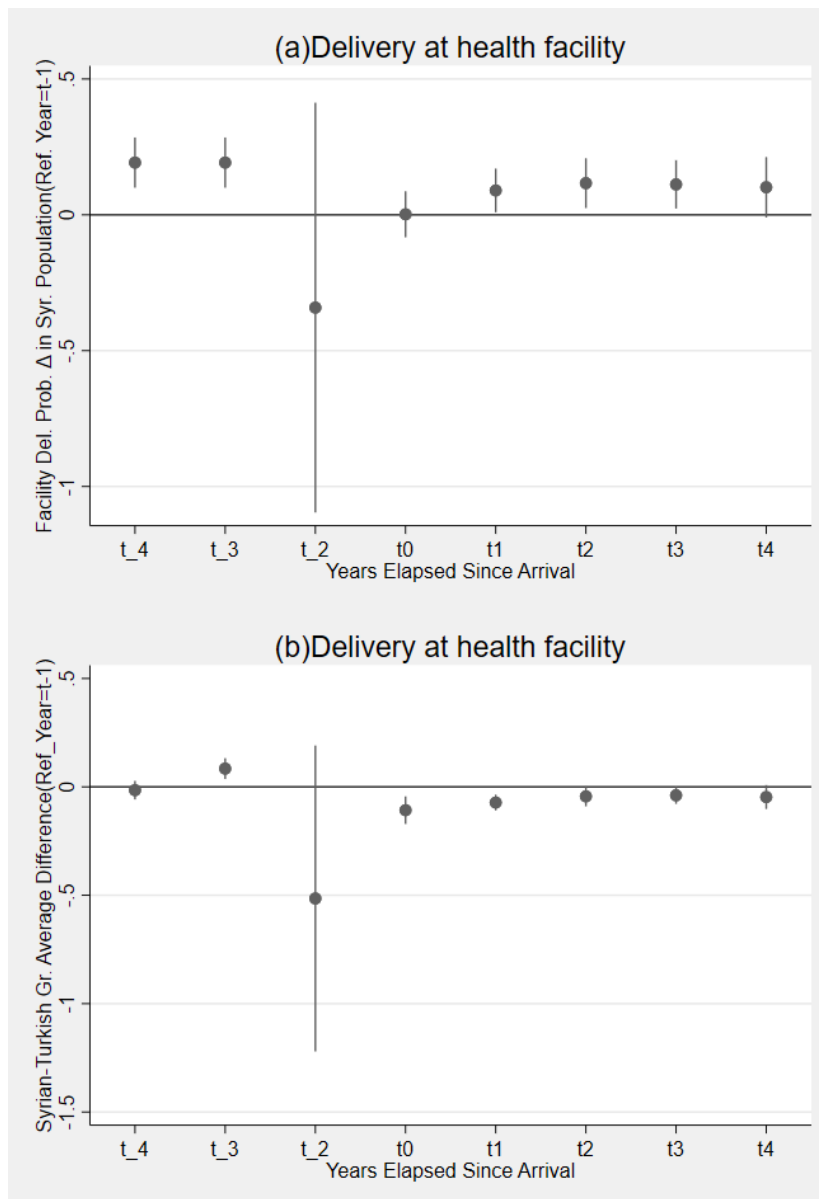**Figure 2. Facility Delivery a-Intra-Syrian Population Comparisons b-Syria/Turkey Comparisons**

Figure 3-b suggests that in the case of postnatal cares timeliness, as in the percentage of the mothers who have received postnatal care within the first 41 days, the difference between the Turkish average and the Syrian average is significant in the entire out of Turkey period. Unlike the antenatal, and the during pregnancy operation access, the postnatal results really significantly converge starting after a significant amount of time has been spent in Turkey (>1 years). This suggests that postnatal care integration has taken a little bit longer than other kinds of natal care dimensions, with birth processes that fully take place in Turkey, more likely to be integrated within the Turkish health care system.

Figure 3. Postnatal Care of Mother a-Intra-Syrian Population Comparisons b-Syria/Turkey Comparisons
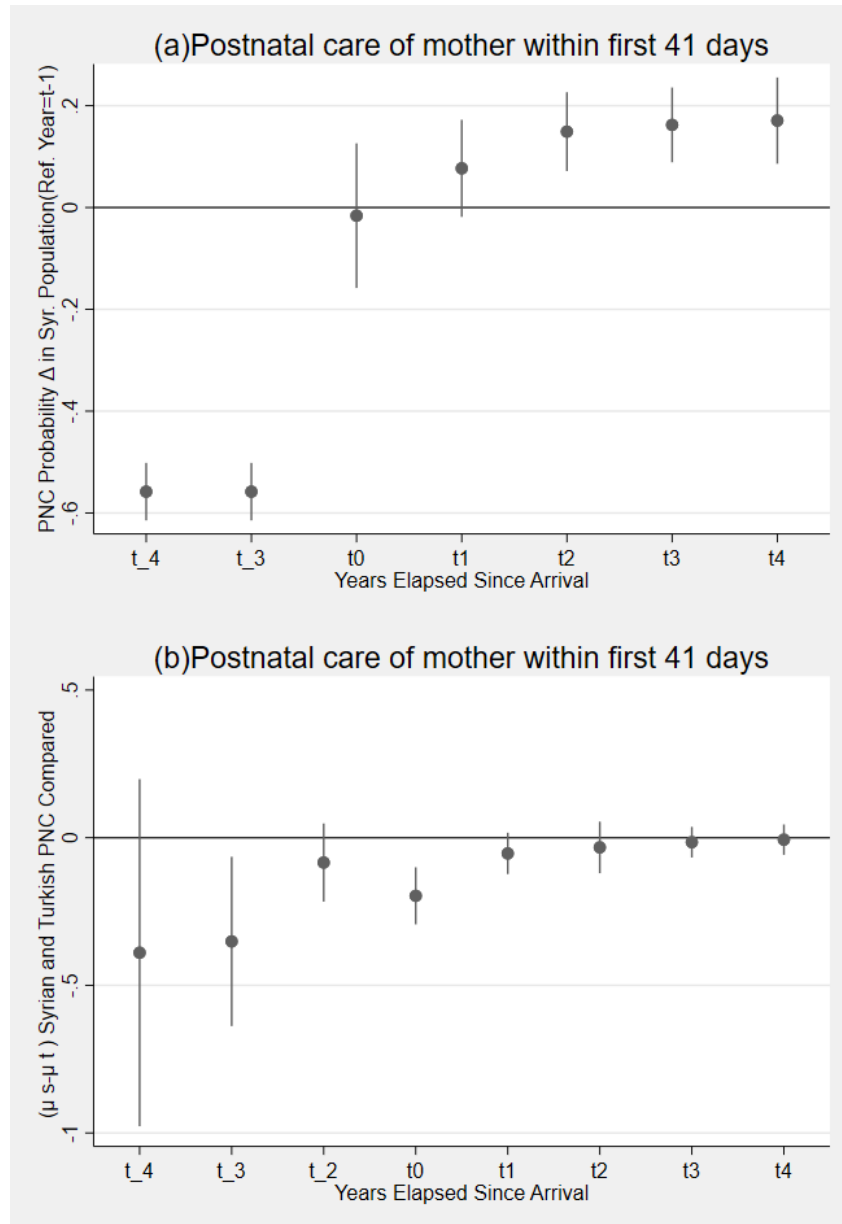
The figures up to this point have been on the subject of access and the health delivery process. When it comes to the outcomes, we believe that it is more important for a sustainable path of integration for the Syrian population. Significant development problems, and significant difference from the Turkish average will suggest that these populations will be stuck on the periphery of the society, because of the workings of the health care system. On the important dimensions, we can check the issues of nutrition, height per age limitations, and mortality at early age issues by focusing on the crucial variables that DHS 2018 has allowed us to explore.

Figure 4-a is showing what is hampering the early child development in terms of the estimated stunting probability and shows the intra-Syrian picture. The situation seems to be going significantly worse within Syria as the war effect approaches (from t-4 to t-2 we see this probability increasing), but after the integration into a new health system (after t+e with e=[0,4]) the levels pick down, as the adverse health outcomes become less and less likely.

Figure 4. Stunting Proportion in Year Cohort a-Intra-Syrian Population Comparisons b-Syria/Turkey Comparisons
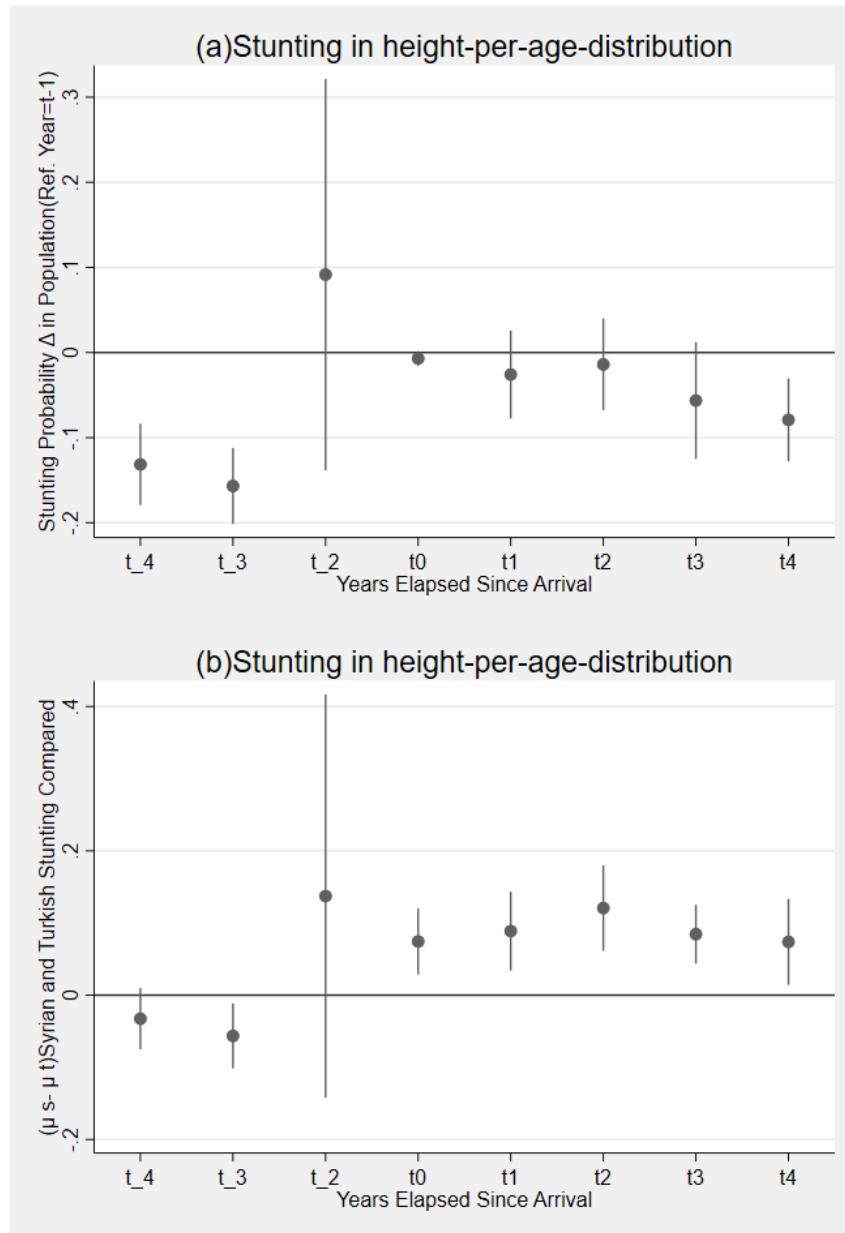
In time t-2, there is a negative health shock for the Syrian group, but the probability of stunting takes a significant drop in the first period of integration, and then in the following periods, stunting probability decreases further, as the child and their family is further integrated into the Turkish society. In terms of differences with the Turkish population (Figure 4-b), even though some significant convergence occurs after time t-0, significant differences and difficulties exist for the specific Syrian subpopulation, even at the very end of the integration period.

Figure 5-a suggests that, in terms of mortality, a significant increase in infant mortality and under-5 mortality (Appendix Tables) have occurred in the crucial t-2 period. Although there is a general

movement of improvement after the initial period of integration, the effects are not significant. In terms of comparison with 5-b, significant improvement in the post-integration is only observed in one of the final periods, suggesting that improvements will be only protracted, and will be harder to achieve.

Figure 5. Infant Mortality Change in Different Birth Cohorts a-Intra-Syrian Population Comparisons b-Syria/Turkey Comparisons
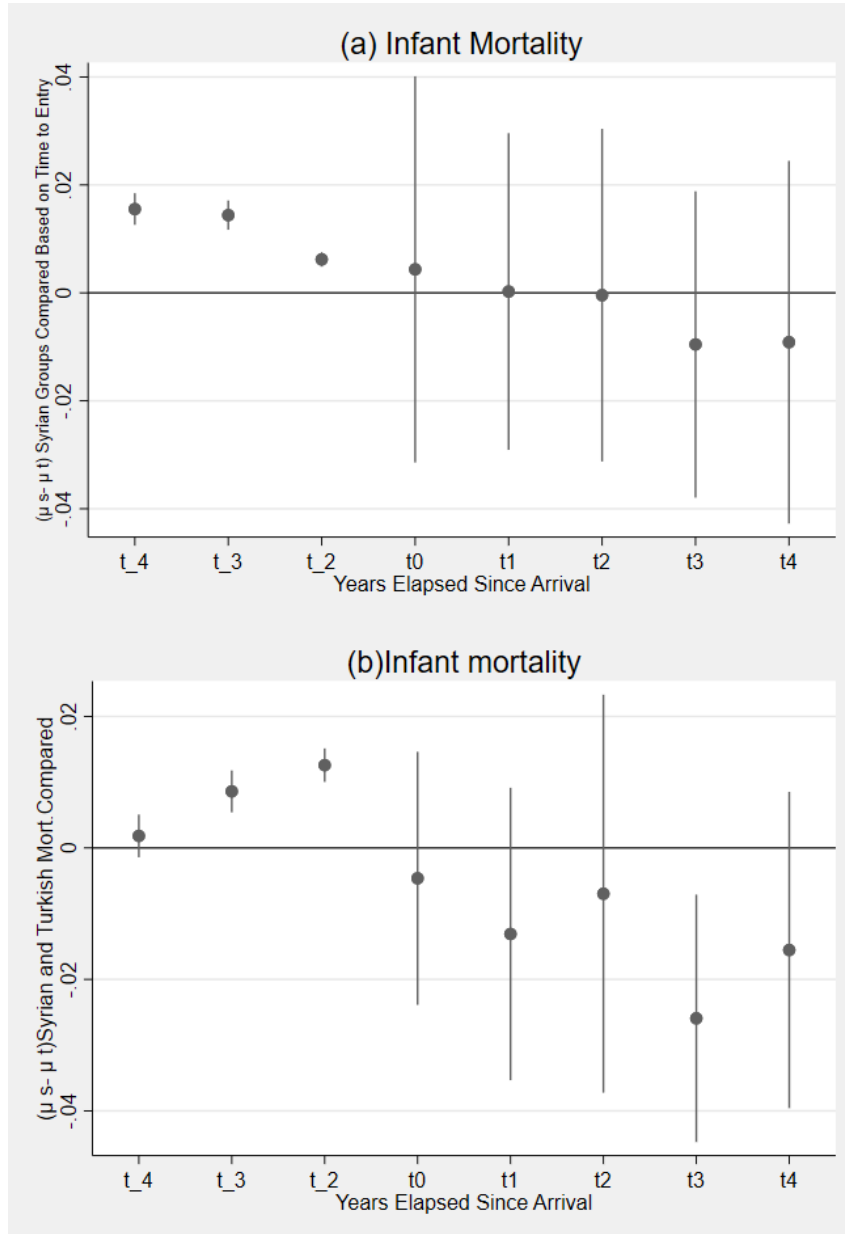

Figure 6-a suggests that, in terms of the height per age distribution, in the first 5 years of the life, normalized by age, significant improvement in this anthropometric measure was observed after the initial integration period. Compared to the Turkish population averages however (in Figure 6-b), significant differences and difficulties are observed in this child development dimension, suggesting that

as with 4-b significant nutrition differences, and cases of undernutrition- at a higher rate than the Turkish average- still exist in the Syrian population that has been residing in Turkey for the last 4+ years.

Figure 6. Age Per Height Development in Different Birth Cohorts a-Intra-Syrian Population Comparisons b-Syria/Turkey Comparisons
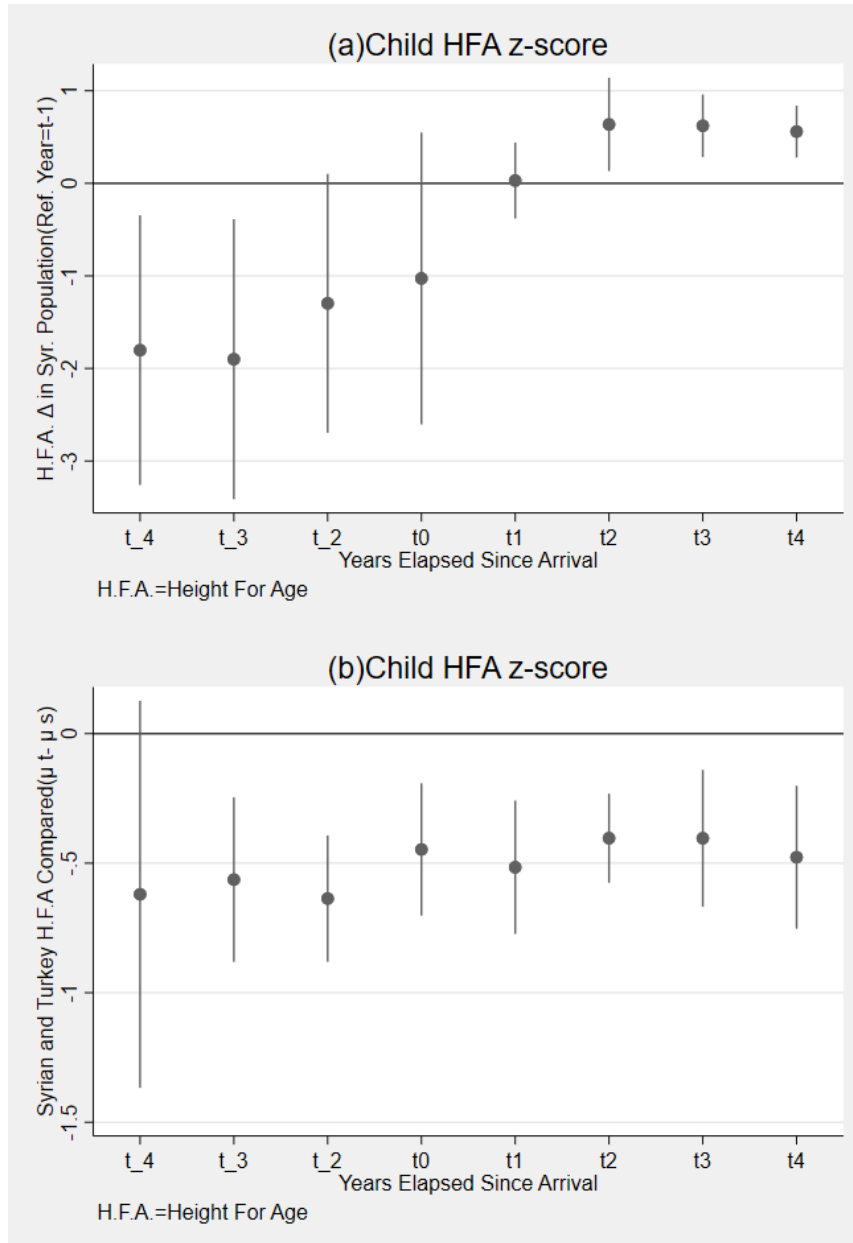
In our regression tables (Table 2 and Table 3), the potential for the health challenges that the Syrian population brings from its source country, and the health benefits of integrating into the host country is obtained, with the source region infant mortality carrying information about the weight of the challenges, and the amount of time spent in the host country, correlating with the amount of integration

into the health system, which is shown to be significantly negatively effecting both mortality values. Education dimensions, and pure timing effects are found to be non-explanatory.

Table 1. Predictors of Mortality for the Syrian Population (Infant Mortality Regression)

Infant Mortality	Coefficient	Std. Err.	Z	P>|z|	[95% Conf. Interval]	
Origin Province Development Level	-0.002	0.0009	**-2.43**	0.015	-0.004	-0.0004
Time Spent in Turkey (Mother)	-0.002	0.0003	**-5.18**	0.000	-0.0023	-0.001
Education Index (Literacy*Highest Education)	0.00004	0.0004	0.09	0.930	-0.0008	0.0008
Time of Interview	-0.0006	0.002	-0.34	0.730	-0.004	0.003
B_0	0.253	0.093	2.72	0.007	0.070	0.435

Wald chi2(4)   =   37.81
Log likelihood = 1669.3807   Prob > chi2   =   0.0000

Table 2. Predictors of Mortality for the Syrian Population (Under-5 Mortality Regression)

Under-5 Mortality	Coefficient	Std. Err.	Z	P>|z|	[95% Conf. Interval]	
Origin Province Development Level	-.002768	.0009476	**-2.92**	0.003	-.0046252	-.000910
Time Spent in Turkey (Mother)	-.0020595	.0003563	**-5.78**	0.000	-.0027577	-.001361
Education Index (Literacy*Highest Education)	-.0002791	.0004321	-0.65	0.518	-.0011261	.000567
Time of Interview	-.0015804	.0019271	-0.82	0.412	-.0053575	.002196
B_0	.323554	.0992624	3.26	0.001	.1290032	.518104

Wald chi2(4)   =   28.35
Log likelihood = 1271.1095   Prob > chi2   =   0.0000

6. CONCLUSION

This study investigates the additional health value of health care access provided to the Syrian population, in particular the infant and early age population, with respect to the earlier Syrian health averages. In other words, our paper aims to analyze the added-value of Syrian health integration to the Turkish health system in three different dimensions namely; access, consistent and timely care and health outputs. The overall picture is consistent with a picture of the health system integration and access, that indeed is helping a vulnerable population to recover their health situation and outcome, and to converge to the Turkish average, for the majority of the health development variables. The integration results come in the three fundamental dimensions; the dimension of the war effect, the migration effect and the convergence effect. The identification methodology used in this study allows us to see when the effect is observed in the life cycle of a person, and whether integration occurs in a one-shot situation, or through stages. The Syria/Turkey comparison is crucial for answering the related questions as it pertains to convergence to the host population, in relation to the refugee cohort, over the same period of time.

The more variation we check for, and the issues of overall social development, the farther we are from convergence to the Turkish equilibrium. This suggests that issues outside the area of health provision, have important effects for health outcomes and health challenges, independently.

The integration, at the end of the day, is an issue at the unit of the individual, and thus must be investigated at the individual outcome, individual access and individual behavior level. The Turkish case is important for the size of the integration experience, but the DHS 2018 is the first survey, with important health dimensions, that allows us to understand what this integration means for the individual refugee. The infant and early age population is one of the most important populations for achieving successful integration, along with having the most important challenges for the joint development process of Syrians together with the overall Turkish system and population. We hope that our study will help to sketch out and identify, both the resulting dimensions of success, and the challenges that remain in the Turkish health care system.

REFERENCES

Akresh R, Verwimp P, and Bundervoet T. 2012. Civil War, Crop Failure, and Child Stunting in Rwanda. Economic Development and Cultural Change. Vol. 59, No. 4, pp. 777-810.

Akresh R, Lucchetti L, Thirumurthy, H. 2012. Wars and Child Health: Evidence from the Eritrean-Ethiopian Conflict. Journal Development Economics. Vol. 99(2):330-340. doi: 10.1016/j.jdeveco.2012.04.001.

Bundervoet T, Verwimp P, and Akresh R. 2009. Health and Civil War in Rural Burundi. The Journal of Human Resources. Vol. 44, No. 2, pp. 536-563.

Chetty R, Hendren N. 2018. The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects. The Quarterly Journal of Economics, Volume 133, Issue 3, Pages 1107–1162, https://doi.org/10.1093/qje/qjy007.

Guha-Sapir D, Gijsbert W. 2004. Conflict-related mortality: an analysis of 37 datasets. Disaster, 28(4), 418–428.

Hacettepe University Institute of Population Studies (HUIPS). 2019. 2018 Turkey Demographic and Health Survey. Hacettepe University Institute of Population Studies, T.R. Presidency of Turkey Directorate of Strategy and Budget and TÜBİTAK, Ankara, Turkey.

Hamill A, Houston P. 2000. War and children's mortality. Childhood, 7(4), 401–419.

Hargreaves JR, Collinson MA, Kahn K, Clark SJ, Tollman SM. 2004. Childhood mortality among former Mozambican refugees and their host in rural South Africa. International Journal of Epidemiology, 33(6), 1271–1278.

Hynes M, Sheik M, Wilson HG, Spiegel P. 2002. Reproductive health indicators and outcomes among refugees and internally displaced persons in post emergency phase camps. JAMA, 288(5), 595–603.

Khawaja M. 2004. The extraordinary decline in infant and childhood mortality among Palestinian refugees. Social Science and Medicine, 58(3), 463.

Madi HH. 2000. Infant and child mortality rates among Palestinian refugee populations. Lancet, 356(9226), 312.

Maystadt JF, Hirvonen K, Mabiso A, and Vandercasteelen J. 2019. Impacts of Hosting Forced Migrants in Poor Countries. Annual Review of Resource Economics.

Minoiu C and Shemyakina O. 2012. Child Health and Conflict in Côte d'Ivoire. The American Economic Review Vol. 102, No. 3.

Mipatrini D, Balcılar M, Dembech M, Ergüder T, and Ursu P. 2019. Survey on the health status, services utilization and determinants of health: Syrian refugee population in Turkey (No. WHO/EURO: 2019-3472-43231-60591). World Health Organization. Regional Office for Europe.

O'Hare BA, Southhall DP. 2007. First do no harm: the impact of recent armed conflict on maternal and child health in Su-Saharan Africa. Journal of the Royal Society of Medicine, 100(12), 564–570.

Serdan GG. 2009. The Effects of the War in Iraq on Nutrition and Health: An Analysis Using Anthropometric Outcomes of Children. SSRN Electronic Journal. DOI:10.2139/ssrn.1359161.

Singh K, Karunakara U, Burnham G, Hill K. 2005a. Using indirect methods to understand the impact of forced migration on long-term under-five mortality. Journal of Biosocial Science, 37, 741–760.

Singh K, Karunakara U, Burnham G, Hill K. 2005b. Forced migration and under-five mortality: a comparison of refugees and hosts in North-western Uganda and Southern Sudan. European Journal of Population, 37, 741–760.

Solis-Soto MT, Paudel D, and Nicoli F. 2020. Relationship between vaccination and nutritional status in children: Analysis of recent Demographic and Health Surveys. Demographic Research, 42(1):1–14.

Verwimp P, Van Bavel J. 2005. Child survival and fertility of refugees in Rwanda. European Journal of Population, 21(1), 271–290.

Winfred AA, Agadjanian V. 2009. Forced migration and child health and mortality in Angola. Social Science and Medicine. 70 (2010) 53–60.

World Health Organization (WHO). 2006. WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. Geneva: WHO.

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