Internal Migration and Contraceptive Use in Turkey

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Abstract

While a large literature explores the fertility of migrants, few scholars have investigated contraceptive behavior in connection with migration and family formation processes. Furthermore, the literature on migrant reproduction has largely focused on international migration, thus overlooking the impact of internal migration. We draw on the case of Turkey to explore contraceptive use and healthcare among internal migrants. Using 2013 Turkish Demographic and Health Survey data, we explore family planning behavior among internal migrants, distinguishing among rural-to-urban, rural-to-rural, urban-to-rural and urban-to-urban migrants. We find that migration is significantly associated with modern contraceptive use—particularly for rural-to urban migrants. Supplementary analyses suggest that these findings might be explained by the fact that migration is also associated with increased access to and knowledge of healthcare, better spousal employment opportunities, greater mobility and changes in norms. This provides support to an adaptation perspective on migrant reproduction but extends it to consider contraception as part of reproduction processes.

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I. Introduction

Migration is an important social process that has substantial impacts on key life course transitions such as family formation. There has been significant interest in understanding the relationship between migration and reproduction, and in particular, whether post-migration fertility aligns with that of the destination context or whether it follows origin-context patterns (Singley and Landale 1998; Parrado 2011; Baykara-Krumme and Milewski 2017). This research provides valuable insights into whether migrants adopt the fertility and family norms of their receiving contexts, or whether they adhere to norms learned prior to migration. Still not fully understood is the impact of migration on contraceptive behavior, which is important because contraceptive access and use could be a potential mediator of the migration-fertility relationship. From a sociological standpoint, a study of the association between migration and contraceptive use and behavior is important because of what it reveals about the migrant adaptation and socialization processes, as well as potential disruptions that occur after arrival. From a policy standpoint, changes in contraceptive use may indicate differing access to public health services and reproductive health care among vulnerable populations either before or after migration.

While there has been considerable attention to the family behavior among international migrants from low-to-high income contexts (e.g. migrants to Europe and the United States), relatively less is known about the role of internal migration within low- and middle-income contexts on changes in family behavior in general and contraceptive behaviors in particular. Nonetheless, internal migration within low- and middle-income countries represents a substantial proportion of global migration flows (Abel and Sander 2014). Drawing on this research gap, this paper explores contraceptive behavior among internal migrants within Turkey.

Although migration from Turkey to Europe is common and has received considerable research and policy attention (Lesthaeghe and Surkyn 1995; Baykara-Krumme 2016; Lievens 1999; Milewski 2011), internal migration within Turkey is also very prevalent. Rural-to-urban migration took place beginning in the 1950s alongside processes of economic development, industrialization and urbanization (Coban 2013). In the 1970s, when a majority of the population resided in urban areas, urban-to-urban migration became more predominant (Gedik 1997), although rural-to-urban migration still occurs. In 2015, 31 percent of the Turkish population was born in a province that was not the current province of residence (Turkstat 2016). While economic-related migration is the primary motivation for men, family migration is the prevailing motivation for women (Gökhan and Filiztekin 2008; Öztürk et al. 2018).

Our paper makes both empirical and theoretical contributions to the literature on migration, fertility, and family formation. Theoretically, we demonstrate the importance of integrating contraception measures into standard frameworks used to explain migrant fertility. In particular, we highlight how norms about contraceptive use can be part of a broader set of adaptation and assimilation processes used to understand how migration may affect childbearing. Empirically, we use the 2013 Turkish Demographic and Health Survey, taking advantage of the fact that this survey includes a detailed migration module that is not common to all DHS surveys. As a first step, we investigate differences in contraceptive use and unmet need for family planning across migration status. Reflecting the several migrant typologies in Turkey, and consistent with prior work (Tanfer 1983; Eryurt and Koç 2012), we distinguish among rural non-migrant, urban non-migrants, rural-to-rural migrants, rural-to-urban migrants, and urban-to-urban migrants. We then explore potential mechanisms that might explain changes in contraceptive use

upon migration including changes in contraceptive knowledge or access, mobility and social values.

II. Integrating contraception into theories of migration and fertility

A large literature on migration and fertility presents several hypotheses for why migration may (or may not) be associated with changes in fertility. These explanations can roughly be grouped into four categories including socialization, adaptation, disruption and selection. Although contraceptive behavior has not been explicitly conceptualized within the parameters of these frameworks, we argue that contraceptive behavior may be subject to similar processes upon migration, and may be an important part of the story explaining migrant reproduction more generally. In what follows, we go through the four aforementioned pathways, with attention to how migration may influence contraceptive use (which in turn may be related to fertility and other reproductive behaviors). While some work has adapted the framework previously (Kessler et al. 2010), we hope to do so in greater detail.

The first perspective, socialization, describes how social rules learned within origin countries continue to influence migrants' demographic behavior at destination. According to this perspective, migration may have limited influence on reproduction—including fertility and contraceptive use—because they adhere to norms and values from their origin context. Evidence for the continued importance of origin context influences on sexual and contraceptive behavior has been found among immigrants in Russia (Agadjanian and Yoo 2018) and the US (White et al. 2016; Farid et al. 2013). Socialization may influence not only values, but also practical knowledge about what are considered acceptable contraceptive methods, such as including home remedies or botanics or other "traditional" methods. In support of this, Betancourt and colleagues

(2013) find the continued use of home remedies and Mexican products among Mexican immigrant women in New York City. Rules learned at origin may not only govern individual behavior but also household gender relations, which could have important implications for women's abilities to negotiate contraceptive use. Several scholars, particularly in the US, have explored how women's contraceptive choices are negotiated together with their partners and are influenced, more broadly, by patriarchal systems, which subordinate women in relation to men. Examining Hispanic immigrants in the US, scholars have found limited evidence of the importance of patriarchal traditions, including a declining significance of patriarchal ideology as women feel more empowered in the US (Gonzalez et al. 2010; Quelopana and Alcalde 2014).

The second perspective, adaptation, suggests that migrants adjust their behavior according to the contraceptive behaviors of the native-born population at destination. Contraceptive adaptation may occur because of knowledge accumulation or exposure to new medical norms and patterns of access to contraception. Adaptation has been found in multiple contexts including Guatemala (Lindstrom 2006), Spain (Alvarez-Nieto et al. 2015), the US (Kessler et al. 2010) and Canada (Wiebe 2013). Attitudes and opinions regarding gender relations may also change after arrival, influencing contraceptive behavior. Quelopana and Alcalde (2014) find among Hispanic women an increased sense of empowerment to discuss issues of sexuality and family planning with their partners, in addition to feeling greater autonomy and having greater economic resources. Loeber (2018) attributes adaptive contraceptive use among Turkish first- and second-generation immigrants in the Netherlands to evolving cultural norms regarding work and family.

The third perspective, disruption, suggests that migration, at least in the short-term, may produce vulnerabilities stemming from weakened social networks and lower socioeconomic

resources, which would lead to reductions in contraceptive use. Costs, language barriers and a lack of childcare may produce hurdles for women who want to access contraception (Betancourt et al. 2013). Furthermore, disruptions in previous access to contraception can also lead to lower or less effective contraceptive use (White and Potter 2013). Even in contexts where contraception is widely available, poor knowledge of contraception and the healthcare system can lead to lower use of contraception or utilization of healthcare services (Betancourt et al. 2013; Garces-Palacio et al. 2008; Farid et al. 2013; Åkerman et al. 2016; Helström et al. 2003). In the case of international migration, a precarious legal status may produce a particularly vulnerable situation and increased risk of poverty (Wolff et al. 2005), and fears of deportation may be a barrier to visiting healthcare facilities (Schoevers et al. 2010; Castenada 2009).

Finally, a selection perspective describes how the characteristics of migrants often diverge from non-migrants in destination or origin areas. For example, age, marital profiles and educational backgrounds are likely to vary between migrant and non-migrant groups (Massey et al., 1987; Feliciano 2010). This selection is likely to influence contraceptive behavior as well, because the women who select into migration might have been systematically different from those who do not. Du Prey et al. (2014) find that immigrant women in Calgary, Canada had similar contraceptive use as Canadian-born women which they attribute to their similar socioeconomic backgrounds, which suggests these migrant women might have had high use of contraception in their origin countries as well.

III. The Turkish context

a. Family planning in Turkey

The Turkish government has implemented family planning policies since the 1960s, after a long period of pronatalism following devastating wars in the early 20th century. In 1965, policymakers introduced health clinics and promoted use of traditional and modern contraception, although abortions were still illegal unless health risks were present. In 1983, Turkey legalized sterilization and abortion (up to 10 weeks) through a new population planning law, becoming one of the first Muslim countries to do so (MacFarlane et al. 2016). The law also approved training for general practitioners to insert IUDs and supported intersectoral cooperation to provide family planning services throughout the country (Akın 2007). Today, 74 percent of women aged 15-49 are currently using a contraceptive method as their primary method, up from 63 percent in 1988. Knowledge of modern methods is widespread: almost all women in Turkey have heard of at least one modern method, the most widely known among them being oral contraceptives and IUDs. Nevertheless, withdrawal use is the most commonly used single method, which suggests adherence to traditional methods is still common. In 2013, 26 percent of currently married women reported current use of withdrawal, followed by IUDs (17 percent) and male condoms (16 percent) (HUIPS 2014). Common reasons cited for using traditional methods include concerns about health side-effects from other methods and husbands' approval (Goldberg and Toros 1994). Modern methods may be accessed for free in government-funded primary health care units and hospitals or from pharmacies and private physicians but for a fee (Karavus et al. 2004). Typically, modern contraception is obtained from public sector sources, with pharmacies being the primary source of pills and male condoms (HUIPS 2014).

Several studies have explored the correlates of contraceptive use in Turkey. For instance, women's education, employment and socioeconomic status are positively related to modern contraceptive use and negatively associated with use of withdrawal (Ergöçmen et al. 2004;

Cindoglu et al. 2008). Husband's education and income is also inversely related with withdrawal use (Kulczycki 2004). In addition, contraceptive use varies across regions. Use of modern methods among currently married women is most prevalent in the central, western and southern regions and urban areas and least common in the eastern region and rural areas. The eastern region is also marked by a relative high proportion of currently married women (38 percent) not using any method (HUIPS 2014). Differences across settings are attributed to varying levels of wealth and economic development and the lower accessibility and availability of health services in rural areas (Cindoglu et al. 2008; Dinç et al. 2007). Finding more prevalent withdrawal use in Turkey's western region, Kulczycki (2004) attributes this to strong historical roots in the region, particularly in Istanbul which also set the precedent for fertility decline in the country. Knowledge of contraceptive methods, couple or husband's approval of family planning, agreement with male authority, Kurdish background and current social security status were found to be associated with current contraceptive use (Cindoglu et al. 2008; Kulczycki 2004; Ergöçmen et al. 2004).

In addition to implementing family planning policies, Turkey has experienced a dramatic decline in fertility rates over the past 50 years, from a total fertility rate (TFR) of around 6.3 children per woman in 1963 to 2.3 by 2013 (HUIPS 2014). Bongaarts (1993) estimates a significant proportion of the decrease in fertility-- 31 percent—is due to family planning policies Other factors include urbanization, shifting structure of the labor force, increasing literacy and per-capita income have played a vital role in the country's transition into low fertility (Yüceşahin & Özgür 2008).

Similar to regional disparities in contraceptive use, there is also notable regional variation in family behavior across Turkey. While Turkey's western urban centers, such as Istanbul and

Izmir, have historically had low fertility relative to the rest of the country, the eastern regions have experienced higher fertility rates (Duben and Behar, 1991; Yavuz 2006; Yüceşahin & Özgür 2008). Generally, Turkey's rural populations have higher TFRs (2.73 in 2013) than those in urban areas (2.16) (HUIPS 2014).

b. Internal migration in Turkey

Internal migration began in the 1950s, triggered by state-led restructuring of economic policies and developments in transportation and infrastructure. Beginning in the 1960s, educational opportunities in urban areas, communication technologies and growing migrant networks would additionally drive internal migration flows, while security concerns in Southeastern Turkey became another factor in the 1980s (Coban 2013). While rural-to-urban migrants dominated migration flows in the 1950s and 1960s, urban-to-urban migration became more important in the 1970s. The result of migration patterns is a dramatic shift in the urban structure of the country: while in 1950 the population living in cities was 25 percent, in 2010 the figure was 76 percent (HUIPS 2014).

Consistent with the literature elsewhere, Turkish internal migrants are generally more educated and younger than the general population (Gökhan and Filiztekin 2008; Tanfer 1983). In addition, women and men with higher education are more likely to move to large urban areas than towns or villages (Tanfer 1983). For the past several decades, marriage has been the most common motivation for migration among women, while parent-related migration declined and partner-related (e.g. partner's appointment) migration has increased. Migrating for personal reasons is more common among women with higher socioeconomic status and among urban-to-urban migrants, while marriage migration is most common among rural-to-urban and among those with less than high school education (Özgören et al. 2012).

While contraceptive behavior across migration backgrounds has not yet been explored, scholars have previously examined the relationship between migration and fertility behavior in Turkey. Eryurt and Koç (2012) find adaptation in fertility behavior among rural-to-urban migrants and urban-to-rural migrants in Turkey.

IV. Hypotheses

In this study, we explore contraceptive behavior across migrant typologies and possible mechanisms for these gaps. In light of the previous literature on migration and contraceptive behavior, we make a number of hypotheses related to current contraceptive use among internal migrants in Turkey.

Hypothesis 1

Higher contraceptive use than that of origin context, alongside increases in knowledge, access, mobility or modern viewpoints, supports adaptation.

Hypothesis 2

Similar contraceptive behavior to that of origin context supports socialization.

Hypothesis 3

Lower contraceptive use than that of origin context would support the disruption hypothesis if lower contraceptive use occurs alongside higher unmet need for family planning.

Hypothesis 4

If contraceptive behavior is distinct from origin context in either direction (higher or lower current use), selection may be present. As adaptation and selection may be difficult to distinguish, selection is hypothesized if present for all four migrant groups.

V. Data and sample

For this analysis, we use the 2013 Turkish Demographic and Health Survey (DHS). The Turkish DHS is a nationally representative survey administered by Hacettepe University Institute of Population Studies (HUIPS). A weighted, multistage, stratified cluster sampling technique is used to select households. All eligible women between the ages of 15 and 49 in the household are interviewed. Here, comprehensive demographic, social and economic characteristics are collected including current contraceptive knowledge and use. In addition, we take advantage of a unique migration module that provides detailed migration histories of respondents, including information on every year and place of migration (province center, district center, sub-district, or abroad) beginning at age 12 and where settlement lasts for at least six months.

As marriage is often linked with migration for women, we limit our analysis to currently married women, removing single women (only 0.3 percent of whom are currently using a contraceptive method). Furthermore, a relatively small number of women who divorced, separated, became widowed or married more than once are removed. We further limit our analysis to internal migrants, thus, women who spent any time abroad are also removed. Listwise deletion is used to remove women with missing information on current contraceptive use, contraceptive knowledge, social security status, current employment, mobility or opinions. The resulting sample size is 6,440 women, 27 percent of whom are urban non-migrants, 13 percent rural non-migrants, 23 percent rural-to-urban migrants, 11 percent rural-to-rural migrants, 3 percent urban-to-rural migrants and 22 percent urban-to-urban migrants.

Methods

Analytical approach

We first investigate differences in contraceptive use and unmet need for family planning across migration status (rural non-migrant, urban non-migrant, rural-to-rural migrant, rural-to-urban migrant, and urban-to-urban migrant). We perform a logistic regression model for each outcome variable (modern, short-acting, long-acting, withdrawal and unmet need for family planning controlling for socioeconomic and demographic background variables (described below). Second, we explore potential mechanisms for differences across migration backgrounds and perform a similar analysis with contraceptive knowledge, social security status, mobility and viewpoints as outcome variables with controls for socioeconomic and demographic background variables.

Model specification

Contraception: We measure contraceptive behavior using self-reported current contraceptive method. From this, we create a dichotomous outcome measure for current modern contraceptive use, which takes on the value of one if currently using a modern contraceptive method and 0 if using another method or not using any method. In addition, we examine current modern contraceptive use by type. Consistent with prior work, we classify current modern contraceptive use into two broad categories: current use of a long-acting or permanent method (e.g. IUDs, hormonal implants, female sterilization and male sterilization) and current use of a short-acting method (oral contraceptive pills, condoms, spermicides and injectable hormones). Given the persistence of withdrawal use in the Turkish context, we also construct a similar dichotomous measure for current withdrawal use.

Unmet need for family planning: We examine unmet need for family planning, which is defined as women who do not want to get pregnant but are not actively using a method for

family planning. To obtain our measure, we use a standard definition for unmet need for family planning provided by the DHS (Bradley et al. 2012).

Migration status:

Drawing on prior work (Eryurt and Koç 2012), we construct a measure for type of migration based on childhood place of residence and the current place of residence. The current place of migration (urban vs. rural) is compared with the respondent's childhood place of residence (province center, district center and sub-district) to create six categories of migration background: urban non-migrant, rural non-migrant, rural-to-urban migrant, rural-to-rural migrant, urban-to-rural migrant and urban-to-urban migrant.

Socioeconomic characteristics:

We also control for women's socioeconomic status. This measure is based on the educational background of respondents, which is an important proxy for one's socioeconomic prospects and earnings potentials.[1] The measure for respondent's education consists of several categories, including no education/incomplete, primary education, secondary education and higher education.

Demographic controls: All models also control for respondent's age, which consists of both a continuous age variable and an age-squared variable. We include an indicator for respondent's current parity (no children, one child, two children and three or more children) and. a variable for current region of residence (North, West, East, South and Central). Furthermore, a dichotomous variable for a Kurdish background is included, drawing on a previously used definition based on whether both or either of the respondent's parents spoke Kurdish as their

[1] Partner's education, which is often used as a proxy for socioeconomic status and has been found to influence contraceptive use in Turkey, is not included as it may be impacted by the migration.

main language, regardless of whether or not the respondent's own main language is Kurdish (Gore and Carlson 2010).

After investigating the relationship between migrant status and current contraceptive use net of socioeconomic characteristics and demographic controls, we explore how migrant status is linked with employment, access, knowledge, mobility and values in order to understand potential mechanisms for change in contraceptive behavior that are consistent with the literature.

Respondent and partner's employment: We explore whether migration may lead to increased economic opportunities and resources through a dichotomous measure for respondent and partner's current employment. The indicator for partner's employment indicates whether or not the respondent's partner worked in the past seven days. As most employed women in rural areas are likely unpaid family workers in the agricultural sector (Tanfer 1985), current employment only incorporates work in the service and industrial sectors.

Access: Migration may also lead to changing contraceptive behavior through increased access to contraception, particularly among rural-to-urban migrants. Our measure for access is whether or not the respondent has social security. In Turkey, the primary source of health insurance is the Social Security Institution, private health insurance companies and the General Health Insurance, which insures individuals not insured by any social security. The Social Security Institution was formed in 2006, joining three longstanding pillars of public insurance: the Retirement Fund, the Social Security Institution and a social insurance institution for self-employed workers including craftsmen and artisans (HUIPS 2014). The dichotomous indicator takes on the value of one if a respondent has social security and zero if she has another form of health insurance or no insurance at all.

Knowledge: Migration may also lead to changing contraceptive behavior through increased knowledge of contraceptive methods. Our measure for knowledge is a continuous variable based on the number of modern contraceptive methods the respondent has knowledge of.

Mobility: Migration may also lead to increased mobility for the respondent. Our measure for access is from a survey question on who is the primary person that does the kitchen shopping. From this, we create a dichotomous measure for whether the respondent does the shopping (either alone or jointly with her partner) or another person performs this chore.

Attitudes and opinions: Migration may also lead to more modern viewpoints, particularly among those who migrate from rural areas to urban centers. We explore a number of dichotomous values measures based on survey questions that ask respondents opinions on whether women should be virgins when they get married; husbands should also do housework chores such as cooking, washing, ironing, and cleaning; women should not work; women should be more involved in politics; it is better to educate a son than a daughter; and family decisions should be made only by men.

VI. Results

Description of how key variables vary by migrant status

Table 1 explores how key demographic and socioeconomic variables differ by migration background. In our sample of currently married women, the mean age varies between 33 and 36 across migrant status. Women who spent their childhoods in rural areas are most concentrated at birth parities of 3 or more children, although rural-to-urban migrants are slightly less so. We also see that women currently living in rural areas are most likely to be residing in the Eastern

regions, while women who are currently living in urban areas are mostly concentrated in Western and Eastern regions. A Kurdish background tends to be more represented among women with a rural childhood experience. Socioeconomic status, measured by respondent's highest educational attainment, is highest among respondents with an urban childhood experience.

Table 1 in the appendix also shows how the reason for last migration varies across migrant types. Consistent with previous findings, we see that marriage is the primary factor for a respondent's migration and that, together with other partner-related factors (such as a partner's job), constitute the large majority of each group. Notable is the relatively higher proportion of urban-to-urban migrants who migrate for work or education-related reasons.

Tables 2 shows descriptively how main outcome variables differ by migration background and includes a t-test comparison for each category of migration background with rural non-migrants. We see, for instance, that rural non-migrants and rural-to-rural migrants have lower usage of modern and short-acting contraceptive methods, while the opposite is generally true for urban non-migrants and urban-to-urban migrants. Rural-to-urban and urban-to-rural non-migrants' demonstrate levels of contraceptive use somewhere in the middle. Unmet need for family planning is highest among women residing in rural areas and lowest for women residing in urban areas. Notably, urban-to-rural migrants' unmet need is similar to that of other women currently residing in rural areas despite higher current short-acting and modern contraceptive usage. Differences in current modern and short-acting contraceptive use and unmet need for family planning are also significant for urban non-migrants and rural-to-urban and urban-to-urban migrants while for urban-to-rural migrants only short-acting use is significantly different. No clear patterns emerge for withdrawal use as urban-to-rural and urban-to-urban migrants

demonstrate the lowest current usage and rural-to-urban and rural-to-rural migrants demonstrate the highest usage. All groups have similar current long-acting contraceptive use.

Migrant status and contraceptive behavior

We first explore the relationship between migrant status and current contraceptive use using logistic regression models. We control for socioeconomic and demographic background variables including respondent's highest education, age, parity, region of residence and Kurdish background. In Table 3, we see that urban non-migrants have a higher risk of current modern contraceptive use and lower unmet need for family planning, demonstrating an urban-rural divide net of socioeconomic and demographic controls. In addition, we see that rural-to-urban have a higher relative risk of using modern contraceptive methods and short-acting modern methods and a lower unmet need for contraception relative to rural non-migrants, indicating some evidence of adaptation. Rural-to-rural and urban-to-rural migrants demonstrate no significant difference with rural non-migrants. In addition, urban-to-urban migrants demonstrate a higher relative risk of modern and short-acting use and lower risk of withdrawal use and unmet need for family planning (although significant only at the $p < 0.10$ level). Few differences are present in withdrawal use, reflecting the commonness of withdrawal use across groups.

Consistent with the literature, we also find that modern contraceptive use increases with age, parity and education. Furthermore, women with a Kurdish background have lower modern contraceptive use and a higher unmet need for family planning. We also find regional disparities with women who live in the Eastern and Northern regions having a lower likelihood of using modern methods and women in the Eastern region having a higher unmet need for family planning relative to women who live in the West.

Potential mechanisms

We now begin exploring potential accounts for differences in contraceptive behavior across migrant statuses. We begin by showing differences across migration backgrounds in employment, knowledge, access, knowledge and mobility. As shown in Table 4, we find that urban non-migrants, rural-to-urban migrants, urban-to-rural migrants and urban-to-urban migrants have a higher likelihood of own employment or spouse's employment (in the services and industrial sectors), access (as measured by public insurance), mobility and knowledge of modern methods relative to rural non-migrants. Rural-to-urban migrants are more closely aligned with urban non-migrants than rural non-migrants across all indicators, providing more evidence of an adaptation effect. Urban-to-rural migrants demonstrate no difference in access despite higher mobility, knowledge and employment, suggesting potential disruption. Rural-to-rural migrants are not statistically different from rural non-migrants except in that they have more knowledge, albeit slight, indicating similar social circumstances which produce their similarly low contraceptive use.

As for differences in viewpoints as measured by a number of survey opinion questions, shown in Table 5, we find that urban non-migrants, rural-to-urban migrants and urban-to-urban migrants have more modern viewpoints regarding husbands' helping with household chores, women's employment, daughters' education and sharing family decision-making. Rural-to-urban migrants align more closely with urban non-migrants than rural non-migrants, indicating adaptation in gender attitudes and opinions. Urban-to-rural and rural-to-rural migrants are generally statistically different from rural non-migrants, suggesting similarities in viewpoints. Urban-to-urban migrants have the highest relative risk of holding modern gender attitudes.

VII. Discussion

In this study, we examine current contraceptive use and unmet need for family planning among currently married internal migrant women in Turkey as well as potential mechanisms for these differences. We compared six groups, which represent all possible migration categories: rural non-migrants, urban non-migrants, rural-to-urban migrants, rural-to-rural migrants, urban-to-rural migrants and urban-to-urban migrants. While many researchers have studied reproductive behavior among migrants, far fewer have analyzed contraceptive behavior and, in particular, among internal migrants. Our study contributes to the literature on migration and fertility by integrating migrant contraception into the migrant-fertility framework. Furthermore, while international migration from Turkey has been the focus of many scholars and policymakers until now, far less is known about family behavior among migrants within Turkey.

We first find evidence of adaptation among rural-to-urban migrants. Not only do they demonstrate higher contraceptive use and lower unmet need for family planning relative to rural non-migrants, but they also demonstrate higher mobility, knowledge, access, knowledge, employment and modern attitudes and opinions. Among rural-to-rural and urban-to-rural migrants we find no significant differences in contraceptive use, however, we find higher mobility, employment and knowledge among urban-to-rural migrants. For rural-to-rural migrants, results may be interpreted as socialization as they demonstrate limited differences in contraceptive behavior, mobility, employment, knowledge access and norms. Urban-to-rural and urban-to-urban migrants, who demonstrate different behavior—though in different directions—than urban non-migrant counterparts, suggest selection.

Although our paper makes a valuable contribution to the literature on migration and reproduction by integrating contraceptive behavior, it has a number of limitations. While we hypothesize that usage of contraception might be an important pathway linking migration to

women's fertility outcomes, we are unable to test this directly due to the cross-sectional nature of our data.

These findings have several implications. They suggest a divide between urban and rural regions of Turkey. Women currently living in rural areas have lower access to contraceptive use, which may be a potential account for their lower current use. Nevertheless, migration produces positive changes insofar as greater contraceptive use indicates greater autonomy and access to healthcare. Furthermore, these findings may be applicable to international migrants from Turkey as employment opportunities, mobility, access, knowledge and modern viewpoints also change.

VIII. Appendix

Table 1. Reason for migration among currently married women by migration background

	Rural-urban	Rural-rural	Urban-rural	Urban-urban
Marriage	0.51	0.74	0.57	0.42
Other partner related	0.24	0.10	0.23	0.25
Work or education related	0.07	0.02	0.04	0.14
Other family related	0.10	0.05	0.08	0.09
Other	0.08	0.09	0.08	0.10
N	1469	722	225	1435

Source: 2013 Turkish DHS

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Table 1. Sample distribution of social and demographic variables by migration background

	Urban non	Rural non	Rural-urban	Rural-rural	Urban-rural	Urban-urban
Age (Mean)	33.71	35.04	35.59	35.12	34.63	33.93
Age Squared (Mean)	1199.80	1302.53	1327.63	1304.33	1269.649	1208.89
Parity						
0	0.09	0.06	0.06	0.07	0.08	0.13
1	0.21	0.11	0.14	0.15	0.22	0.23
2	0.37	0.29	0.33	0.27	0.31	0.36
3+	0.33	0.54	0.47	0.50	0.39	0.28
Region						
West	0.26	0.13	0.29	0.16	0.19	0.31
South	0.15	0.18	0.10	0.13	0.20	0.13
Central	0.22	0.23	0.16	0.16	0.12	0.20
North	0.11	0.11	0.19	0.19	0.12	0.15
East	0.27	0.35	0.25	0.36	0.36	0.21
Kurdish	0.17	0.25	0.28	0.31	0.29	0.17
Education						
No educ/Incomplete	0.13	0.31	0.24	0.30	0.20	0.09
Primary	0.41	0.52	0.57	0.54	0.34	0.30
Secondary	0.16	0.13	0.10	0.11	0.18	0.15
Higher	0.30	0.04	0.09	0.05	0.28	0.47
N	1770	819	1469	722	225	1435

Table 2. Means of key outcome measures disaggregated by migration background with bivariate t-test comparison with rural non-migrants

	Rural non	Urban non		Rural-to-urban		Rural-to-rural		Urban-to-rural		Urban-to-urban	
	Mean	Mean	Pr(|T| > |t|)	Mean	Pr(|T| > |t|)	Mean	Pr(|T| > |t|)	Mean	Pr(|T| > |t|)	Mean	Pr(|T| > |t|)
Withdrawal	0.26	0.26		0.28		0.31	*	0.22		0.21	**
Modern	0.40	0.47	***	0.45	*	0.39		0.44		0.51	***
Short Acting	0.13	0.20	***	0.19	***	0.14		0.20	**	0.27	***
Long Acting	0.27	0.27		0.26		0.25		0.24		0.24	
Unmet Need	0.11	0.06	***	0.06	***	0.08		0.10		0.06	***
N	819	1770		1469		722		225		1435	

Table 3. Logistic regression models predicting modern, short-acting contraceptive use, withdrawal use and unmet need for family planning among currently married women

	Modern	SAM	Withdrawal	Unmet Need
Urban non	0.247**	0.140	-0.0226	-0.390*
(Ref: Rural non)	(0.0940)	(0.126)	(0.100)	(0.157)
Rural-urban	0.215*	0.352**	-0.0177	-0.440**
	(0.0954)	(0.128)	(0.102)	(0.162)
Rural-rural	0.0439	0.0912	0.208'	-0.318'
	(0.112)	(0.154)	(0.115)	(0.182)
Urban-rural	0.234	0.327	-0.230	-0.0480
	(0.164)	(0.204)	(0.184)	(0.259)
Urban-urban	0.425***	0.448***	-0.256*	-0.333'
	(0.101)	(0.130)	(0.110)	(0.173)
Age	0.287***	0.298***	-0.0287	-0.256***
	(0.0334)	(0.0429)	(0.0344)	(0.0531)
Age Squared	-0.00442***	-0.00495***	0.000193	0.00334***
	(0.000465)	(0.000618)	(0.000482)	(0.000753)
Parity 1	1.334***	0.889***	1.515***	0.718**
(Ref: 0)	(0.151)	(0.154)	(0.176)	(0.220)
2	2.096***	1.108***	1.752***	0.536*
	(0.150)	(0.154)	(0.175)	(0.226)
3	2.779***	0.858***	1.442***	0.665**
	(0.159)	(0.167)	(0.182)	(0.239)
Region: South	-0.0620	-0.0796	-0.370***	0.428*
(Ref: West)	(0.0917)	(0.110)	(0.100)	(0.189)
Central	0.223**	0.0205	-0.408***	0.284
	(0.0821)	(0.0950)	(0.0897)	(0.180)
North	-0.285**	-0.171	0.101	0.254
	(0.0889)	(0.105)	(0.0917)	(0.200)
East	-0.187*	-0.0986	-0.429***	0.744***
	(0.0860)	(0.104)	(0.0936)	(0.167)
Kurdish	-0.427***	-0.336**	0.140	0.381**
(Ref: others)	(0.0840)	(0.109)	(0.0906)	(0.136)
Educ: First level	0.294***	0.473***	0.139	-0.253'
(Ref: None)	(0.0841)	(0.124)	(0.0907)	(0.136)
Second level	0.524***	0.591***	0.117	-0.472*
	(0.115)	(0.151)	(0.121)	(0.193)
High school or more	0.972***	1.138***	-0.179	-0.259
	(0.110)	(0.142)	(0.119)	(0.191)
Constant	-7.141***	-7.165***	-1.593**	1.449'
	(0.580)	(0.721)	(0.587)	(0.873)
Observations	6,440	6,440	6,440	6,440

Table 4. Logistic regression models predicting employment, mobility, access and knowledge among currently married women

	R. Employed	P. Employed	Mobility	Access	Knowledge
Urban non	1.044***	1.433***	1.072***	1.026***	0.864***
	(0.176)	(0.102)	(0.0939)	(0.102)	(0.0769)
Rural-urban	1.156***	1.262***	0.999***	1.080***	0.585***
	(0.178)	(0.100)	(0.0949)	(0.104)	(0.0782)
Rural-rural	0.119	0.109	0.126	0.130	0.193*
	(0.226)	(0.107)	(0.107)	(0.113)	(0.0904)
Urban-rural	1.186***	0.502**	0.339*	0.175	0.750***
	(0.241)	(0.167)	(0.160)	(0.175)	(0.134)
Urban-urban	1.242***	1.464***	1.159***	1.188***	0.934***
	(0.179)	(0.114)	(0.102)	(0.116)	(0.0823)
Constant	-10.51***	-2.743***	-3.656***	-0.177	-0.0251
	(0.833)	(0.613)	(0.532)	(0.613)	(0.429)
Observations	6,440	6,440	6,440	6,440	6,440

Table 5. Logistic regression models predicting gender attitudes among currently married women

	Women should be virgins	Husbands should help	Women shouldn't work	More women politicians	Educated son more important	Family decisions by men
Urban non	0.0369	0.324***	-0.578***	-0.0991	-0.584***	-0.800***
	(0.114)	(0.0935)	(0.0926)	(0.0991)	(0.127)	(0.119)
Rural-urban	0.234'	0.262**	-0.348***	-0.0544	-0.441***	-0.524***
	(0.120)	(0.0940)	(0.0947)	(0.101)	(0.124)	(0.112)
Rural-rural	0.335*	-0.0558	-0.324**	0.0405	-0.266'	-0.150
	(0.145)	(0.107)	(0.109)	(0.118)	(0.140)	(0.122)
Urban-rural	-0.0248	0.157	-0.658***	-0.123	-0.289	-0.188
	(0.188)	(0.167)	(0.159)	(0.175)	(0.233)	(0.206)
Urban-urban	-0.0795	0.562***	-0.460***	0.0218	-0.650***	-0.952***
	(0.119)	(0.104)	(0.0988)	(0.108)	(0.145)	(0.143)
Constant	3.613***	-1.425**	1.424**	-2.379***	0.306	2.592***
	(0.622)	(0.539)	(0.506)	(0.548)	(0.790)	(0.708)
Observations	6,440	6,440	6,440	6,440	6,440	6,440